GLOBAL NUTRITION REPORT

FROM PROMISE TO IMPACT

ENDING MALNUTRITION BY 2030

2016

The 2016 *Global Nutrition Report* is an authoritative source of action-oriented nutrition knowledge that transcends politics and guides the SUN Movement in its quest to make nutrition a priority. This report continues to push the boundaries beyond previous editions—with an optimistic message that when we work together, our collective impact can achieve the changes needed to sustainably transform lives, communities, and the future. Eradicating malnutrition requires perseverance from all of us, and the report gives us our backbone and resolve. It also ensures that we hold each other accountable and learn from each other's successes and failures. The *Global Nutrition Report* emphasizes the challenges posed by the multiple forms of malnutrition. It also signals the enormous importance of investing in the critical 1,000-day window so that every girl and boy can lead a happy, healthy, and productive life. Investing in nutrition is our collective legacy for a sustainable world in 2030.

TOM ARNOLD AD INTERIM SUN MOVEMENT COORDINATOR
GERDA VERBURG FORTHCOMING SUN MOVEMENT COORDINATOR

The *Global Nutrition Report* confirms the urgency of collective action to combat malnutrition's cascading impact on people, communities, and whole societies. The simple truth is we cannot secure sustainable development until we address the persistent food and nutrition challenges undermining opportunities for our planet's poorest and most vulnerable people. Moving from theory to action requires giving specific attention to those people left furthest behind, enduring persistent crisis and the effects of climate change. This report confirms that committing to SMART action is the primary way to achieve change for the people who need it most.

ERTHARIN COUSIN EXECUTIVE DIRECTOR, WORLD FOOD PROGRAMME

Achieving good nutrition is about more than the food we eat, and it cannot be guaranteed by economic growth or even by poverty reduction. It is therefore essential that we have a comprehensive global system that regularly monitors people's nutritional status. Global poverty—defined as lack of material well-being—is difficult to measure accurately. So undernutrition monitoring is crucial not only in its own right, but also as one of the most important indicators of poverty more broadly. The *Global Nutrition Report*'s call for a data revolution in nutrition is important and timely.

ANGUS DEATON LAUREATE OF THE SVERIGES RIKSBANK PRIZE IN ECONOMIC SCIENCES IN MEMORY OF ALFRED NOBEL 2015

The third *Global Nutrition Report* comes at an opportune time, with world leaders fully committed to meeting the Sustainable Development Goals. More than half of these goals are related to nutrition; to meet them, we must reshape our food system. The challenges are immense. One-third of the world population is malnourished, while 30 percent of food is wasted. We have left behind smallholders, women, and youth. On the other hand, some countries have made rapid progress. So how do we extend and sustain such progress? This report continues to guide our way to a nutrition-driven global food system.

SHENGGEN FAN DIRECTOR GENERAL, INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

The UN General Assembly declared on April 1, 2016, the UN Decade of Action on Nutrition for the period 2016–2025. The Decade of Action reaffirms the call to end all forms of malnutrition as anchored in the ICN2 Rome Declaration and in the 2030 Agenda for Sustainable Development. It provides a unique avenue for a sustained global push on nutrition. FAO together with its partners will work to make food and agriculture systems more nutrition sensitive using a broad-based and inclusive approach to ending malnutrition. The *Global Nutrition Report*—through the monitoring of global and country commitments—will be a key pillar for enabling effective collective effort in support of the Decade of Action.

JOSÉ GRAZIANO DA SILVA DIRECTOR GENERAL, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Malnutrition in all its forms remains a global concern, particularly affecting highly vulnerable populations in several regions of the world including the Caribbean and other small island developing states. Excessive intake of energy-dense food, a form of malnutrition, together with reduced physical activity, has led to an epidemic of obesity, overweight, and nutrition-related noncommunicable diseases. Ambitious global targets and sustainable development goals have been set to address this problem. Achievement of these goals and targets requires political will and leadership of the highest order, supported by an informed and empowered civil society and a committed and engaged private sector. The 2016 edition of the *Global Nutrition Report* brings together the latest available data and experiences from around the world and provides an excellent tool to support efforts to reduce all forms of malnutrition. For the Healthy Caribbean Coalition and other civil society organizations, the *Global Nutrition Report* is an important resource in the multisectoral response to prevention and control of noncommunicable diseases.

SIR TREVOR HASSEL PRESIDENT, HEALTHY CARIBBEAN COALITION

Considering that hunger and malnutrition persist despite an abundance of healthy food, it is our duty as humans to transform the food value chain. The *Global Nutrition Report* contributes not only by shedding light on this alarming issue, but also by calling the world to take action and showing what needs to be done. I believe that it is my responsibility as a chef and founder of Gastromotiva to foster the new generation of cooks, chefs, and leaders who will unite in the fight against malnutrition.

DAVID HERTZ PRESIDENT-DIRECTOR, GASTROMOTIVA

Nutrition policy is of great importance to Norway, both nationally and globally. While nearly 800 million people suffer from hunger globally, obesity is increasing in both rich and poor countries. Norway will launch a cross-sectoral Action Plan on nutrition and food in 2017. Our goal is to encourage a healthy and varied diet throughout life. The plan will take into account our international commitments, and we will work actively with the World Health Organization to strengthen nutrition globally. While good nutrition is central to our health and our quality of life, it is also essential to the climate. I am convinced that politicians must work together with the private sector, professionals, and civil society to promote healthy eating and sustainable food production. In this regard, the 2016 *Global Nutrition Report* should be a call to action.

BENT HØIE NORWEGIAN MINISTER OF HEALTH AND CARE SERVICES

With its synthesis of data on global nutrition, the 2016 *Global Nutrition Report* implicitly urges our global community to renew its commitment to a basic global goal—a planet where every person, irrespective of race, ethnicity, gender, or socioeconomic background, can access the resources they need to live healthy, holistic, happy lives. The most basic of those resources is food. Fortunately, empowering individuals to feed themselves well is also among the first steps toward a stronger, richer, more democratic world. We all want that world, and we must work for it. This report suggests where and how we can all chip in.

H.E. MARGARET KENYATTA FIRST LADY OF THE REPUBLIC OF KENYA

Economies are increasingly dependent on digital and higher-level competencies and skills, and our investments in "gray-matter infrastructure" are perhaps the most important ones we can make. In too many low- and middle-income countries, children are disadvantaged before they even set foot in school because they did not have adequate early nutrition. Childhood stunting rates of 45 percent—and as high as 70 percent in some countries—are a stain on our collective conscience. The *Global Nutrition Report 2016* issues an important call to action to make the critical investments needed in nutrition so that all children can thrive and we can build strong, resilient societies that will benefit everyone.

JIM YONG KIM PRESIDENT, WORLD BANK GROUP

Every year, undernutrition contributes to the deaths of around 3 million children and threatens the futures of hundreds of millions more—undermining the healthy development of their bodies and their brains, and affecting their ability to learn and to earn later as adults. And undernutrition doesn't affect only the health and well-being of individual children. By preventing children from reaching their full potential, undernutrition also undermines the strength of their societies.

As the 2016 *Global Nutrition Report* shows, the world has made significant progress. Many nations are on course to meet the 2025 global nutrition targets. For example, 99 countries have made progress toward decreasing stunting, which blights the lives of more than 150 million children around the world. The Scaling Up Nutrition (SUN) Movement has united governments, civil society, the private sector, and international organizations in making nutrition a priority—targeting investments, tailoring interventions, and tracking our progress. We will continue working together in common cause and with a shared commitment to reach every child.

ANTHONY LAKE EXECUTIVE DIRECTOR, UNICEF

The 2016 *Global Nutrition Report* highlights a really important issue: worldwide, millions of kids are eating too much of the wrong foods, while millions more aren't getting enough of the good stuff to let them grow and thrive. As the report shows, access to good, nutritious food is not simply a matter of personal choice—it's a matter of government responsibility. It's time for our world leaders to step up and make bold, brave decisions to tackle all forms of malnutrition. Fresh, healthy food is a basic right for every child—let's make that a reality.

JAMIE OLIVER CHEF AND CAMPAIGNER

Nutrition is vital for the health of the Ethiopian people. And it is vital for our country's economy. In fact, our nation sees improved nutrition as an essential input to economic development. Ethiopia is proud of its recent progress in reducing malnutrition but recognizes it still has some way to go toward meeting our goal of ending malnutrition by 2030. We are dedicated to this goal and realize we will need to live up to our commitment. The *Global Nutrition Report* has already been influential in helping us think about our nutrition work, and we look forward to its future contributions in assessing progress and strengthening the accountability of all stakeholders who care about ending the scourge of undernutrition.

H.E. ROMAN TESFAYE FIRST LADY OF THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

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A PEER-REVIEWED PUBLICATION

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Global nutrition profile (data available for 82 indicators on a global scale)

Regional nutrition profiles (data available for 82 indicators for each of the 6 United Nations regions)

Subregional nutrition profiles (data available for 82 indicators for each of the 21 United Nations subregions)

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ABBREVIATIONS

AARR	average annual rate of reduction
ANC	antenatal care
ASPMSA	Afar Salt Producers Mutual Support Association
ATNF	Access to Nutrition Foundation
ATNI	Access to Nutrition Index
BFHI	Baby Friendly Hospital Initiative
BMGF	Bill & Melinda Gates Foundation
BMI	body mass index
CBGA	Centre for Budget & Governance Accountability
CHD	Child Health Day
CIFF	Children's Investment Fund Foundation
CIP	country investment plan
CRS	Creditor Reporting System
CSO	civil society organization
DAH	donor assistance for health
DHS	Demographic and Health Survey
ECOSOC	United Nations Economic and Social Council
EDUCAN	Program for Vulnerable Children in Central America
EIF	Enhanced Integrated Framework
eLENA	e-Library of Evidence for Nutrition Actions
EVIPNet	Evidence-Informed Policy Network
FAO	Food and Agriculture Organization of the United Nations
FFA	Framework for Action
GDP	gross domestic product
GINA	Global database on the Implementation of Nutrition Action
GNR	Global Nutrition Report
HAZ	height-for-age Z-score
HCC	Healthy Caribbean Coalition
HFA	humanitarian food assistance
HGSF	home-grown school feeding programs
HKI	Helen Keller International
IBFAN	International Baby Food Action Network
ICN2	Second International Conference on Nutrition
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IHME	Institute for Health Metrics and Evaluation
ILO	International Labour Organization

IMCI	integrated management of childhood illness
IPCC	Intergovernmental Panel on Climate Change
JCME	Joint Child Malnutrition Estimates
LBW	low birth weight
LIST	Lives Saved Tool
MAM	moderate acute malnutrition
MDG	Millennium Development Goal
MICS	Multiple Indicator Cluster Survey
N4G	Nutrition for Growth
NCD	noncommunicable disease
NDHP	Notre Dame Haiti Program
NFHS	National Family Health Survey
NLIS	Nutrition Landscape Information System
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
OPM	Oxford Policy Management
PAHO	Pan American Health Organization
PDS	Public Distribution System
PNC	postnatal care
R4D	Results for Development Institute
RCT	randomized controlled trial
RSOC	Rapid Survey on Children
SAM	severe acute malnutrition
SDG	Sustainable Development Goal
SESAN	Secretariat for Food Security and Nutrition
SMART	specific, measurable, achievable, relevant, and time bound
SPEED	Statistics of Public Expenditure for Economic Development
SUN	Scaling up Nutrition
UN	United Nations
UNICEF	United Nations Children's Emergency Fund
WASH	water, sanitation and hygiene
WB	World Bank
WCRF	World Cancer Research Fund International
WHA	World Health Assembly
WHO	World Health Organization
WTO	World Trade Organization

EXECUTIVE SUMMARY

Few challenges facing the global community today match the scale of malnutrition, a condition that directly affects one in three people. Malnutrition manifests itself in many different ways: as poor child growth and development; as individuals who are skin and bone or prone to infection; as those who are carrying too much weight or who are at risk of chronic diseases because of excess intake of sugar, salt, or fat; or those who are deficient in important vitamins or minerals. Malnutrition and diet are by far the biggest risk factors for the global burden of disease: every country is facing a serious public health challenge from malnutrition. The economic consequences represent losses of 11 percent of gross domestic product (GDP) every year in Africa and Asia, whereas preventing malnutrition delivers $16 in returns on investment for every $1 spent. The world's countries have agreed on targets for nutrition, but despite some progress in recent years the world is off track to reach those targets. This third stocktaking of the state of the world's nutrition points to ways to reverse this trend and end all forms of malnutrition by 2030.

Over the past decade, momentum around nutrition has been steadily building: In 2012 the World Health Assembly adopted the 2025 Global Targets for Maternal, Infant and Young Child Nutrition. The following year, it went on to adopt targets for noncommunicable diseases (NCDs), including those relevent to nutrition. Also in 2013, at the first Nutrition for Growth (N4G) Summit, donors committed US$23 billion to actions to improve nutrition. With the Second International Conference on Nutrition (ICN2) in 2014 and with the recent naming of 2016–2025 as the United Nations Decade of Action on Nutrition, more and more people have begun to recognize the importance of addressing malnutrition in all its forms. In 2015, the UN Sustainable Development Goals enshrined the objective of "ending all forms of malnutrition," challenging the world to think and act differently on malnutrition—to focus on all its faces and work to end it, for all people, by 2030.

Now, 2016 brings major opportunities to translate this commitment into action. These opportunities include countries' adoption of their own targets related to the Sustainable Development Goals, the ongoing Nutrition for Growth process, and Japan's growing leadership on nutrition in the lead-up to the 2020 Tokyo Olympics and Paralympics.

The *Global Nutrition Report* is the only independent and comprehensive annual review of the state of the world's nutrition. It is a multipartner initiative that holds a mirror up to our successes and failures at meeting intergovernmental nutrition targets.[1] It documents progress on commitments made on the global stage, and it recommends actions to accelerate that progress. The *Global Nutrition Report* aims to be a beacon, providing examples of change and identifying opportunities for action. This year's report focuses on the theme of making—and measuring—SMART commitments to nutrition and identifying what it will take to end malnutrition in all its forms by 2030.

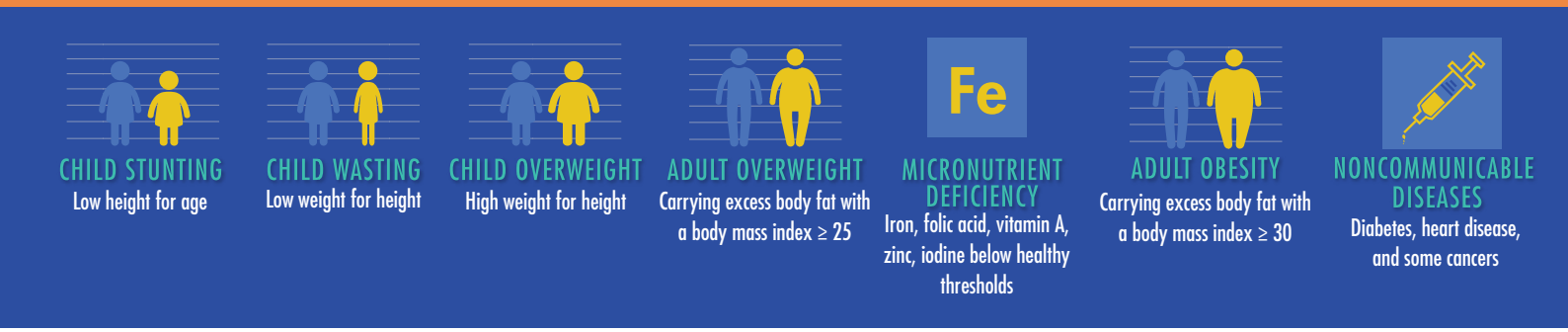
KEY FINDINGS

1 Malnutrition creates a cascade of individual and societal challenges—and opportunities.

Malnutrition and poor diets constitute the number-one driver of the global burden of disease. We already know that the annual GDP losses from low weight, poor child growth, and micronutrient deficiencies average 11 percent in Asia and Africa—greater than the loss experienced during the 2008–2010 financial crisis. This report presents new data on the cost of malnutrition to both societies and individuals. In the United States, for example, when one person in a household is obese, the household faces additional annual health care costs equivalent to 8 percent of its annual income. In China, a diagnosis of diabetes results in an annual 16.3 percent loss of income for those with the disease. All of these figures mean that the burden of malnutrition falls heavily on all of us, whether directly suffering or not. But these costs also represent large opportunities for human and economic betterment, and this report provides many examples of countries that have seized these opportunities to improve the lives of their people and the health of their societies by addressing malnutrition.

2 The world is off track to reach global targets—but there is hope.

If we continue with business as usual, the world will not meet the global nutrition and NCD targets adopted by the World Health Assembly. However, this assessment hides significant variations and some surprises: Many countries are on course for meeting targets related to stunting, wasting, and overweight among children under age 5 and exclusive breastfeeding. Nearly all countries are off course, though, for meeting targets on anemia in women



and adult overweight, diabetes, and obesity. Obesity and overweight, rising in every region and nearly every country, are now a staggering global challenge. The number of children under 5 who are overweight is approaching the number who suffer from wasting. The headline also hides regional variations: the number of stunted children under 5 is declining in every region except Africa and Oceania; the number of overweight children under 5 is increasing most rapidly in Asia. Behind these rather gloomy numbers are a cause for hope: modest changes could put many countries on course to meet global targets. This report outlines where those opportunities lie.

3 Nutrition is central to the Sustainable Development Goals.

At least 12 of the 17 Sustainable Development Goals contain indicators that are highly relevant for nutrition, reflecting nutrition's central role in sustainable development. Improved nutrition is the platform for progress in health, education, employment, female empowerment, and poverty and inequality reduction. In turn, poverty and inequality, water, sanitation and hygiene, education, food systems, climate change, social protection, and agriculture all have an important impact on nutrition outcomes. The report shows that women's power and status constitute a particularly important driver of malnutrition: mothers age 18 or under are more likely to have stunted children, and children are less likely to be stunted if their mother has secondary education. It is thus important to incorporate nutrition targets into development and social sectors, where many governments spend more than 30 percent of their budgets, and to measure the impacts of spending in these sectors on people's nutrition.

4 Current commitments do not match the need.

Given the scale of the malnutrition problem, current spending designed to overcome it is too low. Analysis shows that 24 low- and middle-income governments allocate just 2.1 percent of their spending to reducing undernutrition, whereas they spend a total of more than 30 percent on agriculture, education, health, and social protection. Donors' allocations to nutrition-specific interventions are stagnating at $1 billion, although donor allocations to nutrition through other development and social sectors are, we believe, increasing. Spending on nutrition-related NCDs also appears low. At present we do not know how much governments allocate to combating nutrition-related NCDs. In 2014, donors spent $611 million on all types of NCDs—less than 2 percent of their overall health spending. And despite the fact that nutrition-related NCDs account for nearly half of all deaths and disability in low- and middle-income countries, new data presented in this report show that donors spent just $50 million on these types of NCDs in 2014.

5 SMART commitments and targets matter.

The report finds that donors and governments that prioritized nutrition in their policy documents spent more on nutrition. Businesses with stronger commitments to nutrition have a stronger ability to deliver products, marketing, and labeling that support nutrition. Countries that set undernutrition targets also reduce stunting faster. Despite this, anaysis shows that most nutrition plans do not include the full set of targets for maternal, infant, and young child nutrition, and when countries have set targets, only two-thirds of them are SMART. In addition, only 30 percent of countries have targets for obesity, diabetes, and salt reduction in their national NCD plans. For N4G, our analysis shows that just 29 percent of the 2013 commitments are SMART, and the majority of them did not specify which types of malnutrition they were seeking to address.

Specific
Measurable
Achievable
Relevant
Time bound

6 We must move beyond talk to action.

The report highlights the need to dramatically strengthen the implementation of both policies and programs. Core policies and programs that promote breastfeeding are

seriously lagging: only 36 percent of countries implement all or many provisions of the International Code of Marketing of Breast-milk Substitutes. No country has adopted a comprehensive approach to regulating the marketing of foods and nonalcoholic beverages to children. Two-thirds of countries have made no progress in carrying out three core WHO recommendations to promote healthy diets (salt reduction, trans- and saturated-fat reduction, and implementation of WHO's Recommendations on Marketing to Children). In the same vein, the scale-up of direct programs for undernutrition has been slow and inequitable. Mechanisms to coordinate actions across sectors are key to successful implementation, but to make a difference they must be backed by high-level support and human and financial resources.

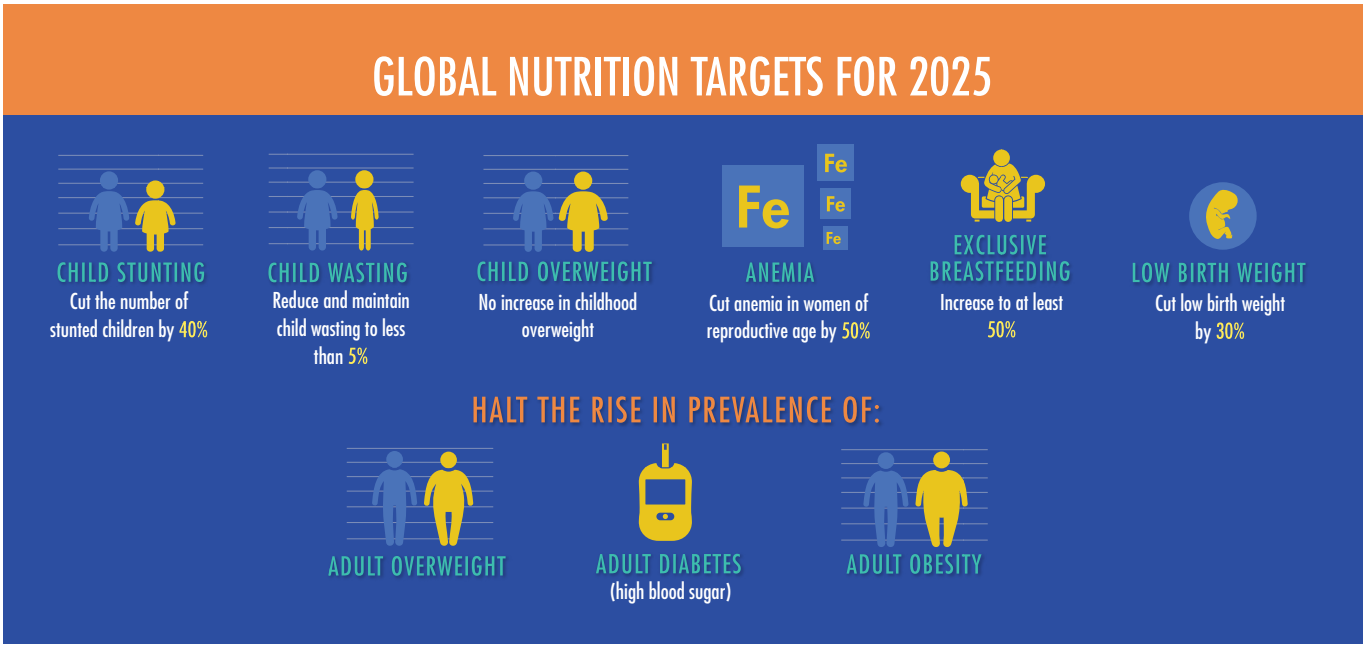
7 Today's data and knowledge are not sufficient to maximize investments.

The report supports the call for a data revolution for nutrition. The scarcity of data prevents us from identifying and learning from real progress at the global and national levels. It also hides inequalities within countries, making it more difficult for governments to know about them and for others to hold governments fully accountable. The report recommends disaggregating data to better understand where malnutrition exists: in an analysis of more than 50 countries, the stunting rate in the subnational region with the highest rate is three times that of the subnational region with the lowest rate. In 13 countries, stunting rates in the wealthiest quintile of society exceeded 20 percent, belying the notion that income necessarily equals good nutrition. We face significant data gaps related to spending on nutrition-sensitive actions and on actions to fight obesity and nutrition-related NCDs; the coverage and impact of programs tackling all forms of malnutrition; the nutrition status of the 60 million people displaced by conflict; and malnutrition prevalence and trends in fragile states. Lastly, we confront knowledge gaps in understanding episodes of success and stasis and comprehending the underlying drivers of obesity and NCDs.

CALLS TO ACTION

1 Make the political choice to end all forms of malnutrition.

We are off course to attain targets for nutrition. Anemia, for example, is declining so slowly that at current rates we will reach the global target closer to 2130 than 2030. Obesity and overweight, far from declining, are on the rise, putting global nutrition milestones at risk. But this gloomy situation can change: dramatic reductions in malnutrition in Brazil, Ghana, Peru, and the Indian state of Maharashtra were fueled by governments and others that made commitments—and kept them. Ending malnutrition is ultimately a political choice that leaders from governments, donors, civil society organizations, and businesses at international, national, and subnational levels need to take. Making SMART commitments to nutrition would plot a different development trajectory for countries—and individuals—across the world.



2 Invest more, and allocate better.

Investing in ending malnutrition is one of the most cost-effective steps governments can take: every $1 invested in proven nutrition programs offers benefits worth $16. To meet key global nutrition milestones, governments and donors will need to triple their commitments to nutrition over the next decade. Rapid increases in spending, and consequent improvements in nutrition, are possible, as places like the Indian state of Maharashtra have shown for undernutrition. At the same time, governments, civil society organizations, donors, and businesses need to do more to ensure that budgets in various sectors—agriculture, education, food systems, health systems, social protection, and water, sanitation, and hygiene—allocate more resources to ending malnutrition in all its forms. We need more spending to build capacity to address obesity, diabetes, and other nutrition-related NCDs. And we need to start seeing nutrition investments as a means to economic growth rather than seeing better nutrition as a result of economic growth.

3 Collect the right data to maximize investments.

Data gaps are a significant roadblock to nutrition progress throughout the world. Every country has a different nutrition context and should gather the national and subnational data it needs to understand—and act on—its own unique situation. In the spirit of the SDGs, governments, donors, businesses, and civil society organizations should track—and regularly report—their spending and impact on all forms of malnutrition, including stunting, wasting, anemia, obesity, and NCDs, as well as on exclusive breastfeeding.

4 Invest in carrying out proven and evidence-informed solutions—and in identifying new ones.

We currently have sufficient experience, data, and evidence to act decisively to improve nutrition outcomes. Examples from Brazil, Ghana, Peru, and other countries, presented in this report, can inform country approaches. We know which interventions are most effective to address undernutrition. We know which public policies stand a good chance of working to reduce malnutrition in all its forms. We have learned that it is important to work with citizens and civil society, and to develop intersectoral governance mechanisms. At the same time, governments, funders, and researchers should work to close the knowledge gaps that are holding back action: for example, our lack of knowledge on the underlying drivers of wasting, nonexclusive breastfeeding, obesity, and overweight hampers our ability to mobilize resources from outside of the health sector to prevent them. Knowing more about why some countries can overcome implementation barriers and achieve high coverage rates in nutrition programs when others cannot will help overcome bottlenecks. And identifying new, less expensive ways to use existing subnational data—and to collect new data where needed—will help ensure that we leave no one behind in the SDG era.

5 Tackle malnutrition in all its forms.

Governments, businesses, civil society organizations, and individuals need to tackle malnutrition in all its forms. This means low- and middle-income-country governments must move to dramatically reduce undernutrition before obesity and nutrition-related NCDs become even more overwhelming. It means these countries must integrate the prevention and control of diabetes and obesity into their nutrition plans and implement the policies and interventions that can tackle them. It means OECD countries must learn from experiences elsewhere in the world to improve their domestic strategies for fighting obesity and NCDs. It means donors must expand their focus to recognize the threat that nutrition-related NCDs and obesity pose to global nutrition. It means all stakeholders need to increase the efficiency of their investments and policies by identifying and implementing double-duty actions that tackle more than one form of malnutrition at once. And it means that all stakeholders need to come to grips with the "new normal" of dealing with malnutrition, in all its forms, in the same place, at the same time—a problem for nearly half of all countries.

1 THE NEW CHALLENGE: END ALL FORMS OF MALNUTRITION BY 2030

"END ALL FORMS OF MALNUTRITION BY 2030." THAT WAS THE CHALLENGE WORLD LEADERS LAID DOWN TO ALL OF US AT THE END OF 2015 WHEN THEY adopted the Sustainable Development Goals (SDGs).

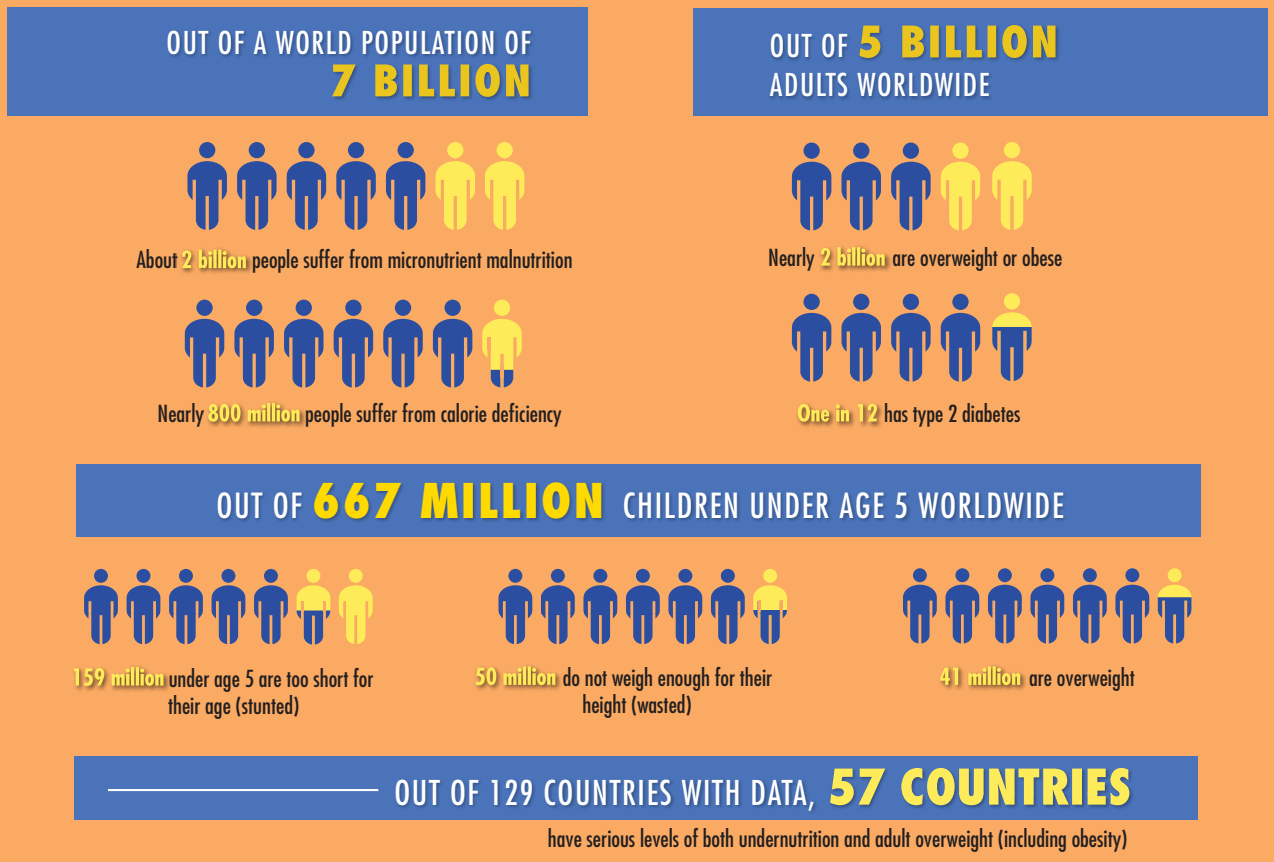
It is a formidable challenge. Every country is facing a serious public health challenge from malnutrition (IFPRI 2014). One in three people is malnourished in one form or another (IFPRI 2015a). Malnutrition manifests itself in many forms: as children who do not grow and develop to their full potential, as people who are skin-and-bone or prone to infection, as people who carry too much weight or whose blood contains too much sugar, salt, or cholesterol.

The consequences are literally devastating (Panel 1.1). An estimated 45 percent of deaths of children under age 5 are linked to malnutrition (Black et al. 2013). Malnutrition and diet are now the largest risk factors responsible for the global burden of disease—by far (Forouzanfar et al. 2015). The economic consequences represent losses of gross domestic product (GDP), year in and year out, of 10 percent—far greater than the annual percentage loss in world GDP due to the global financial crisis of 2008–2010 (Horton and Steckel 2013; IFPRI 2015a; World Economics 2016). New estimates of the costs of obesity and diabetes have also emerged. In the United States, for example, a household with one obese person incurs additional annual health care costs equivalent to 8 percent of its annual income (Su et al. 2015). In China, people diagnosed with diabetes face a resulting annual 16.3 percent loss of income (Liu and Zhu 2014).

Malnutrition results from the interaction of poor-quality diets and poor-quality health and care environments and behaviors, which are shaped in

PANEL 1.1 THE SCALE OF MALNUTRITION IN 2016

Although the numbers of people affected by different types of malnutrition cannot simply be summed (because a person can suffer from more than one type), the scale of malnutrition is staggering.



Sources: Micronutrient malnutrition: WHO (2009); overweight and obesity: WHO (2016j); child stunting, wasting, and overweight: UNICEF, WHO, and World Bank (2015); calorie deficiency: FAO (2015b); diabetes: WHO (2016c). Multiple burdens: The cutoffs for placing countries in each indicator category are as follows: under-age-5 stunting ≥ 20 percent, women of reproductive age anemia ≥ 20 percent, and adult overweight and obesity (BMI > 25) ≥ 35 percent. Full results appear in Appendix Table A1.1.

part by a host of underlying factors, such as political instability, poor economic development, conflict, inequality, and some dimensions of globalization.

CAN WE END MALNUTRITION BY 2030?

Imagine the emergence of a new disease that threatens the potential of one in three people, affecting individuals of every age in all countries. Imagine that the president of the World Bank likens it to "baking inequality into the brains of children." And then imagine that even though we know a great deal about how to prevent and address this new disease, many leaders at all levels turn a blind eye to it. Most of us would be outraged. The disease—malnutrition—is of course already here. The scenario we must avoid now is the tepid response.

The ground has never been more fertile for a step change in the level of commitment to high-impact actions for improving nutrition. Consider the following.

First, the SDGs represent an unprecedented set of opportunities to make commitments to nutrition. We estimate that at least 12 of the 17 SDGs contain indicators

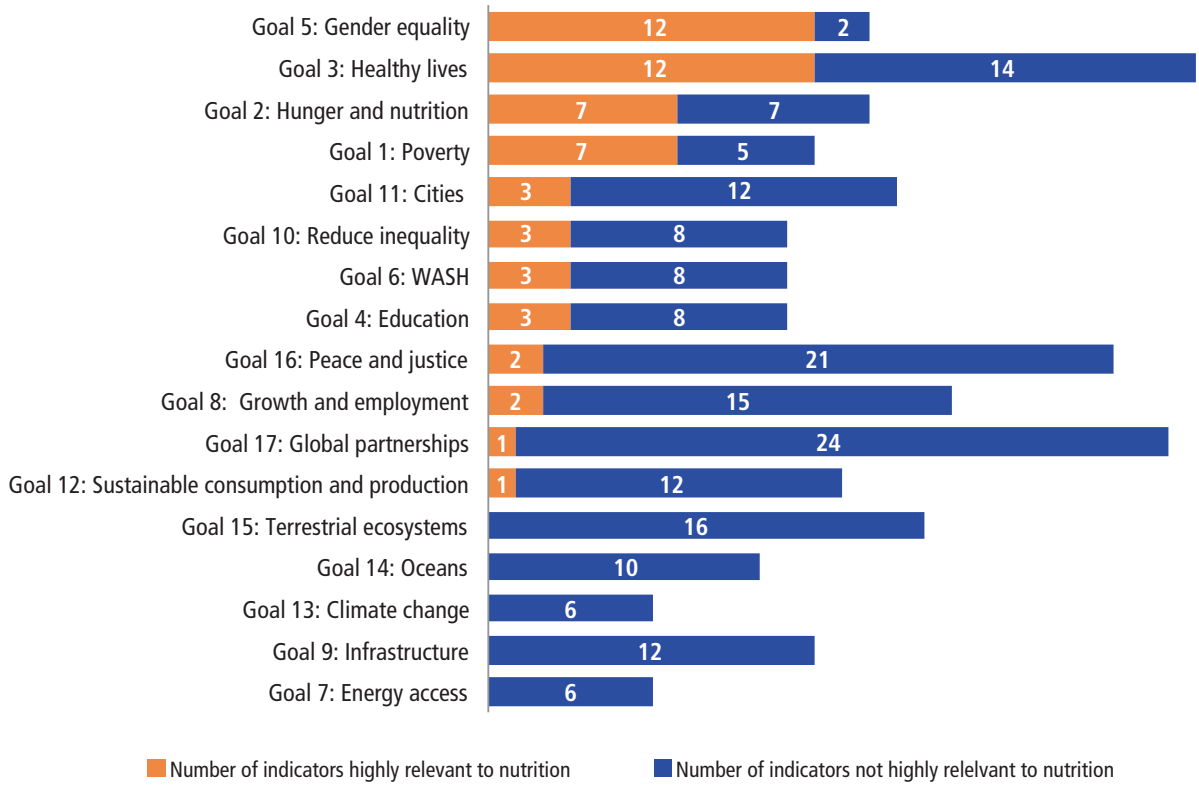
that track important nutrition inputs (Figure 1.1). The largest numbers of indicators are found within the gender equality and health goals. Progress toward both of those goals is vital for improving people's nutrition status. If the nutrition community can help development partners in these and other sectors to move these indicators faster, then they win and nutrition wins.

Second, the economic arguments for investing in nutrition are being adopted by mainstream economists. For example, for the past year the president of the African Development Bank—an organization known for financing roads, ports, and bridges—has been calling for a revolution in investment in "grey matter infrastructure"—in other words, investment in preventing malnutrition early in life (Global Panel on Agriculture and Food Systems for Nutrition 2016). Furthermore, India's Ministry of Finance, in its Economic Survey 2015–16, devotes an entire chapter to dealing with malnutrition, opening with this statement: "Imagine the government were an investor trying to maximise India's long-run economic growth. Given fiscal and capacity constraints, where would it invest? This chapter shows that relatively low-cost maternal and early-life health and nutrition programs offer very high returns on investment" (India, Ministry of Finance 2016).

Third, there is real hope that India, so long synonymous with the problem of malnutrition, can become a major part of the solution. The country almost doubled the rate of stunting reduction in the past 10 years compared with the previous decade (IFPRI 2015a). That is highly significant given that India is home to more than one-third of the world's stunted children. India's awakening to all forms of malnutrition could be a significant game changer for the world's prospects of reaching the SDGs, much as China was for the Millennium Development Goals. Like all other countries, though, India must pay attention to its growing rate of overweight and, in particular, high rate of diabetes.

Fourth, as the 2015 *Global Nutrition Report* documents, policymakers both inside and outside the nutrition community are realizing that ending malnutrition is well aligned with other development imperatives, such as slowing climate change, making food systems healthier and more sustainable, and helping businesses become more supportive of sustainable development.

FIGURE 1.1 Number of indicators in each SDG that are highly relevant for nutrition



Source: Authors.

Finally, momentum is strong for nutrition at present. As Table 1.1 shows, recent years have seen an unprecedented number of interlinked global declarations and commitments to nutrition. They are voluntary, but collectively they have been gathering strength, and they provide a firm platform on which to build political commitment and accountability. The Decade of Action on Nutrition, adopted by the United Nations General Assembly in 2016, reinforces countries' commitment to achieve by 2025 the global nutrition targets adopted by the Member States of the World Health Organization (the targets are shown in Table 2.2). The SDGs have given us an even broader scope and five additional years to fight the different forms of malnutrition and potentially eliminate some of them. The level of ambition for the SDG nutrition targets in 2030 remains to be set, and the World Health Organization (WHO) has been asked to convene discussions over this topic.

The 2016 Nutrition for Growth (N4G) Summit in Rio de Janeiro affords the next opportunity for countries to come together to discuss commitments. All nutrition stakeholders need to seize that opportunity and engage in a process of developing SMART (that is, specific, measurable, achievable, relevant, and time-bound), ambitious, and aligned commitments to end all forms of malnutrition.

Although the time is right for a step change in commitment to nutrition, we need to be mindful of the external challenges. These include a potential slowdown in global economic growth, increasing numbers of people displaced by conflict, and downward pressure on aid budgets. Recognizing the challenges that can emerge from within the nutrition community, we must also guard against complacency, an inability to work together, and a failure to demonstrate results.

Can we vanquish malnutrition by 2030? For undernutrition, success is plausible. For overweight, obesity, and nutrition-related noncommunicable diseases (NCDs), the rising tide can be stopped and the reversal can begin. In practice, though, we will meet the SDG goal of ending malnutrition only if those with the power to make change exercise that power. Each of us reading this report has the power to change things. We need to make it easier for policymakers to choose to do the right things—and harder for them not to. That is what the 2016 *Global Nutrition Report* aims to do. We can achieve this goal by 2030—but only if we choose to do so.

WHAT NEEDS TO HAPPEN TO END MALNUTRITION

The global calamity of malnutrition is not inevitable. It results from choices we make or fail to make.

MAKE THE RIGHT POLITICAL CHOICES

Nowhere is this clearer than when we compare the different nutrition choices that otherwise similar countries

TABLE 1.1 Building a global commitment to nutrition

Year	Global commitment to nutrition
2011	The United Nations releases a political declaration on noncommunicable diseases (NCDs) as the outcome of a High-Level Meeting on the Prevention and Control of NCDs.
2012	At the World Health Assembly, national governments adopt a series of nutrition targets as part of the Comprehensive Implementation Plan on Maternal, Infant, and Young Child Nutrition.
2013	The governments of the United Kingdom and Brazil together with the Children's Investment Fund Foundation cohost a summit designed to raise commitment to actions to achieve the Global Targets on Maternal, Infant, and Young Child Nutrition. At the World Health Assembly, national governments adopt a series of targets on the prevention and control of NCDs, including nutrition-relevant targets.
2014	The United Nations holds a follow-up meeting to the 2011 High-Level Meeting on the Prevention and Control of NCDs to review progress. Countries make clear commitments to, by 2015, set national NCD targets for 2025 and establish process indicators taking into account the nine NCD targets.
2014	Governments come together at the Food and Agriculture Organization/World Health Organization International Conference on Nutrition (ICN2) and agree on a set of 10 commitments in the Rome Declaration on Nutrition and the accompanying Framework for Action.
2015	Countries assemble at the United Nations to adopt a new nutrition target as part of the Sustainable Development Goals to, by 2030, end all forms of malnutrition.
2016	The United Nations General Assembly declares a Decade of Action on Nutrition from 2016 to 2025. The Decade of Action would translate the ICN2 commitments into coherent and coordinated actions and initiatives by all national governments, both low and high income.
2016	Proposed date for the Nutrition for Growth (N4G) Summit in Rio de Janeiro, Brazil
2016	Japan's leadership on nutrition is growing in advance of the 2016 Group of 7 meeting and the lead-up to the 2020 Tokyo Olympics and Paralympics.

Source: Authors.

make. As we have highlighted in previous *Global Nutrition Reports*, governments and civil society in Brazil, Peru, Viet Nam, Kenya, Ghana, and the Indian state of Maharashtra have pursued determined and sustained efforts to improve nutrition outcomes. And their efforts have paid off.

Those countries have made political choices to allocate scarce resources to nutrition. As is clear from the 2014 and 2015 *Global Nutrition Reports*, civil society groups contributed to change in these places by helping to articulate the suffering and wasted human potential malnutrition causes. Articulating dissatisfaction is a first step, but it must be accompanied by a set of solutions stakeholders in the country can implement with the participation of those most affected.

Political commitment to do something about malnutrition creates the space for dialogue about what needs to happen. But malnourished people need more than talk—they need action. And not just any action—they need actions, backed by evidence, that will reduce malnutrition. They need actions for which implementers can be held accountable. They need actions that are ambitious. Finally they need actions that are aligned with the efforts of others. Malnutrition is caused by a powerful array of factors, and it requires an even more powerful alignment of stakeholders, working across many sectors, to overcome it.

We know a lot about which actions to take. The evidence is strong. Increasingly we know how to do it. Whether the problem is stunting or anemia or obesity, we know we have to work at multiple levels across multiple sectors. And while we need a continual stream of new evidence to deliver even more impacts for existing resources and to make the case for more resources, the strength of the current evidence base is sufficient to allow progress on many fronts.

To attain SDG 2 ("End hunger, achieve food security and improved nutrition, and promote sustainable agriculture")—and other SDGs—we must implement policies that make food, health, education, WASH (water, sanitation, and hygiene), and poverty reduction systems more nutrition oriented. We need policies that make food, social, health, and living environments conducive to behaviors that will reduce malnutrition in whatever form it takes. As we proposed in *Global Nutrition Report 2015*, we need policies that work "double duty" to address undernutrition while also combating obesity and nutrition-related NCDs. We have to rethink these policies, finance them, and implement them.

- Diet is now the number-one risk factor for the global burden of disease. The diet choices available to us are shaped by our food systems, which are not sufficiently well geared toward enabling us to consume high-quality, healthy, and nutritious diets. Plausible ideas exist on how to make food systems work harder for nutrition while enhancing sustainability.
- Our health systems are the source of most of the high-impact nutrition interventions that address undernutrition, and health systems can also play a key role in preventing and controlling overweight and obesity. Yet health systems are far from universal. As previous *Global Nutrition Reports* have shown, the coverage rates of nutrition interventions differ markedly from country to country and intervention to intervention.
- Education systems could do much more to keep girls in school to delay the age at which they first give birth. Schools also provide a huge opportunity to reset norms about healthful diets and good nutrition practices.
- Antipoverty programs such as social protection command large resource flows compared with nutrition, but success in fighting poverty does not necessarily translate into success in cutting malnutrition. We know how antipoverty programs can be redesigned to help them pack a bigger nutrition punch, which in turn will generate higher economic returns throughout people's life cycles.
- Improved water and sanitation services help improve nutrition, but they may well be able to do more if they are designed to sharpen their focus on infants and young children.

Financing is of course essential if action is to be implemented in a sustained and widespread manner. This means making existing resources work harder for nutrition and finding extra resources—from governments, local authorities, communities, external donors, households, and businesses—to scale up already high-impact interventions. It means bringing obesity and nutrition-related NCDs into the financing equation so that nutrition interventions can work double duty and their huge health burden receives a fairer share of financial resources.

REJECT BUSINESS AS USUAL

Will business as usual get us to the end of malnutrition? Only long past 2030. Business as usual will result in the persistence of suffering all over the world, the depletion of human potential, and the squandering of economic growth. What is the basis for this gloomy statement? First of all, overweight, obesity, and nutrition-related NCDs are rising; they need to stop increasing before we can begin discussing how long it will take to end them. Second, simple business-as-usual extrapolations of anemia prevalence in women suggest it would take until 2124 to achieve a prevalence rate of 5 percent. Simple business-as-usual extrapolations of stunting numbers suggest that the 2025 global target of 100 million would be met in the mid-2030s, and 50 million by the mid-2050s.[1] Moreover,

as we show in Chapter 5, the rates at which policies and programs are being implemented remain shockingly low. Malnourished people cannot wait that long for their rights to be respected, protected, and promoted.

The global governance of nutrition—the various entities that set norms, examine what works in practice, and hold everyone accountable so that sufficient resources can be mobilized for the right activities in the right places—must be fit for this purpose: giving us a good chance of ending malnutrition by 2030.[2]

MAKE COMMITMENTS THAT COUNT

No one should underestimate the political capital that policymakers must spend to reshape policy and scale up interventions, and then to finance both. So any slippage in implementation represents a waste of energy and diminishes hope that things can change.

The *Global Nutrition Report* was established at the 2013 Nutrition for Growth Summit as an independent accountability mechanism to make it harder for stakeholders to back out of their nutrition commitments. The *Global Nutrition Report* has kept this core function while framing its work in a more positive light. For example, the first *Global Nutrition Report* in 2014 aimed to bring together different strands of the nutrition world so that they could stand together more powerfully and accountably. The 2015 *Global Nutrition Report* aimed to expand the circle of commitment to end malnutrition in all its forms.

This 2016 *Global Nutrition Report* aims to make it easier for governments and other stakeholders to actually make high-impact commitments to end malnutrition in all its forms. It offers guidance to governments and other stakeholders on the following:

- *Why* commitments matter: they are a signal of intent, and they seem to go hand in hand with improved performance.
- *Where* to make commitments: which locations and which sectors.
- *Who* the commitments are being made for: which age and gender groups and which socioeconomic groups.
- *How* SMART (specific, measurable, achievable, relevant, and time bound), ambitious, and aligned some of our current commitments are and how all of our commitments to nutrition could be more so.
- *What* kinds of commitments to make: which policies and programs to commit to, and what level of funding is available and required.
- *Who* needs to do what and by when.

But can we be sure that commitment really matters? Does it lead to action that leads to what we want: accelerated improvements in nutritional status?

Qualitatively, past *Global Nutrition Reports* have highlighted the importance of commitment for action. For example, in 2014 we noted the importance of the Indian state of Maharashtra's Nutrition Mission—a public declaration of intent to reduce malnutrition from the chief minister of the state—for enabling actions leading to a rapid decline in stunting rates. In 2015 we described the Ethiopian government's commitment to redesign the largest social protection program in Africa to make it more nutrition focused. In this report we highlight the efforts of Peru's leaders at all levels to make nutrition a priority, monitor it with investments in data and analysis, and link performance to budgetary allocations. We note how India's economic leaders are reframing investments in nutrition as investments in the sustainability of the country's economic growth. Brazil is another example where sustained political commitment has been followed up by determined action, as we detail in the following section.

Quantitatively, it is almost impossible to definitively demonstrate that enhanced commitment leads to faster malnutrition reduction. It is difficult to measure commitment and then to untangle which comes first—commitment or progress. But it is common sense to expect that commitment and progress go hand in hand, feeding off each other. Panel 1.2 provides three quantitative examples that suggest that commitment and action work together.

Ending malnutrition by 2030 is more than a technical challenge—it is also a political one. Many of the technical policy and program solutions for reducing malnutrition in all its forms are known. But they are not being implemented, either because the political costs of implementing them are too high or the political costs of not implementing them are too low—or both. What is needed now is a 15-year step change in political commitment over the SDG era—a commitment to implement actions that reduce malnutrition faster, secure resources for them, assess their impacts, and respond to the assessments.

HOW TO SUPERCHARGE POLITICAL COMMITMENT FOR NUTRITION ACTION

Political commitment matters. Whether it is commitment to elevate a topic higher on the agenda, a commitment to achieve a target, or a commitment to act, it makes a critical difference. Yet, except in a few cases such as Brazil (see later in this section), the nutrition community has not been very effective at making nutrition a political issue. What can we learn from other sectors, from civil society, and from country experience about generating and following through on commitments?

PANEL 1.2 DOES THE COMMITMENT TO IMPROVE NUTRITION MATTER?

LAWRENCE HADDAD

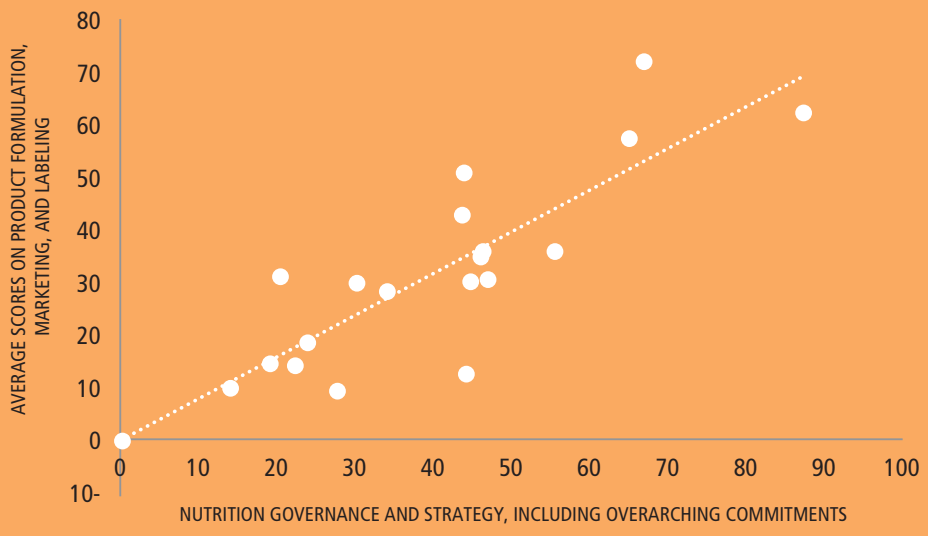
The following three empirical examples offer evidence that commitment and performance go hand in hand.

As we discuss in Chapter 3, one way countries can express their commitment is to set a clear target for reducing malnutrition. For a sample of 41 low- and middle-income countries, we found that the rate of stunting reduction in the 2000s has a significant and large correlation with the existence of a specific and time-bound nutritional status target (usually stunting).[1] Targets and progress seem to go hand in hand. This is consistent with another study linking strong nutrition governance to lower stunting levels (Sunguya et al. 2014).

Some argue that commitments are easy for businesses to make but that such easily made commitments do not contribute to good nutrition—that the "proof of the pudding" is whether companies actually do what is needed. Using data from 28 large food and beverage companies reported in the 2016 Access to Nutrition Index, the Access to Nutrition Foundation (ATNF) found a positive association between companies that make stronger commitments to nutrition and those that have a stronger relative ability to deliver products, marketing, and labeling that support nutrition (see figure below).

Do Nutrition for Growth donors that stress the importance of nutrition in their documents back it up with spending? Development Initiatives selected the most recent donor reports and documents containing their stated development priorities. Each document was assessed to ascertain how prominently and how explicitly nutrition is featured as a priority for that agency. In general, donors that set nutrition as a priority in their policy documents tended to spend the greatest share of their resources on nutrition. We could not find any examples of donors that prioritize nutrition in documents but then fail to spend significantly on nutrition (analysis available on request).

COMPANIES' COMMITMENTS TO NUTRITION ARE ASSOCIATED WITH BETTER PERFORMANCE IN PROMOTING NUTRITION



Source: Rachel Crossley, ATNF.

For insights, we turn to the example of HIV/AIDS. In 2015 the seemingly impossible target of getting 15 million people on AIDS treatment was met—early. Although AIDS is far from being eradicated, progress has been substantial and unprecedented for a global health challenge. Panel 1.3 argues that progress in the fight against HIV/AIDS began with the politicization of the disease and suggests three actions needed for nutrition to become more political.

But getting political support for an idea or a set of actions requires basic mobilization skills: develop simple, clear

PANEL 1.3 GETTING POLITICAL ABOUT NUTRITION

KENT BUSE

Undernutrition and nutrition-related noncommunicable diseases (NCDs) are global scandals, each with its unique politics. A more political approach to nutrition, which includes, empowers, and respects civil society, may help tip the balance of power to eliminate malnutrition in all its forms. As the international community elevates and confronts the nutrition scourge, it is worth considering three interrelated lessons from the AIDS response.

First, people who care about nutrition must think and act more politically to generate the political incentives for political leadership. While Marion Nestle, Tim Lang, Nicolas Freudenberg, and other academic activists, as well as institutions such as IFPRI, are advancing a political understanding of nutrition, this is not fully reflected in social movements on the issue. For example, the "slow food" movement has the right analysis but is more successful at transforming the food culture of the chattering classes in the United States and Europe than at confronting outright the global commercial food industrial complex (Slow Food 2015). Richard Horton of *The Lancet* is right to characterize the NCD movement as too pedestrian and polite (Horton 2015). It is time to actively support greater civil society engagement—to create space for civil society to replace complacency with urgency, to create bottom-up demand for change, and to make links to other social causes for greater political traction.

Second, whatever the appetite for public-private partnerships and voluntary approaches, the hands of local, regional, national, and intergovernmental mechanisms need to be strengthened to tame markets when they act against nutritional interests. Political incentives for action at the highest political levels are fundamental to progress on a problem that is societywide in scope and entails dramatic challenges to commercial interests and prevailing social systems. It seems fanciful to contemplate substantial progress without powerful state intervention in the form of evidence-informed public policy and action.

Finally, given the complexity and scope of the nutrition challenge, there is a need for an apex body that serves as a platform for policy dialogue. This body must broaden the reach of the present conversation, provide a degree of coordination where possible, and most importantly ensure accountability. The Joint United Nations Programme on HIV and AIDS (UNAIDS) brings together governments, 11 UN agencies, civil society, and the private sector when relevant to coordinate a multisector response. According to the United Nations Economic and Social Council, UNAIDS provides a model for addressing other complex development challenges in the context of the Sustainable Development Goals (SDGs). Beyond coordination, the real prize is obviously a web of accountability—one that links to the apex body and has a credible independent review mechanism—which is premised upon a powerful legitimate civil society. The international community should undertake an urgent analysis of the global architecture for nutrition to assess how it must adapt to deliver on SDG 2. A prominent role for civil society will be critical. The *Global Nutrition Report* could play an important lead role in this analysis.

messages that elicit an emotional as well as an intellectual response; provide a way for people to act; do not wait for others to act; set an example yourself either individually or, better yet, with others in a coordinated way. In the United Kingdom and increasingly around the world, celebrity chefs such as Jamie Oliver are campaigning to improve the quality of the food we can afford, have access to, and are influenced to purchase. Panel 1.4 describes four lessons from the past 15 years of campaigning by Jamie Oliver and the Jamie Oliver Food Foundation.

Learning from a sector or from civil society is important, but the national level is where all the lessons need to come together. Brazil is one of the best examples of a country that has built a strong political commitment to nutrition. It has taken on some of the strategies used to build commitment to the fight against HIV/AIDS—including a focus on human rights—and relied significantly on the bottom-up participation of civil society.

Figure 1.2 sets out the changes in the nutrition profile of the Brazilian population. It shows that the commitment has paid off: exclusive breastfeeding (< 6 months) underwent a remarkable improvement from 2 percent in 1986 to 39 percent in 2006; stunting rates declined from 19 percent in 1989 to 7 percent in 2007; wasting rates are very low at 2 percent. In 2014 the country attained Millennium Development Goal 1 goals for poverty and hunger. Some changes, however, have been negative: adult overweight and obesity are high (currently 54 percent and 20 percent, respectively) and rising. Anemia stands at 20 percent, and food and nutrition insecurity remains a problem in specific communities.

PANEL 1.4 MAKING GOOD NUTRITION A MAINSTREAM ISSUE: LESSONS FROM THE JAMIE OLIVER FOOD FOUNDATION

JO CREED

The year 2016 has the potential to be hugely important in the fight against the double burden of obesity and undernutrition affecting our children. Now is the time to combine these two issues previously considered separate. We need to create a powerful message: millions of people have too much of the wrong food, while millions more have too little of the right food.

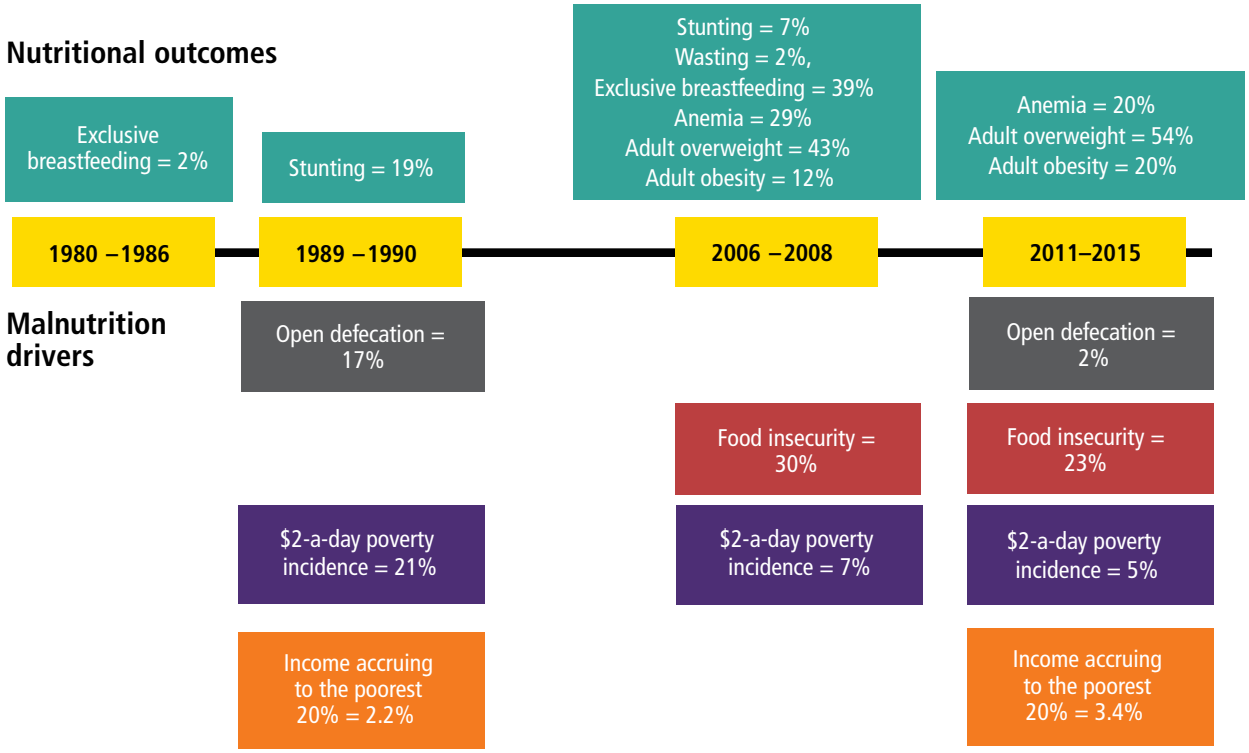
Through Jamie Oliver's many campaigns, several key lessons have emerged on how to make a big problem a mainstream issue:

1. The message needs to be broken down into a clear, simple, undeniable statement. Ultimately, it is every child's human right to have access to good, fresh, healthy food, and this is something we can all understand and relate to. Putting the message across through emotionally inspiring content is vital. The foundation's documentary "Jamie's Sugar Rush," for example, which investigated sugar's contribution to global health problems, was thought to be instrumental in engaging the public and raising awareness about the relationship between sugar consumption and diet-related disease, and particularly how this relationship affects childhood obesity.[1]
2. Equally important is the need to create a movement that engages with people all over the world and provides a way for them to act. For example, the petition launched for the foundation's annual day of action, Food Revolution Day, which called for food education for every child, received more than 1.6 million signatures from people across the world. It broke down a big problem into one easy-to-understand action, bringing individual voices together in one united, global movement.
3. Setting an example, rather than waiting for governments to lead the way, is crucial to driving positive change. Following Jamie Oliver's UK campaign against sugar, more restaurants and restaurant chains have been imposing their own sugary drinks taxes. Furthermore, through social media and on-the-ground engagement, the foundation urged people to share their real stories, join campaigns, and become activists for the cause. We have seen parents start their own school food revolutions off the back of the foundation's work in schools in both the United Kingdom and the United States, as well as people setting up cooking clubs to teach kids about food as a result of Food Revolution Day. By engaging people and empowering them to act, the foundation has built an army of food revolution community members—more than 2,000 voluntary ambassadors in 114 countries from Brazil to India to Nigeria—and partner organizations.
4. Finally, real action can work only when we all—individuals, parents, schools, businesses, organizations, and communities—come together to act and speak out. All of these measures have been designed to ultimately change the political calculations of key decision makers by raising public awareness and making specific issues so mainstream that they can no longer be ignored. We know that with clear and emotionally inspiring messaging and enough of us working together, we can create a movement for action that gets governments to listen. The foundation's work on childhood obesity over the past year has led to a combined force of campaigning groups and organizations all clamoring for the government to implement a robust and groundbreaking child obesity strategy of its own. Together we need to make it easy for governments to do the right thing by providing solutions that they can use, adopt, and adapt.

The world needs political will, leadership, and action. As the *Global Nutrition Report* shows, some countries are already making great changes. This needs to continue, and we need others to step up and take stronger action. Now is the time to work together to demand a better, healthier, and happier life for future generations. Let's make our voices really count.

A number of drivers—both positive and negative—have underlain changes in the nutritional profile of the Brazilian population. They include poverty reduction (Figure 1.2), globalization, and public policy. Since the 1980s, Brazil has instituted a series of strategies implemented through public policy. Table 1.2 provides examples of policies on food and nutrition security. Several of the public policies implemented to achieve these goals have focused on strengthening public procurement, described in Panel 6.2 in Chapter 6. Notable overarching approaches are the Zero Hunger strategy initiated in 2003 and passage in 2010 of a law enshrining the right to food in Brazil's constitution (Brazil is one of three countries in the world to pass such a law). The right-to-food law mandates freedom from hunger and malnutrition and access to adequate and healthy food.

FIGURE 1.2 Changes in Brazil's nutrition status and drivers, 1980–2015



Source: Authors, based on the following data: stunting and wasting (under 5): UNICEF, WHO, and World Bank (2015); exclusive breastfeeding (< 6 months): UNICEF (2016b); adult overweight and obesity: Malta et al. (2014) (first data point); WHO (2015a) (second data point); anemia (women of reproductive age): CONSEA (2010) (first data point); Stevens et al. (2013) (second data point); food insecurity: Burlandy, Rocha, and Maluf (2014); $2-a-day poverty: World Bank (2016); income accruing to the poorest/richest 20%: IPEA (2014); open defecation: JMP (2015b).

TABLE 1.2 Key strategies and public policies on food and nutrition security in Brazil

Year	Strategy/policy
1981	National Breastfeeding Programme
1988	National Code of Marketing of Breastmilk Substitutes; maternity leave increased to 4 months
1993	National Strategy to Combat Hunger and Poverty
1999	National Policy on Food and Nutrition
2003	Launching of Zero Hunger strategy
2003	Food acquisition program (PAA)
2004	Cash transfer program (Bolsa Família)
2006	National Law on Food and Nutrition Security (LOSAN), establishing the National System for Food and Nutrition Security (SISAN)
2009	Law revising the school meal program (PNAE)
2010	Human right to adequate and healthy food incorporated into the Brazilian constitution
2010	National Food and Nutritional Security Policy (PNSAN)
2014	Publication of Brazilian Food Guide; Intersectoral Strategy for the Prevention and Control of Obesity
2015	Decree to enable implementation of National Code of Marketing of Breastmilk Substitutes

Source: Authors.

PANEL 1.5 HOW BRAZIL'S POLITICAL COMMITMENT TO NUTRITION TOOK SHAPE

CECILIA ROCHA, PATRICIA CONSTANTE JAIME, AND MARINA FERREIRA REA

Brazil's political commitment to promoting nutrition in various forms, which has unfolded over several decades, rests on the engagement of civil society, intersectoral governance structures, and data and evidence. This applies to commitment to different aspects of malnutrition over time: food and nutrition security, obesity, and breastfeeding. The story is overall positive, but Brazil has work to do to address remaining and emerging challenges: exclusive breastfeeding rates remain inadequate, anemia is high, and rates of obesity high and rising. Continued political commitment in Brazil will be essential to addressing these challenges.

Food and Nutrition Security

Much of the impetus for this political support came from the ground up, through **nongovernmental organizations and social movements**. Since the 1950s these civil society groups had actively campaigned for food security. As they mobilized, their work led to the first National Food and Nutrition Conference in 1986. At that conference, the goal of food security was officially modified to become "food and nutrition security," placing nutrition far higher on the political agenda. In 1996, Brazil's official delegation to the World Food Summit in Rome had members from both government and civil society (CONSEA 2009). One of the outcomes was the 1998 establishment of the Brazilian Forum on Food and Nutrition Security (FBSAN), a national association of social organizations, researchers, government staff, and other professionals. This forum was key in opening up space for policy dialogue, mobilization, and innovation between civil society organizations. These entities were united in believing in the importance of policy and the institutionalization of programs for the sustainable achievement of the right to food.

Political commitment grew with the election of a **government that prioritized food and nutrition security**. In 2002 President Lula da Silva came to power having promised to end hunger. He set up a ministry—the Ministry of Social Development and Fight Against Hunger—to implement that promise, and in the process many prominent members of civil society organizations were appointed to public office. The Zero Hunger program was set up not just as a social program, but as a model of economic development: the idea was to increase the demand for food to address household food insecurity—such as by increasing purchasing power through the Bolsa Família cash transfer program and enlarging the school meal program—while addressing the poverty of Brazil's family farmers, who were the main source of food (FAO 2002). The policies linking family farming and food security are highlighted in Chapter 6 (Panel 6.2).

The next critical step was the development of a **governance space for engagement between government and civil society**. In 2002 the National Council for Food and Nutrition Security (CONSEA) was re-established to bring together members of civil society—many from FBSAN—and government. CONSEA was the source of many of the laws and policies in Table 1.2, and it, along with FBSAN, was behind the campaign for the right-to-food law (LOSAN), passed in 2006.

Intersectoral governance spaces within government followed. After the passage of LOSAN, the government established the National System for Food and Nutrition Security (SISAN), which brought together two coordination bodies: CONSEA and the Inter-ministerial Chamber on Food and Nutritional Security (CAISAN). Together they incorporate 10 ministries and special secretariats, including education, agrarian development, science and technology, and human rights (Chmielewska and Souza 2011). It was SISAN that enabled the effective coordination, implementation, and monitoring of the public policies (Table 1.2).

Throughout this process, **the investment in and use of data and evidence** have played a key role. In the 1990s, Brazil's Institute of Applied Economic Research (IPEA) drew up a nationwide hunger map showing that there were 32 million destitute people, accounting for more than 20 percent of Brazil's population (IPEA 1993, cited in Chmielewska and Souza 2011). It is now proving crucial as the government moves to address the remaining food and nutrition insecurity in the country through the development of a Traditional and Specific Population Map.

Continued

This commitment to public policy is underlined by the government's financial commitments. For example, federal expenditures on social programs corresponded to 17 percent of the country's GDP by 2012, an increase of 128 percent from 2000 (CAISAN 2013).

What factors led to this political commitment to the development and implementation of public policies? Several elements appear to have been crucial: the engagement of civil society (termed "social participation" in Brazil); creation of intersectoral governance structures within

Continued

PANEL 1.5 HOW BRAZIL'S POLITICAL COMMITMENT TO NUTRITION TOOK SHAPE

CECILIA ROCHA, PATRICIA CONSTANTE JAIME, AND MARINA FERREIRA REA

Obesity

The same factors helped boost Brazil's much more recent political commitment to preventing obesity. The first factor was **evidence**. Throughout the 1990s and 2000s, the country focused on reducing hunger and stunting, even though obesity rates were high and getting higher. But comparable and repeated national surveys illustrated the magnitude of the obesity problem and the speed of its onset. Although some key government actors initially resisted the move to address obesity, government institutions and other stakeholders used their funding, influence, and coalition allies to pursue new policy objectives related to preventing obesity and promoting healthful diets.

Second, the **intersectoral** nature of the fight against undernutrition prepared Brazil for an intersectoral fight against obesity. In 2014 CAISAN developed the Inter-sectoral Strategy for the Prevention and Control of Obesity to integrate existing sectoral actions and new initiatives, increase the consumption of healthy fresh and regional foods, and decrease the consumption of ultra-processed foods. That strategy calls on the Brazilian states and municipalities to implement many of the actions.

Third, there has been **active dialogue between the government and civil society**, such as through CONSEA and the National Health Council (Conselho Nacional de Saúde, or CNS), in formulating public policies. One result is the 2014 publication of the new *Brazilian Food Guide*, which emphasizes freshly prepared food. Nevertheless, key challenges for obesity control remain. Introducing regulatory reforms has proved challenging. Despite efforts to restrict the marketing of high-fat, -sugar, -salt foods to children since 2004, the government has failed to do so. This experience points to the need to build a broad political consensus among the government's executive, legislative, and judicial branches and to build new social norms.

Breastfeeding

Brazil's only example of nutrition-related industry regulation is the law on the marketing of breastmilk substitutes—a hard-fought achievement in the country's commitment to exclusive breastfeeding in the first 6 months and its continuation with healthy complementary foods till the second year or beyond. In the early 1980s, exclusive breastfeeding rates were extremely low in Brazil—just 2 percent—but the country was already showing a commitment to improvement. One aspect was greater coverage of antenatal care, and another was the translation of the International Code of Marketing of Breast-Milk Substitutes into law. Brazil played an important role in preparing and finalizing the code in 1981 and that same year launched its own program to promote breastfeeding. In 1988, Brazil adopted its own code on the marketing of breastmilk substitutes, which was initially implemented as a health standard. In 2006 the code was turned into Law 11265/2006. Like all legislation in Brazil, however, this law could not be enforced until it had undergone a process called "law regulation." The process lasted nine years and 10 months, and on November 3, 2015, the decree was finally signed (Brazil, Presidência da República 2015). Throughout this process, the infant-feeding industry strongly opposed the legislation and made numerous attempts to weaken it. Countering this strong opposition were active efforts by **civil society**. The International Baby Food Action Network–Brazil (IBFAN) was the lead actor, lobbing for the legislation, contacting the Brazilian president directly, and monitoring violations. CNS also played a key advocacy role in the 1990s, and more recently, through CONSEA, after a member of IBFAN–Brazil joined in 2014.

Despite these successes, very significant challenges remain. Exclusive breastfeeding rates in Brazil remain low compared with other countries (Chapter 2); the quality of antenatal care is poor; and violations of the 2006 law continue—a study in 18 cities found 227 violations, including illegal advertising and inappropriate labeling, by 52 companies (IDEC 2016).

government and between government and civil society; and epidemiological evidence of the problem. These same features are found in explaining the political commitment to different aspects of malnutrition: food and nutrition security, obesity, and breastfeeding. Panel 1.5 provides more details on the factors underlying this commitment.

Brazil's experience should serve as an inspiration to other countries—some forms of malnutrition can be addressed within less than a generation, although others are likely to emerge if we are not vigilant. Effective monitoring of the nutrition situation enables a continuous evolving process of updating and improving public policies to address problems as they emerge.

HOW THIS REPORT WILL HELP YOU MAKE YOUR NUTRITION COMMITMENTS COUNT

The report is intended to be practical and helpful to nutrition champions and those they seek to influence. It aims to bring about commitments that count.

Chapter 2 tracks how well countries are doing at achieving the commitments they made at the World Health Assembly to attaining specified targets. It provides details on changes in nutrition status. In which regions and countries is nutrition status improving and for whom? This chapter will help national nutrition champions focus on the forms of malnutrition on which their country is making the least progress, and it will help international champions allocate their resources where they are most needed.

Chapter 3 explores how much progress governments and businesses have made in setting targets for maternal, infant and young child nutrition and nutrition-related NCDs at the national, subnational and company levels. It shows where action is needed to improve the quantity and quality of targets.

Chapter 4 reports on progress on meeting the original N4G commitments and analyzes their SMART-ness and alignment. This chapter provides an assessment of which N4G commitments are on or off course and what is needed now to take the N4G process forward in the post-ICN2/SDG era.

Chapter 5 focuses on helping policymakers accelerate the implementation of actions to support their commitments. What is the state of implementation, where is it lagging, and what needs to happen to accelerate it? It also focuses on policy implementation in key areas where governments have made international commitments: breastfeeding and healthful diet policies. The chapter ends with an assessment of the coverage data on direct nutrition interventions with a discussion of how to increase coverage rates.

Chapter 6 is concerned with the underlying drivers of nutrition status. Vast amounts of resources are allocated to these drivers: what commitments do policymakers and other stakeholders need to make for these resources to be more potent in accelerating nutrition improvements? Previous Global Nutrition Reports have focused on agriculture and social protection; this year we bring together drivers of undernutrition with obesity/NR-NCDs to focus on water, sanitation, and hygiene (WASH) and education and take another look at food systems. We also review opportunities for making new commitments to nutrition in the humanitarian space.

Chapter 7 guides decision makers on where and how much to invest in order to put commitments to action into practice. It updates decision makers on how much governments and donors are currently spending on nutrition, compares that level of spending to other items in government budgets, and summarizes recent analysis of the likely costs of meeting global targets on nutrition and sources of revenue that can be drawn upon. For the first time, we look at spending on nutrition-related NCDs as well as forms of undernutrition.

Chapter 8 identifies the tools and data policymakers need to measure the effect of their actions and shape commitments to accelerate nutrition improvement. It zeroes in on the subnational level, highlighting inequalities in outcomes, including areas facing humanitarian crises and increasing numbers of displaced people.

Chapter 9 ends with specific calls to action to each stakeholder group to help end malnutrition by 2030.

USE THIS REPORT AS AN INTERVENTION

More than 100 people have contributed to the writing of this report. We reject the notion that malnutrition in the 21st century is "normal."

To those of you who have power and influence in your household, clinic, community, municipality, university, business, city, agency, parliament, or government, we say that a world without malnutrition can become the "new normal." Use this report to help make commitments that count for ending malnutrition. Such commitments will shake the current world out of its complacency on malnutrition and help create a new reality for the one-third of humanity—in all countries—that is being denied the chance to reach its full potential.

To those of you who feel outside these circles of power and influence, use this report to educate and organize your communities, and help them engage in and drive the political process to end malnutrition. Use the report to help those in positions of power and influence make commitments that count. Equally, use the report to make it harder for all nutrition stakeholders to back out of their responsibilities and commitments to nutrition.

The SDGs invite all of us to imagine the end of malnutrition. Such a vision reveals the scope of our challenge—but it also reveals the scope of the reward: a world where our children have to learn about malnutrition, rather than experience it. For that to happen, every reader of this report needs to become more engaged in the political process to end malnutrition by 2030. No social movement has ever succeeded without such engagement.

2 THE GLOBAL NUTRITION LANDSCAPE: ASSESSING PROGRESS

KEY FINDINGS

This chapter outlines the latest estimates of nutrition status for eight indicators at the global, regional, and country levels.

- **At a global level, the world is off course to meet global targets for nutrition. This assessment, however, hides significant variations between countries and regions:**
  - Many countries are on track to meet global targets for under-5 stunting, wasting, and overweight, and exclusive breastfeeding of infants younger than 6 months old.
  - Nearly all countries are off course for the targets on anemia in women, and adult overweight, obesity, and raised blood glucose/diabetes.
  - Under-5 stunting is declining in every region except Africa, and the number of overweight children under 5 is increasing most rapidly in Asia.
- **Obesity and overweight are now a staggering global burden—and are approaching the scale of other forms of malnutrition.** The prevalence of adult overweight, obesity, and diabetes is rising for every region and nearly every country. The number of children under 5 who are overweight continues to rise globally, approaching the number of children under 5 who suffer from wasting.
- **Data gaps remain a significant roadblock to assessing progress on nutrition.** The absence of data is a fundamental impediment to determining real progress at the global and national levels, hiding inequalities within countries and making it more difficult to hold governments accountable.

PANEL 2.1 EIGHT GLOBAL NUTRITION TARGETS FOR 2025 ADOPTED BY THE WORLD HEALTH ASSEMBLY

Here we use the term "global nutrition targets" to refer to two sets of targets adopted by the World Health Assembly. One is the set of World Health Organization targets for maternal, infant, and young child nutrition:

- Achieve a 40 percent reduction in the number of children under 5 who are stunted
- Achieve a 50 percent reduction of anemia in women of reproductive age
- Achieve a 30 percent reduction in low birth weight
- Experience no increase in overweight in children under 5 years
- Increase the rate of exclusive breastfeeding in the first 6 months up to at least 50 percent
- Reduce and maintain wasting in children under 5 at less than 5 percent

The other consists of two of the World Health Organization targets in the Global Monitoring Framework for the Prevention and Control of Noncommunicable Diseases:

- Experience no increase in obesity and diabetes (in adults and adolescents)
- Achieve a 30 percent reduction in average population salt intake

AS DISCUSSED IN CHAPTER 1, SETTING TARGETS IS ONE MANIFESTATION OF POLITICAL COMMITMENT. COUNTRIES HAVE ALREADY MADE A SERIES OF COMMITMENTS TO ATTAIN global nutrition targets by 2025 (Panel 2.1). For maternal, infant, and young child nutrition, the 2012 World Health Assembly (WHA) set six targets for 2025. The *Global Nutrition Report* tracks five of these.[1] The WHA also agreed on nine noncommunicable disease (NCD) targets, one of which—"Halt the rise in diabetes and obesity"—is tracked in this report via three indicators. In all, we use eight nutrition status indicators to track six of the targets.

This chapter gives the latest estimates of nutrition status for these eight indicators worldwide, by region, and by country. First, we present progress at the global and regional levels. Second, we present nutrition status at the national level in three different ways—against global goals, relative to other countries, and jointly—combining stunting and wasting estimates for a fuller representation of the burden of undernutrition.

PROGRESS IN MEETING GLOBAL GOALS

The latest Joint Child Malnutrition Estimates for stunting, wasting, severe wasting, and overweight in children under 5 from UNICEF, the World Health Organization (WHO), and the World Bank (released in September 2015) are presented in Table 2.1. The estimates remind us that we have made substantial progress in reducing the number of stunted children, but less in wasting. And the number of under-5 overweight children is increasing. We have no updated data for anemia, adult overweight and obesity, or raised blood glucose since the *Global Nutrition Report 2015*.

The latest Joint Child Malnutrition Estimates on stunting, wasting, and under-5 overweight do not change our assessment in the *Global Nutrition Report 2015* that the world is off course to meet the global goals for the eight nutrition indicators we track (Table 2.2).

Regionally, as shown in Figure 2.1, stunting numbers are declining in each region listed, except for Africa. The number of overweight children under 5 (Figure 2.1) is increasing most rapidly in Asia.

As Figure 2.2 shows, adult overweight and obesity, obesity alone, and diabetes (raised blood glucose) prevalences are estimated to increase at similar rates for all regions.

TABLE 2.1 The global state of malnutrition

Indicator	Number of individuals	Current prevalence (%)
Under-5 stunting	159 million in 2014 (255 million in 1990)	23.8 (39.6 in 1990)
Under-5 overweight	41 million in 2014 (31 million in 1990)	6.1 (4.8 in 1990)
Under-5 wasting	50 million in 2014	7.5
Under-5 severe wasting	16 million in 2014	2.4
Anemia in women ages 15–49 years (nonpregnant and pregnant)	533 million in 2011	29 for nonpregnant women in 2011 (33 in 1995) 38 for pregnant women in 2011 (43 in 1995)
Exclusive breastfeeding (under 6 months)	NA	39 in 2014
Low birth weight	20 million in 2014	15
Adult overweight (ages 18+)	1.9 billion in 2014	39
Adult obesity (ages 18+)	600 million in 2014	13
Adult diabetes (raised blood glucose) (ages 18+)	NA	9

Source: Stunting, overweight, wasting, and severe wasting figures are from the 2015 Joint Child Malnutrition Estimates, which estimated figures for 2014 (UNICEF, WHO, and World Bank 2015); anemia figures are from Stevens et al. (2013), who estimated data from 2011; exclusive breastfeeding data are from UNICEF (2016b); low birth weight data are from the latest World Health Organization (WHO) policy brief on the subject (WHO 2014a); adult overweight, obesity, and diabetes data are from WHO (2014b).

Note: NA = not available; there are no global numbers on how many people have diabetes and how many infants are exclusively breastfed, to correspond with the percentages. Comparable data are not available for 1990 for under-5 wasting, under-5 severe wasting, and anemia in women of reproductive age. According to the Joint Child Malnutrition Estimates for 2015 (UNICEF, WHO, and World Bank 2015), there were 667 million children under 5 in the world.

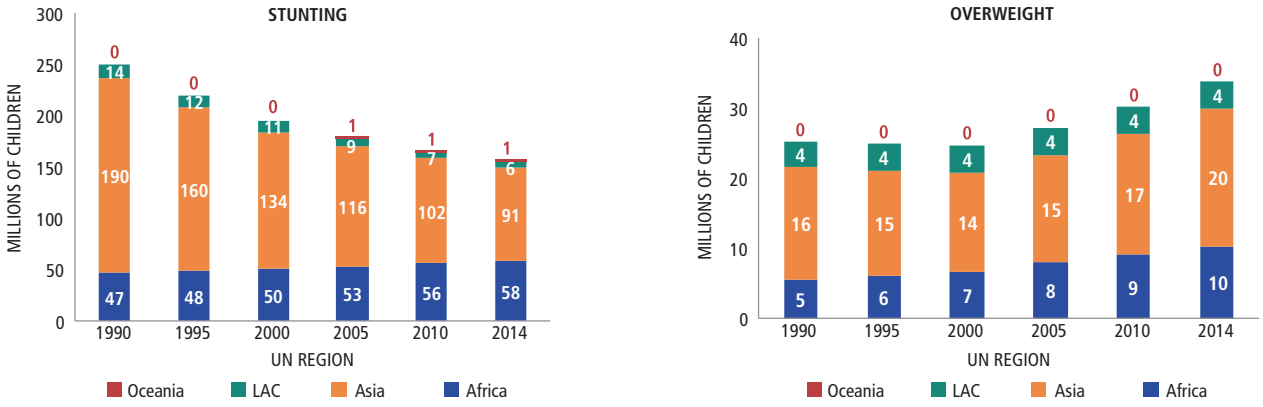
TABLE 2.2 Global progress against global nutrition targets

Target and indicator	Baseline year	Baseline status	Target for 2025	On or off course?	Basis for assessment
Stunting 40% reduction in the number of children under 5 who are stunted	2012	162 million	~100 million (currently 159 million)	Off	Current rate of reduction not rapid enough to attain 100 million by 2025
Wasting Reduce and maintain childhood wasting at less than 5%	2012	8%	< 5% (currently 7.5%)	Off	Current rate of reduction not rapid enough to reach below 5% by 2025
Under-5 overweight No increase in childhood overweight	2012	7%	No increase (currently 6.1%)	Off	The baseline proportion for 2012 was revised down from 7% to 5.9% in the JCMEs for 2015, and the current rate is marginally above this threshold and hence off course
Anemia 50% reduction of anemia in women of reproductive age	2011	29%	15% (no new data over baseline)	Off	Very little progress since 1995, when it was estimated at 33%
Low birth weight 30% reduction in low birth weight	2008–2012	15%	10%	NA	Estimating methods being revised (see Panel 2.1)
Exclusive breastfeeding Increase the rate of exclusive breastfeeding in the first six months to at least 50%	2008–2012	38%	50% (currently 39%)	Off	Not increasing rapidly enough to meet 50% by 2025
Adult overweight Halt the rise in prevalence	2014	38%	Halt the rise in prevalence	Off	Rates are increasing in vast majority of countries, 2010–2014
Adult obesity Halt the rise in prevalence	2014	12%	Halt the rise in prevalence	Off	Rates are increasing in vast majority of countries, 2010–2014
Adult diabetes (raised blood glucose) Halt the rise in prevalence	2014	9%	Halt the rise in prevalence	Off	Rates are increasing in vast majority of countries, 2010–2014

Source: Based on IFPRI (2014, Table 3.1; 2015a, Table 2.1), UNICEF, WHO, and World Bank (2015), WHO (2014b, 2016s, 2016t); 1995 anemia estimate from Stevens et al. (2013).

Note: The term "global nutrition targets" refers to targets adopted by the World Health Assembly for maternal, infant, and young child nutrition and the nutrition-related targets in the Global Monitoring Framework for the Prevention and Control of NCDs. For low birth weight, new data estimation methods have been developed and are planned for release in the second half of 2016 by a working group including the London School of Hygiene and Tropical Medicine, UNICEF, and the World Health Organization. For more on the methods behind the stunting target, see de Onis et al. (2013). NA = no data available. JCMEs = Joint Child Malnutrition Estimates.

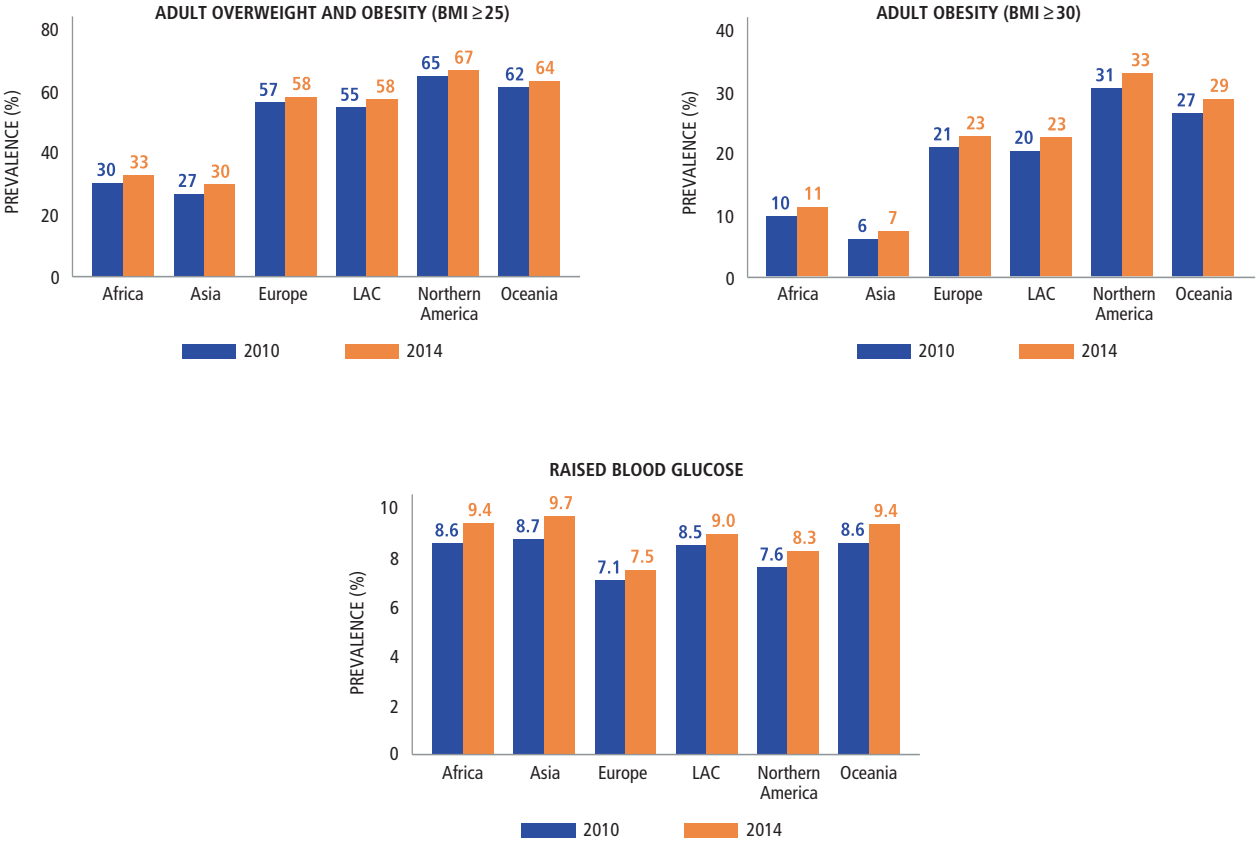
FIGURE 2.1 Number of children under 5 affected by stunting and overweight by region, 1990–2014



Source: Authors, based on data from UNICEF, WHO, and World Bank (2015).

Note: LAC = Latin America and the Caribbean. Europe and Northern America were not included in the overweight figure because of lack of data. Estimates for Asia exclude Japan. Estimates for Oceania exclude Australia and New Zealand.

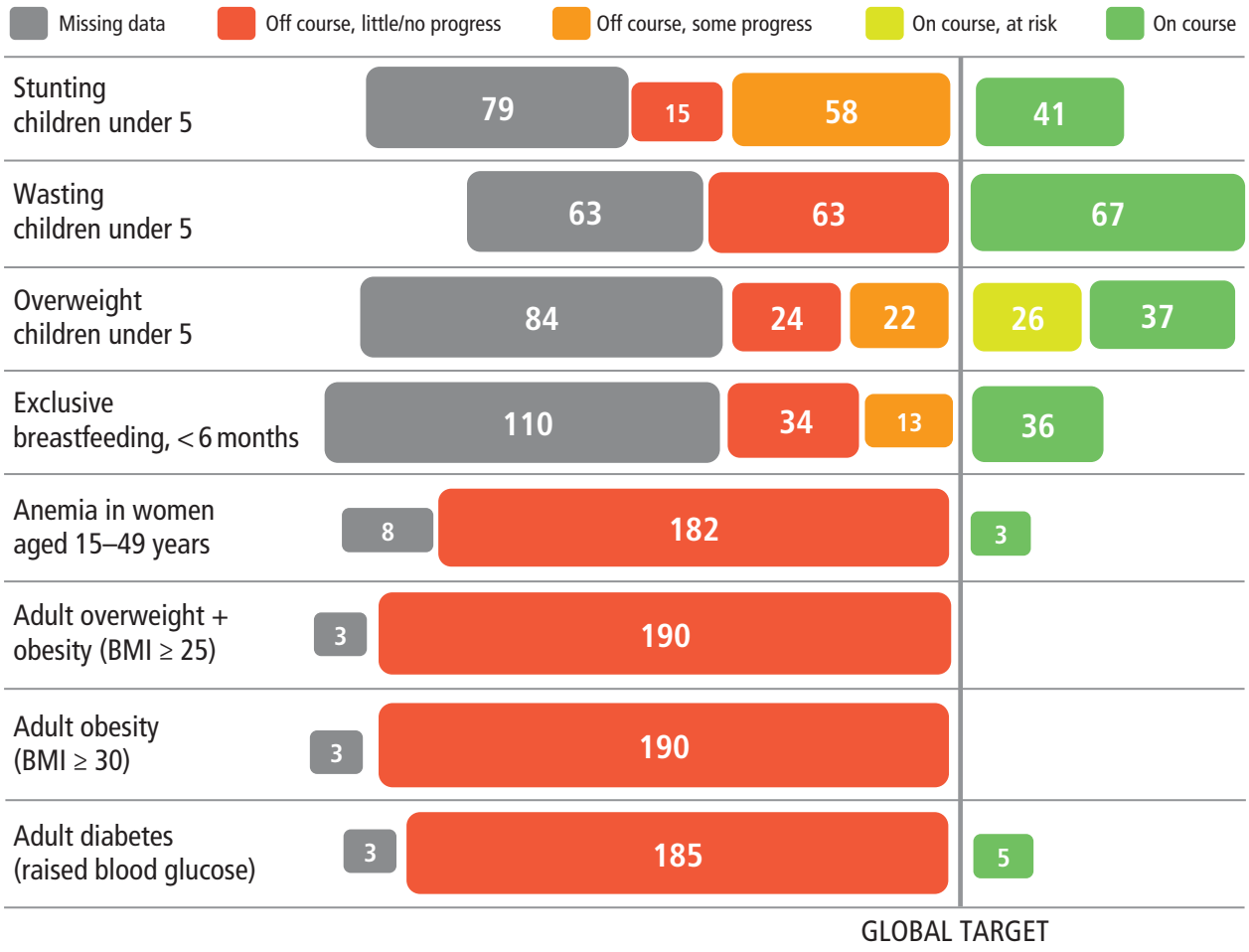
FIGURE 2.2 Adult overweight and obesity, adult obesity, and adult diabetes, by UN region, 2010 and 2014



Source: Authors, based on data from WHO (2015a).

Note: Raised blood glucose = fasting glucose ≥7.0 mmol/l (126 mg/dl) or on medication for raised blood glucose or with a history of diagnosis of diabetes. BMI = body mass index; LAC = Latin America and the Caribbean. Number of countries = 190. Prevalence data are age-standardized adjusted estimates (population age 18+ years). Regional estimates are population-weighted means.

FIGURE 2.3 Number of countries at various stages of progress against the global targets on nutrition



Source: Authors, based on data from Stevens et al. (2013), UNICEF (2016b), UNICEF, WHO, and World Bank (2015), and WHO (2015a).

But as we have seen from the 2014 and 2015 *Global Nutrition Reports*, the global and regional numbers hide a great deal of country variation. Applying the global goals at the country level reveals many countries on course and many more making progress, even if not at the rate required to meet the global target.

In fact, of the 24 countries reporting new data (in the JCMEs) since *Global Nutrition Report 2015*, only one has slipped in its assessment (from "on course" to "off course, some progress"). In contrast, Cameroon, Congo, El Salvador, Sao Tome and Principe, and Timor-Leste have all moved into the "on course" category for various indicators (see Appendix Table A3.1).

Figure 2.3 summarizes the latest state of progress for all countries against global targets using rules developed for *Global Nutrition Report 2015* (see Appendix 2). It shows, first, that many countries are on track and many are making good progress on the global WHA target for under-5 stunting, wasting, and overweight, and exclusive breastfeeding of infants younger than 6 months. Second, for the remaining four indicators—anemia in women ages 15–49 and adult overweight, obesity, and raised blood glucose—nearly all countries are off course. Third, data availability remains a real problem when it comes to making assessments. The first set of four indicators is based on cross-sectional surveys, but many countries do not have sufficient data to make an assessment. Out of four possible assessments for 193 countries, we are able to make only 436 assessments, or 56 percent of the total of 772. The second set of four indicators has a sparser underlying database because the assessments rely on modeled estimates. It is not clear whether there is a link between lack of progress toward a global target and reliance on modeled data; therefore more research could be done here.

Figure 2.3 does not include low-birth-weight (LBW) assessments because LBW prevalence estimates need strengthening. Work is ongoing in this area, and Panel 2.2 describes what is being done and what progress is being made.

PANEL 2.2 HOW MANY LOW-BIRTH-WEIGHT BABIES ARE BORN EACH YEAR?

HANNAH BLENCOWE, ELAINE BORGHI, MERCEDES DE ONIS, JULIA KRASEVEC, JOY LAWN, AND SUHAIL SHIEKH

Low weight at birth places infants at an increased risk of morbidity and mortality, and is a key indicator of preterm birth and nutritional status. In 2012, the World Health Assembly adopted the target of reducing low birth weight (LBW) by 30 percent between 2012 and 2025 (WHO 2012b), but monitoring progress has been challenging because many newborns are not weighed at birth. In order to improve the country-level and time-series data, UNICEF, the World Health Organization, and Johns Hopkins University have been working with the London School of Hygiene and Tropical Medicine to increase the quantity and quality of LBW data, including the following:

- Expansion of data from routine reporting systems (1,119 data points from 99 countries are now included, covering more than 308 million live births)
- Improved methods to adjust LBW rate estimates from household survey data (applied to 70 Multiple Indicator Cluster Surveys and 93 Demographic and Health Surveys)
- Revision of inclusion criteria to include only survey data with at least 30 percent of newborns weighed (32 surveys eliminated from 18 countries), and to exclude data sources with LBW rates of less than 3.2 percent or greater than 40 percent (37 data points from 15 countries excluded)
- Development of a model to estimate LBW rates and enhance comparability across countries in a transparent and objective manner

The good news is that there are now more data from routine health reporting, mainly from high-income and upper-middle-income countries, and the quality of the available time-series data has been enhanced by revised inclusion criteria. However, most of the data excluded based on these revised inclusion criteria were from low- and lower-middle-income countries, where only a minority of newborns are weighed; thus, the available data represent a biased sample of children from richer families.

Immediate next steps include finalizing the revised time series, completing the modeling, conducting country consultations, and disseminating the results in early 2017. The group will also work on guidelines for accurately weighing, recording, and reporting of birth weights to help improve the quality of country data.

Reporting LBW requires a skilled attendant at birth, equipped with appropriate equipment and skills to weigh the baby and record the birth weight, and effective routine reporting systems to collate the data. Global LBW reporting will continue to be hampered by substandard input data until governments prioritize and invest in skilled attendants at birth, while addressing the barriers to ensure that all newborns' weights are taken, recorded, and reported.

The absence of data is a fundamental impediment to our ability to identify real progress at the global and national levels and to learn from it. It hides inequality within countries and makes the Sustainable Development Goals aspiration of "leaving no one behind" much harder to attain. Finally, it also represents a fundamental barrier to accountability. Panel 2.3 highlights the data available in the *Global Nutrition Report's* own country nutrition profiles.

In the Sustainable Development Goals era, the data revolution must include nutrition. Those in the nutrition community must pursue every opportunity to engage with data investment processes, starting with the World Data Revolution for Sustainable Development forum, planned for the second half of 2016 and every two to three years thereafter (UN SDSN 2015).

PROGRESS IN NUTRITION STATUS AT THE NATIONAL LEVEL

This section presents national nutrition status data in three different ways to help country stakeholders accelerate action for nutrition.

First, we present data on which countries are closest to being on course relative to the eight global targets. Countries will decide where they allocate their energy and resources in the fight against malnutrition. Knowing they are close to meeting a global target might inspire further action, although it may also detract attention from indicators that are making little progress. Either way, the additional data should stimulate further discussion about priorities.

Second, we present national rankings of countries on the eight indicators. National rankings tend to be easier

PANEL 2.3 THE *GLOBAL NUTRITION REPORT* COUNTRY PROFILES

TARA SHYAM

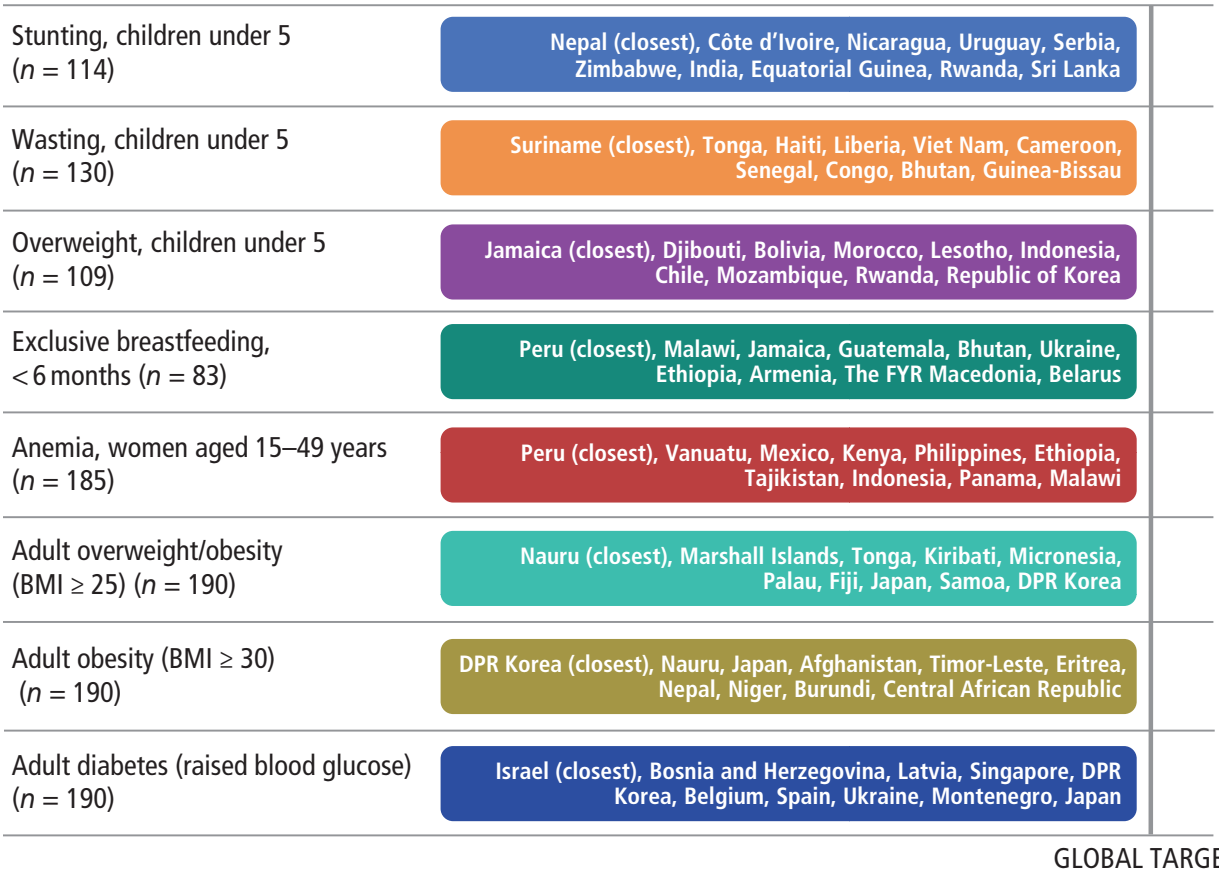
The *Global Nutrition Report* nutrition profiles bring together more than 80 indicators on nutrition status, intervention coverage, underlying determinants, and resources for all 193 UN member countries. These data are presented by country, region, and subregion, as well as in a global profile. They are available as individual two-page documents and as raw data from www.globalnutritionreport.org.

The data are drawn from WHO, UNICEF, the Food and Agriculture Organization of the United Nations (FAO), and the World Bank, among others. To encourage open data for nutrition, all datasets included in the *Global Nutrition Report* profiles are from sources available to the public, whether freely accessible (online or in print) or freely attainable from the agency that published them. Wherever possible, survey data have been employed in the profiles; however, the best available modeled estimates are also used where methodologically robust survey data cannot be identified. A technical note, also available on the *Global Nutrition Report* website, details the data sources and definitions of each indicator used in the profiles.

Besides presenting the data that are available, the nutrition profiles also highlight where gaps exist, either in data availability or in the compatibility of a country's data with international standards. While other data sources may be available, credible, and used at the country level, the *Global Nutrition Report* nutrition profiles include only data whose methodologies are consistent across the 193 countries. This ensures that a single standard is being used when making comparisons across countries for each indicator.

The profiles are aimed at helping nutrition champions from all sectors to assess progress in a country's nutrition, compare it with that of others within and across regions, and advocate for greater action for nutrition in their field of work.

FIGURE 2.4 Countries that are closest to moving from off course to on course, by nutrition indicator



Source: Authors, based on data from Stevens et al. (2013), UNICEF (2016b), UNICEF, WHO, and World Bank (2015), and WHO (2015a).

Note: BMI = body mass index; DPR Korea = Democratic People's Republic of Korea; The FYR Macedonia = The former Yugoslav Republic of Macedonia.

PANEL 2.4 COUNTRY LAUNCHES OF THE *GLOBAL NUTRITION REPORT* CAN BE A SPARK FOR NEW ACTION

LAWRENCE HADDAD

I have been lucky enough to attend more than 20 *Global Nutrition Report* country launches during 2014–2016, covering countries with very different types of malnutrition burden. This is a subjective assessment of what I have noted about the ability of the report launches to spark dialogue and action.

1. **The demand for country launches is strong.** The vast majority of launches are organized by stakeholders within the country. There is an appetite for an event that looks at malnutrition in all its forms, at inputs as well as outcomes, at progress within the region as well as against global goals, and at process as well as achievements.
2. **Conversations are sparked.** Sometimes they are about data (for example, why the latest national data are different from what is in the WHO/UNICEF/World Bank databases and therefore in the *Global Nutrition Report*), sometimes they are about issues that are highly relevant in the host country but have not been given sufficient emphasis in the *Global Nutrition Report* (for example, the role of the media or inequality within a country), and sometimes they are about disbelief that the country is doing better (or worse) than a neighbor.
3. **Actions are initiated.** Examples include a minister of health calling up his staff and demanding to know why the country is not on track for a global goal; a member of parliament wanting to know how her country can make a Nutrition for Growth commitment; leaders of a national planning process engaging with the *Global Nutrition Report* team in helping to shape, justify, and communicate their new national nutrition strategy; a cabinet secretary wanting to know how to use the evidence on the economic returns on scaling up nutrition actions; and a civil society network leader using the *Global Nutrition Report* statistics and presentations to make the case for the country to become a member of the Scaling Up Nutrition Movement.
4. **The *Global Nutrition Report* launches are a poor substitute for a similar national effort.** Periodic national nutrition reports would strengthen the ownership of nutrition accountability, bring in more granular and relevant data, and feed into national and subnational nutrition processes. This would also stimulate the production, analysis, scrutiny, and use of national and subnational data.

for policy makers and the public to interpret, and therefore they can spark debate on performance relative to other countries.

Finally, for a large number of countries we present data on the percentage of children under 5 affected by stunting, wasting, or both. When we assess nutrition status and advocate for reduction of malnutrition, we tend to use one indicator or the other, but combining them provides a fuller sense of the burden of malnutrition, which in turn maintains a sense of the urgent need to act.

COUNTRIES THAT ARE CLOSEST TO BEING ON COURSE TO MEET GLOBAL GOALS

The 2015 *Global Nutrition Report* added some nuance to country assessments, distinguishing whether a country was off course and making little progress, or was off course and making progress. Here we provide some detail on which countries are closest to being on course for each of the eight nutrition indicators tracked in the *Global Nutrition Report*. Closeness is assessed based on simple distance between rates of progress required to meet targets and actual rates of progress.[2]

Figure 2.4 highlights the 10 countries for each indicator that are closest to meeting the required rate of change to reach the global goal in 2025. The assessment may cast a different light on the data and thereby provide countries with some added impetus in knowing how close they are to being "on course" to meet the global goal.

COUNTRY RANKINGS BY NUTRITION STATUS INDICATORS

Appendix Tables 3.2–3.9 show the rankings of countries by their levels on the eight indicators in Figure 2.4. The rankings provide countries with a sense of their position relative to their neighbors and comparators, rather than relative to a global target. The rankings are also a useful way for civil society organizations to compare their own country's standing and to advance dialogue on why their country is doing better or worse than comparators. In the numerous *Global Nutrition Report* launches around the world, we present nutrition status data for countries within

the particular region ranked by the eight indicators tracked by the *Global Nutrition Report*. The position of the host country relative to its neighbors never ceases to catch the attention of host government officials or that country's national media (Panel 2.4).

COUNTRY RANKING BY THE COMBINED BURDEN OF STUNTING AND WASTING

Not all children who are stunted are wasted. And not all children who are wasted are stunted. To fully assess the burden of under-5 undernutrition, we need to estimate how many children are affected by stunting, wasting, or both. In the *Global Nutrition Report 2015*, using data from five countries with a high burden of undernutrition, we provided a snapshot of the prevalence of children 6–59 months old who were stunted, wasted, or both (concurrence), highlighting the fact that in all five countries, a minority of children avoided both stunting and wasting (Dolan, Mwangome, and Khara 2015).

Here we provide an expanded analysis from all countries with recent (2005–2015) available country-representative datasets.[3] The 83 countries in the sample included those with high, medium, and low burdens of undernutrition. The estimated prevalence of children between 6 and 59 months of age who are wasted or stunted is 38.9 percent. This compares with an estimate for the same countries of 33.0 percent of children 6–59 months who are stunted. An estimate of the percentage of children who are stunted or wasted provides a larger estimate of the burden of malnutrition affecting children under 5 than stunting numbers alone. As Figure 2.5 shows, out of the 83 countries, there are 13, highlighted in red, where less than half of all children under 5 escaped both stunting and wasting.

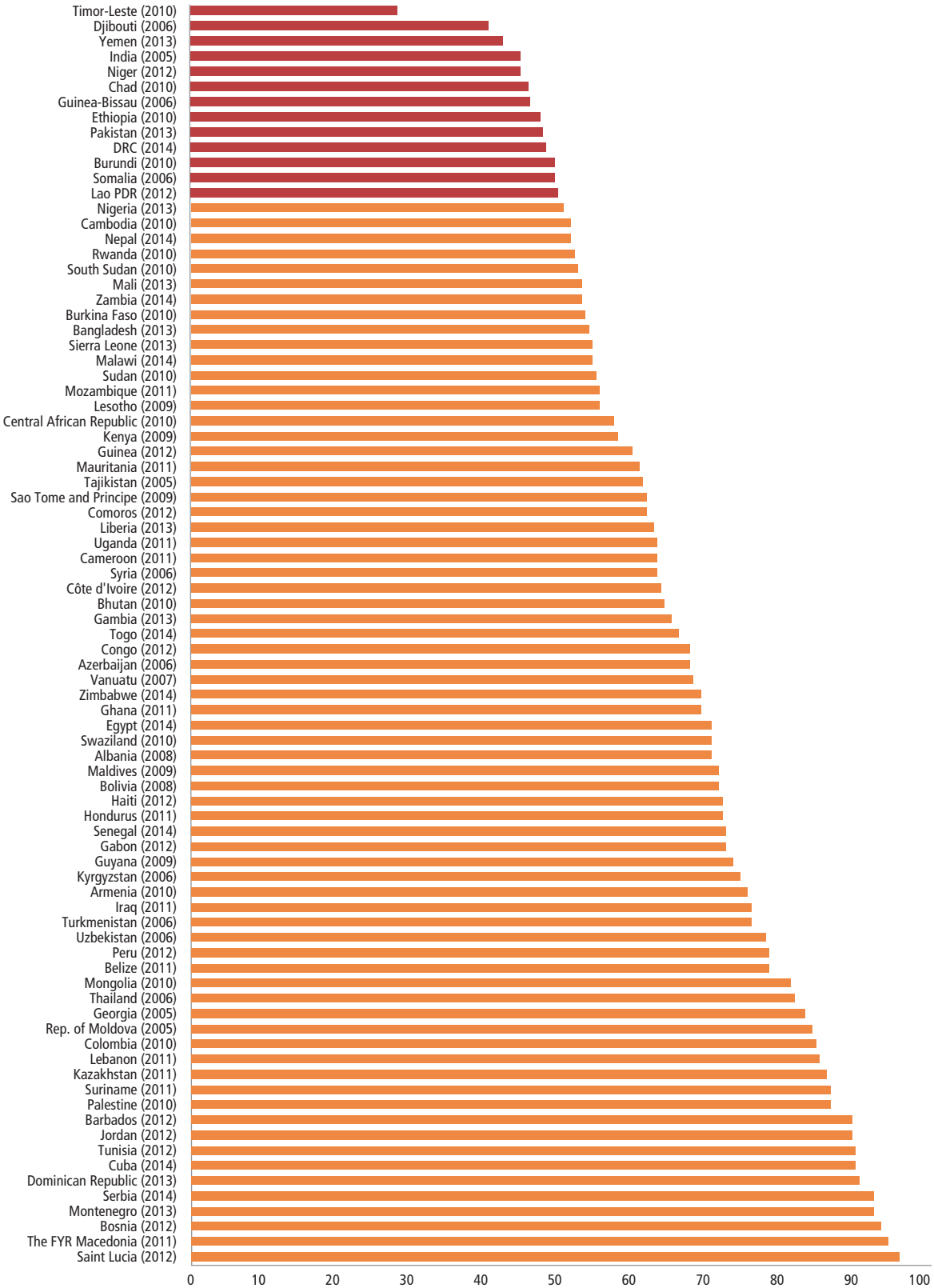
CALLS TO ACTION

1. **Support more nutrition progress stories.** Every country is an example of nutrition success, failure, or stagnation, but these stories need to be told. Countries that are on track to meet global goals can provide guidance and inspiration on how to reduce malnutrition; countries that are not on track also demand further understanding and analysis. Funders should encourage researchers to undertake these assessments, journals should publish these reports, and findings should be disseminated in mainstream media. The need for credible stories is particularly great wherever indicators are stagnating or worsening. Given the urgent need for progress stories, by 2018 a major multiyear, multicountry research program should be funded on why change does or does not happen.
2. **Invest in more and better data to assess progress.** The availability of internationally comparable data on nutrition outcomes is still weak, either because high-quality data are not collected at the country level or because they are not reported to the United Nations—but these data are essential to ensuring accountability.
   - Surveys on rates of under-5 stunting, wasting, and overweight, as well as exclusive breastfeeding, should be conducted at least every three to five years. More surveys need to assess anemia. The funders of Demographic and Health Surveys, Multiple Indicator Cluster Surveys, and other such surveys should be prepared to coordinate more among themselves and respond to government demand for surveys every three years. Countries with high burdens of malnutrition and with data more than five years old should be a priority for new data collection.
   - By 2020 all high-income countries should make their data compatible with UN databases.
   - Within the next 12 months, nutrition champions within the UN and multilateral agencies should strengthen nutrition's presence in the ongoing "data revolution" discussion to ensure that nutrition is not left behind. This effort could start with the World Data Revolution for Sustainable Development Forum in the second half of 2016.

Every country is an example of nutrition success, failure, or stagnation, but these stories need to be told.

3. **Start assessing national progress on nutrition every year.** Countries should consider producing annual national reports on nutrition, linked to current processes, and use these data to assess progress and evidence on what works, adjust tactics and budgets, amend national nutrition plans, and be accountable for progress.

FIGURE 2.5 Percentage of children 6–59 months of age who are neither stunted nor wasted



Source: Tanya Khara, Martha Mwangome, and Carmel Dolan, based on data from DHS (2005–2015) and UNICEF (2016c).

Note: Red bars designate country-years in which the percentage of children 6–59 months old who avoid stunting, wasting, or both is below 50 percent. DRC = Democratic Republic of the Congo; Lao PDR = Lao People's Democratic Republic; The FYR Macedonia = The former Yugoslav Republic of Macedonia.

3 TAKING AIM: PROGRESS ON SETTING NUTRITION TARGETS

KEY FINDINGS

This chapter explores how much progress governments and businesses have made in setting nutrition targets at the national, subnational, and company levels.

- National target setting can help drive action on nutrition, and setting targets that are SMART (specific, measurable, achievable, relevant, and time bound) can help ensure focus and accountability. Many countries, however, have failed to set such targets or to make their nutrition targets SMART. An analysis of 122 national nutrition plans with a potential total of 732 targets (six targets for maternal, infant, and young child nutrition in each of 122 plans) revealed only 358 targets—just under half the potential number. When targets existed, only two-thirds of them were SMART.
- Some national governments have begun to set targets related to noncommunicable diseases (NCDs)—indicating a growing commitment—but they are still in the minority. Only about 30 percent of countries that provided data to the World Health Organization have incorporated targets for obesity, diabetes, and salt reduction into their national NCD plans.
- Much nutrition programming has been decentralized to subnational administrative units, yet examples of subnational target setting are few. Even the influential Indian state nutrition missions are inconsistent about setting nutrition targets.
- About half of the 22 large food and beverage companies surveyed have set targets on salt, sugar, and added fats. Virtually none have targets to increase the levels of more health-promoting ingredients (such as whole grains, fruits, and vegetables) in their products, or to ensure accessibility of healthy products.

THROUGH THE WORLD HEALTH ASSEMBLY (WHA), COUNTRIES HAVE SIGNED ONTO GLOBAL NUTRITION TARGETS (PANEL 2.1, CHAPTER 2), AND AS CHAPTER 2 SHOWS, ONE WAY to track countries' progress is to apply these global targets to the national level. Yet targets that countries set for themselves are likely to be more effective tools for promoting accountability. By definition, these self-generated targets have greater government buy-in and ownership than those set from outside the country. And these targets are most useful for accountability when they are SMART (that is, specific, measurable, achievable, relevant, and time bound).

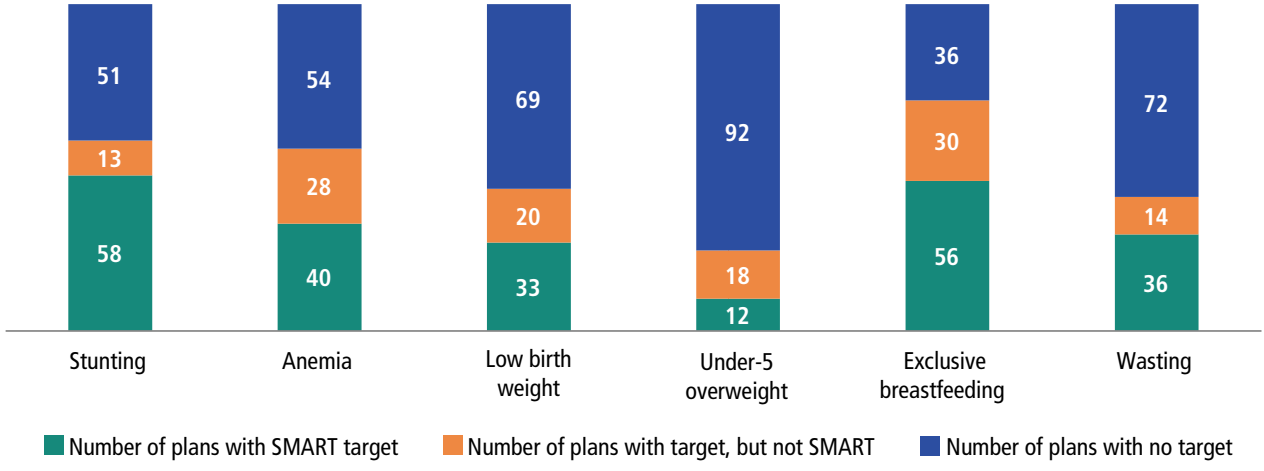
This chapter focuses on countries' progress in setting national targets for the indicators tracked in Chapter 2 (Table 2.1). We review countries' national plans for both nutrition and noncommunicable diseases (NCDs) to identify whether they include clear and SMART targets for progress. Since the setting of targets by other stakeholders is also important (see Chapter 1), we review the evidence on target setting for the 22 food and beverage companies participating in the Access to Nutrition Index.

NATIONAL TARGETS ON MATERNAL, INFANT, AND YOUNG CHILD NUTRITION

Since the 1992 International Conference on Nutrition, the World Health Organization (WHO) has monitored countries' development and implementation of national plans of action on nutrition.[1] The WHO has reviewed nutrition plans to assess how many countries have targets for the six global targets on maternal, infant, and young child nutrition: stunting, wasting, and overweight in children under 5, low birth weight, anemia in women of reproductive age, and exclusive breastfeeding. It has also assessed whether these targets are SMART—that is, whether they are specific (defined in this instance as being aligned with the global targets included in the WHO's global monitoring frameworks), measurable (including both a baseline[2] and an end line value), and time bound (stating a specific time frame).[3]

The WHO team identified 122 national nutrition plans and analyzed them to assess how many include SMART targets. Ideally, each of the 122 plans would incorporate the full set of six global maternal, infant, and young child nutrition targets, and all would be SMART, making a potential total of 732 SMART targets. The analysis shows, however, that these 122 plans include only 358 targets—less than half of the potential 732 (Figure 3.2). Where targets exist, just 235 of them—66 percent—are SMART.

FIGURE 3.1 Number of 122 national nutrition plans that have targets, SMART targets, and no targets for maternal, infant, and young child nutrition



Source: Authors, based on data from Chizuru Nishida and Kaia Engesveen.

PANEL 3.1 WORLD HEALTH ORGANIZATION (WHO) TOOLS TO HELP COUNTRIES SET NATIONAL NUTRITION TARGETS

ELAINE BORGHI, KAIA ENGESVEEN, CHIZURU NISHIDA, AND MERCEDES DE ONIS

The *Global Nutrition Targets Tracking Tool* (WHO 2016f) supports countries in the process of adapting the global targets to the national setting. The tool displays a country's updated, comparable data on five of the six global nutrition target indicators (low birth weight is not yet included). It is an interactive tool, featuring for each of the indicators status at baseline, recent trends, and required progress to reach set targets for 2025. This tool is also meant to provide benchmarks to track target achievements, identify gaps, and trigger action.

Evidence-informed policy planning for nutrition provides guidance on *Developing Country Scale-Up Plans* (WHO 2016b) through five proposed steps. These steps can be adapted to the country's context and situation by using global and local evidence. It was developed in close collaboration with the Evidence-Informed Policy Network.

The *Nutrition Landscape Information System* (NLIS) (WHO 2016i) offers country nutrition profiles, bringing together all WHO nutrition databases and including data on other related key indicators. NLIS includes obesity data and will in the future include data on the extended list of the Global Nutrition Monitoring Framework indicators, which include some diet indicators relevant to nutrition-related noncommunicable diseases.

The *WHO Conceptual Framework* (WHO 2016g) for stunted growth and development facilitates understanding of the different risk factors associated with child stunting, one of the global nutrition targets. Stunting is also closely linked to other global nutrition targets, and the framework highlights the need for a life course approach, recognizing women's health as the foundation for child nutrition and highlighting exclusive breastfeeding and appropriate complementary feeding.

The *e-Library of Evidence for Nutrition Actions* (eLENA) (WHO 2016d) provides information on approximately 100 evidence-informed diet- and nutrition-related interventions addressing all forms of malnutrition. The new eLENA mobile phone application allows access through smartphones in settings without reliable Internet access.

The required financial and human resources for implementing selected nutrition interventions can be assessed through the *OneHealth Tool* (WHO 2016l). This tool is designed to strengthen health system analysis, strategic planning, and costing. It contains a nutrition module with all the WHO essential nutrition actions, as well as other nutrition-specific and nutrition-sensitive interventions commonly delivered through the health sector. The OneHealth Tool includes various impact modules, one being the *Lives Saved Tool* (LiST) (WHO 2016u). LiST estimates the impact of selected interventions on child mortality and morbidity, including stunting, wasting, and anemia in pregnant women, and can therefore indicate whether the country targets are achievable or not given the planned program coverage and available human and financial resources.

The *Health Accounts Production Tool* (WHO 2016v) tracks expenditures on nutrition-specific and nutrition-sensitive actions. The tool may help in setting relevant and achievable nutrition outcome targets as well as setting SMART (specific, measurable, achievable, relevant, and time bound) spending targets that take into account financing gaps in relation to the scaling up of nutrition interventions.

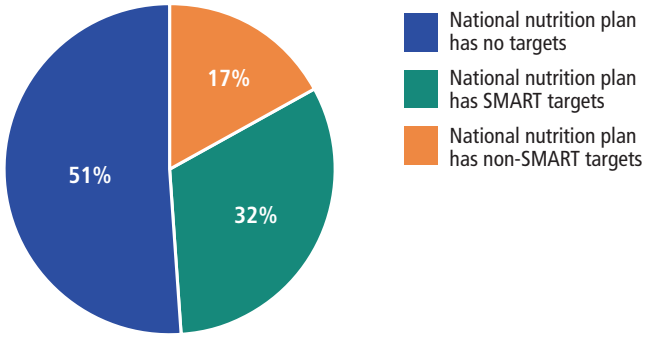
Implementation bottlenecks can be identified using tools such as the *Landscape Analysis Country Assessments* (WHO 2016h). Multisectoral country teams can use this participatory rapid assessment tool to systematically evaluate countries' commitments and capacities (that is, readiness) to act at scale.

The *Global Database on the Implementation of Nutrition Action* (GINA) (WHO 2016e) can help planners overcome implementation obstacles by learning from other countries' best practices. GINA furthermore provides a repository of country policy commitments and implemented actions (currently information for 184 countries).

There is also significant variation between targets. As shown in Figure 3.1, 86 of 122 country plans have targets for exclusive breastfeeding rates. At the other extreme, only 30 of 122 plans have targets for under-5 overweight rates. There are also differences in the proportions of these targets that are SMART: 82 percent of stunting targets are SMART (58 out of 71), but only 40 percent of childhood overweight targets are SMART (12 out of 30).

To help governments move forward and develop nutrition targets, the WHO has a range of tools to support national target setting. These tools, which are largely focused on undernutrition, are summarized in Panel 3.1.

FIGURE 3.2 Presence of maternal, infant, and young child nutrition targets in 122 national nutrition plans (%)



Source: Authors, based on data from Chizuru Nishida and Kaia Engesveen.
Note: SMART = specific, measurable, achievable, relevant, and time bound.

TABLE 3.1 Number of countries with targets for adult obesity, adult diabetes, and salt reduction, by WHO region

	Obesity	Diabetes	Salt reduction
African region	12	8	8
Region of the Americas	11	9	6
Eastern Mediterranean region	7	7	4
European region	9	9	7
South-East Asia region	7	5	5
Western Pacific region	17	17	13
Total	**63**	**55**	**43**

Source: Unpublished self-reported data from the NCD Country Capacity Survey, provided by the WHO Surveillance and Population-Based Prevention Unit, Department for Prevention of NCDs. Printed with permission.

NATIONAL TARGETS FOR NUTRITION-RELATED NONCOMMUNICABLE DISEASES

The global NCD targets were established as part of the NCD Global Monitoring Framework based on the historical performance of the top-ranked 10th percentile of countries to help set the level of achievement considered possible by 2025 (the targets are listed in WHO 2016p). To fill data gaps, the WHO established age-standardized baselines for 2010 for all targets, based on existing data and estimation methods. The WHO also routinely tracks progress and issues periodic global status reports.

The WHO is now encouraging and supporting member states to develop national targets that build on those set in the NCD Global Monitoring Framework but are based on their own national situations. To adapt the global targets to the national level, the WHO advises that countries review their current performance in preventing and managing NCDs; the current level of NCD-related mortality; exposure to risk factors; and NCD-oriented programs, policies, and interventions, both planned and in place.

The WHO has produced a range of guidance documents to support national governments in setting targets consistent with the global NCD targets. The first is a detailed guidance to member states so they can correctly measure each of the 25 indicators and monitor their progress over time. For each indicator, a complete definition is provided; appropriate data sources are identified; and a detailed calculation, where applicable, is provided. The second tool is an Excel-based worksheet that allows countries to enter current prevalence data to calculate the level they may wish to set for a target and the values they would aim for by 2025 and any interim years they may wish to monitor.[4]

The WHO supports countries in using these tools in multicountry workshops where countries review their existing data sources, level of programmatic response, and future planned investments in NCD prevention and control, and consider appropriate levels for national target setting. The tools are also used in individual country missions.

The WHO NCD group uses its NCD country capacity survey, which collects self-reported data, to track how many national NCD plans include these targets, including a 0 percent rise in obesity/diabetes and a 30 percent reduction in salt/sodium intake. Table 3.1 shows data reported by 174 countries. Of these, 36 percent have targets for obesity, 31 percent for diabetes, and 25 percent for salt reduction. Some countries have used the same or similar targets as those set globally. For example, Kenya has set national targets of a 0 percent rise in obesity and diabetes by 2020—the same as the global target, but for 2020 rather than 2025 (Panel 3.2). Salt reduction has a lower target of 15 percent by 2020. Other countries have used more ambitious targets. For example, in the South African Strategy for the Prevention and Control of Obesity, government ministers "commit [themselves] and call on all

PANEL 3.2 NATIONAL PLANNING TO ADDRESS OBESITY IN KENYA

LINDSAY JAACKS, JUSTINE KAVLE, ALBERTHA NYAKU, AND ABIGAIL PERRY

Few countries in Africa south of the Sahara have national responses to address the obesity epidemic despite the fact that in many countries (such as Ghana, Kenya, Mauritania, Niger, Sierra Leone, Tanzania, and Zimbabwe), the prevalence of overweight and obesity among women 19 to 49 years old is approaching 50 percent in urban areas (MQSUN 2016). In Kenya, approximately one in two women living in urban areas and one in four living in rural areas is overweight or obese, as are approximately 15 percent of adolescent girls (15 to 18 years old) living in urban areas and 8 percent living in rural areas (Jaacks, Slining, and Popkin 2015), and about 5 percent of children younger than five years (Tzioumis et al. 2016). The increasing prevalence of overweight and obesity has contributed to a rapid increase in noncommunicable diseases (NCDs), which now account for 27 percent of deaths in Kenyans 30 to 70 years of age (WHO 2016q).

The government is beginning to take action—one of only a few examples of such action from the region. In 2015 the Ministry of Health published the Kenya National Strategy for the Prevention and Control of Non-communicable Diseases 2015–2020, which includes a target of no increase in obesity and diabetes among adults. This target is similar to the obesity target set in the NCD Global Monitoring Framework. The National Nutrition Action Plan (2012–2017) (Kenya, Ministry of Public Health and Sanitation 2012) outlines specific activities to address the increase in overweight and obesity in Kenya, including the following: review, develop, and disseminate a comprehensive strategy and guidelines for preventing, managing, and controlling nutrition-related NCDs; train service providers and create public awareness on the importance of preventing, managing, and controlling nutrition-related NCDs; scale up community screening of body mass index (BMI) and waist circumference; and improve nutrition in schools (that is, review, develop, and disseminate nutrition guidelines for schools, mobilize resources to sustain optimal feeding programs, and integrate nutrition education into school curricula).

For childhood obesity, the country's 2013 national maternal, infant, and young child nutrition policy guidelines state that childhood obesity is an emerging public health problem (Kenya, Ministry of Health, Division of Nutrition 2013), and in 2014, the nation's first lady made a commitment to addressing nutrition, urging a particular focus on childhood obesity. In response to this call to action, the Ministry of Health is currently developing a National Action Plan for the Prevention of Childhood Obesity based on the WHO tools contained in its publication *Prioritizing Areas for Action in the Field of Population-Based Prevention of Childhood Obesity* (WHO 2016m). A major gap noted by the ministry, however, is the lack of data for children 5 to 14 years of age.

While Kenya is taking steps in the right direction by integrating overweight and obesity into national health policies and plans of action, the country still needs to allocate funds for obesity programming, as well as greater funding for nutrition in general. Further political support and will, including support from multiple sectors, are needed if the goal of halting the increase in obesity is to be achieved.

stakeholders to support and strengthen efforts to prevent and reduce the prevalence of obesity by 10 percent by 2020" (South Africa, Department of Health 2015, 10).

Panel 3.2 provides more detail about the developing plans to address obesity and NCDs in Kenya, including through the adoption of targets.

SUBNATIONAL TARGETS

There is a rising need for nutrition targets at the level of subnational administrative units. Policy makers need targets to guide actions that will lead to zero levels of malnutrition, subnational administrators need them as responsibility for implementing nutrition programs gets decentralized, businesses need them to identify opportunities, external donors need them to target their interventions, and those in civil society need them to promote accountability for the most vulnerable. But setting targets at the subnational level is not easy: it requires capacity at the subnational level to monitor progress against targets, and it requires politically courageous subnational leaders as their efforts become more transparent.

The state nutrition missions of India are an example of where laudable commitment has not, to date, been fully backed up with targets. These missions serve six states,

PANEL 3.3 STATE NUTRITION MISSIONS IN INDIA: DOING POORLY ON TARGET SETTING

NEHA RAYKAR AND PURNIMA MENON

Although declines in India's child undernutrition rates have accelerated since 2006, these faster developments are still well below the rates of progress needed to achieve the global nutrition targets adopted by the World Health Assembly (WHA) to which India is a signatory. India lags behind many poorer countries in Africa south of the Sahara; at current rates of decline, India will achieve the current stunting rates of Ghana or Togo by 2030 and that of China by 2055. Further, nutritional status and progress in India vary markedly across its states. India urgently needs to take target setting to the subnational level to achieve global nutrition targets and Sustainable Development Goals (SDGs).

To look at challenges related to state-level target setting for nutritional outcomes, we assessed whether states that have declared commitment to nutrition in the form of an independent state nutrition mission also included time-bound targets for improvements in nutrition. Maharashtra was the first state in India to launch its mission in the form of an autonomous technical and advisory body, in 2005, under the Department of Women and Child Development. Subsequently, five other states have launched their respective missions based on the Maharashtra model: Madhya Pradesh, Uttar Pradesh, Odisha, Gujarat, and Karnataka. All six state nutrition missions focus on the 1,000-day postconception period and commit to improving intersectoral coordination in order to improve child nutrition.

State	Does the state nutrition mission have time-bound global nutrition targets?					
	Under-5 stunting	Under-5 wasting	Low birth weight	Under-5 overweight	Anemia in women of reproductive age	Exclusive breastfeeding
Uttar Pradesh	Yes	Yes	No	No	Yes	Yes
Maharashtra[a]	No	No	No	No	No	No
Odisha	Yes	Yes	No	No	No	No
Karnataka	No	No	No	No	No	No
Gujarat	No	No	No	No	No	No
Madhya Pradesh	No	No	No	No	No	No

Source: Maharashtra, Health and Nutrition Mission (2016); Uttar Pradesh, State Nutrition Mission (2014); Odisha, Women and Child Development Department (2016); Karnataka Comprehensive Nutrition Mission (2016); Gujarat, Health and Family Welfare Department (2012); Madhya Pradesh, Women and Child Development Department (2016).

[a] Maharashtra monitors some of these indicators under its action plan, but there are no time-bound targets for any of these.

Continued

with a combined population of more than 300 million people, that have chosen to make a public commitment to nutrition improvement. Yet, as Panel 3.3 shows, few of them actually have numerical, time-bound targets for improvements in nutrition status indicators. One reason the nutrition missions in India do not cover all targets enumerated in Panel 3.3 is likely that they are typically housed in the state Department or Ministry of Women and Child Development (WCD), whose agenda is supplementary nutrition. Issues that fall in the domain of other departments, such as health, do not get articulated in WCD departments' plans or missions. This situation demonstrates the need for multisectoral missions or agencies, cutting across departments, with clearly defined and measurable targets and monitorable action points for all sectors.

BUSINESS TARGETS

Countries are not the only stakeholders for whom target setting can provide focus and promote accountability.[5] As the *Global Nutrition Report 2015* demonstrated, busi-

Continued

PANEL 3.3 STATE NUTRITION MISSIONS IN INDIA: DOING POORLY ON TARGET SETTING

NEHA RAYKAR AND PURNIMA MENON

Some insights arose from examining target setting in the context of Indian state nutrition missions:

1. Only two of the six states have clear, measurable targets for nutritional outcomes—Uttar Pradesh State Nutrition Mission and Odisha's Nutrition Operation Plan. The action plan of Maharashtra's Rajmata Jijau Mother-Child Health and Nutrition Mission includes monitoring of 10 important indicators related to maternal and child health but does not specify measurable targets and time frames for these indicators. The states of Gujarat, Madhya Pradesh, and Karnataka do not include any specific targets in their mission statements.
2. Not all targets align with the global nutrition targets: Uttar Pradesh includes four of the six targets—it excludes low birth weight and overweight prevalence but includes underweight prevalence as an additional indicator that is not a global target. Odisha's Nutrition Operation Plan includes only stunting, wasting, and underweight, excluding the other global targets of women's anemia, exclusive breastfeeding, child overweight, and low birth weight.
3. In states that have targets, the targets are based on older data. For example, the Uttar Pradesh State Nutrition Mission's plan for 2014–2024 is based on findings from India's National Family Health Survey 3 (NFHS-3), from 2005–2006, and includes time-bound targets for stunting, wasting, underweight, exclusive breastfeeding, and women's anemia. Progress across the target indicators could instead be measured using the recently released Rapid Survey on Children 2014 data for baseline values to reflect the most recent status of undernutrition in the state. Likewise, Odisha's Nutrition Operation Plan, aimed at accelerating underweight reduction in 15 high-burden districts of the state, includes targets for stunting, wasting, and underweight based on NFHS-3, 2005–2006 levels.

An urgent action call is needed for all states to use new, updated data to report the current status of nutrition and set new targets, cover all six globally agreed target indicators, and ensure the availability of appropriate data collection mechanisms that deliver comparable data on these targets over time. Target setting is the first order of business to strengthen accountability. The next is collecting data on stated targets.

nesses have a large influence on nutrition outcomes. How many of the large food and beverage companies set nutrition targets? The Access to Nutrition Index (ATNI) assesses the extent to which major food and beverage companies make clear commitments or have formal policies on key issues and, in selected areas, whether they set quantifiable targets.

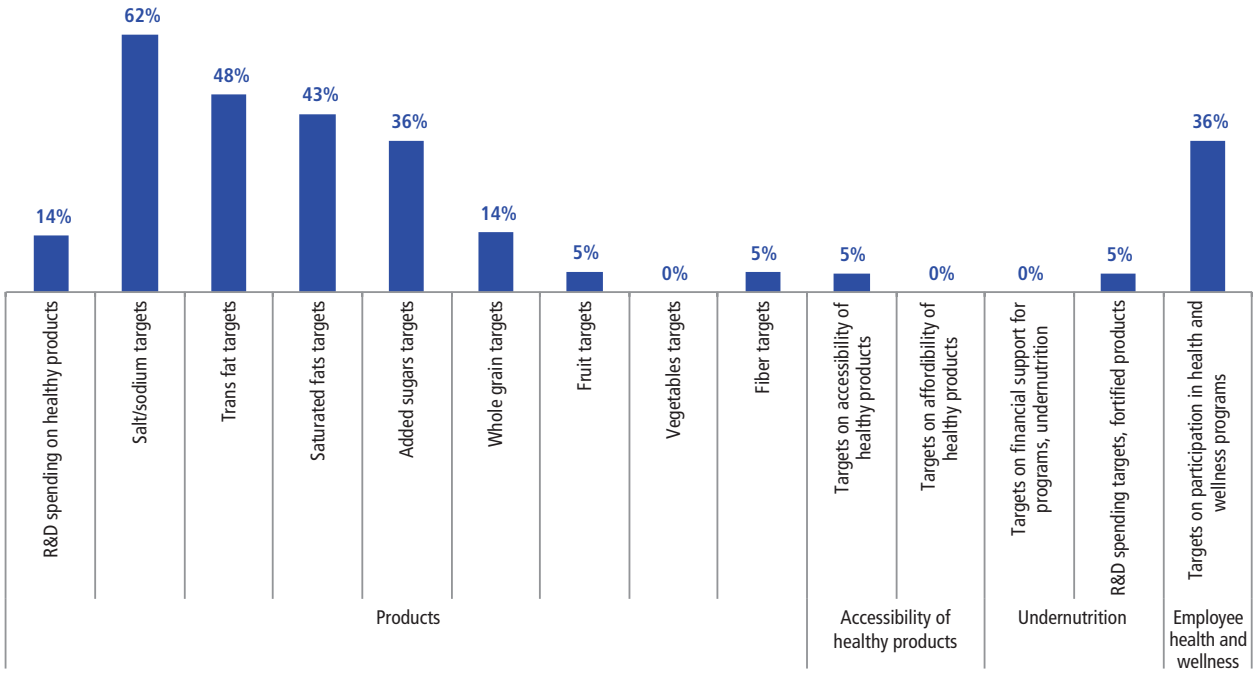
In the 2016 global ATNI, 22 companies were scored on whether they set targets in 14 areas that lend themselves to more quantitative goals. Figure 3.3 shows that companies have generally not made or published clear, measurable targets.

With respect to the nutritional composition of their products, 62 percent of companies (13 of 21 for whom it is relevant) have set targets for reducing salt (or sodium) in their products. Ten out of 21 companies—nearly 50 percent of relevant companies—have set a target on trans fats. And while some have set targets to reduce saturated fats or sugar, hardly any have set targets to increase the levels of more health-giving ingredients, such as whole grains, fiber, fruits, and vegetables.

In the other areas where ATNI assesses whether companies have targets, such as the accessibility or affordability of health-promoting products, research and development spending for fortified products, or financial support for undernutrition programs, performance is lamentable, with only one company setting a target on two out of the four dimensions of performance. Even in the area of employee health and wellness, only eight companies (36 percent) set targets for the level of participation they hope to encourage in these programs.

Companies are run, and their value assessed, by setting and performing against key targets: targets for revenue and margin growth, market penetration, brand

FIGURE 3.3 Share of companies in the Access to Nutrition Index that set clear targets in a range of areas



Source: Analysis and data from Rachel Crossley, Access to Nutrition Foundation.

Note: Number of companies = 22. R&D = research and development.

recognition, and many more metrics. That is to say, managers know that what gets measured gets managed.

CALLS TO ACTION

1. **Set more SMART targets.** All national governments should establish SMART national targets for stunting, wasting, exclusive breastfeeding, low birth weight, anemia, childhood overweight, adult obesity, diabetes, and salt reduction by the end of 2017. These targets should be ambitious but achievable and aligned.
2. **Establish more subnational targets.** National nutrition plans should develop and incorporate nutrition outcome and input targets for major administrative regions.
3. **Food and beverage companies should set and report against a larger number of SMART targets to improve nutrition.** Key areas are adherence to the International Code of Marketing of Breast-milk Substitutes, significant reductions in advertising and marketing to children, and the reduction of sugar, salt, and fat across their entire product lines. Companies should also clearly publish these targets, as well as their performance against them. The next Access to Nutrition Index evaluation should report substantial progress in these areas from the 22 largest global food and beverage companies assessed.

4 PROGRESS AGAINST AND NATURE OF THE 2013 NUTRITION FOR GROWTH COMMITMENTS

ON JUNE 8, 2013, THE GOVERNMENTS OF THE UNITED KINGDOM AND BRAZIL, AND THE CHILDREN'S INVESTMENT FUND FOUNDATION (CIFF) HOSTED A SUMMIT IN London titled "Nutrition for Growth: Beating Hunger through Business and Science" (known as N4G). The objective of the summit was to mark a "seminal declaration by leaders to scale up political commitment, increase resources, and take urgent action on nutrition" (United Kingdom 2013a, 1).

At the summit, 90 stakeholders—countries, international agencies, donors, businesses, and civil society organizations (CSOs)—made commitments that were published in the N4G Commitments document (United Kingdom 2013b) (see Panel 4.1). A further 20 stakeholders made commitments after the summit, leading to a total of 204 commitments made by 110 stakeholders.

The *Global Nutrition Report* was established at the summit in part to track these commitments. The *Global Nutrition Reports* of 2014 and 2015 provided an assessment of progress in implementing these commitments. Here we assess progress in implementing the commitments between 2015 and 2016, and compare progress across the three years of reporting based on reports provided by the stakeholders (details on methodology appear in Appendix 7 [online]). In addition, in light of future N4G summits and the recent developments of the Second International Conference on Nutrition (ICN2) and the Sustainable Development Goals (SDGs), we conduct an assessment of the N4G commitments to action. We ask three questions: Are the 2013 N4G commitments SMART (specific, measurable, achievable, relevant, and time bound)? Are they aligned with all forms of malnutrition? And finally, how aligned are the government commitments with the recommendations for action agreed upon multilaterally at ICN2?

PROGRESS DURING 2015 ON IMPLEMENTING THE 2013 N4G COMMITMENTS

RESPONSE RATE

The response rate from signatories in reporting on their commitments was 65 percent in 2016, compared with 92 percent in 2014 and 83 percent in 2015. Donors and UN agencies posted the highest response rates (more than 80 percent) and businesses posted the lowest (31 percent), with countries (60 percent), civil society (80 percent), and other organizations (75 percent) falling in between. Rates declined among all types of signatories. The decline among businesses was particularly notable: from 83 percent in 2014 to 72 percent in 2015 to 30 percent in 2016. Donors, however, consistently achieved a 100 percent response rate in reporting on their financial commitments in all three

KEY FINDINGS

This chapter assesses whether commitments made at the 2013 Nutrition for Growth Summit are on course, are SMART (specific, measurable, achievable, relevant, and time bound), consider all forms of malnutrition, and are aligned with intergovernmental recommendations for action since 2013.

- Two-thirds of Nutrition for Growth (N4G) commitments are on course. Different groups are progressing at different paces.

  On policy and program commitments,

  - 9 out of 12 donors are on course,
  - 6 out of 7 UN agencies are on course,
  - 9 out of 21 national governments are on course,
  - 7 out of 11 civil society organizations are on course, and
  - 7 out of 29 companies are on course to meet workforce commitments.

  On donor financial commitments,

  - the 10 donors have met about 61 percent of their nearly US$20 billion N4G commitment;
  - taking the United States and the World Bank out of this assessment (because their commitments were from 2013 to 2015), the remaining 8 donors have met about one-third of their N4G commitments; and
  - this performance is encouraging, but the World Bank and the United States need to make new, more ambitious, SMART commitments for 2016 onward.

- Fewer stakeholders reported their progress on N4G commitments this year—only 65 percent—with a particular drop in business responses. "Reporting fatigue" or irregular N4G reporting cycles could explain this phenomenon.

- The majority of the N4G commitments are not SMART and thus are difficult to monitor. In fact, only 29 percent of the 2013 N4G commitments are SMART.

- The majority of N4G commitments do not specify which types of malnutrition they are seeking to address. Where they do, commitments focus on stunting, wasting, and exclusive breastfeeding. N4G commitments do not address malnutrition in all its forms: obesity, overweight, and noncommunicable diseases are conspicuous in their absence.

- A shift is needed away from the existing 2013 N4G commitments toward a new unified set of commitments to address malnutrition in all its forms. The Decade of Action for Nutrition, the Nutrition for Growth Summit in Brazil, and SDG target setting at the country level provide excellent opportunities to ensure that future commitments are SMART and address malnutrition in all its forms.

PANEL 4.1 THE NUTRITION FOR GROWTH COMMITMENTS

PATRIZIA FRACASSI

At the 2013 Nutrition for Growth (N4G) Summit, 110 stakeholders made four types of commitments to action:

- Impact commitments focus on concrete outcomes that align with, for example, World Health Assembly targets for exclusive breastfeeding or stunting.
- Financial commitments focus on the sources and amounts of funding to be directed toward nutrition targets.
- Policy commitments create a more enabling environment for nutrition action or implement specific policies to improve nutrition.
- Program commitments focus on the implementation of concrete strategies to achieve nutrition targets.

Under the leadership of the governments of the United Kingdom and Brazil, and the Children's Investment Fund Foundation (CIFF), the N4G Summit stakeholders decided to focus on undernutrition. Commitments were made to achieve three main goals based on technical recommendations developed by a mixed group of experts from different national and international institutions:

1. Ensure that effective nutrition interventions reach at least 500 million pregnant women and children under 2.
2. Reduce the number of stunted children under 5 by at least 20 million by 2020.
3. Save the lives of at least 1.7 million children under 5 by preventing stunting, increasing breastfeeding, and increasing treatment of severe acute malnutrition (United Kingdom 2013a).

In the run-up to N4G Summit, the N4G's steering and technical advisory committees identified a number of high-priority areas for feasible commitments. From those high-priority areas, **countries** chose commitments related to (1) setting targets for reducing undernutrition, (2) stating the levels of domestic support, (3) establishing new arrangements to improve governance and legislation, and (4) strengthening the monitoring of progress and the transparency of reporting. In particular, the emphasis on governance arrangements pointed to the importance of strong executive leadership and cross-ministry coordination. In each signatory country, government focal points for nutrition, with the support of technical partners, played a key role in developing national commitments in the run-up to the London event. In most cases the commitments made in London reflected the work done at the country level. This enabled the countries to report on the results of their commitments to the *Global Nutrition Report* in the following years.

For **businesses** a first step was to support the productivity and health of their workforces by introducing a nutrition policy and improving policies for maternal health, including support for breastfeeding mothers. Some businesses further committed to improving the nutrition delivered by food systems so that mothers and children have access to the affordable, nutritious foods they need.

For **donors**, the emphasis was on mobilizing and aligning international resources, empowering country-led coordination arrangements, and facilitating mutual learning (for example, South-South knowledge sharing) and technical assistance. In this regard, the Scaling Up Nutrition (SUN) Donor Network developed a common methodology to track donor funds.

Civil societies committed to mobilizing private resources to support the scale-up of nutrition programs, particularly in fragile states, and they committed to coordinating actions for aligned responses to undernutrition. Advocacy and transparency of information were seen as ways to allow citizens to hold their governments accountable for their commitments and to drive forward action and progress on nutrition.

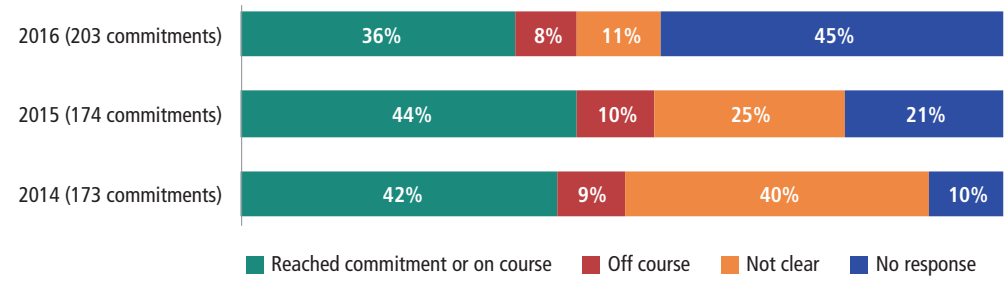
The **United Nations and UN member states** focused their efforts on jointly setting clear and ambitious targets for nutrition with relevant indicators within the Sustainable Development Goal agenda.

years (but a lower rate of reporting on their nonfinancial commitments in 2016) (full details on responses from signatories appear in Appendix 7 at www.globalnutritionreport.org).

It is not clear why the response rate was lower in 2016 across all signatories despite a consistent process of engagement to encourage responses and a facilitated platform for reporting. Several possible reasons are the following:

- There could be response fatigue; three years of intense data reporting with different due dates can be demotivating if the rationale is not apparent.
- The *Global Nutrition Report* time frames shift each year because releases are timed to coincide with important international nutrition events, which do not fall at the same time each year, preventing a consistently timed reporting schedule.

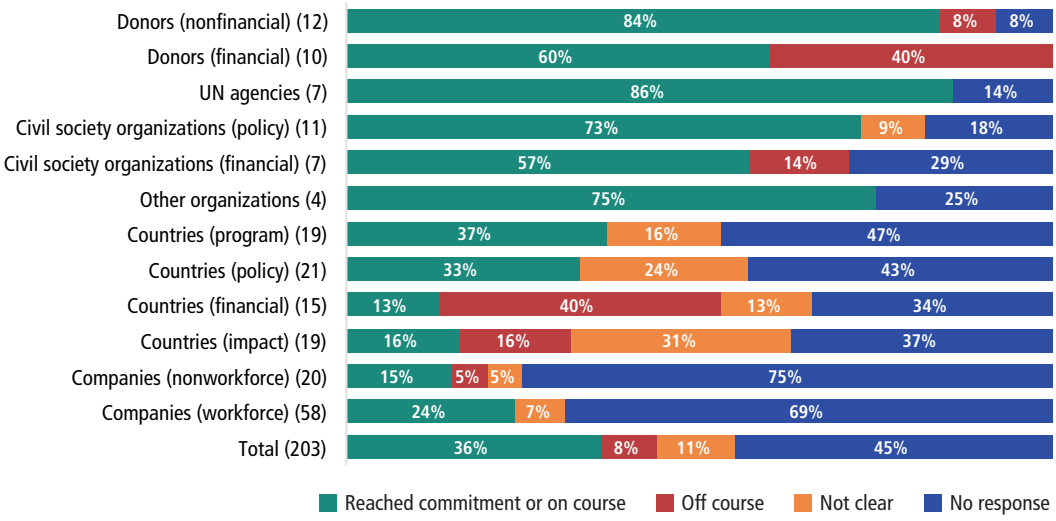
FIGURE 4.1 Overall progress against N4G commitments, 2014, 2015, and 2016



Source: Authors.

Note: In 2013, 204 commitments were made, but the 2014 *Global Nutrition Report* included only 173 of them because businesses were not ready to report on all of their commitments in 2014. Response rates in Figure 4.1 are given only for commitments being tracked in both 2014 and 2015. The number of commitments is 174 in 2015 and 173 in 2014 because Ethiopia did not separate its N4G commitment into program and policy components in its 2014 reporting, but it did so in 2015. The total number for 2016 includes all commitments made, totaling 203; this total differs from the initial 2013 total because the Naandi Foundation was taken out of the reporting process.

FIGURE 4.2 Progress against N4G commitments by signatory group, 2016



Source: Authors.

- The 2016 report had a particularly short reporting schedule, with just seven months between reporting periods owing to the anticipated Rio N4G Summit in 2016.
- There has been turnover in critical staff among the organizations reporting, resulting in the loss of historical perspective on prior N4G reporting and knowledge.

There may well be additional reasons. Further work is needed to understand why businesses had a significantly lower reporting rate than the other types of stakeholders.

OVERALL PROGRESS

In the 2016 assessment, a smaller number of stakeholders reported being on course or having met their commitments (36 percent) than in 2014 and 2015, in part a result of the lower response rate (Figure 4.1[1]). A further 19 percent of the commitments either were off course or were assessed as not clear because insufficient evidence was provided to make an assessment.

Of the responses received, however, more than two-thirds of the commitments were assessed as on course (36 percent out of 55 percent), which is a higher proportion than in 2014 and 2015 (Figure 4.1).

Panel 4.2 provides examples of on-course commitments from different stakeholders and what they did; more details on two of the commitments are given in Panels 4.3 and 5.5.

Donors, CSOs, UN agencies, and "other" organizations had success this year in making progress toward their policy and programmatic commitments. Between 57 percent and 86 percent of them reported being on course or having reached their commitments (Figure 4.2). In contrast to

PANEL 4.2 EXAMPLES OF ON-COURSE AND ACHIEVED COMMITMENTS MADE AT N4G 2013

SWETHA MANOHAR AND SARA GLASS

The following are examples of commitments—made by various stakeholders at the 2013 Nutrition for Growth (N4G) Summit in London—that have been met or are on their way to being met. Although this panel does not address whether these commitments were ambitious or successful in attaining improved nutrition status, it does show what the commitments were and how they were achieved.

UN Agencies

- The International Fund for Agricultural Development (IFAD) committed to orienting approximately 20 percent of all new IFAD-funded projects toward achieving nutrition outcomes. In 2016, IFAD reported allocation of 21 percent of funding for nutrition-sensitive projects.
- UNICEF made several commitments, one of which was to support implementation of Multiple Indicator Cluster Surveys (MICS) in about 50 countries over the next three years. UNICEF has reported implementing MICS in more than 50 countries, with more than 58 surveys implemented, in progress, or planned since 2013 (more details in Panel 4.3).

Governments

- The government of Bangladesh committed to reducing stunting from 41 percent (in 2011) to 38 percent (in 2016), reducing wasting from 16 percent (in 2011) to 12 percent (in 2016), mobilizing domestic and international financial support for national efforts to improve nutrition, and reviewing national policy and safety-net programs for explicit focus on nutrition-specific and nutrition-sensitive interventions. It reached its policy commitments by endorsing the National Nutrition Policy 2015 and the National Strategy for Micronutrient Deficiency Control. Nearing endorsement are a nutrition advocacy component of the Comprehensive Social and Behaviour Change Communication Strategy and revision of rules under the Breast Milk Substitutes Act of 2013. Additionally, the Seventh Five-Year Plan, National Nutrition Policy, National Food Policy, and other relevant sectoral policies and strategies have addressed undernutrition by including cross-sector nutrition-specific and nutrition-sensitive approaches. Bangladesh is on course to attain its other commitments.
- The government of Burkina Faso attained its policy commitment of promising to include civil society organizations and parliamentarians as key stakeholders in nutrition. Civil society was brought in through its inclusion in the multisectoral platform, with journalists contributing to nutrition awareness activities and increasing the visibility of nutrition by organizing communication trailers about exclusive breastfeeding in certain areas of the country.

Donors

- Germany committed US$105 million and provided $102 million to nutrition-specific and nutrition-sensitive interventions, setting it on course to achieve its commitment of providing a total of €200 million ($260 million) in additional funding for nutrition-specific and nutrition-sensitive interventions between 2013 and 2020.
- The World Bank committed $600 million to support maternal and child nutrition programs in developing countries—a threefold increase from its spending in 2011–2012. It achieved its commitment from July 1, 2013, through June 30, 2015, during which it disbursed $1,627 million in new nutrition-specific and nutrition-sensitive commitments.
- The Bill & Melinda Gates Foundation disbursed $90.9 million in 2014, setting it on course to achieve its pledged overall investment of $862.7 million in nutrition-specific and nutrition-sensitive programs by 2020.

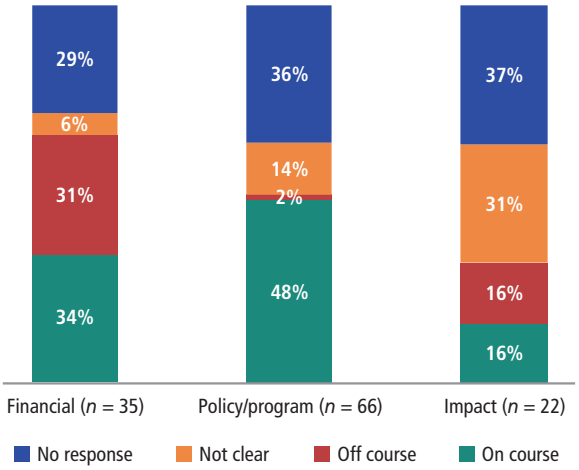
Businesses

- In 2015 Cargill completed the $150,000 in funding it committed to the Notre Dame Haiti Program, which has established a salt fortification facility that produces 3,000 metric tons a year (see Panel 4.3).
- Royal DSM committed to supporting improved nutrition for 50 million beneficiaries per year by 2020. Through its largest partnership with the World Food Programme, DSM reached 25.1 million beneficiaries in 2014.

Civil Society

- Concern Worldwide committed $25,300,000 and invested $31,709,300 in nutrition-specific actions.
- Helen Keller International committed to building an evidence base for nutrition-sensitive interventions, supporting large-scale food fortification efforts in Burkina Faso, securing private funding to support nutrition initiatives, and playing a leadership role in global nutrition initiatives. It is on course with these commitments (see Panel 5.5 in Chapter 5).

FIGURE 4.3 Progress by commitment type, pooled across donors, civil society organizations, and countries



Source: Authors.

2015, a larger proportion of CSOs were assessed as on course for their policy commitments (73 percent) than for their financial commitments (42 percent). As in 2015, a larger proportion of governments were assessed as on course for their program and policy commitments than for their financial and impact commitments.

Signatories that made financial N4G commitments, including donors, countries, and CSOs, made a total of 35 financial commitments (Figure 4.3). Of these, 34 percent were assessed as on course for being reached, 31 percent off course. We did not receive responses for 29 percent of financial commitments.

The largest proportion of commitments assessed as on course were those related to policy and programming (48 percent), followed by financial commitments (31 percent) and impact commitments (16 percent). Impact commitments were made only by countries, and they had the lowest response rates (63 percent) out of the three commitment types; they also the largest proportion assessed as not clear (31 percent). Financial commitments had the largest proportion assessed as off course (31 percent).

A deeper look at donors' financial commitments

Although the financial commitments were least likely to be on course, donors performed well. In total, 10 donors made financial commitments at the 2013 N4G Summit. Six of these commitments either were on course or had been achieved by the 2016 assessment (Appendix Table A7.3 [online]). Among the remaining 40 percent assessed as off course, all have shown marked increases in nutrition-sensitive and nutrition-specific disbursements since 2013 (see Chapter 7, Table 7.1, for more details).

But as a set, how are the donors performing in relation to their N4G commitments? Table 4.1 reminds us of the N4G financial commitments made and summarizes reporting on those commitments over each donor's commitment period.

TABLE 4.1 Donor financial commitments at N4G and reporting on those commitments

Donor	N4G commitment	Reporting on commitment in *Global Nutrition Reports, 2014–2016*
Australia	Extra A$40 million (about US$37 million[a]) over 2013–2017	US$108 million disbursed over 2013 and 2014, but not clear how much is additional. Assume all.
European Union	$4,565 million, 2014–2020	$615 million disbursed in 2014
Germany	$260 million additional funding, 2013–2020	$160 million disbursed over 2013 and 2014. Assume $96 million ($160 million – 2 × $32 million [the 2012 level]) is additional.
Ireland	$338 million, 2013–2020	$134 million disbursed over 2013 and 2014
Netherlands	$390 million, 2013–2020	$85 million disbursed over 2013 and 2014
United Kingdom	$1,922 million, 2013–2020	$1,707 million disbursed over 2013 and 2014
United States	$10,015 million, 2012–2014	$7,488 million disbursed over 2012–2014
Bill & Melinda Gates Foundation	$863 million, 2013–2020	$218 million disbursed over 2013 and 2014
Children's Investment Fund Foundation	$793 million, 2013–2020	$65 million disbursed over 2013 and 2014
World Bank	$600 million, 2013–2014	$1,627 million reported as covering 2013 and 2014
Total	$19,863 million	$12,143 million (or 61% of the commitment)

Source: Authors; N4G commitments are available at United Kingdom (2013b).

Note: A$ = Australian dollars; all other dollar amounts are in US dollars. See Table 7.1 for a complete summary of donor reporting.

[a] Converted to US dollars using 2013 exchange rate from www.irs.gov/Individuals/International-Taxpayers/Yearly-Average-Currency-Exchange-Rates.

From Table 4.1 it would appear that donors are well on their way to meeting their $19.86 billion N4G commitment: they have met 61 percent of the pledge. However, this strong performance is influenced by the sizable disbursements made by the World Bank and the United States, two large donors that made two- to three-year commitments in contrast to other donors' seven- to eight-year commitments. Taking the World Bank and the United States out of the assessment, the remaining eight donors have met about 33 percent of their total N4G financial commitments—progress that, two years into an eight-year period, puts them ahead of schedule.

Given that their commitment periods have now been completed, we look to the World Bank and United States to make SMART and ambitious commitments for 2016 and beyond.

We look to the World Bank and United States to make SMART and ambitious commitments for 2016 and beyond.

Details of progress by signatory group

- **National governments:** For commitments to reduce undernutrition rates (impact), 3 of 19 governments either are on course or have reached their commitments based on their reported progress against these targets (Appendix Table A7.2). Two of 15 governments are on course to meet their financial commitments, and 9 of 21 are on course or have reached their policy/program commitments.
- **Donors:** Of the 10 financial commitments made by donors at the 2013 N4G Summit, 5 are on course and 1 has been reached (Appendix Table A7.3). Of the 12 donors that made policy/program commitments, 9 were assessed as on course for these commitments, and 1 had reached its commitment (Appendix Table A7.4).
- **Civil society organizations:** Of the 7 CSOs that made financial commitments at N4G, 4 are on course, 1 did not respond, 1 was unable to respond, and 1 is off course. Out of 11 that made policy/program commitments, 2 have reached their commitments, 6 are on course, 1 was assessed as not clear, and 2 did not respond (Appendix Table A7.5). As reported in 2014 and 2015, many of the N4G commitments focus on nutrition-sensitive work and the linkages between nutrition, WASH (water, sanitation, and hygiene), agriculture, and health. Panel 5.5 in Chapter 5 shows an example of a successful CSO commitment.
- **Businesses:** Of the 29 companies that made workforce commitments at N4G (that is, to produce a nutrition policy for their workforce and to improve policies for the maternal health of their workforce), 20 did not respond, 7 are on course, and 2 were assessed as not clear (Appendix Tables A7.7a and A7.7b). Of the 9 companies that responded, 7 are on a positive trajectory (continued or accelerated rate of progress) and 2 are on a downward trajectory (consistently slow or slowing rate of progress). Of the 20 companies that made nonworkforce N4G commitments, 5 responded: 3 are on course, 1 is off course, and 1 is not clear. Panel 4.3 presents an example of a company commitment.
- **UN agencies:** Similar to their performance in *Global Nutrition Report 2015*, the UN agencies reported that they continue to make progress on their N4G program- and policy-based commitments; 6 out of 7 UN agencies were assessed as being on course (Appendix Table A7.9). Panel 4.3 presents an example of a commitment from a UN agency.
- **Other organizations:** Other organizations included CABI (Centre for Agriculture and Biosciences International, which provides, among other services, a nutrition and food sciences database), CGIAR (a global agricultural research partnership), GAIN (Global Alliance for Improved Nutrition, an international organization addressing malnutrition), and Grand Challenges Canada (an organization that supports integrated innovation in global health). Of those organizations that responded, all were on course (Appendix Table A7.10).

HOW SMART, COMPREHENSIVE, AND ALIGNED ARE THE 2013 N4G COMMITMENTS?

Here we aim to address three questions: Are the 2013 N4G commitments SMART? Do they cover all forms of malnutrition? And finally, how aligned are they with the recommendations for action agreed upon multilaterally at ICN2?

SMARTNESS OF THE N4G ACTION COMMITMENTS

In the 2015 *Global Nutrition Report* we evaluated the "SMARTness" of the original 2013 N4G commitments.

SMART metrics are useful because they allow us to see where we are in a program or effort and make meaningful, helpful changes along the way to improve chances for success. Here we undertake a fuller analysis. To do so, we first defined what is meant by SMART commitments in the context of nutrition. As part of this process we produced a guidance note, "Making SMART Commitments to Nutrition Action: A Guidance Note." This note, reproduced in Appendix 5, is intended as a guide for preparing future commitments to ensure they are SMART. It also sets criteria for determining whether existing commitments are SMART.

Using this guidance note, we assess the N4G 2013 commitments, focusing on whether they are specific, measurable, and time bound according to the following criteria:

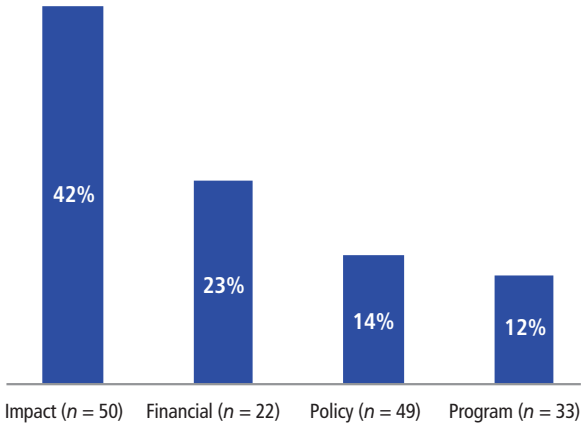
- A commitment was rated "specific" if it contained an action and denoted who is responsible for its achievement. Commitments that included an action but failed to identify who would take it were rated "not specific."
- A commitment was rated "measurable" if it contained quantifiable or semi-quantifiable statements that could be assessed. If there was a target-based commitment, baseline numbers needed to be provided. If there was no measurable commitment or action, it was rated "not measurable."
- A commitment was rated "time bound" if clear time frames or timelines were included in the text of the commitment. If there was no indication of timing, the commitment was rated not "time bound."

Though "A" (achievable) and "R" (relevant), the other aspects of SMARTness, are critical for country buy-in and monitoring purposes, they were not used in the assessment because including them would require a deep dive into the country's or organization's ongoing capacity and the nutrition situation where it is working.

Disappointingly, and as reported in the *Global Nutrition Report 2015*, the assessment found that only 29 percent of the original N4G commitments met the criteria.

Of the 154 N4G commitments made in 2013 by the 25 governments, 37 (24 percent) were SMART. When broken down by type of country commitment (Figure 4.4), the largest proportion of SMART commitments were impact commitments (21 of 50, or 42 percent), followed by 5 of 22 financial commitments (23 percent). A smaller proportion of policy and program commitments were SMART, with 7 of 49 (14 percent) and 4 of 33 (12 percent) assessed as SMART, respectively. Notably, the analysis above shows that the SMARTest types of commitments—impact and financial—were the least likely to be on course, while the vaguer policy and program commitments were more likely to be assessed as on course.

FIGURE 4.4 Share of total 2013 N4G country commitments that are SMART, by category



Source: Authors.

As reported in Figure 3.6 of the 2015 *Global Nutrition Report*, SMART rates for other stakeholders were as follows: 58 percent for businesses (nonworkforce commitments), 30 percent for other agencies, 26 percent for donors (nonfinancial commitments), 23 percent for UN agencies, and 10 percent for CSOs (nonfinancial commitments).

Some examples of SMART N4G commitments are shown in Panel 4.3. While we are not able to assess whether these commitments were effective in reducing malnutrition, on paper they matched the right elements of SMART.

ALIGNMENT OF N4G COMMITMENTS WITH GLOBAL NUTRITION TARGETS

The 2013 N4G Summit focused on undernutrition, particularly stunting, with less emphasis on malnutrition in all its forms. Because the N4G Summit took place before ICN2, the SDGs, and the adoption of the WHO's global noncommunicable disease (NCD) targets—all of which emphasize the wide range of malnutrition outcomes that need to be reversed—it would be surprising if the N4G commitments were aligned with these initiatives. Nevertheless, it is instructive to assess to what degree the 2013 N4G commitments are aligned with the full range of global nutrition targets for maternal, infant, and young child nutrition and nutrition-related NCDs (see Panel 2.1 in Chapter 2). Each of the 204 commitments made by signatories to the N4G compact was therefore examined for its alignment with these eight targets by noting whether any of these eight nutrition targets were mentioned in the signatories' commitments.

PANEL 4.3 SMART COMMITMENTS ARE EASIER TO MONITOR: EXAMPLES FROM CARGILL AND UNICEF

KATHERINE ROSETTIE, WERNER SCHULTINK, AND TARYN BARCLAY

Cargill made several SMART—that is, specific, measurable, achievable, relevant, and time-bound—commitments at the 2013 N4G Summit. As part of Cargill's Nourishing the Future initiative, one commitment was to explore new opportunities to work with the nongovernmental organization CARE's Integrated Program for Vulnerable Children in Central America (EDUCAN) in Guatemala. The aim was to reach an additional 6,000 households and 14,000 children with nutrition education in three main municipalities over a three-year period. This commitment includes all of the SMART elements: it is specific (it identifies a specific action and who is responsible for that action—CARE and Cargill teams in Guatemala), measurable (the number of households reached can be counted), achievable (Cargill and CARE have been making progress in engaging children and parents in nutrition education since 2009), relevant (Guatemala has a high prevalence of chronic malnutrition), and time bound (it set a three-year period beginning in 2013).

A second SMART commitment by Cargill was to allocate US$150,000 to promote sustainable salt fortification through its partnership with the Notre Dame Haiti Program (NDHP) over a three-year period. This financial commitment encompasses all five SMART elements: it is specific (it identified an action and who is responsible), measurable (the amount of money allocated to NDHP can be tracked), achievable (Cargill has been collaborating with and supporting the NDHP since the early years of this century), relevant (iodine deficiency and lymphatic filariasis affect millions of Haitians), and time bound (limited to a three-year period).

Because these are SMART commitments, we could clearly assess whether they have been implemented and attained their goals. In 2016, Cargill reported it had reached its target of 14,000 beneficiaries with nutrition education in the three main municipalities near Cargill's operations in Guatemala. Additionally, 70 percent of the 345 children sampled from the three target municipalities were found to have attained adequate knowledge of food and nutrition security. It also met its funding commitment to NDHP in 2015. NDHP has now established a 3,000 metric-ton-per-year salt fortification facility, and Cargill has also shipped about 1,500 tons of salt at market price from its solar salt operation in Bonaire to the Haiti program.

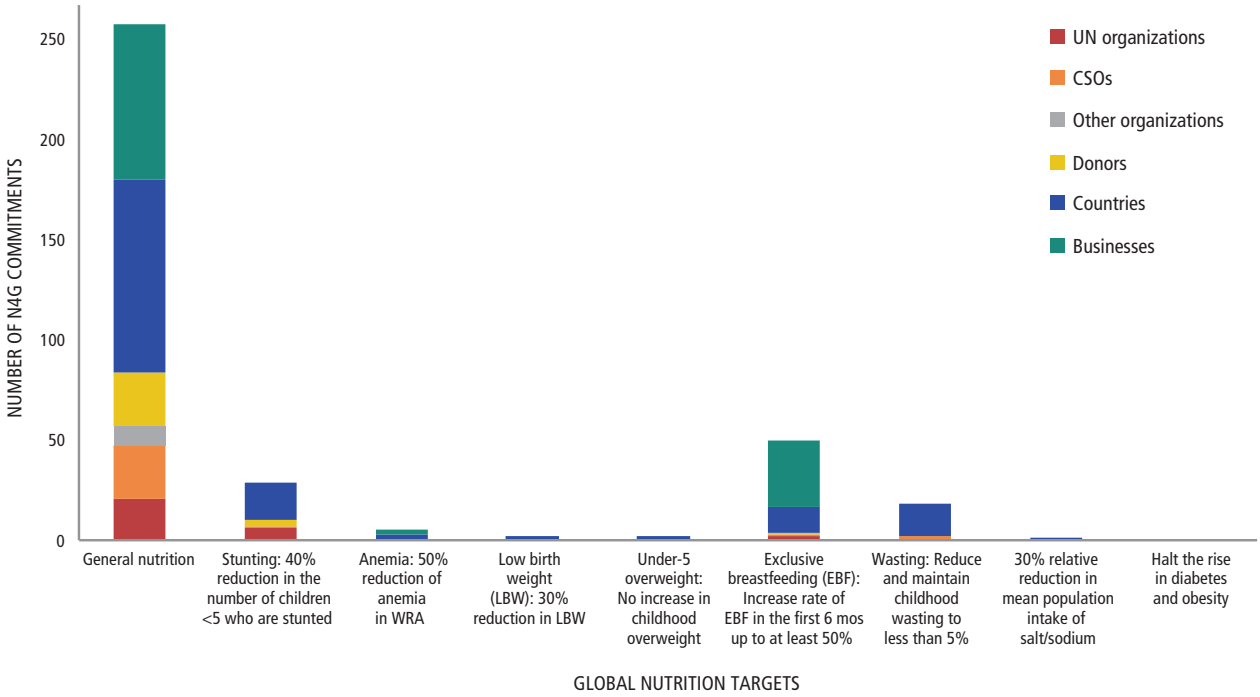
UNICEF also made several SMART commitments aimed at addressing global malnutrition at the 2013 N4G Summit. One was to work with government partners to include essential nutrition services in all health intervention packages delivered through Child Health Day (CHD) events over a five-year period. This commitment is specific (it identifies a specific action and indicates who is responsible for achieving it), measurable (the percentage of CHD events reached can be counted, up to 100 percent), achievable (UNICEF had already been working in many countries to improve the delivery of nutrition services), relevant (CHD events reach the most vulnerable populations, where malnutrition is most prevalent), and time bound (set over five years).

Because the commitment is SMART, it has been easier to identify that UNICEF is making substantial progress in incorporating nutrition services into CHD events. With support from the government of Canada, UNICEF has worked in 13 African countries to support governments in improving the effectiveness of semiannual Child Health Days. Specifically, UNICEF has successfully included vitamin A supplementation, behavior change communication messages focusing on nutrition, screening and referral for acute malnutrition, and growth monitoring and promotion at CHD events in Africa south of the Sahara.

A second SMART commitment made by UNICEF was to support the implementation of Multiple Indicator Cluster Surveys (MICS) in approximately 50 countries over three years. This commitment is SMART because it is specific (approximately 50 countries), measurable (the number of countries with MICS can be counted), achievable (UNICEF has successfully implemented MICS in many countries; this is its fifth round), relevant (MICS will be an important source of global data in the post-2015 era), and time bound (limited to three years). Since 2012, UNICEF has supported a total of 48 countries in conducting 59 MICS, 50 of which have published reports and 9 are in process toward survey completion.

Figure 4.5 shows that the vast majority of the commitments did not specify what forms of malnutrition they were aiming to address. However, as expected, of those that did, most were concerned with exclusive breastfeeding, followed by stunting and then wasting. The number of commitments that specifically referred to anemia, low birth weight, overweight, obesity/diabetes, and salt reduction were negligible. Interestingly, however, two countries—Tanzania and Sri Lanka—made commitments on obesity despite its not being a focus of the summit.

FIGURE 4.5 Number of N4G commitments referencing specific forms of malnutrition



Source: Authors.
Note: CSOs = civil society organizations; WRA = women of reproductive age; LBW = low birth weight; EBF = exclusive breastfeeding.

TABLE 4.2 Four examples of SMART, double-duty commitments to both undernutrition and obesity/nutrition-related noncommunicable diseases

ICN2 FFA recommendation (in abbreviated form)	Example of a SMART, double-duty commitment	How is this action double duty?
1: Develop—or revise, as appropriate—and cost national nutrition plans.	The Ministry of Health, with input from the Ministries of Agriculture, Education, Commerce, and Social Protection, and in consultation with civil society, develops (or revises) and costs a national nutrition plan by December 2017.	National nutrition plans should cover malnutrition in all its forms.
16: Establish food- or nutrient-based standards to make healthy diets and safe drinking water accessible in public facilities.	The Ministries of Education and Health develop nutrition standards for public schools adhering to WHO recommendations by June 2017 and ensure implementation in schools by December 2018.	Nutrition standards for schools should promote high diet quality for children at risk of undernutrition, overweight/obesity, and nutrition-related NCDs.
29: Adapt and implement the International Code of Marketing of Breast-Milk Substitutes and subsequent relevant World Health Assembly resolutions.	The legislative body incorporates the International Code of Marketing of Breast-Milk Substitutes and WHO guidance on inappropriate marketing of commercial foods for infants and children into national laws by December 2017.	Breastfeeding plays a role in preventing forms of undernutrition and overweight/obesity.
38: Provide dietary counseling to women during pregnancy for healthy weight gain and adequate nutrition.	The Ministry of Health mandates that dietary counseling of prospective mothers (and fathers) be part of the standard counseling provided during regular pregnancy check-up appointments at maternity clinics by June 2017.	Dietary counseling should include reference to the risk of all forms of malnutrition among children and be tailored, where applicable, to the forms of malnutrition women commonly experience.

Source: WCRF International and NCD Alliance (2016).

Note: These examples are aligned with the Framework for Action of the Second International Conference of Nutrition. FFA = Framework for Action; ICN2 = Second International Conference on Nutrition; NCD = noncommunicable disease; WHO = World Health Organization.

There is scope for nutrition commitments to address more than one kind of malnutrition at once. In the 2015 *Global Nutrition Report* we identified the potential of "double-duty" actions that have simultaneous benefits for, on the one hand, undernutrition and, on the other, obesity and nutrition-related NCDs. In May 2016, World Cancer Research Fund International (WCRF) and the NCD Alliance formulated examples of SMART double-duty actions that governments can take to address both undernutrition and obesity/nutrition-related NCDs, and that are aligned with the ICN2 Framework for Action (WCRF International and NCD Alliance 2016). Examples of SMART, double-duty actions appear in Table 4.2.

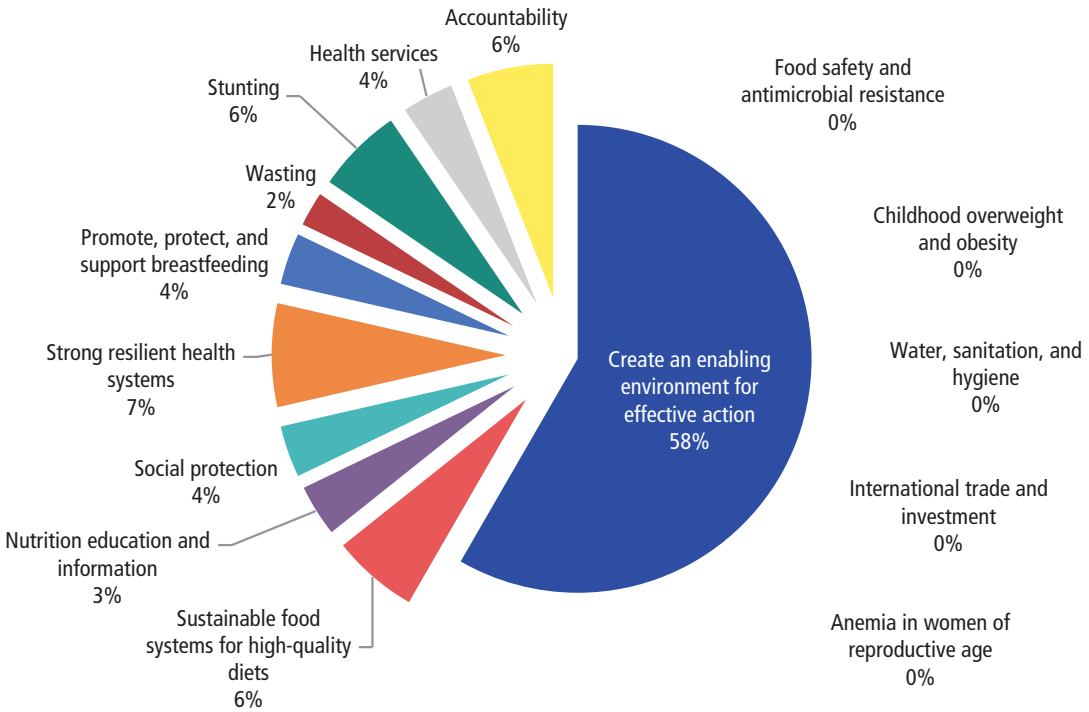
CONSISTENCY OF N4G COMMITMENTS WITH ICN2 RECOMMENDATIONS

This section focuses on which areas of the 2014 ICN2 Framework for Action are covered by the N4G commitments. There are 60 recommendations in the Framework for Action, divided into 15 action categories.

To identify areas of consistency and alignment, we reviewed the 75 N4G policy and program commitments to action made by governments and assessed which action categories (out of 15) and recommendations (out of 60) they reflected. We found a total of 87 commitments, but we only reported 84 as 3 did not fit in any category of the Framework for Action because no category captured micronutrient fortification and supplementation besides anemia. Where one N4G commitment included several different actions, we counted it more than once, making a total of 84 N4G commitments.

Figure 4.6 shows their numerical distribution. Given the focus of the N4G Summit on establishing new arrangements to improve governance (Panel 4.1), it would be expected that most commitments would be aligned with the first of the 15 categories in the Framework for Action—that is, the category on creating an enabling environment for nutrition action. This proved to be the case: 56 percent of the N4G commitments were so aligned.

FIGURE 4.6 Distribution of governments' N4G policy and program commitments within the ICN2 Framework for Action categories



Source: Authors.

Note: This figure shows the distribution of 84 N4G commitments among the 15 action categories in the Framework for Action of the Second International Conference on Nutrition (ICN2). There is no recommendation in the ICN2 Framework for Action that covers fortification and supplementation to reduce micronutrient deficiencies, but three of the N4G countries made program or policy commitments in this area.

Two-thirds of these enabling environment commitments fell into 2 of the 60 FFA recommendations:

- Recommendation 2: Develop—or revise, as appropriate—and cost national nutrition plans, align policies that impact nutrition across different ministries and agencies, and strengthen legal frameworks and strategic capacities for nutrition.
- Recommendation 3: Strengthen and establish, as appropriate, national cross-government, intersector, multistakeholder mechanisms for food security and nutrition to oversee implementation of policies, strategies, programs, and other investments in nutrition. Such platforms may be needed at various levels, with robust safeguards against abuse and conflicts of interest.

The other N4G commitments were scattered throughout the remaining 14 action categories, although there were none relating to anemia, childhood overweight, WASH, and international trade and investment.

CALLS TO ACTION

1. **Make *all* commitments SMART.** Governments, agencies, parliaments, civil society organizations (CSOs), donors, and businesses: make nutrition commitments that are specific, measurable, achievable, and time-bound. Our SMART guide can help you.
2. **Make commitments that address all forms of malnutrition.** UN member states and agencies, parliaments, CSOs, donors, and businesses: ensure that future nutrition commitments address all forms (and combinations) of malnutrition according to their nutritional contexts—stunting, wasting, micronutrient deficiencies, obesity, overweight, and nutrition-related noncommunicable diseases.
3. **Use all new opportunities to make SMART commitments.** UN member states and agencies, parliaments, CSOs, and donors: use the Decade of Action, the Sustainable Development Goals (SDGs), and the Nutrition for Growth (N4G) process as an opportunity to raise your level of ambition for SMART nutrition commitments.
4. **Agree upon one strong and independent global reporting mechanism for nutrition in all its forms.** By the end of 2017, all nutrition stakeholders should engage in a process, as part of the Decade of Action, to agree on one inclusive, independent mechanism to monitor progress on outcomes, actions, and inputs relating to all forms of nutrition under the SDGs.
5. **Report on commitments.** UN member states and agencies, CSOs, donors, and businesses: be accountable by reporting on your progress on nutrition annually. The *Global Nutrition Report 2017* should be able to report a better than 90 percent response rate.

5 TAKING ACTION: PROGRESS AND CHALLENGES IN IMPLEMENTING NUTRITION POLICIES AND PROGRAMS

TO BE EFFECTIVE, COMMITMENTS TO ACTION MUST BE IMPLEMENTED AND ENFORCED. THE IMPLEMENTATION OF POLICIES AND INTERVENTIONS DEPENDS on converting political commitment to practical action. How are governments and other stakeholders doing in implementing policies and interventions that reflect commitment?

In this chapter we track implementation of four different sets of actions: First we look at progress in creating an enabling environment for nutrition action through cross-sector governance structures—an area subject to a relatively high number of government policy and program commitments made at the 2013 Nutrition for Growth (N4G) Summit (see Chapter 4). While not policies themselves, the purpose of these governance structures is to drive development and implementation of policies and programs. Second, we examine policies that support breastfeeding—a practice that can address several different forms of malnutrition: wasting, stunting, and obesity. Third, we discuss policies that support healthy diets, and fourth, we look at coverage of direct nutrition interventions.

PROGRESS IN DEVELOPING INTERSECTORAL GOVERNANCE MECHANISMS FOR NUTRITION

The need for intersectoral governance for nutrition is now broadly recognized. Recommendation 3 of the Second International Conference on Nutrition (ICN2) Framework for Action encourages countries to develop national cross-government, intersectoral, multistakeholder mechanisms to oversee implementation of public policies. Chapter 4 showed that by far the most common policy and program commitments made at the 2013 N4G Summit concerned intersectoral mechanisms. Such mechanisms were critical in Brazil's efforts to address food security and nutrition (Chapter 1, Panel 1.5). The critical element

in Brazil's experience was the establishment of a set of mechanisms between government ministries and between government, civil society, and social movements brought together through the National System for Food and Nutrition Security (SISAN). The existence of SISAN, and the fact that it was operational and had top-level support, enabled the effective coordination, implementation, and monitoring of the public policies.

The Scaling Up Nutrition (SUN) Movement has been vocal in its calls for multisector governance mechanisms as spaces to develop policies and plans. It calls for multiple sectors and stakeholders to work together in a truly coherent

KEY FINDINGS

This chapter explores persistent challenges and limited progress in implementing recommended nutrition policies and programs.

- Even when commitment is present, implementation is a challenge. In the presence of mandates to act, codes to guide, and evidence of impact, actual implementation of nutrition actions remains highly variable across countries and interventions. There is little evidence and analysis of where, why, and how such implementation gaps persist.
- Experience from existing intersectoral and interministerial mechanisms for implementing nutrition policies indicates they are more likely to succeed with top-level commitment, appropriate human and financial resources, and social participation.
- While breastfeeding is widely recognized as one of the best ways to improve nutrition, implementation of core policies and programs that promote breastfeeding need to be dramatically scaled up:
  - Only 36 percent of countries implement all or many provisions of the International Code of Marketing of Breast-Milk Substitutes, which aims to encourage exclusive breastfeeding and appropriate use of complementary foods. This implementation figure has actually declined since the last assessment.
  - Nearly a fifth of all countries have no data on maternity protection policies (such as workplace policies that support continued breastfeeding and childcare), suggesting a huge legislation gap. Nearly 70 percent of countries with data do not have policies for the provision of nursing or childcare facilities at the workplace.
  - The first-ever analysis of the Baby-Friendly Hospital Initiative, which promotes breastfeeding in hospitals, shows that less than 28 percent of maternity facilities in 160 countries have been certified since 1991. Many have not been certified or recertified in the past few years, reflecting declining support for the initiative.
- Countries have made limited and uneven progress in implementing policies that promote healthy diets, which are essential to combating NCDs. For implementing three core recommendations of the World Health Organization (those on marketing to children, reducing salt, and reducing trans and saturated fats),
  - two-thirds of countries have made no progress in implementing any of the three;
  - only 10 percent of countries have made some progress in implementing all three, and a disproportionate number of these are high- or middle-income countries; and
  - one-third of countries have implemented policies on salt reduction—the most widely implemented of the policies to date.
- The scale-up of nutrition-specific interventions for undernutrition has been slow and uneven: implementation of fortification and supplementation programs—such as vitamin A and zinc supplementation—has been stronger than health promotion–based approaches such as exclusive breastfeeding and dietary diversity promotion. Universalization of primary healthcare systems provides an opportunity to scale up these interventions further.

PANEL 5.1 LESSONS LEARNED FROM INTERSECTORAL GOVERNANCE MECHANISMS TO ADDRESS NUTRITION: NATIONAL NCD COMMISSIONS IN THE CARIBBEAN

MAISHA HUTTON AND SIR TREVOR HASSELL

In 2007, the heads of the governments of the Caribbean Community (CARICOM) region held a seminal and first-of-its-kind summit on noncommunicable diseases (NCDs) in Port of Spain, Trinidad.[1] As part of the resulting Port of Spain declaration, the heads of government called on countries to establish NCD commissions as mechanisms for the multisectoral prevention and control of NCDs at the national level—a recommendation first made in the Non-communicable Disease Prevention and Control Strategic Plan for the Caribbean Region 2003–2007. Because of the multiple causes and risk factors of NCDs, the commissions are designed to be the engine of a "whole-of-government" (intrasectoral) and "whole-of-society" (intersectoral) response.

By the end of 2014, 12 out of 20 countries in CARICOM had formed NCD commissions or analogous bodies. Seven of these were launched in 2011 or thereafter, likely in response to the 2011 UN High Level Meeting on NCDs. The Healthy Caribbean Coalition (HCC), a nongovernmental organization, has monitored and assessed the functioning of these commissions. A review of five of the commissions in 2014 found that four of the five had representatives from Ministries of Education and Agriculture (government) and from faith-based organizations, health-oriented civil society organizations, and trade unions (civil society). Three of the five had representation from the private health sector, manufacturers, and the media (private sector).

Since the Port of Spain NCD summit, national NCD commissions have had several successes in implementing programs and policies aimed at tackling NCDs. In 2015, HCC undertook a comprehensive review of all CARICOM national NCD commissions and found, for example, that the commission in Barbados had led national nutrition improvement and populationwide salt reduction campaigns. Well Bermuda, a national NCD commission equivalent, has successfully engaged multiple sectors in using health promotion strategies, with several memorandums of understanding signed between the Ministry of Health and lead agencies, and 15 out of 18 action plans implemented. The HCC reports a general sense that national NCD commissions have contributed to both a greater awareness of NCDs within countries and a multisectoral response to them.

However, national NCD commissions have also faced significant challenges in moving from governance structure to implementation of action. As of March 2016, only nine are currently active. A survey of five commissions in 2014 found that most of their chairs felt the commissions were not sufficiently action oriented and had no ability to guarantee implementation of their recommendations. Human and financial resource gaps hampered their programs. A lack of understanding of stakeholders' various roles and functions has been a barrier to implementing the requisite multisector, whole-of-society approach. Further, although these commissions were meant to serve as platforms for realizing a truly whole-of-society response to the NCD epidemic, it is now evident that there needs to be an interministerial task force or equivalent mechanism in which all sectors of government are truly engaged, thus creating a fertile environment for health in all policies in a whole-of-government response. The latter has not been achieved to any significant extent with the exception of a few territories. Defining relationships between national NCD commissions and Ministries of Health has been complex and sometimes cumbersome, often raising questions about roles and responsibilities and highlighting the lack of autonomy and implementation clout of these bodies. There have been challenges in monitoring and evaluating, and sharing information both within and among sectors, and consequently little evidence that knowledge and policies are being translated into behavior change.

In response to these challenges, HCC has made recommendations for strengthening national NCD commissions in the Caribbean, including ensuring stable financing, strengthening nonhealth government sectors, increasing participation by the private sector and civil society, and setting up a formal mechanism to allow for routine interaction between the minister of health and the members of the NCD commission. HCC is in the process of developing a national NCD commission implementation framework to support the establishment or strengthening of existing national commissions in the region.

approach, combining high-level political commitment, effective laws and policies, aligned actions from all parts of society, and better resources to defeat malnutrition.

Evidence suggests that SUN countries are moving forward in developing intersectoral mechanisms. By September 2015, 48 of the 56 countries in the SUN Movement

reported having an intersectoral, multistakeholder mechanism in place, although with varied degrees of functionality (Scaling Up Nutrition 2015). For example, of the N4G country signatories, the Democratic Republic of the Congo established its National Multisectoral Nutrition Committee in December 2015, and Zambia has developed subnational coordination structures at provincial, district, and ward/community level in all 14 priority districts. Most countries are working to improve engagement with civil society organizations (CSOs) and the science community as well as getting the private sector on board. With these mechanisms now established in many countries, the current challenge is to see that they function effectively. A 2015 self-assessment by SUN countries found that using the mechanisms to align actions and resources was proving a challenge.

Intersectoral governance is also recommended to facilitate the multisectoral action needed to address obesity and noncommunicable diseases (NCDs). At the international level, the World Health Organization (WHO) Global Coordinating Mechanism for NCDs began functioning in 2014 with the aim of facilitating coordination of activities; multistakeholder engagement; and action across sectors at the local, national, regional, and global levels. A range of independent initiatives designed to promote intersectoral, interdisciplinary coordination to spur action for obesity and NCDs have also been established, most recently the Lancet Commission on Obesity, which met for the first time in February 2016.

At the national level, the 2014 UN NCD review meeting produced a clear statement in support of mechanisms to lead, execute, and foster the multisectoral approach. It specifically recommended that countries should "consider establishing, as appropriate to the respective national context, a national multisectoral mechanism, such as a high-level commission, agency or task force for engagement, policy coherence and mutual accountability of different spheres of policy making" (United Nations 2014a, 6).

One region where the establishment of NCD commissions has been taken particularly seriously is the Caribbean, where 12 countries have established commissions. These commissions have led to some positive outcomes but also faced many challenges, as described in Panel 5.1. Like the SUN countries, these commissions have shown that having a mechanism is not in and of itself sufficient: a commission needs to be properly resourced with human and financial capacity and have real political clout to function effectively in its role of driving commitments to implemented action.

PUBLIC POLICIES TO PROTECT AND PROMOTE BREASTFEEDING

Breastfeeding is widely recognized as the best option for infant feeding, and the WHO recommends exclusive breastfeeding until 6 months of age, with continued breastfeeding up to 2 years of age or beyond with the addition of nutritionally adequate, safe, and appropriate complementary foods (WHO 2003). Following this recommendation saves lives, and the beneficial effects reach populations in all countries regardless of the stage of the countries' development. Breastfeeding has been found to protect against infant mortality and morbidity, especially from gastrointestinal infections; increase intelligence; and probably reduce NCD incidence, notably overweight and diabetes in later life. It is furthermore linked to a decreased risk of maternal breast cancer (Victora et al. 2016).

Many public policies can support breastfeeding, ranging from legislative protections to programs that support and counsel women. Here we review efforts to implement three actions aimed at improving breastfeeding rates for which data are available from a majority of countries: national implementation of the International Code of Marketing of Breast-Milk Substitutes, maternity protection, and baby-friendly hospitals.

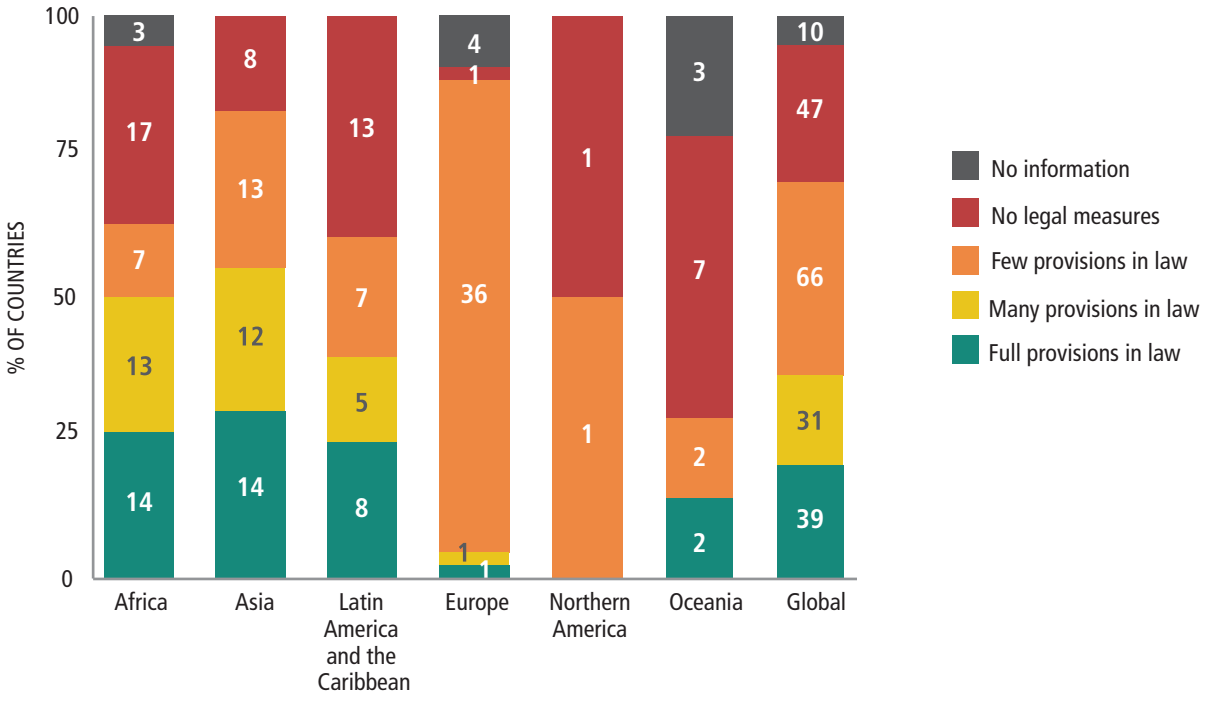
NATIONAL IMPLEMENTATION OF THE INTERNATIONAL CODE OF MARKETING OF BREAST-MILK SUBSTITUTES

In 1981 the World Health Assembly (WHA) endorsed the International Code of Marketing of Breast-Milk Substitutes and subsequently passed 16 relevant resolutions to protect breastfeeding (WHO 1981). The WHA adopted the code in the form of a recommendation, and it is therefore not binding. For the code to take effect, countries must pass national legislation. However, countries' endorsement of the code represents an internationally stated commitment to implementing it.

In the 2014 *Global Nutrition Report*, we reported that more than half (54 percent) of the 164 countries with data available had succeeded in enacting laws encompassing all or many of the provisions in the code (IFPRI 2014). Using updated data compiled by WHO, UNICEF, and the International Baby Food Action Network (IBFAN) (2016), we now present a more up-to-date picture of the global status of implementation of the code.

Data are now available for 183 of 193 countries (95 percent). Figure 5.1 shows the global and regional number and percentage of 193 countries in each stage of implementation of the code. As of 2016, 70 of 193 countries (36 percent) covered all or many provisions of the code. In Africa and Asia, the proportion of countries with all or

FIGURE 5.1 Legal status of the breast-milk marketing code in UN countries by region, 2016



Source: Authors, based on data from WHO, UNICEF, and IBFAN (2016).

Note: The number of countries is shown as numbers on the bars. Percentage of countries is shown as the area of bars.

many provisions was higher (50 percent and 55 percent, respectively) than in the rest of the world. There were no legal provisions in place in 47 countries (24 percent). Owing to a reassessment of the provisions in countries, the number of countries with provisions in place has actually declined from 89 of 193 (46 percent) in 2014.[1]

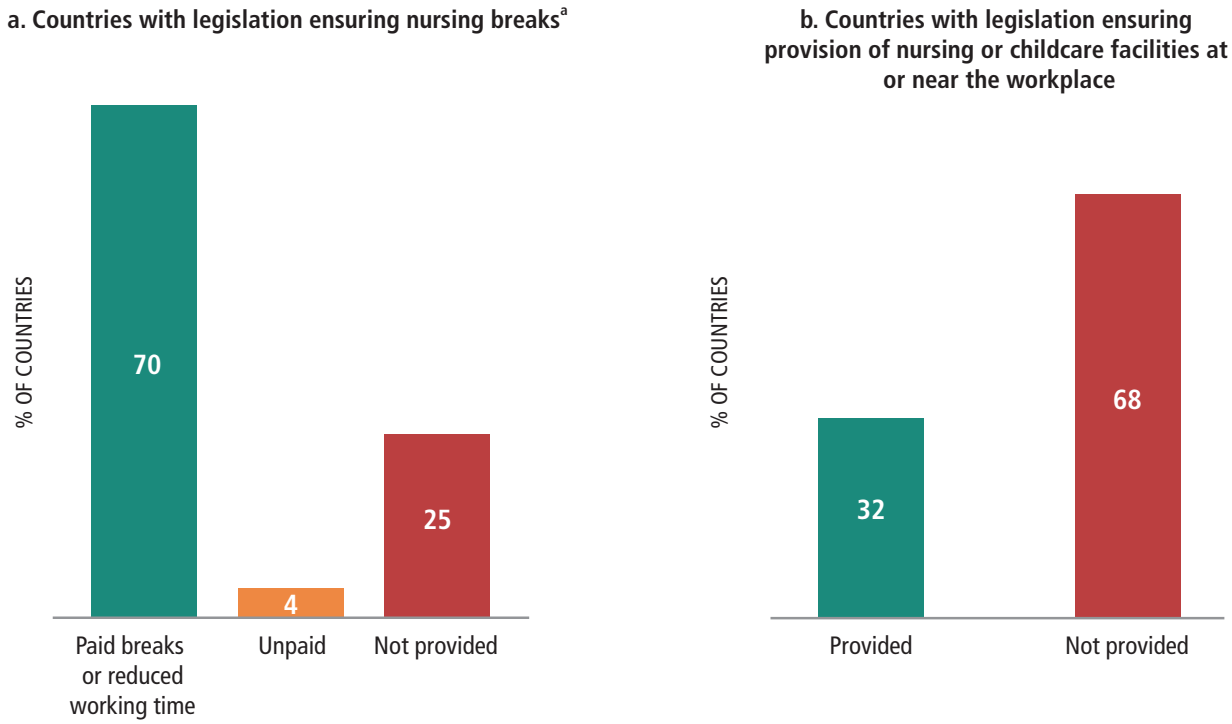
For the code to have the full effect intended by the WHA 35 years ago, many more countries will need to pass legislation that includes all the articles in the code, implement meaningful penalties for noncompliance, and establish reliable monitoring systems. A positive step in this direction is the recent creation of the Network for Global Monitoring and Support for Implementation of the International Code of Marketing of Breast-Milk Substitutes and Subsequent Relevant WHA Resolutions (NetCode) by the WHO in collaboration with UNICEF and nongovernmental organizations dedicated to breastfeeding and child health.

MATERNITY PROTECTION

A recent report on the global childcare crisis reviewed existing data on the economic and social effects of childcare demands on women (ODI 2016). The report highlights the need to extend care-related policies such as support for breastfeeding and maternity protection to the informal sector, as an important measure to improve pay parity in the workplace and reduce the economic penalty that working mothers pay as a result of inaccessible childcare and weak workplace policies to support motherhood.

In the *Global Nutrition Report 2014*, we examined implementation across all 193 countries of the International Labour Organization's Convention 183, which provides maternity leave protection (IFPRI 2014). We found that the convention, which commits countries to guaranteeing 14 weeks of maternity leave paid at 66 percent of previous earnings by social security or general revenue, had been ratified by 86 countries (51 percent of the 169 countries with data). Ratification is only the first step; each ratifying country must then implement the provisions through national laws or regulations. Here we build on the *Global Nutrition Report 2014* analysis to examine data on two further indicators of workplace policies that support continued breastfeeding when women return to work after giving birth: entitlement to paid nursing breaks, and childcare or nursing facilities provided by the employer. The guarantee of paid breastfeeding breaks is associated with higher rates of exclusive breastfeeding (Heymann et al. 2013).

FIGURE 5.2 Status of legislation supporting exclusive breastfeeding, 2013



Source: Authors, based on data from ILO (2014).

Note: Figure 5.2a shows results for the 159 countries with data on this issue. Figure 5.2b shows results for the 157 countries with data on this issue.

[a] Percentages do not total 100 because of rounding.

Nearly one-fifth of all countries had no data available on legislation for these policies (ILO 2014), highlighting a big data gap. For the countries with data, 70 percent had legislation in place entitling women to paid nursing breaks or a reduction of working time to breastfeed or to express breast milk during the workday (Figure 5.2a). The duration of the entitlement ranged from 1–5 months to until the child's second birthday (32 countries do not specify any duration). However, 68 percent of countries with data did not have legislation for the provision of any nursing or childcare facilities at the workplace (Figure 5.2b).

THE BABY-FRIENDLY HOSPITAL INITIATIVE

For the first time, we report on the implementation of the Baby-Friendly Hospital Initiative (BFHI). Launched by WHO and UNICEF in 1991, the initiative aims to support breastfeeding in facilities that provide maternity services. It certifies whether hospitals adhere to a set of 10 specific steps that address the domains of policy, human resources, promotion and support, protection from breast-milk substitutes, and physical structure to ensure that mothers and babies room together.

There is no global dataset on the BFHI. The data we present here show country-level coverage in 127 countries for which data are available from five different sources: WHO's *Global Nutrition Policy Review* (WHO 2013b); UNICEF's NutriDash Survey (UNICEF 2014); a Pan American Health Organization report titled *The Baby Friendly Hospital Initiative in Latin America and the Caribbean: Current Status, Challenges and Opportunities* (PAHO 2015a); the World Breastfeeding Trends initiative of the International Baby Food Action Network (WBTi 2016); and the Eighth Meeting of BFHI Coordinators from Industrialized Countries, Eastern Europe, and the Commonwealth of Independent States (CEE/CIS) Survey (Stufkens 2014).

The data describe the percentage of a country's maternity facilities that have ever been designated as baby friendly. We do not have information on how many of these facilities have been reassessed or continue to follow BFHI policies. A more comprehensive global database will be made available through WHO later this year.

Between 2007 and 2014, 91 countries reported low coverage levels—that is, less than 40 percent of facilities were baby friendly (Figure 5.3); 14 of these countries reported that not a single hospital or maternity facility in

the country had ever received BFHI certification. Only 3 countries (Bahrain, Cuba, and Fiji) reported 100 percent BFHI coverage. These estimates may change when new data become available, but overall they indicate low levels of implementation.

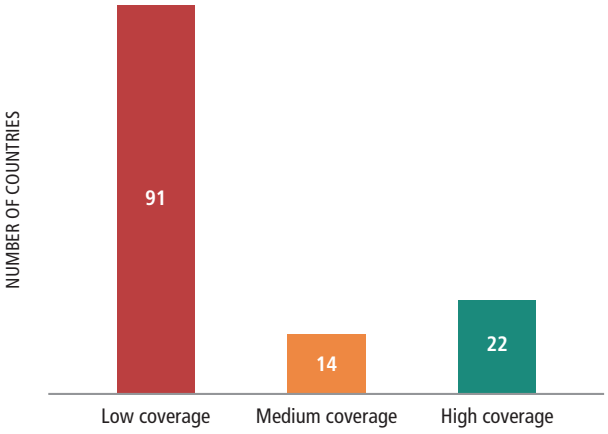
It has evidently proved a challenge to sustain BFHI.[2] Throughout the 1990s, the initiative benefited from strong political support and international investment in training and evaluation. As a result, numerous facilities were certified, leading to significant improvements in breastfeeding (Perez-Escamilla et al. 2016). Globally, an estimated 27.5 percent of maternity facilities in 160 countries have been certified since 1991 (Labbock 2012).

However, a recent estimate for Latin America and the Caribbean shows that although 8 percent of facilities have been certified overall, only 2 percent had been certified or recertified in the preceding five years, and 40 percent of countries had no certifications or recertifications during that period (PAHO 2015a). In the past five years, only 3.5 percent of facility births have occurred in certified facilities, compared with a 25-year average of 15.0 percent.

As a result of declining support and investment, implementation of the initiative has been uneven, often depending on a single person in the Ministry of Health with a limited or no budget. One key way to increase the sustainability of the initiative is to link the certification process to broader hospital accreditation systems. This tactic has been used, for example, in Viet Nam, where BFHI's 10 steps to successful breastfeeding have been incorporated into the National Hospital Quality Criteria and Accreditation System.

Another key mechanism to enhance sustainability is strategic data collection to measure coverage; the appropriate use of information collected is also essential. For example, in 2007, the US Centers for Disease Control and Prevention instituted an annual state-by-state report card, which has documented that the proportion of births occurring in baby-friendly hospitals in the United States increased from less than 2 percent in 2007 to nearly 8 percent in 2014 (PAHO 2015a).

FIGURE 5.3 Coverage of facilities ever designated as baby friendly in 127 countries, data collected 2007–2014



Source: Authors, based on data from WHO (2013b); WBTi (2016); PAHO (2015a); Stufkens (2014); UNICEF (2014).

Note: Low coverage = < 40% of hospitals are designated as baby friendly, Medium coverage = 40–60%, High coverage = > 60%. Year of data collection does not imply date of certification or timely recertification of facilities.

PUBLIC POLICIES TO PROMOTE HEALTHY DIETS

Policies to promote healthy diets, to which governments have committed in international forums, are expected to become more important in the era of the new Sustainable Development Goals (SDGs), which include a specific target on reducing noncommunicable diseases. Such policies also form one of the three core planks of the *Report of the Commission on Ending Childhood Obesity*, published by WHO in 2016. The report recommends that countries "implement comprehensive programmes that promote the intake of healthy foods and reduce the intake of unhealthy foods and sugar-sweetened beverages by children and adolescents" (WHO 2016o, viii).

The report's recommendations follow from a series of international recommendations of policies to promote healthy diets initiated in 2004 with the WHO Global Strategy on Diet, Physical Activity, and Health. In the 2011 UN political declaration on NCDs, countries pledged to promote healthy diets through public policies to do the following:

- Implement the WHO recommendations on marketing of foods and nonalcoholic beverages to children
- Reduce salt, sugars, and saturated fats
- Eliminate trans fats
- Encourage policies that support production of healthy foods

Here we report on progress in implementing three of these policies: implementation of the WHO recommendations, salt reduction strategies, and policies to reduce saturated and trans fats. These policies were selected by the WHO for its required reporting to the 2017 UN General Assembly.[3]

PANEL 5.2 TRANSLATING GLOBAL TARGETS TO NATIONAL ACTION: SMART SALT POLICIES IN ARGENTINA

CHESSA LUTTER

The Argentinian law on salt reduction commits the government to reducing salt intake to 5 grams per person per day by 2020 through a series of measures, including a gradual reduction of salt in bread and other processed foods, and a communication campaign with the slogan "Less salt, more life" (*Menos sal, más vida,* in Spanish).

The policy aims to be SMART (specific, measurable, achievable, relevant, and time bound). It is clearly both specific and measurable. It is also likely to be achievable, because studies conducted in the country show that 70 percent of salt intake is from processed foods, especially bread. Therefore, a focus on processed foods and bread for salt reduction will address a major portion of salt intake. The commitment is also highly relevant; research conducted in the country estimated that for each gram of salt reduction, 2,000 annual deaths from cardiovascular disease could be avoided. Last, it is time bound. Interim two-year targets were established, such as reduction of salt in bread by a certain amount. The salt content in bread and other processed foods is measured, as is intake (through 24-hour urine collection), and data are analyzed at a national laboratory.

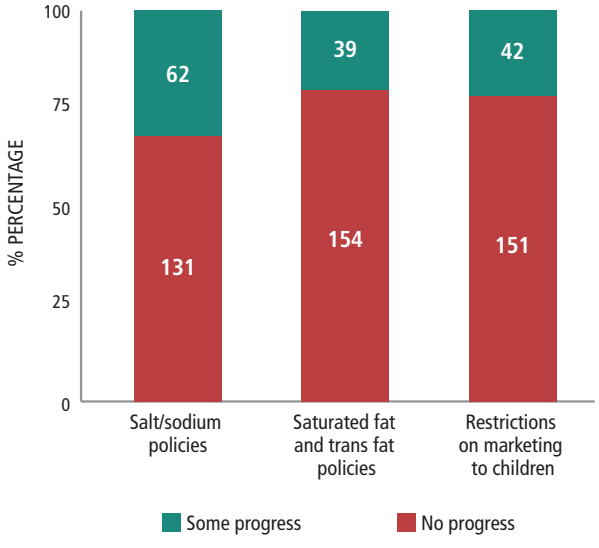
Between 2011 and 2015, average daily salt intake fell by 2.0 grams, from 11.2 to 9.2 grams per day. While significantly more work is needed to bring down intake to the 5-gram target, it is estimated that this decrease resulted in 4,040 fewer deaths per year during that period.

Our analysis is based on data from the self-reported NCD Country Capacity Survey conducted in 2014, which collected information from 193 countries (WHO 2015c). We reported on the number of countries that (1) report "any progress" on implementation, whether fully or partially achieved, and (2) report "no progress" or have inadequate data to assess progress.

As shown in Figure 5.4, progress has been extremely limited: governments are far behind in implementing these widely recommended policies to prevent obesity and NCDs. Of 193 countries, only 20 (10 percent) have made some progress on all three indicators; 120 (62 percent) have made no progress. Fifty-three countries (28 percent) reported fully achieving at least one or two of the three.

Of the 193 countries covered in the NCD capacity survey, 24 percent say they have implemented WHO's 2010 recommendations intended to guide national efforts to restrict food marketing to children (WHO 2010b). However, the criteria for assessing whether a country has implemented the recommendations are not clear. It could mean, for example, that there is a voluntary agreement on some aspect of marketing, a policy statement about why the issue is important, a comprehensive action plan, or a specific implemented action that achieves the objective set by the recommendations: to reduce the exposure of children to, and power of, marketing. The World Cancer Research Fund International database, NOURISHING, which tracks confirmed information on implementation of specific policies, reports that only 16 countries have implemented restrictions on marketing to children that aim to achieve these objectives (WCRF International 2016). This represents just 8 percent of the 193 countries.

FIGURE 5.4 Number of countries that have implemented healthy diet policies



Source: Authors, based on data from WHO (2015c).

Note: Total number of countries = 193. The number of countries is shown as numbers on the bars. Percentage of countries is shown as the area of bars.

More work is needed to clarify how to monitor the WHO recommendations.

The policy that has been most widely implemented is sodium/salt reduction; 62 countries (one-third) have implemented such policies (WHO 2015c). In an independent assessment of salt reduction strategies, Trieu and colleagues (2015) identified 75 countries with a national salt reduction strategy, more than double the number reported in a similar review done in 2010. They found that the majority of programs are multifaceted and include industry engagement to reformulate products (61 countries), establishment of sodium content targets for foods (39), consumer education (71), front-of-pack labeling (31), taxation of high-salt foods (3), and interventions in public institutions (54). Legislative action related to salt reduction, such as mandatory targets, front-of-pack labeling, food procurement policies, and taxation, has been implemented in 33 countries.

As a region, Latin America has been particularly active on salt reduction. As of 2015, 12 governments in Latin America and the Caribbean had implemented national initiatives to reduce salt intake. In addition to the 12 governments with national initiatives, as of 2015 another 9 countries had subnational programs or had done research on salt reduction. Argentina, for example, has implemented a SMART (specific, measurable, achievable, relevant, and time bound) approach to salt reduction, as described in Panel 5.2.

One policy area that has undergone significant developments in recent years is the adoption of taxes on sugar-sweetened beverages and foods high in fat, sugar, and salt. According to the NOURISHING database (WCRF International 2016), 14 countries now have health-related food and beverage taxes (and the United Kingdom will implement a tax in 2018), 6 of which have been implemented since 2014. In one of those countries, Mexico, new evidence published in 2016 suggests that the tax is associated with declines in expenditure on sugar-sweetened beverages, with a larger effect among households with lower incomes (Colchero et al. 2016). Chile also implemented a sugar-sweetened beverage tax in 2015, as well as fully achieving two of the three WHO policy indicators. Panel 5.3 tells the story of the people and processes in Chile that have converted political commitment into action.

A disproportionate number of countries that have implemented policies are either high-income countries like Chile or upper-middle-income countries like Argentina and Mexico. Of the 20 countries that reported having fully achieved all three policies, 13 were high-income countries, 6 upper-middle-income, and 1 low-income. Of the countries that had implemented no policies at all, the largest share—33 percent (40 countries)—were lower-middle-income countries. The scores vary significantly across regions: 96 percent of African, 60 percent of Asian, 57 percent of Oceanian, 58 percent of Latin American, and 30 percent of European countries did not achieve full scores on any indicators. The two Northern American countries reported having achieved two or all three indicators.

While countries are making progress in implementing these policies to protect and promote healthy diets, and some countries stand out in their commitments to action—notably in Latin America—the bigger picture is the same as reported in *Global Nutrition Report 2015*: patchy progress with huge implementation gaps. Gaining support for these policies from stakeholders in international agencies, government, donors, and development agencies historically concerned with undernutrition may be one way of encouraging greater political commitment to action. Some policies can do "double duty" in addressing different forms of malnutrition. As shown in Chapter 4, the N4G commitments need to be realigned to encourage countries to develop and implement specific policies and programs (Chapter 4). A new set of commitments for the post-ICN2, SDG era would, as called for in Chapter 4, help move the process of international commitments to public policies forward for breastfeeding, healthy diets, and as discussed in the next section, coverage of direct nutrition interventions.

COVERAGE OF DIRECT INTERVENTIONS TO REDUCE UNDERNUTRITION

The *Global Nutrition Report 2015* showed the availability of coverage data for 12 proven interventions recommended by WHO (2013a) and by Bhutta and colleagues (2013) to address maternal and child undernutrition (Table 4.5 in *Global Nutrition Report 2015*). We also tracked data for six of these interventions, consisting of nine indicators (Table 4.6 in *Global Nutrition Report 2015*).

This year, we track 13 indicators, covering the same six interventions (Table 5.1).[4] Data, however, are from 2005 to 2015, and several new indicators have been added. These 13 represent nearly all coverage or proxy coverage indicators for pregnant women and children included in the Demographic and Health Surveys.

New additions to this year's report include children 6–23 months fed the minimum meal frequency, children 6–59 months given iron supplements in the past seven days, women who received iron and folic acid during their most recent pregnancy, and women who received iron and folic acid during the most recent pregnancy and did not take it. We furthermore show the three countries with the

PANEL 5.3 IMPLEMENTING PUBLIC POLICIES TO PROMOTE HEALTHY DIETS IN CHILE

CAMILA CORVALAN AND MARCELA REYES

In the past five years, the Chilean government has passed a series of regulations to improve the population's dietary intake, attempting to curb the ongoing obesity and noncommunicable disease (NCD) epidemic. In 2014, the government implemented an 8 percent tax on sugar-sweetened beverages relative to other beverages. In July 2016, food companies will be required to place front-of-package warning labels on processed foods and beverages high in sugars, sodium, saturated fats, and energy, and they will be prohibited from advertising and marketing these products to children 14 and younger. The marketing restriction represents the most comprehensive in the world to date.

The implementation of these regulations is the result of almost 10 years of intense discussions involving sectors such as health, agriculture, economy, and social development, as well as several actors, including politicians, researchers, and food industry representatives, among several others. During these years, key leaders continuously pushed for the approval and implementation of these regulations.

- In academia, a public health nutrition professor played a key role by leading the WHO committee on chronic disease prevention. He actively disseminated data on Chile's epidemic of obesity and NCDs as well as stressing the need for larger-scale actions. His participation has been critical for involving policy makers and providing credibility and scientific support to the entire process.
- In the Senate, a medical doctor took the challenge, presenting a first regulatory draft and pushing for its approval. Over these years, this legislator has been key in raising awareness of this topic in the Senate and in public opinion.
- In government, the chair of the nutrition department of the Ministry of Health has consistently led the process by maintaining a consistent point of view and prioritizing this agenda.

The Ministry of Health also convened several expert advisory committees to provide scientific advice and served as a hub for continuous communication among different sectors and actors. It did, however, have to make compromises in order to move toward implementation. For example, to get the approval of the agriculture and economic sectors in government, the Ministry of Health negotiated a phased implementation; the regulations will thus become increasingly strict over three years.

The process of implementation is still in the early phases. Its long-term sustainability depends on the strength of the government and its ability to maintain support from the different sectors, as well as on increased participation by civil society, which has not played a significant role in the adoption of the measures to date.

Will it be effective? An evaluation plan involving international researchers is already in place to assess whether the policies will attain their objective of improving diets among the Chilean population.

highest percentage of coverage for 12 of these indicators, and the three countries with the lowest (Figure 5.5).

The analysis shows that countries are on average doing better on supplementation and fortification programs than on health promotion–based approaches. Many actors have played a role in advancing the commitment to implement fortification programs. Panel 5.4 provides an example of how private-sector engagement has played a key role in enhancing salt iodization, and Panel 5.5 highlights the role played by a nongovernmental organization.

In other supplementation and fortification programs, countries are doing well on providing vitamin A supplementation, with median coverage of 79 percent,[5] and on providing iron and folic acid supplementation to women during their most recent pregnancy, with a median coverage of 78 percent. However, the median proportion of women in countries with data who did not take the supplement was 21 percent (ranging from 3 to 83 percent).

For the health promotion–based approaches, including complementary feeding interventions for infants and young children 6–23 months old, the three indicators used reflect low rates of coverage across countries. The lowest rate is for minimum acceptable diet,[6] with a median of only 15 percent (ranging from 3 to 72 percent). The best median coverage for complementary feeding interventions is minimum meal frequency,[7] with a median of 57 percent. As

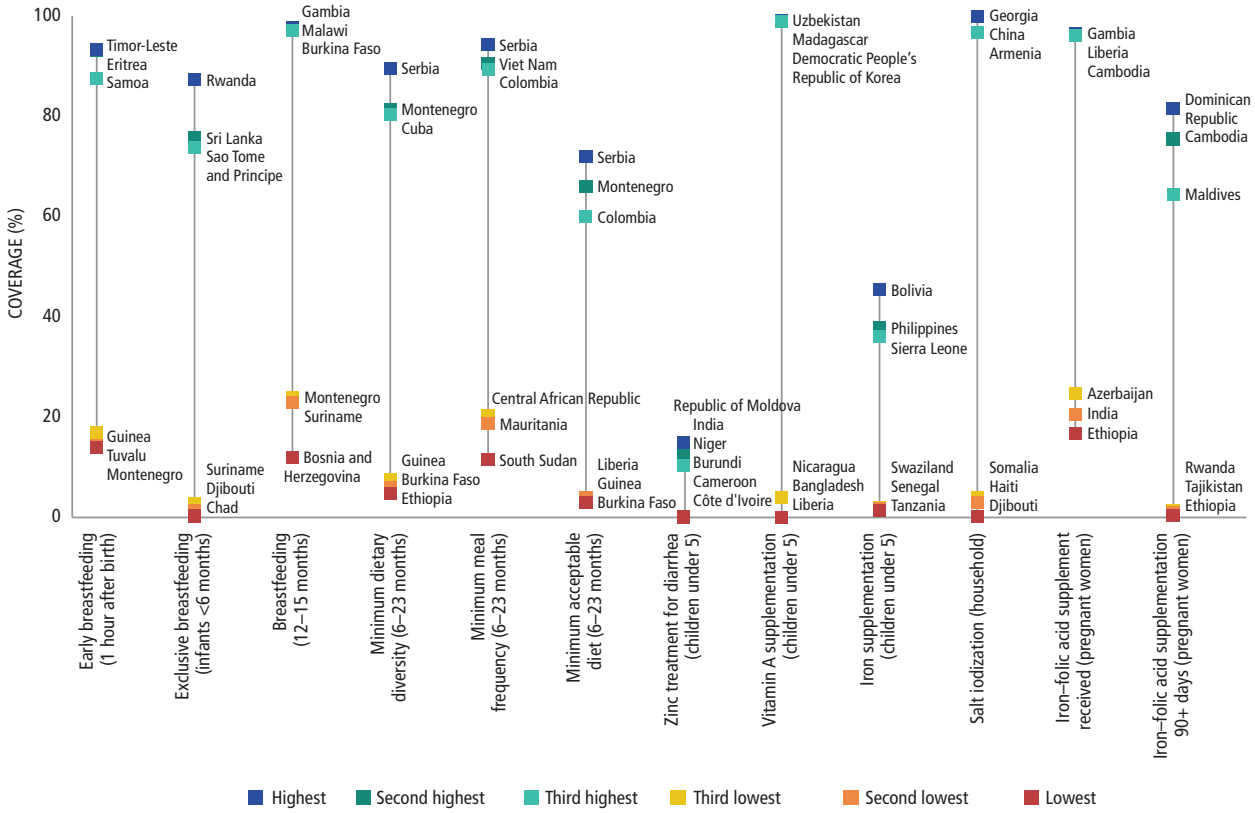
TABLE 5.1 Coverage of interventions and practices to address maternal and child malnutrition

Coverage or practice indicator	Associated intervention recommended by Bhutta et al. (2013) (target population)	Number of countries with data	Rate of coverage or practice for countries with data (%)			
			Minimum	Maximum	Mean	Median
Children 0–59 months with diarrhea who received zinc treatment	Zinc treatment for diarrhea (children 0–59 months)*	39	0.1	15	3	2
Early initiation of breastfeeding (proportion of infants who were put to the breast within one hour of birth)	Protection, promotion, and support of breastfeeding*	125	14	93	52	52
Infants < 6 months who were exclusively breastfed	Protection, promotion, and support of breastfeeding*	122	0.3	87	38	37
Children 12–15 months who were breastfed	Protection, promotion, and support of breastfeeding*	122	12	98	69	72
Children 6–23 months fed 4+ food groups (minimum dietary diversity)	Promotion of complementary feeding for food-secure and food-insecure populations (children 6–23 months)*	60	5	90	36	28
Children 6–23 months fed the minimum meal frequency	Promotion of complementary feeding for food-secure and food-insecure populations (children 6–23 months)*	82	12	94	56	57
Children 6–23 months fed with three IYCF practices (minimum acceptable diet)	Promotion of complementary feeding for food-secure and food-insecure populations (children 6–23 months)*	50	3	72	22	15
Children 6–59 months who received two doses of vitamin A supplements in 2014	Vitamin A supplementation (children 0–59 months)*	57	0	99	65	79
Children 6–59 months given iron supplements in past seven days	Neither Bhutta et al. (2013) nor WHO (2016d) recommend this intervention	51	1	45	14	12
Household consumption of adequately iodized salt	Universal salt iodization*	83	0.2	100	57	61
Women with a birth in last five years who received iron and folic acid during their most recent pregnancy	Multiple micronutrient supplementation (pregnant women)	57	17	97	71	78
Women with a birth in last five years who received iron and folic acid during the most recent pregnancy and did not take it	Multiple micronutrient supplementation (pregnant women)	55	3	83	27	21
Women with a birth in last five years who received iron and folic acid in the most recent pregnancy and took it for 90+ days	Multiple micronutrient supplementation (pregnant women)	56	0.4	82	28	29

Source: Authors, based on data from Kothari (2016) and UNICEF (2016d), the latter based on Multiple Indicator Cluster Surveys, Demographic and Health Surveys, and other nationally representative surveys conducted between 2005 and 2015.

Note: * = interventions recommended by WHO (2016d). Multiple micronutrient supplementation is recommended by Bhutta et al. (2013). Data from before 2005 have been excluded from this table pending WHO ratification of this recommendation. For India, new data from Rapid Survey on Children 2013–2014 are used where applicable. IYCF = infant and young child feeding.

FIGURE 5.5 Countries with the highest and lowest coverage rates of 12 interventions and practices to address maternal and child malnutrition



Source: Authors, based on data from Kothari (2016) and UNICEF (2016d), the latter based on Multiple Indicator Cluster Surveys, Demographic and Health Surveys, and other nationally representative surveys conducted between 2005 and 2015.

we have said in previous *Global Nutrition Reports*, improving these numbers from their very low levels is a high priority.

Outcome indicators that can be influenced through interventions that focus on the protection, promotion, and support of breastfeeding include initiation of breastfeeding within one hour of birth, exclusive breastfeeding of infants younger than 6 months, and continued breastfeeding at 1 year and at 2 years. Among this group of indicators, the median for exclusive breastfeeding is lowest, indicating the need to strengthen program inputs. This indicator is one where program efforts have notably led to successful increases and where withdrawal of program efforts has been accompanied by a subsequent deterioration of rates.

Continued breastfeeding at one year, on the other hand, has the highest median among this group of indicators, at 72 percent. Rates for continued breastfeeding at one year have, however, been relatively steady over the last few decades and thus appear not to be influenced by any recent program efforts.

There is more work to be done to clarify the relationship between these practice indicators and the implementation and quality of policies and interventions such as those reviewed above. Do coverage practice indicators reflect policy adoption and implementation, other factors, or both? If so, in what ways? Knowing what needs to be done to improve infant and young child feeding practices is challenging when it is not clear what policies and interventions have been implemented, nor their quality.

Some coverage data are available on the management of severe acute malnutrition (SAM) through outpatient care with ready-to-use therapeutic foods and inpatient care with hospitalization and treatment in facilities (Figure 5.6 presents coverage data from the Coverage Monitoring Network, or CMN).[8] Using only 2014 and 2015 data for the 17 countries CMN reported on, coverage assessment estimates are available for 58 of 102, or 57 percent, of district locations in 14 countries.[9] Coverage rates are below 50 percent in 33 of 58 district locations. These numbers

PANEL 5.4 ENGAGING THE PRIVATE SECTOR IN ETHIOPIA TO IMPROVE IODIZED SALT ACCESS

COREY L. LUTHRINGER, ALEM ABAY, AND GREG S. GARRETT

Since 2011, Ethiopia has achieved tremendous progress in improving iodine nutrition by iodizing salt. Ethiopia has long struggled with a high prevalence of micronutrient malnutrition among its population. In 2005, iodine intakes were very low. National coverage of iodized salt (containing any amount of iodine) was 4.2 percent, 83 percent of schoolchildren had iodine deficiency, and nearly 40 percent of children were identified with goiter (EHNRI, FMoH, and UNICEF 2005).

By the end of 2014, however, more than 95 percent of households had access to iodized salt (containing any amount of iodine), and 42.7 percent of households had access to adequately iodized salt. While there has not been an independent evaluation, this increase appears to be because of improved supply chains, private-sector engagement, public commitment to reinstate and enforce iodization legislation, engagement by international agencies like UNICEF, and initiatives like the Micronutrient Initiative and the Global Alliance for Improved Nutrition.

This scale-up of coverage has led to improvements in the iodine status, mental development, and physical growth of Ethiopian children. In a 2014 randomized trial of children in 60 Ethiopian villages, the urinary iodine content, length for age, and scores on tests used to assess motor, language, and cognitive development were all higher for those children consuming iodized salt (Bougma et al. 2015).

The private sector played a leading role in this scale-up by (1) improving the cost structure of iodized salt to provide incentives for production, (2) improving access to potassium iodate (KIO_3), and (3) implementing high-quality iodization processes.

First, the small-scale salt sector organized into cooperatives. Near Lake Afdera, where the majority of Ethiopia's salt is harvested, an overcrowding of salt producers following government incentives to increase salt production led to plummeting prices and inconsistencies in the supply of high-quality salt (Bagriansky 2014). In response, the producers banded together to coordinate production and fix quotas and prices, forming the Afar Salt Producers Mutual Support Association (ASPMSA). In late 2011, ASPMSA used its new supply coordination network to reengage producers to iodize their salt. The association worked with the government to distribute KIO_3 to each producer, automatically deducting the cost of KIO_3 from the producer's pay. This method effectively removed the incentive to increase profits by not iodizing (Chuko et al. 2015).

Second, ASPMSA supported the establishment of a cost recovery mechanism for KIO_3 to ensure its sustainable supply for producers without the aid of continued outside donations. The design of the method ensured affordable access to KIO_3, especially for small-scale producers (Spohrer and Garrett 2013; Garrett and Prczewlofsky 2013). This new system has reduced and covered the cost of fortificants, shown to be one of the most significant barriers to adequate fortification (Luthringer et al. 2015).

Third, quality assurance practices are being built and are contributing to higher-quality iodized salt. From 2011 to 2014, the Global Alliance for Improved Nutrition donated iodization machines, which increase the quality and production volumes of adequately iodized salt compared with the former process of spraying iodine on salt. Producers have been trained on quantitative iodine analysis using donated rapid test kits or internal production laboratories, and food control inspectors have been added to better enforce regulations for iodized salt. Shewit Salt Processing, a major cooperative similar to ASPMSA, has also improved salt iodization quality by using better packaging and labeling practices to command higher market prices, and by securing land to expand its iodization facility.

Together these actions by the private sector, government, and technical agencies have led to rapid and sustainable improvements in iodine nutrition in Ethiopia. However, some quality issues remain to be addressed in the salt iodization program in order to achieve more universal coverage of adequately iodized salt, which the private sector is well placed to deliver.

probably represent a best-case scenario for coverage—they are where nongovernmental organizations can work and collect data—and they need to be placed in the public domain in an accessible and well-documented manner. At present they are not. Doing so would facilitate thorough analysis of the pattern and determinants of implementation, which would help policy and program implementers refine their strategies for improving SAM treatment.

Progress on scaling up interventions to reduce undernutrition worldwide has been slow and inequitable. One

PANEL 5.5 NONGOVERNMENTAL ORGANIZATIONS' SUPPORT FOR MICRONUTRIENT PROGRAMS IN BURKINA FASO

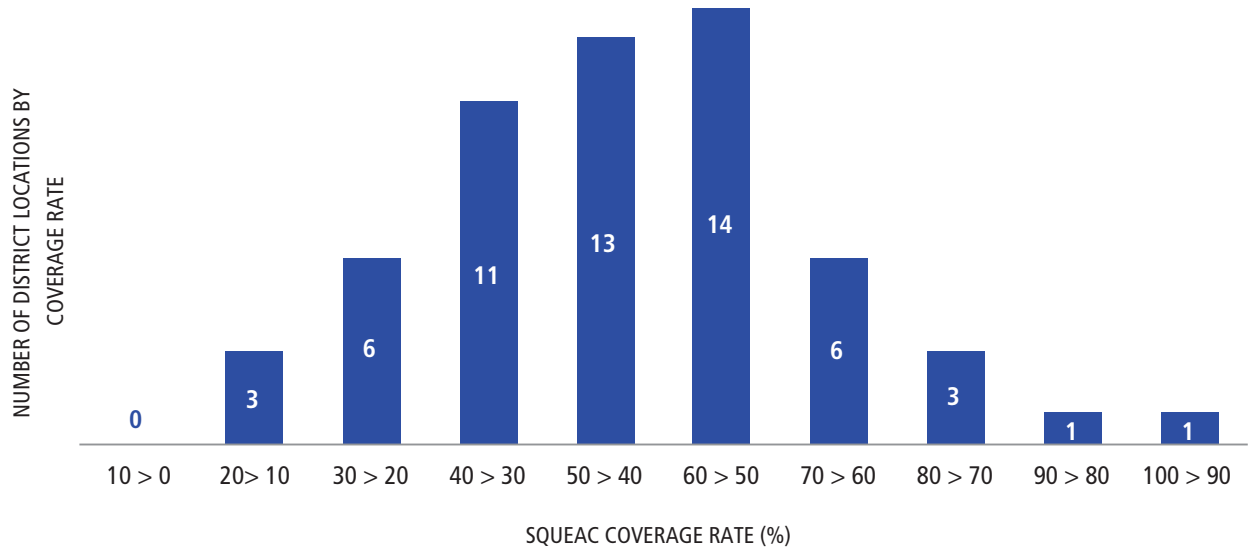
VICTORIA QUINN

In Burkina Faso, major advances have included the industrial fortification of staple foods—a cost-effective strategy to reduce micronutrient deficiencies (Hoddinott et al. 2012; Das et al. 2013)—following passage of legislation for the mandatory fortification of cooking oil with vitamin A and wheat flour with a range of nutrients including iron and folic acid. These products are now reaching more than 84 percent of the country's 18 million consumers.

These advances have been supported by Helen Keller International (HKI). Funding from the government of Taiwan enabled HKI to provide the technical assistance needed to reinforce local food industries' capacity to meet standards and assure quality. These fortified products are branded with the Enrichi fortification logo developed under a wider West African multipartner initiative spearheaded by HKI and other partners with multidonor funding, including from the US government. HKI has worked with governments and private food companies in 19 countries across Africa, where today it is estimated that 285 million consumers have access to such fortified foods.

HKI's commitment in Burkina Faso also entails building the evidence base on the impact of nutrition-sensitive agriculture. Along these lines, HKI partnered with the International Food Policy Research Institute and—together with local government health and agricultural offices, the National Agricultural Research Institute, and a local NGO—concluded the first phase of a rigorous, community-randomized controlled trial of its well-known Enhanced Homestead Food Production model in Burkina Faso's Est (eastern) region with funding from the US government. Findings were published in 2015, showing for the first time ever that a well-designed, integrated program promoting nutrient-rich homestead food production, together with nutrition behavior change communication, can have a positive impact on maternal and child nutritional status (Olney et al. 2015). HKI's support for micronutrient programs in Burkina Faso was also a commitment made for N4G.

FIGURE 5.6 Coverage estimates for management of severe acute malnutrition in 58 districts in 14 countries



Source: Authors, based on data provided by Jose Luis Alvarez of the Coverage Monitoring Network, February 8, 2016.

Note: Estimates are produced by the SQUEAC (semi-quantitative evaluation of access and coverage) methodology. The 14 countries are Afghanistan, Burkina Faso, Central African Republic, Chad, Democratic Republic of the Congo, Ethiopia, Kenya, Mali, Niger, Nigeria, Pakistan, Senegal, Somalia, and South Sudan.

way of advancing implementation to reach scale is through health systems, especially primary health care. Many health systems are already actively engaged in implementing direct nutrition interventions—for example, delivering iron and folic acid or multiple micronutrient supplements, calcium supplements, counseling on nutrition and early breastfeeding, and more through prenatal care. Experiences now exist with other services as well (infant feeding counseling, screening, referral and treatment of malnutrition), so it is an appropriate time to examine this issue more closely. There is also considerable alignment with health systems' actions to reduce child mortality, 45 percent of which is due to child undernutrition.

For example, in Ethiopia, the health extension system is taking on the delivery of nutrition interventions like infant feeding counseling and calcium supplementation. In India, the national rural health mission is taking on more work on nutrition—especially in the context of prenatal care provision, treatment of SAM, and micronutrient supplementation. In Viet Nam, the health system has embarked on an ambitious plan to integrate facility-based nutrition counseling on a large scale. In Bangladesh, the health sector development plan aims to "mainstream" nutrition into the health system. Efforts have been made through the integrated management of childhood illness (IMCI) approach to strengthen interventions for nutrition (for example, Arifeen et al. 2009).

But there are numerous challenges: the health system integration of nutrition in Bangladesh, for instance, worked much better for nutrition in prenatal care than in the provision of nutrition counseling to sick children; outreach services for preventive nutritional care, such as counseling and supplementation, were extremely difficult to establish (Saha et al. 2015). Even though IMCI guidelines, training, and tools are available, doctors providing care for sick children are busy and overburdened and therefore fail to follow many of the nutrition elements of the IMCI protocol (weighing children, assessing feeding, providing information on feeding).

Furthermore, plans to strengthen health systems are often slow to integrate actions that also strengthen the inclusion of nutrition interventions—especially preventive interventions in early childhood and those needed beyond age 5. Most health systems are focused on providing basic preventive care (immunization, prenatal care) and full-scale curative care. Many nutrition interventions are often in the middle of these types of services. Still, nutrition interventions such as micronutrient supplements, zinc along with oral rehydration solutions, and treatment of severe malnutrition in facilities fall well within routine health care activities. In many countries, health care systems are still far from being able to deliver some of the more "basic" health interventions—immunizations, basic prenatal care, birthing care—so nutrition services and interventions may be seen as nonessential.

As the global and national discourse unfolds on issues related to Sustainable Development Goal 3 ("Ensure healthy lives and promote well-being for all at all ages") and especially universal health care, it will be important to think about what this means for delivery of nutrition interventions as well. Health systems will need to be equipped to better integrate nutrition interventions at high coverage rates in the context of improving primary health care and reproductive, maternal, and child health services. Given common goals and the linkages between nutrition and health, strengthening these nutrition-health system linkages can be a potential win-win for the policy, program, and research communities that are engaged in strengthening health systems, scaling up nutrition, or both.

CALLS TO ACTION

1. **Strengthen interministerial task forces across malnutrition in all its forms.** By the end of 2018, all national governments should build interministerial task forces to implement nutrition policies, as well as national advisory councils or commissions. Such mechanisms should do the following:
   - have a direct line to the office of the head of state;
   - include bottom-up, social participation (for example, CSOs, social movements, and academia); and
   - oversee the development and/or implementation of policies and programs to address malnutrition in all its forms.

   In addition, by 2018 the donor community should provide funding for at least 25 such mechanisms, to allow them to build capacity and ensure that they are working effectively.
2. **Convert recommendations into legislation.** Governments should implement and monitor widely recommended policies and programs that support breastfeeding. Specifically, governments should make SMART commitments to
   - implement all the provisions outlined in the International Code of Marketing of Breast-milk Substitutes by the time of the N4G event in 2020; and

- ratify by 2020 the International Labour Organization's convention to provide maternity leave protection and other workplace support, and monitor and report on workplace policies for continued breastfeeding and child care.

3. **Implement policies to support recommendations.** Governments should implement and monitor widely recommended policies and programs that promote healthy diets, such as salt/sodium reduction policies (including legislated targets); policies to replace saturated fats and trans fats with unsaturated fats; restrictions on marketing of foods high in fats, sugars, and salt to children; and taxes on sugar-sweetened beverages. To date, only 10 percent of countries report progress on three core policies (implementing the World Health Organization's recommendations on marketing to children; salt reduction; and trans and saturated fat reduction). By 2030 all countries should be able to report significant progress on these three.
4. **Scale up the 13 proven nutrition-specific interventions.** Governments and international stakeholders should work to scale up coverage of proven nutrition-specific interventions—at both the global and national levels—with a focus on integrating nutrition actions into health system platforms. Of the 13 interventions we review, the median coverage rate ranges from 1 to 79 percent. By 2030 the median coverage rate for all 13 should be 90 percent.
5. **Deepen understanding of scale-up and quality implementation of all proven nutrition interventions.** Researchers should explore the technical, political, and economic enablers of and barriers to the uptake, implementation, and enforcement of nutrition interventions. Areas where more research is needed include
    - lessons learned from successful task forces and councils;
    - why some countries achieve better coverage than others for a given nutrition-specific intervention, and why some nutrition-specific interventions are more scalable than others, even within the same country; and
    - how incorporating proven nutrition-specific interventions into health systems affects nutrition and broader health outcomes.

By the end of 2018, research funders should have announced at least two major multicountry-funded research programs on the enablers of and barriers to uptake, implementation, and enforcement of proven nutrition policies and programs.

6 ACCELERATING THE CONTRIBUTION THAT NUTRITION'S UNDERLYING DRIVERS MAKE TO NUTRITION IMPROVEMENTS

THE FOOD, SOCIAL, HEALTH, AND LIVING ENVIRONMENTS IN WHICH PEOPLE MAKE DECISIONS HAVE A HUGE INFLUENCE ON NUTRITIONAL STATUS (FIGURE 6.1). For optimal nutrition, these underlying factors matter. For example, the food environment should make healthy diets available, affordable, accessible, and desirable. The social environment should set norms about good nutrition and hygiene and support people in caring for their nutrition and the nutrition of their families.

The health environment should support widespread access to affordable and high-quality preventive and curative health care. And the living environment should provide access to improved water and sanitation services, as well as built spaces that promote physical activity in safe and healthy contexts. Behind these underlying outcomes are underlying processes such as agricultural development, trade, health care, education, and poverty reduction. All of these processes are influenced by governance systems and economic incentives and disincentives. Together these underlying outcomes and processes form what we term the "underlying drivers" of nutrition status.

Government resources that influence these underlying drivers dwarf the resources allocated to actions explicitly designed to address nutrition. The 2014 *Global Nutrition Report* found that 35 percent and 31 percent of government budgets in Africa and Asia, respectively, are allocated to just four sectors: agriculture, health, education, and social protection. In contrast, the 2015 *Global Nutrition Report* found that the average allocation to nutrition across these sectors (including the water and sanitation sector) from 14 countries was 1.3 percent. The large amount of resources flowing to these underlying drivers makes it imperative that the nutrition community make it easier for those working in the relevant sectors to identify nutrition-related commitments and implement them.

This chapter asks what commitments to action, when kept, are likely to accelerate the pace of

improvement in these underlying drivers and their impact on nutrition. First, the chapter reviews new evidence on the importance of these underlying drivers for nutrition. Second, it examines three sets of actions designed to enhance the contribution underlying drivers can make to improving nutrition by making these drivers more nutrition sensitive: (1) actions to accelerate the progress of the drivers themselves, (2) actions that help these drivers have a bigger nutrition impact, and (3) actions that exploit the opportunities these drivers provide as platforms for more immediate nutrition-improving initiatives (Ruel and Alderman 2013). The chapter concludes with calls to action.

THE IMPORTANCE OF UNDERLYING DRIVERS TO NUTRITION IMPROVEMENT

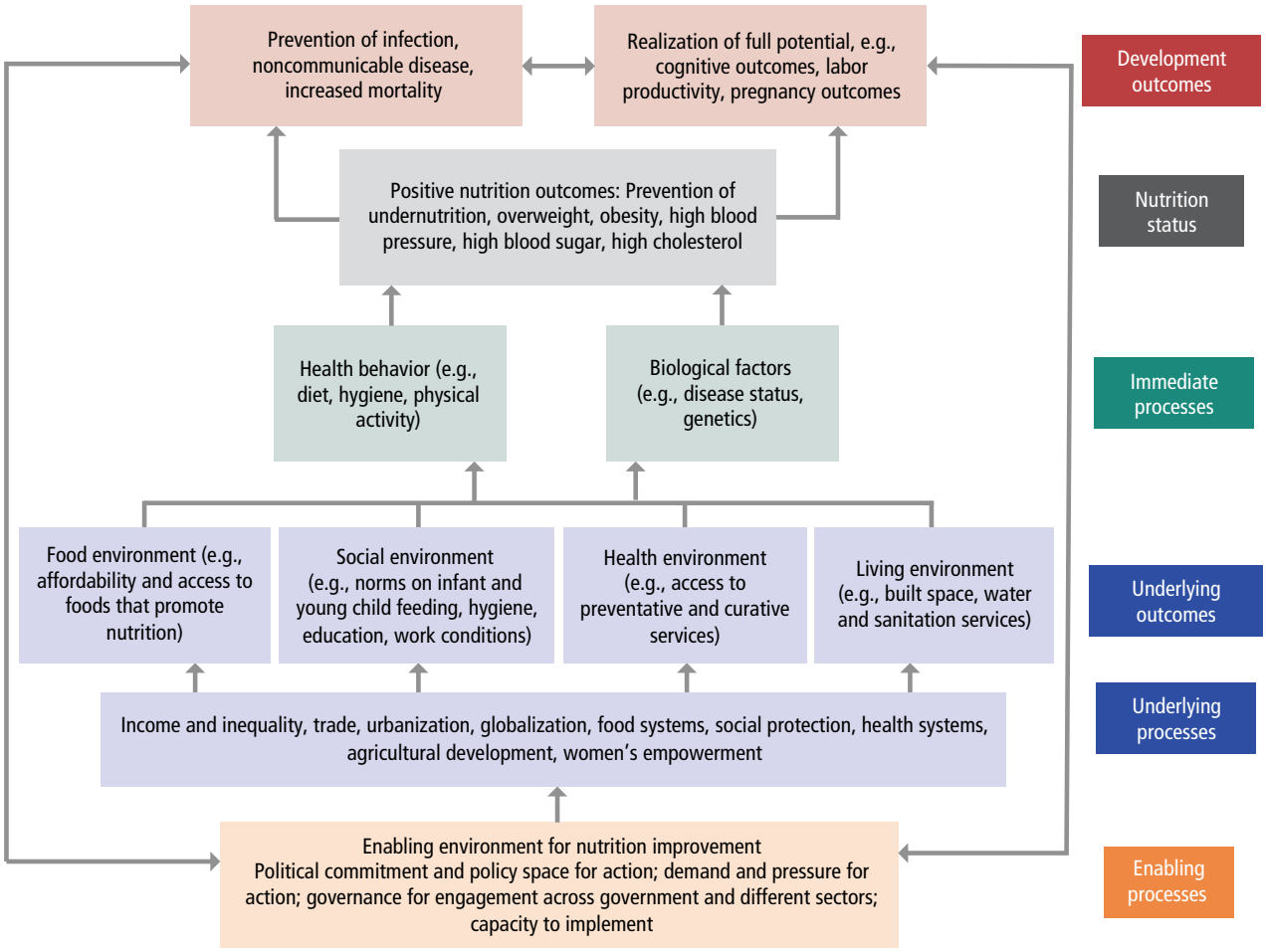
Underlying drivers are important for all forms of malnutrition. The most comprehensive evidence base is for the correlation between selected underlying drivers and stunting outcomes, but it is likely that these drivers are also highly relevant for other forms of undernutrition, such as wasting and anemia. These underlying drivers include calories from the food supply, the percentage of calories from staples, female secondary school enrollment rates, the life expectancy of women relative to men, and access to improved

KEY FINDINGS

This chapter asks what commitments to action, when kept, are likely to accelerate the pace of improvement in the underlying drivers and their impact on nutrition?

- Well over 30 percent of government spending in Africa and Asia is allocated to five sectors that serve as underlying drivers of nutrition: agriculture; health; education; social protection; and water, sanitation, and hygiene. Policies and programs in these areas can be adjusted to improve nutrition outcomes in many ways, such as focusing on women's empowerment, and building nutrition targets and nutrition behavior change components into program design. This chapter contains examples of how these adjustments can be made.
- Direct undernutrition interventions, even when scaled up to 90 percent coverage rates, have been estimated to address only 20 percent of the stunting burden. Tackling the underlying drivers of nutrition, particularly in the sectors listed above, is key to addressing the other 80 percent.
- With diet the number-one factor in the global burden of disease, changes in food production, food storage and distribution, cross-border trade, and food packaging and processing could have a significant impact on diet- and nutrition-related noncommunicable diseases. This chapter outlines how.
- Across all drivers, the power of women to make and influence key decisions is essential to improving nutrition outcomes: a mother with a secondary school education is less likely to have a malnourished child.
- Climate change—including the El Niño weather effects of 2015–2016—and conflict have significantly increased the caseload of severe acute malnutrition, underscoring the importance of aligning humanitarian food assistance strategies and implementation across different agencies.
- We have a good understanding of the set of underlying drivers that are most important for reducing stunting, but their relative importance varies by country. The analysis in this chapter will help countries identify which underlying drivers they should prioritize.
- Income, urbanization, and globalization have been identified as underlying drivers of obesity and overweight, but more research is needed to understand the set of drivers that all forms of malnutrition have in common.

FIGURE 6.1 The underlying drivers of improved nutrition status



Source: Authors.

Note: Underlying drivers combine underlying outcomes and underlying processes.

water sources and sanitation services. For other forms of malnutrition, such as overweight and obesity, the evidence is more complex and fractured.

The importance of underlying drivers to efforts to reduce undernutrition is evident in two main respects: First, direct undernutrition interventions, even when scaled up to 90 percent coverage rates in 34 high-burden countries, have been estimated to address only 20 percent of their stunting deficits (Bhutta et al. 2013). There is clearly a significant gap to be filled, in part, by drivers at the underlying level. Second, the World Bank and the Results for Development Institute have estimated the costs of achieving the World Health Assembly (WHA) targets by 2025 by scaling up direct nutrition interventions (in the *Global Nutrition Report 2015* and in this year's *Global Nutrition Report*, Chapter 7), and these cost estimates depend on assumptions about the contributions underlying drivers can make. If underlying drivers can make a larger contribution over time, then it may be possible to scale up direct nutrition interventions more slowly.

Several studies provide estimates that link stunting to a range of underlying drivers. Smith and Haddad (2015) analyzed variation across a number of countries over time, while Headey and Hoddinott (2014) and Headey (forthcoming) analyzed variation within a given country over time.[1] Figure 6.2 summarizes the estimated contributions to under-5 height-for-age (standardized) made by the same set of underlying drivers in four South Asian countries over the past decade: Bangladesh, India, Nepal, and Pakistan.[2] Assets, women's education, and open defecation are important across all four countries, reflecting stunting's multisectoral etiology.

PANEL 6.1 ACTIONS THAT APPEAR TO HAVE IMPROVED NUTRITIONAL STATUS IN GHANA

RICHMOND ARYEETEY, ESI COLECRAFT, AND ANNA LARTEY

From 1988 to 2003, four successive Demographic and Health Surveys (DHSs) in Ghana reported a slow decline in under-5 stunting rates, with prevalence remaining greater than 30 percent. After 2008, though, the decline in stunting accelerated, and the 2014 DHS reported a stunting prevalence of 19 percent (GSS et al. 2015).

These improvements are likely linked to political stability and faster economic growth. Ghana's peaceful democratic process has become a model for Africa. Since 1992, governments have changed democratically, without major disruptions to social programs. And economic growth in Ghana accelerated from 5 percent in 2009 to well above 5 percent in 2010–2013, returning to 5 percent in 2014. Economic growth is not necessary or sufficient to reduce undernutrition, but it is helpful, especially if it is broad based, because it enables families to buy more and better-quality nutrition inputs and helps government provide more public services as tax revenues increase.

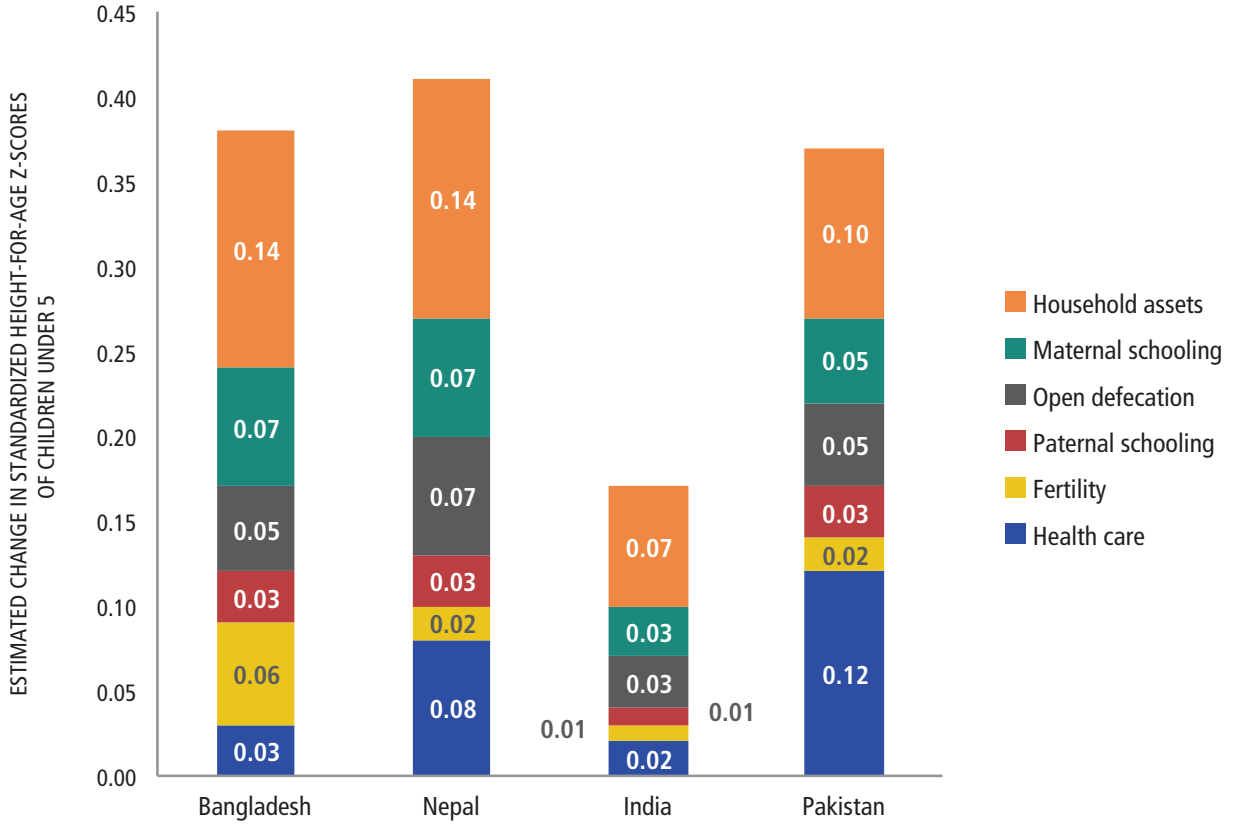
In addition to changes in underlying political and economic drivers, Ghana has implemented a wide range of policies and interventions affecting the immediate and underlying causes of undernutrition, such as the following:

- Since 2008 the government has increased coverage of interventions such as free distribution of insecticide-treated bed nets to pregnant women and focused prenatal care. Maternal thinness (a body mass index of less than 18.5) in Ghana has declined significantly from 8 percent in 2008 to 6 percent in 2014.
- In the past decade, the implementation of community-based management of acute malnutrition has also been scaled up, but not yet in all facilities.
- The Ministry of Health adopted a comprehensive "child-centered" child health strategy in 2007 (Ghana, Ministry of Health 2007). This led to increased coverage of interventions for malaria prevention and control, use of insecticide-treated bed nets, intermittent treatment of malaria in pregnancy, and prompt treatment of childhood fever. Implementation of these interventions has consistently and greatly improved, leading to a reduced fever rate over time. Similar declines have occurred for childhood diarrhea and acute respiratory infections (ARIs). There is also increased uptake of effective interventions such as zinc and oral rehydration solutions for diarrhea treatment, antibiotics for ARIs, and vaccinations for children 12–23 months old. These factors have likely contributed to Ghana's significant progress in reducing the burden of infections and disease.
- Agriculture contributes the largest share of Ghana's GDP (Ghana, Ministry of Food and Agriculture 2010). Ghana is one of the few countries in Africa south of the Sahara that met the Millennium Development Goal 1C targets on hunger and poverty reduction (FAO 2015a). Ghana's agricultural policy emphasizes rural agricultural development, irrigation, and improved crop varieties and input subsidies for farm families (Ghana, Ministry of Food and Agriculture 2010). Agricultural interventions have become more oriented toward nutrition by promoting backyard gardens with nutrient-rich crops like orange-fleshed sweet potatoes; fruit tree planting; and rearing of small ruminants, snails, and poultry.
- Ghana has instituted social protection measures. The National Health Insurance Scheme, started in 2003, has removed financial barriers to health-care access, enabling poor households, paying lower premiums, to gain access to high-quality healthcare (Saleh 2013). The social transfer program (Livelihood Empowerment against Poverty) currently provides cash grants to more than 80,000 ultra-poor households (Roelen et al. 2015). Free maternal health coverage for prenatal care, deliveries, and early postnatal care was instituted in 2010 to encourage women to seek appropriate pregnancy and delivery care. The homegrown National School Feeding Program provides one hot meal daily to children in targeted basic schools in almost 200 districts (Ofei-Aboagye 2013).
- The government has a policy on free basic education and capacitation grants. The Ghana Living Standards Surveys (2000, 2008, and 2014) suggest steady improvements in female education. The proportion of females 15 and older who have never been to school declined marginally (41 percent to 38 percent) between 2000 and 2008, but more significantly, to 24 percent by 2014 (GSS 2014). Also, between 2000 and 2008, the female literacy rate increased from 27 percent to 31 percent (GSS et al. 2015). The share of females with secondary education or higher remains low (12 percent), although it has doubled since 2000.

Despite the reported progress, challenges and opportunities remain. Agricultural policy could be more oriented toward nutrition outcomes, recent declines in exclusive breastfeeding rates need to be reversed, and the quality of diets of infants and young children needs to be improved significantly. Furthermore, reductions in stunting are not equally distributed. For example, the Northern Region has 30 percent stunting, compared with 10 percent in the Greater Accra Region. And while government policy interventions support nutrition, financial commitment remains suboptimal (Laar et al. 2015).

Moreover, obesity and noncommunicable disease risk factor rates are rising. The prevalence of adult overweight and obesity (body mass index greater than or equal to 25) increased from 30 percent to 34 percent between 2010 and 2014 (WHO 2014b). Rates among women were higher: 44 percent in 2014. Hypertension among adults is also widespread—42 percent in 2008. The 2012 National Policy for the Prevention and Control of Chronic Non-communicable Diseases in Ghana appears not to have been operationalized in any way.

FIGURE 6.2 Contributions of different underlying factors to estimated reductions in standardized height-for-age, children under 5 years of age



Source: Headey (forthcoming).

In a more qualitative analysis of Ghana's fast rates of stunting reduction (from more than 30 percent in 2003 to 19 percent in 2014), Panel 6.1 illustrates the important role that a range of underlying factors play, especially in combination with improvements in coverage of more direct nutrition interventions.

A different set of underlying drivers have been examined for risk factors and markers of nutrition-related noncommunicable diseases (NCDs): body mass index (BMI), overweight and obesity rates, fasting plasma glucose, systolic blood pressure, and serum total fasting cholesterol.

A range of cross-country studies examine the relationship between some underlying drivers and BMI, overweight, and obesity outcomes directly. Some of the findings are as follows:

- For income, studies indicate a positive association between national income and obesity for low- and middle-income countries (for example, Ruel and Alderman 2013). There is a positive relationship between household assets and female obesity, up to about US$7,000, where it flattens off (Goryakin and Suhrcke 2014). Similarly, for a large set of countries from low-, middle-, and high-income levels, Danaei and colleagues (2013) reported that adult BMI rises with per capita national income up to about US$7,000, and then flattens. However, Neuman et al. (2014), using DHS data from low- and middle-income countries, found no association between national income and mean BMI. For education, there is a positive association with overweight for women, with a declining risk for those with higher education (Mamun and Finlay 2015, using DHS surveys from low- and middle-income countries).
- The living environment, especially living in an urban area, shows a consistent relationship with these nutrition outcomes. For a wide range of countries, living in an urban area is positively associated with overweight in women (Goryakin and Suhrcke 2014; Goryakin et al. 2015), adult BMI (Danaei et al. 2013), and ischemic heart disease (Harrington and Elliott 2009; Green et al. 2016). Evidence from Latin America suggests that food environments are increasingly dominated by "ultra-processed" foods, driven by underlying drivers such as urbanization, income, and market deregulation (PAHO 2015b).

- For globalization, these studies offer inconsistent directions and strengths of association between a range of globalization indicators and both obesity and NCD-related outcomes. For example, on trade openness, Neuman et al. (2014) found no association with BMI while Miljkovic et al. (2015) found positive associations with obesity. For foreign direct investment, Neuman et al. (2014) found no association with BMI, and Miljkovic et al. (2015) found no association with obesity. For indexes of globalization, Goryakin et al. (2015) found stronger associations between overweight/obesity and the social and political dimensions of globalization, compared with the economic dimensions.

More work is needed to unify a number of empirical research strands on the underlying drivers of obesity and nutrition-related NCDs and their risk factors. Replication of cross-country studies, better data, and advanced analytical methods are needed to increase confidence in the results. We also need to better understand where underlying drivers for undernutrition co-occur with obesity and nutrition-related NCDs.

ACTIONS TO ENHANCE THE CONTRIBUTION OF UNDERLYING DRIVERS TO NUTRITION IMPROVEMENT

Here we review actions to enhance the contribution of the underlying drivers, outcomes, and processes outlined in Figure 6.1 to improving nutrition status. We focus on three avenues for doing so: (1) by altering the rate of change in underlying drivers, (2) by redesigning them to orient them toward achieving nutrition outcomes, and (3) by using them as a platform for direct nutrition interventions.

ACCELERATING THE RATE OF CHANGE OF UNDERLYING DRIVERS

The ways in which changes in the underlying drivers in Figure 6.1 can be guided to reduce undernutrition are well known and have been articulated in many articles and reports. National and household food security is achieved through a combination of investments in agriculture (for example, Godfray et al. 2010 globally), antipoverty programs (Devereux 2015 for Africa south of the Sahara; Dutta et al. 2012 for India), and food policy (Bray and Popkin 2014 for the United States; Rocha 2016 for Brazil). Expansion of improved water and sanitation (Fuller et al. 2016 globally; Duflo et al. 2015 for India) is dependent on the level of development and on governance (Smith and Haddad 2015). Access to improved healthcare is driven by political leadership, health system reform, and public and private investment (for example, Savedoff et al. 2012 for the United States; Frenk 2015 for Latin America; Reddy 2015 for India). The agency of women is vital to strengthening the contribution of all of these underlying drivers to improved nutrition outcomes (Cunningham et al. 2015; Carlson et al. 2015; Rollins et al. 2016).

But how best to make more strategic commitments at the underlying level? Reflecting the availability of recent evidence, here we focus on stunting and six underlying drivers (Smith and Haddad 2015). To help countries be more strategic in identifying underlying drivers that are lagging relative to others, we identify thresholds for the drivers, above which stunting is greater than 15 percent. A 15 percent stunting cutoff is arbitrary but does correspond to the approximate stunting prevalence in 2015 for 100 million stunted children—the WHA target for stunting in 2025 (IFPRI 2014). The underlying driver thresholds are calculated in a simple way: we fit a line to a cross-plot of stunting and each of the underlying drivers using data from all countries that have available data for all six underlying drivers. The threshold for, say, available calories per person per day is determined by the calorie level above which we would estimate a stunting rate—on average—of less than 15 percent (2,850 calories). This is done for all six underlying drivers (Table 6.1).

These thresholds can serve as a useful starting point for countries to begin thinking about targets for their

TABLE 6.1 Thresholds for underlying drivers corresponding to a predicted stunting rate of less than 15 percent

Underlying driver	Threshold corresponding to a prediction of stunting prevalence of < 15%	Unit
Total per capita calories in food supply	2,850	Calories
Calories from nonstaples	51	Percentage
Access to improved water	69	Percentage
Access to improved sanitation	76	Percentage
Female secondary school enrollment rate	81	Percentage
Ratio of female to male life expectancy (as a proxy for the empowerment of women)	1.072	Ratio

Source: Authors.

TABLE 6.2 Number of countries by number of vulnerabilities

Number of vulnerabilities	Number of countries	Names of countries (n = 98)
0	6	Argentina, Armenia, Belarus, Brazil, Turkey, Venezuela
1	14	Albania, Barbados, Belize, Chile, Colombia, Ecuador, Japan, Kazakhstan, Mexico, Montenegro, Serbia, The former Yugoslav Republic of Macedonia, United States, Uruguay
2	14	Algeria, Azerbaijan, Costa Rica, Dominican Republic, Egypt, Guyana, Honduras, Iran, Jordan, Kyrgyzstan, South Africa, Suriname, Thailand, Tunisia
3	14	China, El Salvador, Guatemala, Iraq, Jamaica, Malaysia, Maldives, Mongolia, Panama, Paraguay, Peru, Republic of Moldova, Sri Lanka, Tajikistan
4	4	Botswana, Morocco, Philippines, Sao Tome and Principe
5	11	Benin, Bolivia, Cambodia, Central African Republic, Ghana, Indonesia, Mauritania, Namibia, Nicaragua, Uganda, Vanuatu
6	35	Angola, Bangladesh, Burkina Faso, Cameroon, Chad, Congo, Côte d'Ivoire, Djibouti, Ethiopia, Gabon, Gambia, Guinea, Guinea-Bissau, India, Kenya, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Mali, Mozambique, Nepal, Niger, Nigeria, Pakistan, Rwanda, Senegal, Sierra Leone, Solomon Islands, Swaziland, Timor-Leste, Togo, Tanzania, Zimbabwe

Source: Authors.

underlying drivers—at least for stunting reductions.[3] The thresholds will be different for other nutrition outcomes such as under-five overweight. For countries with significant levels of undernutrition and overweight/obesity, the threshold on calorie availability needs to be interpreted with care.

If countries show underlying determinant levels below the thresholds in Table 6.1, we can say they have a vulnerability to stunting in this underlying area. Table 6.2 ranks countries by their number of vulnerabilities. For countries with zero and six vulnerabilities, the exercise does not assist much in prioritization, although it is useful to have the values of these underlying drivers in the same place for reference (Appendix Table A6.1).

Of course the aim should be to improve all underlying drivers at the same time, but because resources are scarce and have alternative uses, it is important to have some information to feed into the prioritization process.

REORIENTING UNDERLYING DRIVERS TOWARD ACHIEVING NUTRITION OUTCOMES

The *Global Nutrition Reports* of 2014 and 2015 provided examples of interventions in agriculture and social protection that have attempted to reorient underlying drivers toward achieving nutrition outcomes. The 2014 *Global Nutrition Report* described the impact evaluation results of the Helen Keller International home garden program in Burkina Faso and identified key attributes that were important for enhancing nutritional impacts. The 2015 *Global Nutrition Report* highlighted the Ethiopian Productive Safety Net Programme's efforts to make this large-scale intervention more nutrition sensitive. The 2015 *Global Nutrition Report* set out policies and interventions as well as indicators for nutrition-friendly food systems. But to date the *Global Nutrition Reports* have been relatively silent on what could make policies and interventions in food systems; the water, sanitation, and hygiene sector; and the education sector more nutrition oriented.

Food systems

The food system is vital for diet choices because it is an underlying driver of food availability, affordability, access, and acceptability. The food system includes agriculture, food distribution and transformation, and retail, as well as consumers.

The *Global Nutrition Report 2015* examined different types of food systems and developed a dashboard of indicators for determining their nutrition sensitivity. But how do policy makers and civil society attempt to bring about these changes? There are choices in several policy domains. The type of agriculture and trade system a population has determines the nutritional quality of the food available (FAO 2015a). If it incentivizes the productivity and production of fruits and vegetables, then it is more likely that these will be grown and will be profitable, accessible, and affordable. The type of food distribution system will affect the accessibility of different types of foods. If, for example, fresh foods are more available only in places that require travel by car or public transport, accessibility will be diminished for the most marginalized. If fresh foods are much cheaper when bought in bulk, they will be less affordable to the poorest. If food transformation plays on and contributes to notions of desirability that are linked to

products high in salt, sugar, and fat, then everyone will be at risk of consuming too many of these diet components. If purchasing power is improved though safety nets that favor the consumption of healthy foods, then the food system is helping to create a food environment that makes it easier for people to make healthy diet choices. Each of these food system components is shaped, in part, by public and private policy (see Chapters 4 and 7 of *Global Nutrition Report 2015*).

Table 6.3 shows how taking actions throughout food systems—not just in agriculture—could push food systems toward enabling and encouraging people to eat more nutritious, healthy diets. It includes just some of the potentially vast array of changes that could be made. Focusing on a small number of recommended dietary changes and just four different food system elements, it shows the importance of ensuring that actions are aligned for impact throughout food systems. Policies that aim to change consumer demand for food also affect food systems. Some of these policies are included in Chapter 5 as well as discussed in *Global Nutrition Report 2015*.

One action that can be taken in the food distribution element of the food system is public procurement. Panel 6.2 on nutrition-sensitive public procurement of food illustrates what Brazil has done in an approach being adopted in different forms by many other countries around the world.

One possible action in the agricultural element of the food system is biofortification. By 2016, an estimated 15 million people were growing and eating biofortified foods (iron beans and pearl millet; zinc rice and wheat; and vitamin A sweet potatoes, cassava, and maize) in the eight countries where, for example, crops were first introduced through collaboration with HarvestPlus. These crops are now at a scaling-up stage. Panel 6.3 highlights some of the challenges to scaling up and how they might be overcome.

TABLE 6.3 Some of the changes that can be made in food systems to achieve dietary goals

Dietary goal	Food system element			
	Food production	Food storage, transport, distribution	Cross-border food trade and investment	Food packaging and processing
Increase fruit and vegetable intake	Invest in mixed and integrated cropping systems in areas where markets are poorly developed	Invest in distribution infrastructure to enable establishment of local markets for low-income groups; develop public procurement mechanisms to ensure fruits and vegetables are served in public institutions	Use the World Trade Organization Aid for Trade initiative facility or Enhanced Integrated Framework aid for trade partnership to increase the supply of fruits and vegetables in low-income countries	Develop microenterprises for local processing to reduce waste
Increase intake of legumes/ pulses	Improve varieties to boost yield	Train farmers on management practices to reduce loss during storage to insect damage/ improper drying	Safeguards to prevent distortions that discourage local production and regional trade in legumes	Develop quick-cooking bean flours
Increase intake of grains high in protein, micronutrients, and fiber	Incentivize the production of underutilized grains; promote biofortification using conventional breeding	Develop more efficient threshing and milling technologies for underutilized grains	Ensure that policies support open regional trade where neighboring countries produce underutilized grains	Set standards and marketing incentives for use of whole grains in processed food products; develop novel foods with underutilized species
Encourage balanced consumption of safe milk	Improve availability of animal health services; ensure women can have title to the animals they milk and care for	Invest in infrastructure to ensure safe transport of milk from farm to cooling center	Ensure effective food safety checks of imported milk powder	Train milk processors in food safety and quality assurance
Replace saturated and trans fats with unsaturated fats	Switch investments in palm oil to oils with healthier fatty acid profiles	Encourage cooperatives between healthier oil producers to lower prices	Lower tariffs on healthier oils relative to oils with saturated fats	Prohibit public investment and disincentivize private investment in facilities producing hydrogenated oils
Reduce intake of high-calorie, nutrient-poor sugary drinks and salty snacks	Use competition laws to combat excessive concentration in the agribusiness sector	Tax transportation of high-calorie, nutrient-poor sugary drinks and salty snacks	Codex Alimentarius Commission sets international guidelines for consumer-friendly nutrition labels	Mandate downsizing of all package sizes of sugar-sweetened beverages sold through retail outlets

Source: Authors, adapted from information in Anand et al. (2015); Bereuter and Glickman (2015); de Schutter (2014); Fanzo et al. (2013); FAO (2013); Global Panel on Agriculture and Food Systems for Nutrition (2014); Hawkes and Ruel (2010); Hawkes (2015); Nugent (2011); UNSCN (2014).

PANEL 6.2 REORIENTING PUBLIC PROCUREMENT TOWARD NUTRITION: THE CASE OF BRAZIL

DANIEL BALABAN AND MARIANA ROCHA

Over recent decades Brazil has experienced structural changes that have drastically transformed its nutrition landscape. These changes are the result of strong mobilization by both civil society and the government aimed at tackling hunger through a range of mechanisms, including the use of public procurement as a nutrition-sensitive policy.

In the 1980s, Brazil underwent a democratization process that culminated in the adoption of a new constitution in 1988. The so-called Citizen Constitution recognized numerous economic and social rights, such as the rights to health, education, housing, and social protection. As part of this trend toward a greater guarantee of rights and social mobilization, civil society started to bring attention to the issue of hunger. By channeling donations to those most in need while at the same time denouncing the government's lack of attention to this issue, social movements managed to put hunger on the government's agenda. In 1993–1994, the National Food and Nutrition Security Council (CONSEA) gathered government and civil society actors to advise the president on how to move this agenda forward, but the body was dissolved following a change in government.

In the following years, debate around undernutrition gained increasing recognition in the public space and was introduced to the agenda of certain political parties. By 2003, the newly elected government made combating hunger a major priority, with a dedicated approach. The Zero Hunger (Fome Zero) Strategy encompassed more than 20 initiatives in four axes of intervention to address the multiple causes and faces of hunger: food access, strengthening of smallholder farmers, income generation, and social control. Given the attention to civil society participation, CONSEA was reestablished. Overall, the strategy is considered a milestone in the recognition of food and nutrition as a leading and crosscutting priority on the political agenda.

The Food Acquisition Program (PAA) was designed within this framework to create public procurement markets for smallholder farmers. Through a simplified public bidding process, PAA lets food be procured from family farmers to meet the needs of food-insecure communities. Because family farmers participating in PAA mostly produce fresh products with little or no processing, fruits and vegetables are among the most important products purchased, promoting healthy eating habits among beneficiaries. The program is innovative because it created a major new market for smallholder farmers, who often have difficulty accessing markets and are themselves food insecure. While guaranteeing enhanced nutrition to vulnerable groups, PAA also contributes to farmers' food security by increasing their income.

In 2009, this model was incorporated into the existing National School Feeding Program (PNAE). The program was reshaped to promote the links between family farmers, food, and nutrition education in basic education. A quota of 30 percent of federal resources for school feeding had to be used to purchase food from family farmers. New nutritional criteria require nutritionally balanced meals for every age group, containing cooked and fresh food while avoiding processed foods with high levels of sodium, fat, and sugar. The new law also expanded targeted age groups by including the provision of complementary food to children between 6 months and 5 years old in preschools and nurseries—where up to 70 percent of the daily nutritional requirement should be met.

In the case of both PAA and PNAE, the facilitated bidding procedure for accessing public procurement is combined with technical assistance to these farmers, aligning other governmental areas with the broader strategy. Public authorities, including nutritionists, are also encouraged to prepare menus that incorporate local products and follow the production calendar in order to make procurement more functional to public institutions and farmers.

The PAA and PNAE have become an international reference on how to combine and link different programs to advance the nutrition of groups that are often among the most vulnerable. Brazil's experience is a good example of how public procurement may be shaped to contribute to social policies, increasing income and promoting greater inclusion. In addition to fostering shorter supply chains, which tend to be more sustainable and more inclusive of local cultural practices, such frameworks contribute directly to improving the nutrition of smallholder farmers and their families. In terms of institutional setting, the context in which PAA was created and PNAE was restructured bring to light how coordinated actions by different sectors of the government may be mutually reinforcing. The model is under consideration by more than 30 developing countries and has recently been endorsed by the African Union. The Purchase from Africans for Africa program implemented by Ethiopia, Malawi, Mozambique, Niger, and Senegal with technical leadership and expertise from the Food and Agriculture Organization of the United Nations and the World Food Programme is an example of how this model is being adapted by other countries (PAA Africa 2016).

PANEL 6.3 BIOFORTIFICATION: HOW TO SCALE UP?

HOWARTH BOUIS

Biofortification is the process of using conventional plant breeding techniques to enrich staple food crops with higher levels of vitamin A, zinc, and iron. Biofortified varieties are high yielding, profitable for farmers, and already available in a number of countries. Evaluations provide several examples of nutritional efficacy and effectiveness (van Jaarsveld et. al. 2005; Hotz et al. 2012; Beer et al. 2014; De Moura et al. 2014), and an increasing number of national and international institutions are mainstreaming biofortification into their policies and programs. African and Asian governments, the World Bank, the World Food Programme, and World Vision are increasingly convinced of the important role biofortified crops can have in improving the nutrition status of the most vulnerable. The International Potato Center has also been effective in broadening the reach of orange sweet potatoes through its programs and networks.

The key challenge to reaching the 1 billion poorest individuals with micronutrient deficiencies is to create sustained demand for the products. Strong demand for biofortified crops, among both consumers and policy makers, is the ultimate assurance that biofortification will be mainstreamed in agricultural research programs. Challenges to adoption so far have included (1) product color for high pro–vitamin A crops, which are yellow or orange, rather than the whiter color of comparable nonbiofortified varieties, and (2) a frequent perception that biofortified crops are genetically modified, whereas all crops officially released to date by national seed systems have been produced through traditional plant breeding techniques. Experience has shown that when information is provided to mothers, farmers, and policy makers, these challenges are no longer barriers.

Reaching 1 billion will involve repeating in another 25–30 countries (with a particular focus on the populous countries of Asia—and so also a focus on rice and wheat) what has worked well so far in 8 target countries. This will also entail broadening policy support among a number of national, regional, and international institutions, and expanding the number of organizations in those 25–30 countries that will mainstream biofortification in their core activities, a process that is already underway.

The first step is advocacy to begin to create demand for these products from policy makers, consumers, and researchers. The second step is to establish a country-specific pipeline of releases of high-yielding, high-profit biofortified crops through the national agricultural research system, private seed companies, or both. The CGIAR research centers are central to supporting this process, both through upstream plant breeding and through their extensive and long-standing networks with agricultural research institutions in developing countries. Finally, food subsidy policies could give preference to use of biofortified food staples. In the case of pro–vitamin A (orange/yellow) crops, consumers need to be informed of the reason for the color change through government programs and private-sector advertising. In the case of iron and zinc crops, the optimal strategy is to capture as high a percentage of the total supply as possible through piggybacking the high iron and zinc traits onto the highest-productivity, most climate-smart varieties available to farmers.

Nevertheless, resources are still needed—for advocacy, demand creation, and agricultural research—to help mainstream the uptake of biofortification. In the current eight target countries, donors have provided funding to initiate the delivery process, to learn lessons, and to prove principles in reaching the first 15 million. However, such funding is not available in unlimited amounts. Rather, spontaneous mainstreaming as described above is required for biofortification to spread more widely.

Water, sanitation, and hygiene

Recognition of the key role that low-quality water, sanitation, and hygiene (WASH) practices play in initiating and perpetuating malnutrition has grown substantially in the past 10 years (Bhutta et al. 2013; Ngure et al. 2014). For children, WASH programs are typically designed to either prevent feces from getting into the child's environment or prevent pathogens in the environment from being ingested (Curtis et al. 2000). Consequently, they achieve a host of health outcomes (infectious disease control, maternal and newborn health, child health and nutrition) by breaking this chain of enteric disease transmission.

Global rates of access to improved water and sanitation remain far from 100 percent (for improved sanitation, global access is 68 percent; for water, it is 91 percent [JMP 2015]), and 13 percent of the world's population practices open defecation (UNICEF and WHO 2015). Nonetheless, it is important to ask what can be done to make existing services more nutrition sensitive. While the evidence base is not yet strong in terms of completed studies, the framing for plausible design changes (Panel 6.4) is the same as

PANEL 6.4 MAKING WATER, SANITATION, AND HYGIENE PROGRAMS NUTRITION SENSITIVE

MDUDUZI MBUYA

Making water, sanitation, and hygiene (WASH) nutrition sensitive does not require a paradigm shift. Rather, it requires that interventionists and program planners adhere to WASH behavioral objectives and align programs with the multiple pathways of feco-oral transmission relevant to the target population. More specifically, here is how we can ensure that WASH programs are nutrition sensitive:

1. **Focus on nutritional outcomes:** WASH programs inherently address crucial underlying drivers of fetal and child nutrition and development, and are therefore fundamentally nutrition sensitive. However, they can be further leveraged for nutrition actions when they are implemented in a manner that protects women's time; reducing the time women spend fetching water can affect the time they have available for childcare and other activities associated with improved consumption (Pickering and Davis 2012; WHO, UNICEF, and USAID 2015).
2. **Target the first 1,000 days:** The first 1,000 days after conception have been identified as a critical point in a child's development because of the rapid process of linear growth, which mirrors brain development. WASH programs targeted to this age group are therefore more likely to achieve nutritional outcomes and prevent the developmental deficits associated with early growth faltering.
3. **Pay attention to the causal linkages between WASH and nutritional outcomes:** Conditions of poor WASH can affect nutritional status through diarrheal disease and parasitic infections. Recently, it has been hypothesized that a subclinical gut disorder called environmental enteric dysfunction is a primary mediator of the association between WASH, and stunting and anemia (Humphrey 2009). Focusing only on clinical disease outcomes may thus underestimate the impact of WASH interventions. As such, WASH programs should be implemented with time frames that permit changes in nutritional outcomes to be realized and evaluated for additional outcomes related to diarrhea incidence and prevalence.
4. **Align WASH interventions with these causal linkages:** Preventing children's ingestion of fecal microbes in the first 1,000 days should be an express objective of nutrition-sensitive WASH programs. Research in rural Zimbabwe (Ngure et al. 2013; Mbuya et al. 2015) and elsewhere suggests that the feco-oral transmission pathways for adults differ from those of toddling children, who engage in mouthing and exploratory play—for example, geophagy and consumption of chicken feces. This result suggested that a nutrition-sensitive WASH (or baby WASH) intervention should
   - reduce the environmental microbe load through household sanitation and hygiene;
   - reduce fecal transmission via hands through washing of caregivers' and children's hands with soap;
   - improve drinking water quality through improved access to protected water sources and hygienic methods of household water treatment and storage;
   - promote exclusive breastfeeding for the first six months of life to ensure nutrient adequacy and exclude potentially contaminated non–breast milk liquids and foods;
   - avoid child fecal ingestion during mouthing and exploratory play by ensuring a clean play and infant feeding environment; and
   - provide hygienically prepared and stored complementary food fed using clean utensils and hands.

for other underlying driver interventions: plan to improve nutrition status and prevent malnutrition.

Table 6.4 draws distinctions between conventional and nutrition-sensitive WASH programs. For example, nutrition-oriented WASH programs include interventions with the first 1,000 days postconception in mind. There is a greater focus on caregivers (those whom the baby is dependent on), on the cleanliness of play areas, and on preventing contact with animal as well as human feces (because infants crawl around with their hands on the floor).

Humanitarian food assistance

The number of people affected by disasters such as floods and droughts has shown no signs of diminishing in the first decade of the 21st century (Guha-Sapir et al. 2016). In

TABLE 6.4 Differentiating a nutrition-sensitive water, sanitation, and hygiene (WASH) program from a conventional WASH program

Feature	Conventional WASH	Nutrition-oriented WASH
Primary outcomes of interest (impact indicators)	Clinical disease outcome (for example, diarrhea, trachoma, neglected tropical diseases)	Nutritional outcome (for example, stunting, anemia) in addition to clinical disease outcomes
Primary target group	All age groups, communitywide	The first 1,000 days from conception through two years (focus is on caregivers, since the fetus/baby is dependent on their actions)
Infrastructural choices	Toilet, water supply	Toilet, water supply, protected play space
Sources of contamination	Human feces	Human and animal feces
Vectors of feco-oral transmission	Fingers (with a focus on caregiver hands), fluids, flies, fields	Fingers (focusing on both caregiver and baby hands), fluids, flies, fields (especially soil)
Targeted behaviors (behavioral/process indicators)	Disposal of feces, handwashing with soap, water treatment, food hygiene	Disposal of feces (with added emphasis on animal stool and child feces), handwashing with soap (focusing on both caregiver and baby hands), water treatment, food hygiene, exclusive breastfeeding
Factors influencing choice of combinations of intervention components	Communicable disease prevention or control; ministerial or donor priorities	Nutritional outcomes
Evidence base	Strong randomized trial evidence	Strong observational evidence base and plausibility basis

Source: Mduduzi Mbuya.

addition, the Intergovernmental Panel on Climate Change estimates that climate change will increase the frequency and severity of such events (IPCC 2007).

The El Niño weather events of 2015–2016 have already been devastating for millions, especially in eastern and southern Africa (FAO 2016a), and will reverberate throughout 2016 as families struggle to cope with the effects the droughts and floods have had on food production, food prices, and rural livelihoods (WFP 2016). Panel 6.5 summarizes some of the challenges and lessons from responding to El Niño in 2015. The effects of El Niño will be lifelong for those in the first 1,000 days postconception, whose growth and development could not be protected from El Niño's effects (see, for example, Danysh et al. 2014). In addition, and as data from the UN High Commissioner for Refugees reported in Chapter 8 show, the number of people displaced by conflict has reached an unprecedented high (nearly 60 million). Chapter 8 will ask how accountability to those vulnerable to emergencies can be improved. Here we ask how well the humanitarian food assistance strategies of different agencies are doing in mainstreaming nutrition and thereby mainstreaming commitments to reducing undernutrition in emergencies.

The improvement of nutrition status of disaster-affected populations is widely acknowledged to require action beyond the nutrition sector (von Grebmer et al. 2015; Brown et al. 2015). As the recent analysis by Brown and colleagues noted, "There is a need to tackle the multiple determinants of undernutrition in emergencies through the mainstreaming of nutrition across sectors including in humanitarian food assistance" (2015, 7).

Supported by the European Commission's Humanitarian Aid and Civil Protection department (ECHO), Brown and colleagues (2015) reviewed 22 policy and strategy documents from 2006 to 2015 from UN agencies, international nongovernmental organizations, and donors on 15 criteria. Figure 6.3 shows the percentage of documents that "covered" each of the 15 criteria. The 22 strategy and policy documents did especially poorly[4] in three criteria or areas: monitoring coverage or access of groups (especially the most vulnerable) to nutrition-sensitive humanitarian food assistance (HFA) interventions; minimizing unintended negative nutritional impacts from nutrition-sensitive HFA; and references to meeting Sphere minimum (voluntary) standards in food security and nutrition, which promote accountability in the humanitarian space on these issues. HFA agencies can strengthen their commitments in the above areas, preferably by pooling capacity and resources with their development counterparts (Panel 6.5 also stresses this point).

PANEL 6.5 THE EL NIÑO CLIMATE CYCLE: SUCCESSES AND CHALLENGES FROM 2015

YVES HORENT, CLAIRE DEVLIN, AND ABIGAIL PERRY

The impact of El Niño on malnutrition throughout 2015 and into 2016 has been profound, resulting in a staggering caseload of severe acute malnutrition (UNICEF 2016a) in eastern and southern Africa and an estimated 60 million people affected overall so far (UNOCHA 2016). The full impacts on hunger and malnutrition are poorly understood but will undoubtedly be significant and long lasting. The events of the past year have highlighted that despite some improvements, systems are still not able to sufficiently mitigate the impact of the types of climatic shocks arising from El Niño.

Like other organizations, the UK Department for International Development (DFID) started to monitor El Niño models closely beginning with the first warning in March 2015. At that time forecasts were uncertain, but they reached a much higher degree of certainty in June 2015. This was the point at which the predicted likelihood of a strong event became sufficient to inform early decisions. Over this period, DFID, scientists, academics, and the UK Meteorology Office collaborated to anticipate weather patterns and possible humanitarian effects. In August 2015, this scientific analysis started to be shared with donors as well as development and humanitarian agencies to stimulate early response. Starting in October 2016, quality-assured regional seasonal outlooks were also provided to interested partners.

Mindful of the devastating impacts of the 1997–1998 and 2010–2011 El Niño episodes, the focus during this period was developing or updating contingency plans (DFID 2015). It was apparent that there would be major nutrition needs across parts of Africa and other regions. The hunger crisis in the Horn of Africa in 2010–2011 highlighted that early warning does not automatically lead to early action, and the country contingency plans were identified as a crucial step for stimulating action.

In view of the large numbers of people affected by El Niño in 2015 and 2016, it is evident that more progress is urgently required:

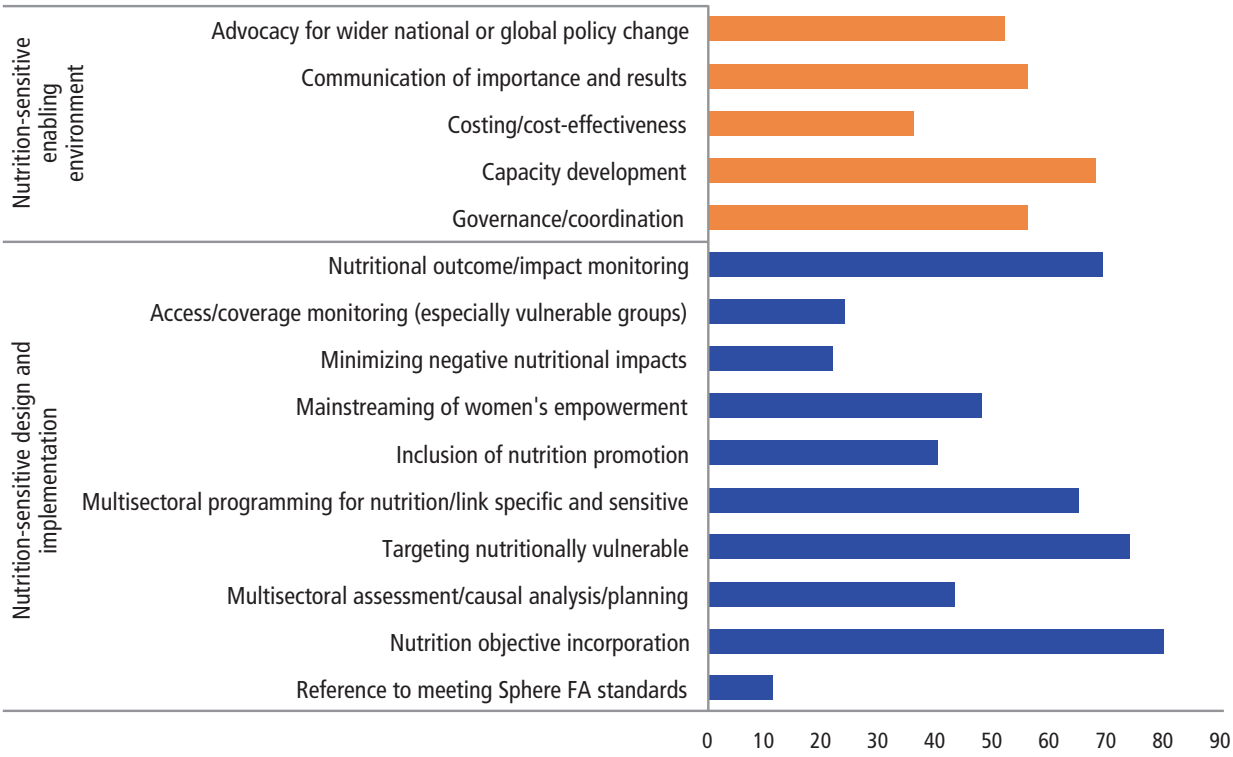
- Contingency planning and other preparedness activities need to be timely and more systematic and methodological. These should not be the exclusive responsibility of emergency humanitarian agencies but need to be integrated into a wider range of government departments, agencies, and programs.
- Evidence on the design and delivery of shock-responsive social protection needs to be enhanced to enable rapid expansion to more crisis-prone countries. If possible, these mechanisms should also be made more nutrition sensitive and linked to early warning systems that enable localized prediction of hunger and malnutrition.
- The use of climate science needs to become the norm and more systematic. This requires more people to be educated and trained to understand forecasts and stick to quality-assured products. These also need to be better communicated to all decision makers, from the grassroots level up to heads of state, in a language that is appropriate.
- Financing mechanisms are needed that trigger the release of resources at scale and on time.
- Analysis of economic and market data needs to be strengthened. New technologies should facilitate access to data and analysis, leading to greater transparency and adaptation of policy at times of stress or shocks.

The 2015–2016 El Niño is not, however, an entirely bad-news story. Despite the weaknesses in the response this time around, there is evidence that there have been important improvements in our ability to deal with climatic shocks when compared with the experience of the El Niño in 1997–1998:

- With more knowledge and more computer power, weather forecasts have significantly improved and are much more reliable, over longer periods of time and in more regions than ever. Forecasts are also better communicated, thanks to new information technologies.
- Many countries have improved their disaster management capacity, and the aid sector has become much more structured and professional. More decision makers understand the benefits of early actions and more collaboration.
- More countries have social protection programs that not only partially sheltered large numbers of people from the impact of climatic shocks but can also rapidly adapt and be scaled up when needed (Fitzgibbon 2016).
- New risk-based financing models are also being tested and are providing promising results.

While an El Niño of the strength seen in 2015–2016 is not a common occurrence, the distortions to weather patterns are not dissimilar to a near-future world with climate change. Vital lessons have been learned over the past year, and we will need to build upon these to improve our ability to protect populations from hunger and malnutrition into the future.

FIGURE 6.3 Percentage of 22 policy and strategy humanitarian food assistance documents that cover nutrition-sensitive issues in different domains



Source: Brown et al. 2015.

Note: FA = food assistance.

USING UNDERLYING DETERMINANT INTERVENTIONS AND POLICIES AS A PLATFORM FOR DIRECT NUTRITION ACTIONS

Here we consider the usefulness of underlying determinant interventions and policies as platforms for the more direct or nutrition-specific actions highlighted in Chapter 5.

Cash transfers with behavior change

New research from Bangladesh illustrates the potential impact of using social protection interventions as a platform for direct nutrition interventions. World Food Programme cash transfers that added behavior change communications around infant and young child feeding were the only type of transfer that had a large, positive, and significant impact on height-for-age Z-scores. Cash transfers without behavior change communications did not have an impact on height-for-age scores, although nearly all modalities had a positive impact on household food security and child diet (Ahmed et al. 2016). This evaluation of the cash transfer modalities was a trial of a pilot program, but given the widespread implementation of cash transfer programs—and if the results are replicated—the inclusion of behavior change components in social protection programs shows promise.

Education

The education sector provides opportunities for improving nutrition through all three of the pathways identified in the chapter introduction: the level of underlying drivers, the nutrition sensitivity of drivers, and the use of underlying determinant interventions as platforms for direct nutrition interventions. It is an important way of empowering women and of changing norms about nutrition. Panel 6.6 outlines what the options are and what the evidence says.

PANEL 6.6 INCREASING THE ORIENTATION OF EDUCATION ACTIONS TOWARD ADDRESSING MALNUTRITION IN ALL ITS FORMS

HAROLD ALDERMAN

Nutrition-sensitive programs draw upon complementary sectors to affect the underlying determinants of nutrition and child development, which include poverty, food insecurity, and lack of access to adequate care resources and adequate health, water, and sanitation services (Ruel and Alderman 2013). While particular attention has been applied to the potential nutrition sensitivity of agriculture and social protection, education shares in that potential owing to its coverage as well as its ability to serve as a platform for nutrition-specific programs. There are several ways to make school more nutrition sensitive.

Increase girls' participation in schooling. Girls' schooling can reduce adolescent pregnancy—a well-documented risk factor for small birth size (Kozuki et al. 2013)—as well as raise the age of marriage (Hahn et al. 2015) and reduce total fertility (Breierova and Duflo 2004). Clearly, however, in the long run what girls learn in school is even more important. This is not just basic literacy and numeracy, but also information on health and nutrition.

Use school as a platform for nutrition education and other nutrition-related services. There is accumulating evidence on school-based modules for nutrition education, particularly in encouraging healthy eating and exercise with the aim of preventing obesity (Waters et al. 2011). There is also some experience with encouraging hygiene and handwashing as well as with teaching modules addressing risky activities potentially linked to adolescent pregnancies. But there is also one glaring omission: there is little in the nutrition literature that covers low- and middle-income countries on the experience of using classrooms to impart information on caring for children, despite the high expectation that most students will shortly take on the role of caregiver (Tang et al. 2009).

Schools can also be a platform for iron supplementation (Luo et al. 2012) as well as for incentives for school leaders to reduce anemia in schools (Miller et al. 2012). Similarly, albeit not without some debate, schools can provide a platform for regular deworming (Ahuja et al. 2015).

Make school meals a nutrition intervention. School meals offer a possibility for exploring diet diversity, but their role in improving nutrition is less straightforward than their proven role in promoting school enrollment. This is illustrated by the example of certain Mexican children who can be classified as both underweight by World Health Organization (WHO) standards and simultaneously overweight in terms of body mass index (Lobstein et al. 2015). This paper offers an apt phrase for the challenge that this phenomenon exemplifies—overweight or underheight?—a challenge that affects the goals and assessment of school feeding programs, including those in preschools. It is no longer clear how to interpret evidence such as the systematic review of randomized trials of school meals that reported an increased weight gain of 0.39 kilograms (Kristjansson et al. 2007) without a greater understanding of context, although the corresponding evidence on school performance in these programs is less ambiguous (Victora and Rivera 2014).

Use school feeding as a potential support to agricultural development. In addition to its nutrition, education, and social protection objectives, school feeding is increasingly asked to support agricultural development through homegrown school feeding programs. Adding a new objective, of course, increases the trade-offs that must be considered. In the case of homegrown school feeding, decentralization makes fortification—one means by which school meals can effectively reduce micronutrient deficiencies—more challenging, but not impossible. It also increases the challenge of logistics in food-insecure areas in times of drought or seasonal shortages. Over time, however, homegrown school feeding may improve dietary diversity and increase food security among low-income producers, although there is no evidence yet to support this hope.

CALLS TO ACTION

1. **Set targets for underlying driver outcomes.** During the next revision of their national nutrition and noncommunicable disease plans, country governments and civil society organizations (CSOs) should identify the primary underlying drivers of their unique nutrition contexts and establish targets to accelerate improvement in them.
2. **Set targets for nutrition-sensitive spending.** Governments, UN agencies, CSOs, donors, and businesses should make more ambitious commitments about the percentages of their investments in food systems; water, sanitation, and hygiene (WASH); education; gender equity; and social protection programs that are explicitly designed to help address all forms of malnutrition.

3. **Deepen understanding of common drivers of poor nutrition.** Researchers need to create a unified, conceptual framework for understanding the underlying drivers of overweight/obesity, micronutrient deficiency, stunting, and wasting—and identify common drivers of all forms of malnutrition. This will help guide specific commitments by governments, donors, the UN, and businesses at the underlying level. This should be published in a Lancet nutrition series and supported by funders and governments.
4. **Strengthen nutrition action for those affected by conflict and emergencies.** Leading national and international humanitarian stakeholders must ensure that their actions are more nutrition oriented, and they need to do a better job of
    - monitoring access of vulnerable groups to humanitarian interventions that tackle malnutrition and bridge the gap between humanitarian and development interventions;
    - meeting Sphere standards on the implementation of humanitarian response in food and nutrition as a way to strengthen accountability to vulnerable groups; and
    - systematically using climate science, social protection mechanisms, and new data technologies to improve the ability of underlying drivers to improve preparedness for and response to shocks.

These stakeholders should be encouraged to make SMART commitments in the aforementioned areas as part of the 2016 N4G process, and as they set country-level SDG targets.

7 MEETING THE NEED: FINANCING TO ATTAIN TARGETS

COMMITMENT WITHOUT FUNDING REPRESENTS UNFULFILLED GOOD INTENTIONS. IF NUTRITION-PROMOTING ACTIONS ARE TO BE IMPLEMENTED AND TARGETS MET, they need to be financed. Financing for nutrition comes from governments (domestic), from international sources—the bilateral and multilateral aid agencies and foundations that make up the "donor" community—and from people themselves.

We know that investing in scaling up nutrition interventions is a high-impact, high-return proposition. The *Global Nutrition Report 2014* estimated a benefit-cost ratio of 16:1 and the *Global Nutrition Report 2015* summarized new estimates that show a compound rate of return from nutrition investments of greater than 10 percent. We also know that the costs of nutrition-related noncommunicable diseases (NCDs) are very high: for example, Popkin et al. (2006) estimate that for China the costs of obesity and obesity-related dietary and physical activity patterns will increase from 3.58 percent to 8.73 percent of gross national product from 2000 to 2025.

This chapter outlines how much it will cost to scale up interventions and accelerate improvements in nutrition—and how well governments and donors are doing in meeting that challenge. In doing so we identify ways in which governments and donors can increase and most effectively allocate resources to support action on nutrition. The chapter also provides civil society with data to help it hold governments and donors more accountable for financing actions to accelerate nutrition improvements.

The first part of the chapter deals with the spending levels needed to attain targets related to undernutrition and breastfeeding. It presents analyses that answer the following questions: How much will be needed to finance direct nutrition interventions to meet the World Health Assembly (WHA) targets on stunting, wasting, exclusive breastfeeding (EBF), and anemia by 2025? Who has to step up, and how will the resources be raised? The analysis shows that

governments and donors—together—need to increase their investments in nutrition several times over if the highest-burden countries are to reach the WHA goals.

Next, we conclude that there is significant room for governments to increase their allocations to nutrition. We show that governments are allocating 2.09 percent of their expenditures to nutrition. This compares with 33 percent of government expenditure in Asia and Africa allocated to four sectors: agriculture, education, health, and social protection (we do not have comparable data for water, sanitation, and hygiene [WASH]). These sectors are the reservoirs that nutrition must draw on. We show that 24

KEY FINDINGS

This chapter outlines how well governments and donors are doing in meeting nutrition financing needs, and what it will cost to meet the challenge that malnutrition poses.

- Scaling up nutrition investments is still a high-impact, high-return proposition, with a benefit-cost ratio of 16:1 and a compound rate of return of more than 10 percent (IFPRI 2014, 2015a).
- The costs of neglecting nutrition are high, causing economic losses of 10 percent of gross domestic product. In China, the gross national product losses due to obesity are likely to double from 4 percent in 2000 to 9 percent in 2025. In low-income countries, 54 percent of the cost of cardiovascular disease is met from household expenses.
- There is a strong case for tracking financial resources and investments in nutrition: it leads to a far greater focus on results and helps make the case for additional investment.
- Current funding levels do not meet the needs:
  - The 10-year funding gap to meet 2025 milestones for stunting, severe acute malnutrition, breastfeeding, and anemia is US$70 billion.
  - Analysis of 24 low- and middle-income governments' spending shows the mean allocation to nutrition at 2.1 percent, compared with 33 percent to agriculture, education, health, and social protection.
  - Noncommunicable diseases (NCDs), many of which are linked to nutrition, cause 49.8 percent of death and disability in low- and middle-income countries. But less than 2 percent of donor health spending goes to NCDs per year ($611 million in 2014). And nutrition-related NCDs received only $50 million of donor funding in 2014, compared with nearly $1 billion spent on nutrition-specific interventions.
  - Donor allocations to all nutrition-specific interventions are stagnating at $1 billion, although their allocations to nutrition via other sectors are increasing.
- Governments and donors must triple their commitments to nutrition to meet these critical milestones, with annual spending increases of $3.7 billion and $2.6 billion, respectively.
- Significant opportunities exist to increase nutrition spending: governments can make the 33 percent they spend on agriculture, education, social protection, and health work harder for nutrition by including nutrition targets in their plans and by tracking impact.
- Reporting on nutrition spending is patchy, at best. Government spending data on nutrition-related NCDs and obesity are fragmented across multiple departments and often bundled in with non-nutrition items. The Organization for Economic Co-operation and Development's Development Assistance Committee does not monitor donor nutrition-sensitive spending or nutrition-related NCD spending. Governments and donors do not always take consistent approaches to tracking their nutrition spending.

governments are already drawing on these sectors, but the flow to nutrition is, at present, a trickle.

We show that while donors have stepped up impressively for undernutrition interventions over the last 10 years, their momentum on nutrition-specific spending—such as breastfeeding promotion, the promotion of improved infant and young child feeding, micronutrient supplementation and fortification, and therapeutic feeding for severe acute malnutrition (SAM)—has stalled. We point out that spending on these items has plateaued while major donors such as the United States, the United Kingdom, and Japan have seen significant declines in their disbursements to nutrition-specific interventions. In addition, 13 of the 28 Organization for Economic Co-operation and Development (OECD) donors continue to shun nutrition-specific interventions by allocating less than US$1 million[1] to them. Donor nutrition-sensitive disbursements to combat undernutrition in areas such as agriculture, social protection, education, WASH, and women's empowerment are increasing, although the reporting remains patchy and therefore difficult to analyze.

Finally, and for the first time in the *Global Nutrition Report*, we begin to assemble a picture of funding for nutrition-related NCD actions. Data sources are fragmented and not well tailored to assessing government or donor spending on such actions. Governments, donors, and researchers have a great deal more work to do to identify spending on actions to prevent and control nutrition-related NCDs.

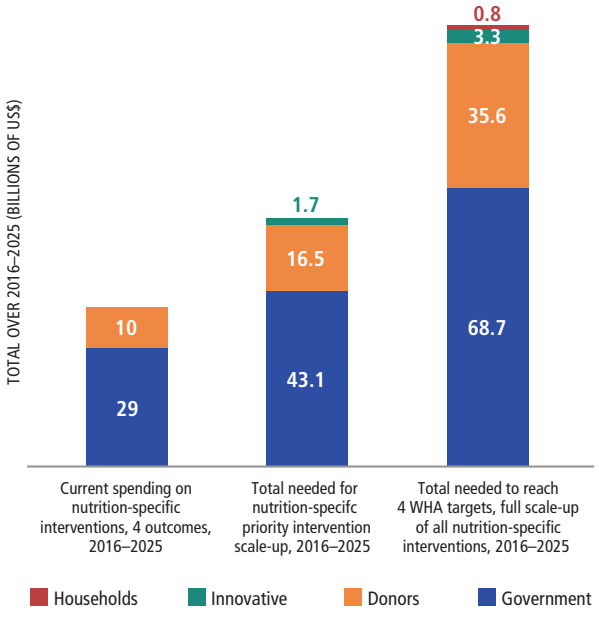
COSTING AND RESOURCING OF DIRECT INTERVENTIONS TO MEET GLOBAL MATERNAL AND CHILD NUTRITION TARGETS

The *Global Nutrition Report 2015* summarized a preliminary analysis from the World Bank and the Results for Development Institute (R4D) on the cost of scaling up nutrition-specific interventions in 37 high-burden countries to meet the 2025 stunting targets. Since that work in mid-2015, the World Bank and R4D teams have refined their stunting analysis and added similar analyses for three further targets—under-5 severe acute malnutrition,[2] anemia in women of reproductive age, and exclusive breastfeeding—this time for all low- and middle-income countries.[3]

The teams estimate that current spending on nutrition-specific interventions to address stunting, severe acute malnutrition, exclusive breastfeeding, and women's anemia is $3.9 billion a year: $2.9 billion from government sources and $1 billion from donors. If this level is maintained over the coming decade, a total of $39 billion will be invested in the key intervention package (Figure 7.1). To meet the four targets, however, this amount will have to increase by nearly $70 billion. This represents a near tripling of the current spending over this 10-year period to a total of $108 billion (Figure 7.1). Governments will need to mobilize an average of $3.9 billion more per year, and donors an additional $2.6 billion annually over the next 10 years to meet the targets. This would increase current government funding by a factor of 2.3 over the 10-year period and current donor funding by a factor of 3.6. The middle bar of Figure 7.1 provides estimates for scaling up a subset of interventions[4] (see Shekar et al. 2016). These multiples for the full scale-up are in line with previous estimates on stunting from the World Bank and R4D team, reported in the *Global Nutrition Report 2015*.

Are these increases in nutrition-specific investment levels feasible in an era when economic growth is slowing and official development assistance levels are plateauing? Donors have already quadrupled their spending on nutrition-specific interventions over the past 10 years, though

FIGURE 7.1 Financing levels and sources to meet stunting, severe acute malnutrition, anemia, and exclusive breastfeeding goals for all low- and middle-income countries by 2025



Source: Authors, based on data in Shekar et al. (2016).

Note: Examples of innovative financing mechanisms include the Power of Nutrition (see www.powerofnutrition.org) and the Global Financing Facility in support of Every Woman, Every Child (see www.globalfinancingfacility.org). *Global Nutrition Report 2015* reported on these mechanisms.

admittedly from a very low base. Will they be willing to expand at this more demanding pace?

To make a convincing argument for additional investment, several things need to happen. First, there needs to be an engaging articulation of the lives saved and the benefit-cost ratios of scaling up direct nutrition interventions (see the median benefit-cost ratio of 16:1 reported for 40 countries in the *Global Nutrition Report 2014)*. Second, the total cost needs to be broken down into "bite-sized" pieces that are more politically feasible for domestic and international investors to commit to (hence the "priority intervention" scenario, middle column, Figure 7.1). Third, a timeline needs to be articulated for a schedule of payments that reflects different stakeholders' ability to invest. And fourth, the circle of investors needs to be expanded.

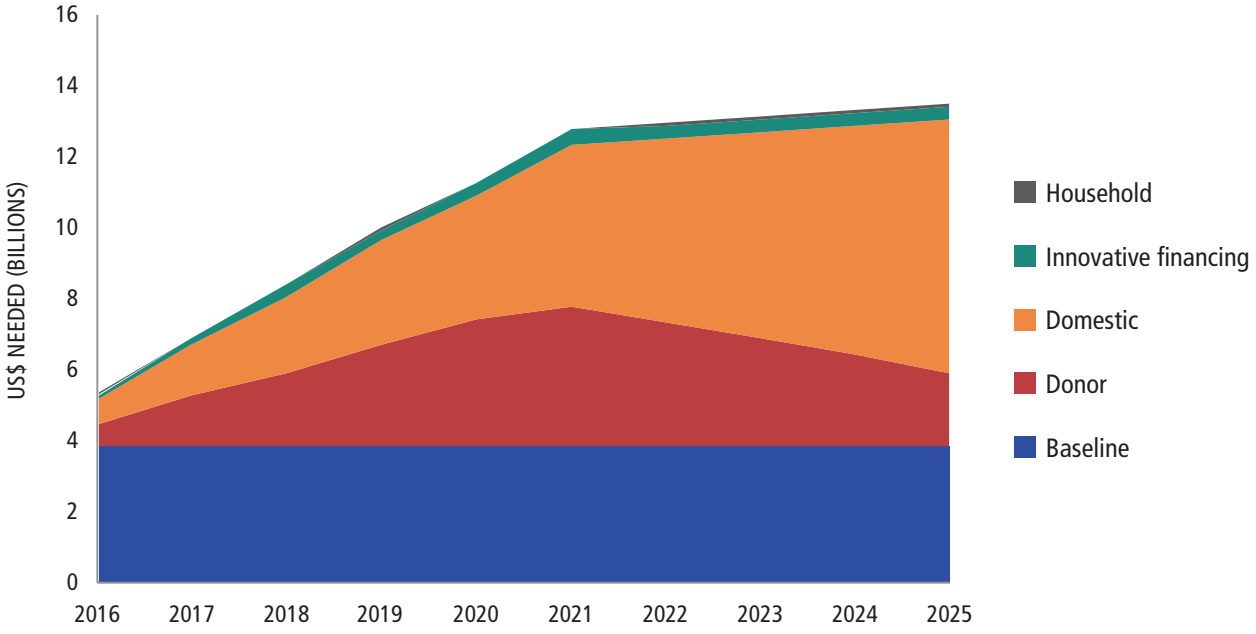
To make the step up in funding more feasible, the World Bank and R4D authors propose a time line with a schedule of payments that, they argue, reflects ability to invest. This is the "global solidarity" scenario for funding (Figure 7.2). Donor increases would be front-loaded, with the bulk of government domestic increases occurring in the second half of the 10-year period.

The *Global Nutrition Report* strongly endorses the conclusions of the analysis of the World Bank and R4D team. Further details of their work are summarized in Shekar et al. (2016).

COUNTRY DOMESTIC NUTRITION BUDGET ALLOCATIONS

In the *Global Nutrition Report 2015* we presented data from 14 countries that had estimated their domestic allocations to both nutrition-specific and nutrition-sensitive actions.[5] Each of those countries derived and applied its own nutrition weights to various line items in its government budget. This section applies the mean weights for those 14 countries to 8 new countries.[6] Two additional countries, Peru and Guatemala, provided their actual nutrition budget allocations. Thus, we have 24 country-level estimates of domestic allocations to nutrition.[7] Figure 7.3 presents the nutrition allocations as a percentage of general (total) government expenditures. The estimates range from 0.06 to 9.23 percent of general government expenditures. The mean nutrition allocation across the 24 countries is 2.1 percent.

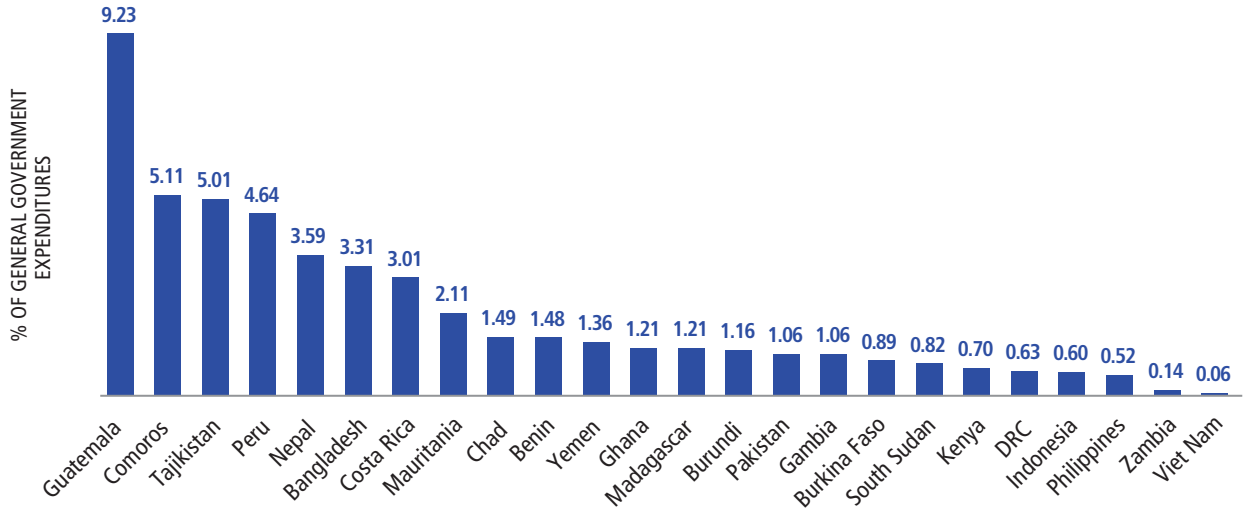
FIGURE 7.2 Additional investments required to achieve "global solidarity" scenario for all low- and middle-income countries, 2016–2025



Source: Shekar et al. (2016).

Note: Dollar amounts represent the additional investments over baseline required from different stakeholders to achieve the 2025 global nutrition targets for stunting, severe acute malnutrition, anemia, and exclusive breastfeeding in the "global solidarity" scenario for the full scale-up in all low- and middle-income countries.

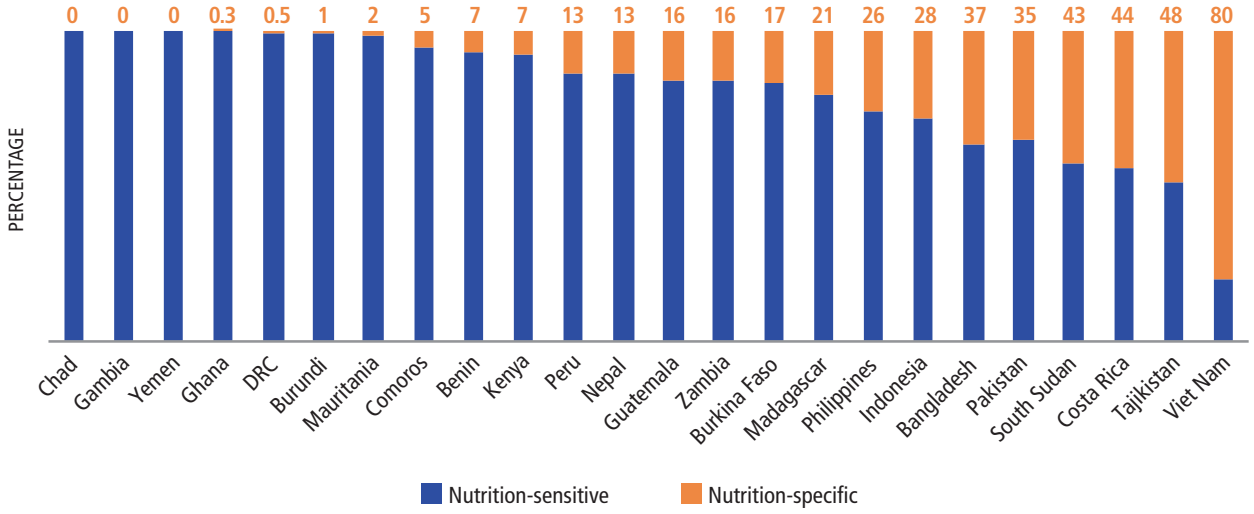
FIGURE 7.3 Budget allocations to nutrition-specific and nutrition-sensitive interventions, 24 countries



Source: Authors, based on data in Greener et al. (2016).

Note: DRC = Democratic Republic of the Congo.

FIGURE 7.4 Nutrition-specific and nutrition-sensitive budget allocations, 24 countries



Source: Authors, based on data in Greener et al. (2016).

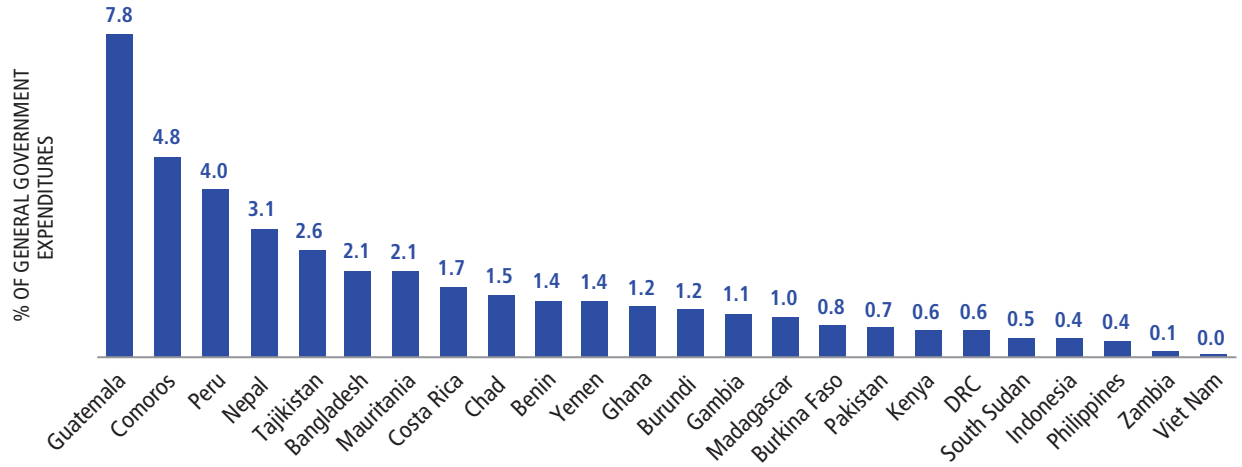
Note: DRC = Democratic Republic of the Congo.

Figure 7.4 breaks the estimated nutrition allocations down into nutrition-specific[8] and nutrition-sensitive shares. Most of the domestic budget allocations to nutrition identified by the countries relate to nutrition-sensitive interventions (1.7 percent of general government expenditures for sensitive and 0.4 percent for specific). The dominance of the nutrition-sensitive category reinforces the importance of underlying drivers as highlighted in the previous chapter.

Figure 7.5 shows the estimated domestic budget allocation of each of the 24 countries to nutrition-sensitive interventions as a percentage of general government expenditures. This measure ranges from 0.01 to 7.78 percent. The mean nutrition-sensitive allocation as a percentage of general government expenditures across the 24 countries is 1.7 percent.

That is a small percentage relative to the shares of the sectors from which most of these line items are drawn.[9] For example, in 2011 the Bangladesh government spent 37

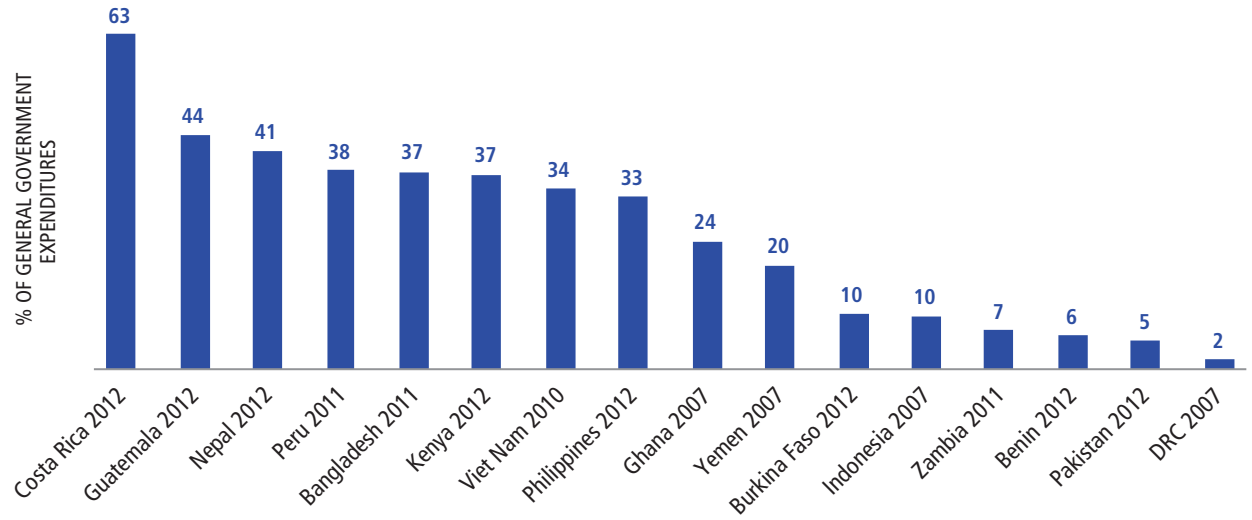
FIGURE 7.5 Estimated budget allocations to nutrition-sensitive interventions, 24 countries



Source: Authors, based on data in Greener et al. (2016).

Note: DRC = Democratic Republic of the Congo.

FIGURE 7.6 Budget allocations to nutrition-relevant sectors, 16 countries



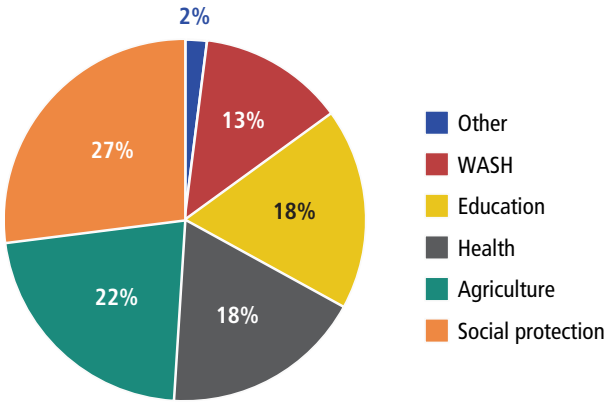
Source: Authors, based on SPEED database (IFPRI 2015b).

Notes: Sectors are agriculture, education, health, and social protection. Data for water, sanitation, and hygiene are not available. DRC = Democratic Republic of the Congo.

percent of its general budget expenditures on agriculture, health, education, and social protection (Figure 7.6). On the other hand, it allocated 2.1 percent of its total budget to nutrition-sensitive interventions (Figure 7.5).

Figure 7.7 shows the nutrition-sensitive breakdown by sector across the 24 countries. The social protection sector accounts for the highest share of nutrition-sensitive allocations, followed by agriculture, health, and education. The *Global Nutrition Report 2014* highlighted the large amounts of resources allocated by governments to social protection and pointed out the opportunity for using it to advance nutrition. The *Global Nutrition Report 2015* provided examples of how Bangladesh and Ethiopia were making their social protection financing work harder for nutrition. Chapter 6 of the *Global Nutrition Report 2016* has panels on WASH and education that provide new and clear guidance on how to embed nutrition more firmly in those sectors.

FIGURE 7.7 Share of nutrition-sensitive allocations from each sector, 24 countries



Source: Authors, based on data in Greener et al. (2016). Data are from the same 24 countries covered in Figures 7.3, 7.4, and 7.5.

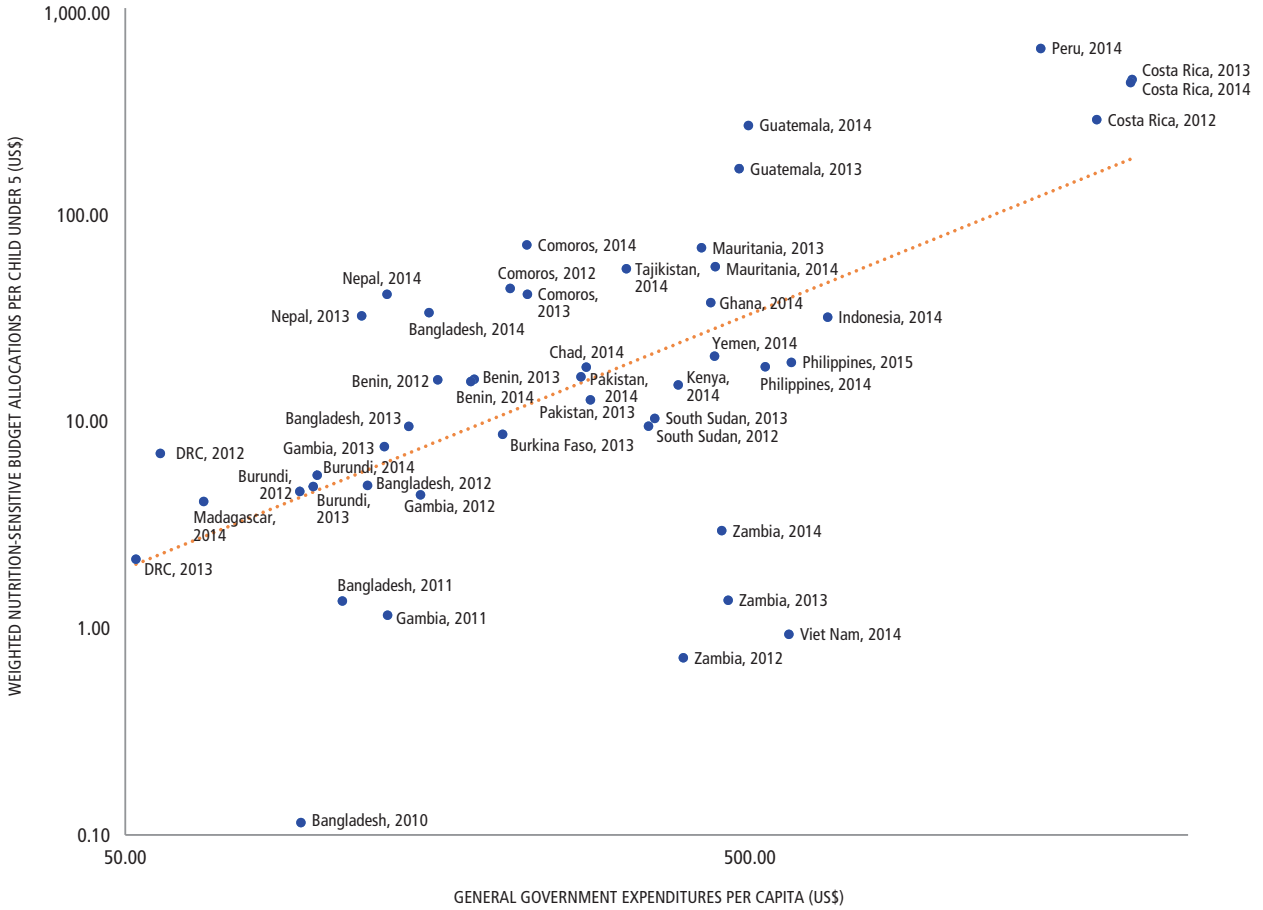
Note: WASH = water, sanitation, and hygiene.

NUTRITION-SENSITIVE ALLOCATIONS PER CHILD UNDER 5 ARE CORRELATED WITH OVERALL GOVERNMENT EXPENDITURES PER CAPITA — BUT THERE ARE SIGNIFICANT OFF-TREND EXAMPLES

Figure 7.8 shows that nutrition-sensitive budget allocations, normalized on a per-child-under-age-5 basis, are positively correlated with per capita general government expenditures. As the line of best fit shows, countries with larger overall government spending (typically countries with higher incomes) allocate more nutrition-sensitive resources per child under 5.

Countries above the line allocate more to nutrition-sensitive actions than we would expect based on their overall government expenditure. Countries below the line allocate less than we would expect. There are wide variations around this line, however. For example, Zambia and Guatemala allocated similar amounts of total government resources per person (the horizontal axis), but Guatemala allocated much higher levels of nutrition-sensitive funding per child under 5 (the vertical axis).[10]

FIGURE 7.8 Relationship between nutrition-sensitive weighted budget allocations per child under age 5 and general government expenditures per capita



Source: Greener et al. (2016).

Note: Countries appear more than once depending on how many years of budget data are available.

PANEL 7.1 GUATEMALA AND PERU: TIMELY ACCESS TO FINANCIAL DATA MAKES A DIFFERENCE IN ACTUAL SPENDING AND SPURS ACCOUNTABILITY AT ALL LEVELS

PAOLA VICTORIA, ARIELA LUNA, JOSÉ VELÁSQUEZ, ROMMY RÍOS, GERMÁN GONZÁLEZ, WILLIAM KNECHTEL, VAGN MIKKELSEN, AND PATRIZIA FRACASSI

Guatemala and Peru have put in place advanced integrated financial management information systems with public access to daily updated budget and other management data.

In Guatemala, expenditure tracking is consolidated in monthly reports prepared by the Secretariat of Food Security and Nutrition (SESAN), with data extracted from the Integrated Government Accounting System (SICOIN) managed by the Ministry of Public Finance. Guatemala has embarked on a results-based management program, and has developed a publicly accessible tracking system specifically to monitor the Zero Hunger Pact Plan[1] interventions. Its tracking system enables the monitoring of progress by institution, program, and municipality. It also allows other stakeholders to promote accountability. For example, a private-sector initiative—Mejoremos Guate ("We will improve Guatemala")—undertook a detailed monitoring exercise of service delivery to prevent chronic malnutrition. So far, four monitoring exercises have been undertaken, informing the ministry in charge of implementation results.

In Peru, expenditure tracking is through a publicly available electronic portal—Consulta Amigable—managed by the Ministry of Economy and Finance. The Ministry of Social Development and Inclusion consolidates data for the social programs. The Ministry of Economy and Finance prepares a monthly report on financial execution for all budget programs. A red alert is issued for executing entities/products with a low execution rate. Recently, an attempt to improve financial tracking vis-à-vis progress in service delivery was carried out. Ministries worked with regional and local governments as well as civil society to generate data on service delivery (for example, growth control, vaccination scheme, micronutrient supplementation, human resource capacity, and so forth), which were then related to financial execution to understand if this was a key bottleneck to scale up.[2]

The regular tracking in both countries reveals that Guatemala's actual expenditures are lower than planned allocations, while Peru's actual expenditures are higher than planned allocations. The significantly higher spending in Peru is because releases take place every month based on results. For this reason, Peru's actual spending is 26 percent higher than initial allocations that are planned on an annual basis, but 12 percent lower than modified allocations that occur once or twice per year when required.

Transparent and regular access to data allows for results-based releases of resources and the timely correction of low implementation rates as well as increased accountability of ministries to local governments, civil society organizations, and the families for whom these investments are meant.

We include this analysis here because it is possible that this association may form the basis for a benchmark on nutrition-sensitive budget allocations. For example, the line of best fit might be interpreted in a larger data set as the average level of nutrition-sensitive allocation for a country of a particular income level. Total nutrition allocations could also be benchmarked in this way. More work needs to be done to develop these benchmarks.

THE PROCESS OF COLLECTING NUTRITION BUDGET ALLOCATION DATA HELPS COUNTRY CHAMPIONS INFLUENCE CHANGE

In general, as reported by Scaling Up Nutrition (SUN) government focal points, the process of tracking budgets increases dialogue between ministries, departments, and agencies within governments about the need to invest in nutrition (Scaling Up Nutrition 2015). Peru and Guatemala are two of the better-known examples of countries with budget-driven planning processes. Panel 7.1 elaborates on how those countries use nutrition budgets to ensure effective implementation.

Perhaps less well known are the experiences from South Asia, and therefore we provide examples from Pakistan and Bangladesh as well as a very recent example from India.

The Pakistan government's analysis of budget data brought up two main findings. First, the Benazir Income Support Program accounts for almost 50 percent of the analyzed budget (with $985 million allocated per year). This is an unconditional cash transfer to poor households. The Pakistan government is engaging partners to improve

PANEL 7.2 BUDGETING FOR NUTRITION IN INDIA

SUMAN CHAKRABARTI, PURNIMA MENON, AND SUBRAT DAS

Several points are worth noting from the Indian budget of 2015–2016 released in February 2016.

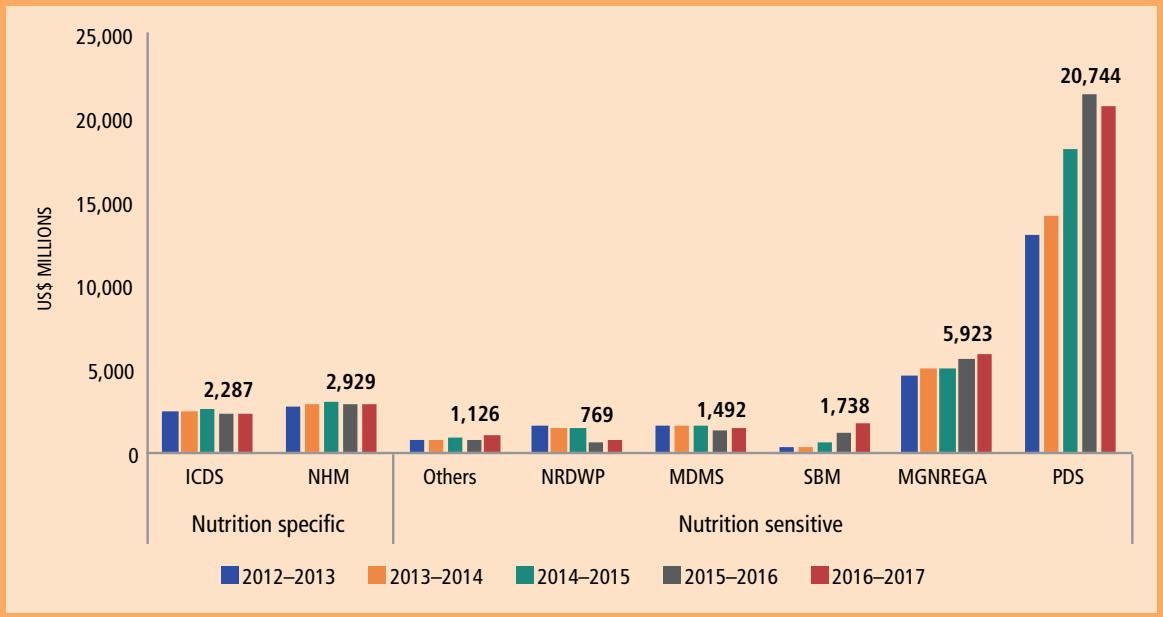
First, in 2016, the Indian government, at the central level, allocated approximately US$5.3 billion in total to nutrition-specific programs such as the Integrated Child Development Services Scheme and the National Health Mission. It allocated $31.6 billion in total to several programs aimed at improving the underlying determinants of nutrition, such as the Public Distribution System (PDS), which focuses on food security, the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), which focuses on livelihood security in rural areas, and the Swachh Bharat Mission, which is focused on sanitation.

Second, although a large amount of money is committed to nutrition-specific interventions, it falls $700 million short of the $6 billion per year Menon, McDonald, and Chakrabarti (2015) estimate is needed. The Indian government could meet this independently assessed target by increasing the budget 13 percent.

Third, programs such as the PDS (food subsidy) and MGNREGA (employment security) that target underlying determinants account for about 70 percent of India's expenditure on nutrition. Such allocations, and those available from the central government for the sanitation mission, can help create more supportive home environments for improved nutrition, if well implemented. For all these programs, the onus of strengthening centrally sponsored government schemes by reducing inefficiencies, improving targeting, and ensuring greater convergence of the schemes lies with the state governments.

Finally, due to changes in the country's fiscal architecture, there are now opportunities for states to increase their commitment to nutrition and allocate additional state financing. But there is a risk that states may not prioritize nutrition. Guidelines for prioritizing and allocating financing available from the central government could help strengthen nutrition-financing efforts at the state level as well.

BUDGET ALLOCATIONS TO NUTRITION-RELATED PROGRAMS IN INDIA, 2015–2016



Source: Authors, based on data in CBGA (2016a).

Notes: US$1 = INR 65. Figures for 2016–2017 are budget estimates. ICDS = Integrated Child Development Services Scheme; NHM = National Health Mission; NRDWP = National Rural Drinking Water Programme; MDM = Mid-day Meal Scheme; SBM = Swachh Bharat Mission; MGNREGA = Mahatma Gandhi National Rural Employment Guarantee Act, PDS = Public Distribution System (food subsidy). "Others" includes National Creche Scheme for Children of Working Mothers, Indira Gandhi Matritva Sahayog Yojana, Scheme for Empowerment of Adolescent Girls, National Mission for Oilseeds and Oil Palm, National Mission for Sustainable Agriculture, National Food Security Mission, and National Rural Livelihood Mission.

PANEL 7.3 GLOBAL PARTNERS HARMONIZE TECHNICAL SUPPORT ON BUDGET ANALYSIS

ALEXIS D'AGOSTINO, AMANDA POMEROY-STEVENS, CLARA PICANYOL, MARY D'ALIMONTE, PATRIZIA FRACASSI, SASHA LAMSTEIN, HILARY ROGERS, AND SHAN SOE-LIN

The 2014 *Global Nutrition Report* emphasized the need for sufficient financial resources for nutrition and pointed out the requisite by countries to be able to track their domestic nutrition spending. A year later, 30 countries were able to report preliminary estimates of national budget shares for nutrition in the 2015 *Global Nutrition Report*.

Out of the 30 countries, 16 carried out the data gathering themselves, 10 were supported by the *Global Nutrition Report* secretariat, two got support from the Results for Development Institute (R4D), and two were supported by the USAID-funded SPRING project. The work culminated in April 2015 with four regional budget analysis workshops supported by UNICEF on behalf of the United Nations Network for the Scaling Up Nutrition (SUN) Movement.

At those workshops, the countries requested that technical support be accelerated in a number of areas, including these:

1. Provide guidance to standardize the categorization of "nutrition-specific" and "nutrition-sensitive" interventions.
2. Develop recommendations on how to identify allocations for personnel and how to deal with subnational government finances.
3. Develop options to harmonize the "weighting" of the interventions, especially the nutrition-sensitive ones.
4. Provide recommendations on the next steps—in particular,
   a. how to use the results of the Budget Analysis Exercise for advocacy and communication;
   b. how to track actual expenditures;
   c. how to track off-budget allocations and expenditures; and
   d. how to link the financial tracking with planning and resource mobilization.

A group of global technical experts convened by the SUN Movement Secretariat and including SPRING and R4D is working to provide further guidance to researchers, donors, and government agencies responsible for analyzing nutrition financing (allocations and/or expenditures). This joint effort should move the topic of nutrition financing forward by answering key questions identified with estimating and tracking nutrition budget and expenditures.

the design of the program so that it can respond to the nutritional needs of women and children. Second, the analysis revealed a significant variation among the provinces in the ratio between nutrition-specific and nutrition-sensitive allocations, as well as the relative contributions made by each sector. This shows that even within a country, different regions make different decisions on resource allocations to improve nutrition outcomes, and there is potential for peer learning between subnational governments.

The government of Bangladesh uses a financial database that is based on the 2012 Country Investment Plan. An analysis of the actual versus planned spending in 2014 revealed that, on average, 81 percent of allocations directed toward nutrition-specific interventions were actually spent compared with 48 percent of allocations directed toward nutrition-sensitive actions. The agriculture sector receives the highest share of domestic funding. The government is updating the national plan of action, which is expected to influence the sectoral budgetary allocations to nutrition and, especially, the actual spending in the coming years.

The Indian government released its 2015–2016 budget in February 2016. Despite the lack of mention of any explicit commitments to nutrition in the budget speech by the finance minister, an analysis of the budget (Panel 7.2) through a nutrition lens by the Centre for Budget and Governance Accountability in India reveals several insights about how the government of India is investing in areas that could support nutrition. The panel shows that the budget allocation to nutrition is not increasing, is short of what is needed, and is dominated by interventions at the underlying level (such as the Public Distribution System), which have to be well designed, with an intent to improve nutrition, if they are to be effective.

An important overall conclusion from observing the process of estimating country nutrition budget allocations is that the process opens debate on how some programs might be improved to have a larger impact on nutrition out-

comes. Once the initial setup is completed and the process annualizes, it can become an inspiration for other countries, including high-income countries, many of which cannot report nutrition budgets.

Finally, it should be noted that the process of estimating funding gaps, such as in the foregoing discussion, requires solid estimates of current government spending. Domestic budget analysis has come a long way since 2014, but it still has a ways to go before methods are harmonized. Panel 7.3 describes the process of harmonization currently under way.

As more nutrition spending data become available, studies will be needed to analyze the impacts of budget/funding allocations on levels/changes in program coverage and nutrition status. While there is plenty of evidence on the costs and nutrition-outcome impacts of raising nutrition-specific coverage rates (for example, Bhutta et al. 2013; IFPRI 2014), we know of no studies that link actual nutrition spending with rates of nutrition progress.

DONOR SPENDING

This section analyzes official donor spending on actions to reduce undernutrition (nutrition specific and sensitive) and nutrition-related NCDs.[11]

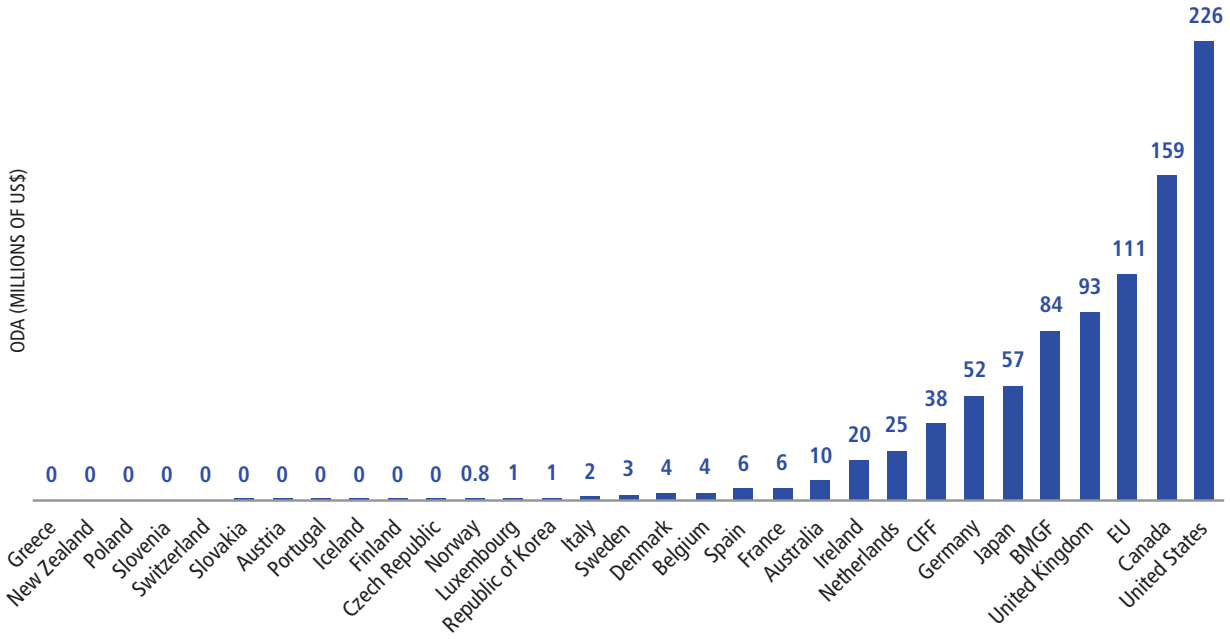
UNDERNUTRITION ACTIONS

Nutrition-specific spending

Using the latest donor data from the Creditor Reporting System (CRS),[12] Figure 7.9 shows the official development assistance (ODA) spending levels in 2014 for the 28 OECD bilateral agencies, the European Union, and two foundations—the Bill & Melinda Gates Foundation (BMGF) and the Children's Investment Fund Foundation (CIFF). The 31 donors spent a total of $900 million on nutrition-specific interventions (for example, breastfeeding promotion, infant and young child feeding, and vitamin A supplementation). The top five donors (United States, Canada, European Union, United Kingdom, and BMGF) provided most financing (75 percent of the total). Only 11 of the 31 donors allocated more than $10 million. As in 2013, 13 donors spent less than $1 million on nutrition-specific interventions. An additional $10 million from each of the 20 donors who currently spend less than $10 million on nutrition-specific interventions would add $200 million per year to nutrition-specific disbursements, an increase of 22 percent on the total.

Trends show that ODA disbursements to nutrition-specific interventions have plateaued. Between 2013 and

FIGURE 7.9 Nutrition-specific spending by donors, 2014



Source: Authors, based on reported disbursements under CRS code 12440.

Note: Dollar amounts are in current prices and rounded to the nearest whole number. ODA = official development assistance; CIFF = Children's Investment Fund Foundation; BMGF = Bill & Melinda Gates Foundation.

2014, total global ODA spending (minus BMGF and CIFF) on nutrition-specific interventions decreased by 1 percent: down $12 million—from $949 million in 2013 to $937 million in 2014. This fall in spending breaks a pattern of annual increases initiated in 2011 (Figure 7.10). Despite the slight decrease, global nutrition-specific ODA spending as a proportion of total ODA spending remains steady at 0.57 percent—representing an all-time high.

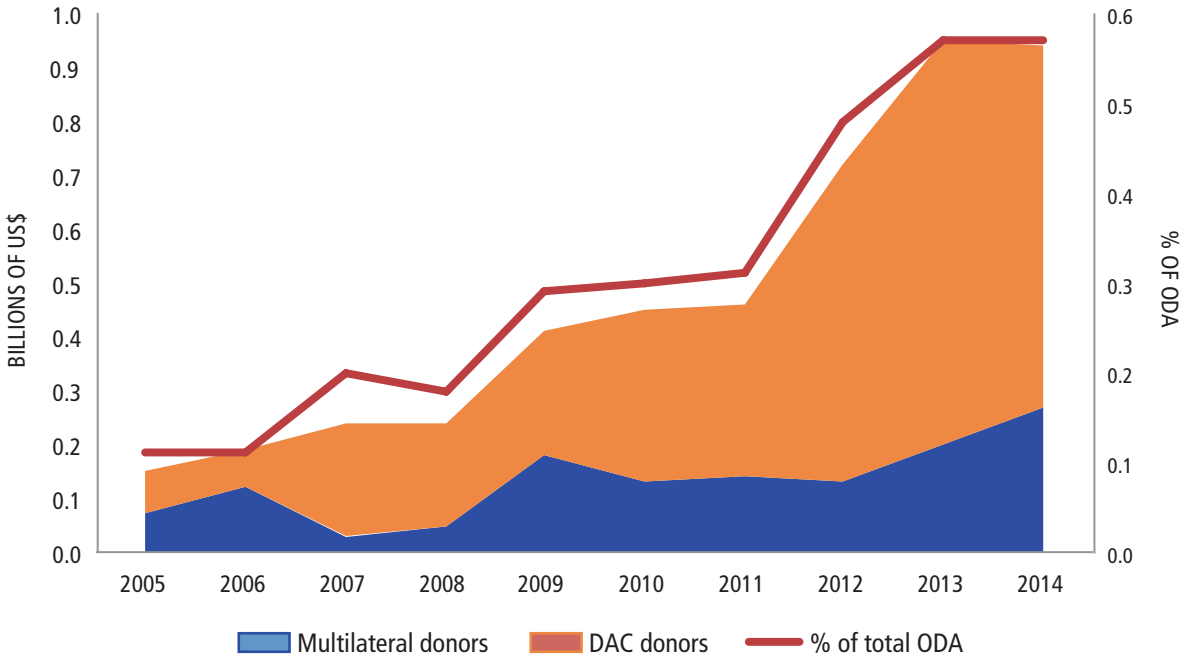
Ten of the 28 OECD country donors reported decreased spending in 2014 ($77 million in total). This includes four of the top five[13] OECD donors: the United States, Canada, the United Kingdom, and Japan (Figure 7.11). Multilateral donors' cumulative spending did, however, increase significantly, by $63 million. While six multilateral donors decreased their spending, several major multilaterals increased theirs by significant amounts. The overall increase was a result of greater spending from the European Union ($69 million) and the World Bank (International Development Association, $29 million). For the first time since 2009, some spending was reported by non–Development Assistance Committee (DAC) donors. Kuwait and the UAE reported spending of $0.9 million and $0.8 million, respectively.

Data for 2014 show that nutrition-specific spending from all donors was directed to at least 116 different countries. Spending is, however, largely concentrated in 12 selected countries. They are, in order of highest to lowest, Ethiopia, Yemen, Mali, Mozambique, Bangladesh, Rwanda, Malawi, Niger, India, Senegal, Kenya, and Tanzania. They received more than half (51 percent) of all disbursements in 2014.[14] Ethiopia received 8 percent of country-allocable disbursements, the most of any country.

Nutrition-sensitive spending

Based on data the donors reported to the *Global Nutrition Report*, it appears that nutrition-sensitive spending (disbursements) has increased substantially in the aftermath of the 2013 Nutrition for Growth Summit. But it is difficult to tell. Table 7.1 presents the data and caveats. The missing full time series for four of the largest donors (the United States, the World Bank, the European Union, and Canada) makes the construction of meaningful overall time series impossible. Nevertheless, looking across the rows of Table 7.1, one sees upward trends between 2010 and 2014 for nearly all donors in the nutrition-sensitive category, which is encouraging. And as Chapter 6 has suggested, the scope to increase this source of funding for nutrition remains significant.

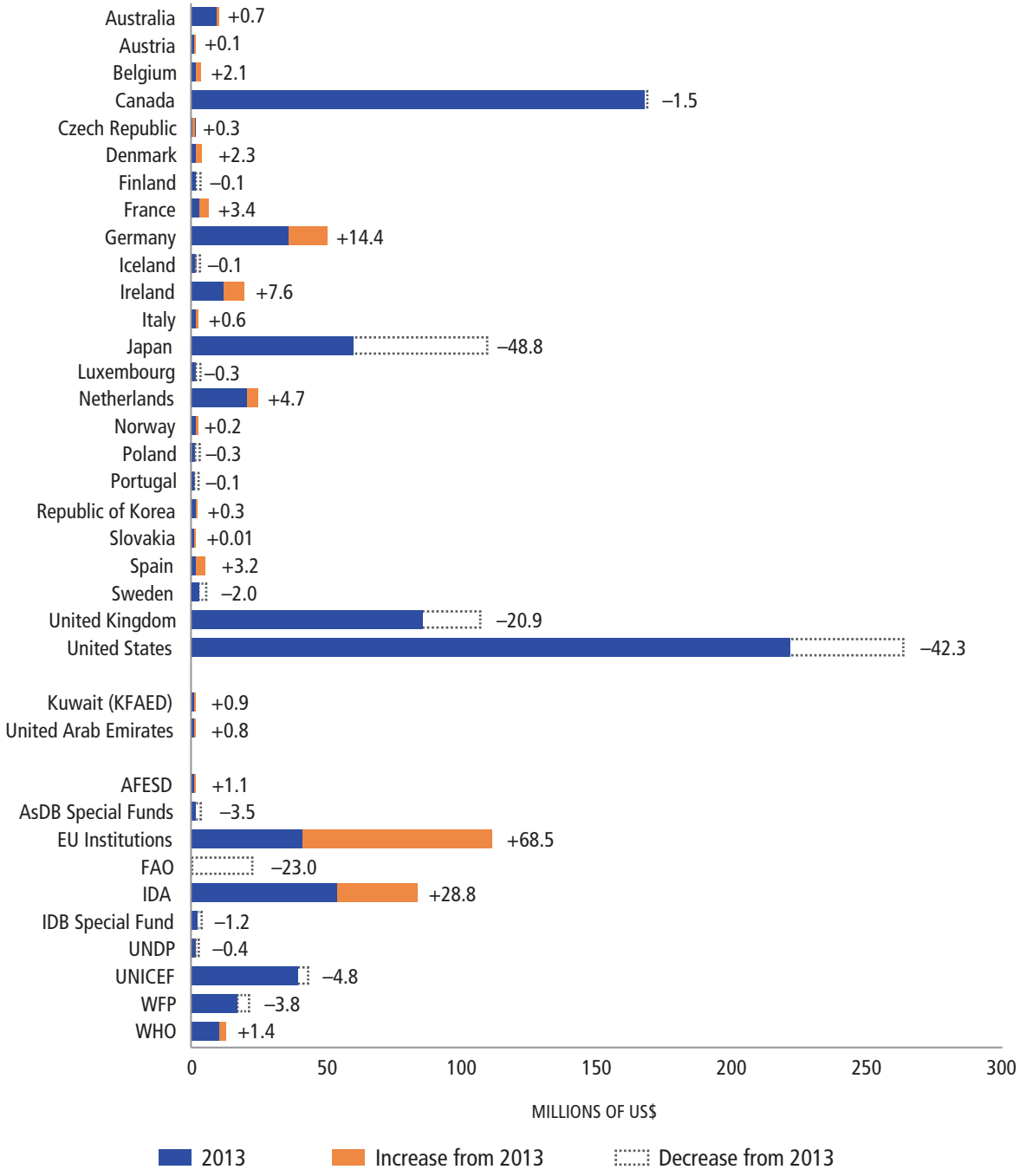
FIGURE 7.10 Donor ODA spending on nutrition-specific interventions, 2005–2014



Source: Development Initiatives, based on OECD (2016a).

Note: Amounts are gross disbursements in constant 2013 prices. DAC = Development Assistance Committee; ODA = official development assistance.

FIGURE 7.11 Changes in nutrition-specific spending by country donors and multilateral donors, 2013–2014



Source: Development Initiatives, based on OECD (2016a).

Note: Amounts are based on gross disbursements in constant 2013 prices. KFAED = Kuwait Fund for Arab Economic Development; AFESD = Arab Fund for Economic and Social Development; AsDB = Asian Development Bank; FAO = Food and Agriculture Organization of the United Nations; IDA = International Development Association; IDB = Inter-American Development Bank; UNDP = United Nations Development Programme; WFP = World Food Programme; WHO = World Health Organization.

TABLE 7.1 Nutrition disbursements reported to the 2014–2016 *Global Nutrition Reports*, 13 donors (thousands of US$)

Donor	Nutrition-specific 2010 disbursements	Nutrition-specific 2012 disbursements	Nutrition-specific 2013 disbursements	Nutrition-specific 2014 disbursements
Australia	6,672	16,516	NR	20,857
Canada[a]	98,846	205,463	169,350	159,300
EU[b]	50,889	8	54,352	44,680
France	2,895	3,852	2,606	6,005
Germany	2,987	2,719	35,666	50,572
Ireland	7,691	7,565	10,776	19,154
Netherlands	2,661	4,007	20,216	25,025
Switzerland	0	0	0	0
United Kingdom	39,860	63,127	105,000	87,000
United States[c]	8,820	229,353	311,106	263,240
BMGF	50,060	80,610	83,534	61,700
CIFF	980	5,481	37,482	26,750
World Bank[d]	61,160	21,873	NR	NR
Total of 13 donors	333,521	640,574	NA	NA
Donor	**Nutrition-sensitive 2010 disbursements**	**Nutrition-sensitive 2012 disbursements**	**Nutrition-sensitive 2013 disbursements**	**Nutrition-sensitive 2014 disbursements**
Australia	49,903	114,553	NR	87,598
Canada[a]	80,179	90,171	NR	998,674
EU[b]	392,563	309,209	315,419	570,890
France	23,003	27,141	33,599	NR
Germany	18,856	29,139	20,642	51,547
Ireland	34,806	45,412	48,326	56,154
Netherlands	2,484	20,160	21,616	18,274
Switzerland	21,099	28,800	29,160	26,501
United Kingdom	302,215	412,737	734,700	780,500
United States[c]	NR	1,857,716	2,206,759	2,619,923
BMGF	12,320	34,860	43,500	29,200
CIFF	0	0	854	154
World BankB[d]	NR	NR	NR	NR
Total of 13 donors	NA	NA	NA	NA
Donor	**Total 2010 disbursements**	**Total 2012 disbursements**	**Total 2013 disbursements**	**Total 2014 disbursements**
Australia	56,575	131,069	NR	108,455
Canada[a]	179,025	295,634	NA	1,157,974
EU[b]	443,452	309,217	369,771	615,570
France	25,898	30,993	36,205	NA
Germany	21,843	31,858	56,308	102,119
Ireland	42,497	52,977	59,102	75,308
Netherlands	5,145	24,167	41,832	43,299
Switzerland	21,099	28,800	29,160	26,501
United Kingdom	342,075	475,864	839,700	867,500
United States[c]	NR	2,087,069	2,517,865	2,883,163
BMGF	62,380	115,470	127,034	90,900
CIFF	980	5,481	38,336	26,904
World Bank[d]	61,160	21,873	680,000	1,627,000
Total of 13 donors	NA	3,610,472	NA	NA

Source: Authors, based on data provided by the donors.

Notes: NR = no response to our request for the data. NA = not applicable (meaningful totals cannot be calculated owing to missing data or data produced using a methodology other than the Scaling Up Nutrition Donor Network Methodology). Data are not in constant prices. Finally, most donors report in US dollars, and where they do not, we use an annual average market exchange rate from the period reported on (https://www.irs.gov/Individuals/International-Taxpayers/Yearly-Average-Currency-Exchange-Rates). BMGF = Bill & Melinda Gates Foundation. CIFF = Children's Investment Fund Foundation.

[a] The Canadian government's nutrition-sensitive component for 2014 is calculated in a different way from that of other countries. The method used is available by inquiring here: https://www.international.gc.ca/department-ministere/form_contact-formulaire_contacter.aspx?lang=eng.

[b] At the Nutrition for Growth Summit, the EU committed 3.5 billion euros for nutrition interventions between 2014 and 2020. A commitment corresponds to a legally binding financial agreement between the European Union and a partner. The disbursement figures reported by the European Union are the total amounts contracted in respect of commitments. Further disbursements of funds are made according to a schedule of disbursements outlined in individual contracts, progress in implementation, and rate of use of the funds by the partner.

[c] The US government's nutrition-sensitive component is calculated in a different way from that of other countries (see Panel 7.4).

[d] The World Bank reports that its 2013 total disbursement number covers two fiscal years (2013 and 2014) and its 2014 total disbursement number also covers two fiscal years (2014 and 2015); thus it is not appropriate to add $680 million and $1,627 million because doing so would result in double counting.

PANEL 7.4 DONORS' METHODS FOR ESTIMATING NUTRITION-SENSITIVE SPENDING MATTERS

LAWRENCE HADDAD AND JORDAN BEECHER

As in 2015, this *Global Nutrition Report* reports nutrition-sensitive spending from donors using the Scaling Up Nutrition (SUN) Donor Network methodology, with the exception of the United States, which reports nutrition-sensitive spending using a less resource-intensive method.[1] What difference does methodology make? To answer this question, we applied the US methodology to the other N4G donors and then compared the levels of nutrition-sensitive spending generated by both methods and the donor rankings that each set of estimates generates. The results are presented in the table below.

The US government methodology inflates the nutrition-sensitive disbursement estimates for all donors. The inflation is substantial for some donors—the allocations of Germany and the Netherlands are inflated by a factor of 10. The rankings are also significantly altered. While the top two nutrition-sensitive donors in the table remain the same (United Kingdom and Australia), the five countries below change positions significantly.

Methodology matters. Given that the SUN methodology is more refined than the US methodology, we recommend that all countries use the SUN methodology for reporting on nutrition-sensitive disbursements.

WHAT DIFFERENCE DOES METHODOLOGY MAKE TO NUTRITION-SENSITIVE DISBURSEMENTS?

Country	Rank	Nutrition-sensitive disbursements, 2013 (US$ millions) SUN DONOR NETWORK METHOD		Country	Rank	Nutrition-sensitive disbursements, 2013 (US$ millions) US GOVERNMENT METHOD
United Kingdom	1	734.7		United Kingdom	1	949.0
Australia	2	74.7		Australia	2	224.4
Ireland	3	48.3		Germany	3	210.6
France	4	33.6		Netherlands	4	204.9
Switzerland	5	29.2		Switzerland	5	181.1
Netherlands	6	21.6		France	6	78.6
Germany	7	20.6		Ireland	7	37.2

Source: Analysis undertaken by Jordan Beecher at Development Initiatives.

Note: Table includes countries that reported nutrition-sensitive spending using the SUN donor methodology in the *Global Nutrition Report 2015*. The United States cannot be included in the comparison as it did not report nutrition-sensitive spending using the SUN donor methodology in the 2015 *Global Nutrition Report*.

In addition to the patchy reporting from some donors, the donors need to solve a methodological issue pertaining to the estimation of nutrition-sensitive spending (Panel 7.4).

NUTRITION-RELATED NCD ACTIONS

Chapter 2 reminded us that estimated rates of adult overweight, obesity, and high blood sugar are increasing in nearly every country. The economic costs of these nutrition-related NCDs are high: obesity treatment alone consumes 2 to 20 percent of health care expenses (IFPRI 2015a). Despite significant adverse economic impacts, there is little published information about the financing directed to prevent and control nutrition-related NCDs.

Here we draw on new information from the World Health Organization (WHO), the Institute for Health Metrics and Evaluation (IHME), and the OECD/DAC database to present the best available data. We first provide information about sources of funding for all NCDs for selected low-income countries, followed by the most recent information about donor funding for NCDs. We then offer a new analysis of nutrition-related funding within this category.

Country sources of funding for NCDs

There are three main payers for health services: households themselves paying out of pocket (directly or through private insurance); governments paying directly (general

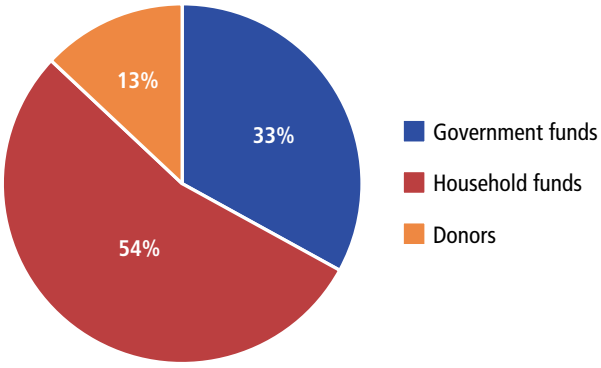
government revenues via taxation on unhealthy products); or through public insurance schemes, the private sector, and donors. The mix of payment sources varies substantially by disease or health issue, and by country income.

Because there is limited government funding, and unlike many other areas of health, much of the burden of NCDs is borne by households themselves through out-of-pocket expenditures. For example, a recent systematic review of the global impact of NCDs on household income (Jaspers et al. 2015) found that cardiovascular disease (CVD) patients in India spent 30 percent of their annual family income on direct CVD health care, where the mean out-of-pocket cost per hospitalization increased from $364 in 1995 to $575 in 2004. The authors also found that in India the risk of impoverishment due to CVD was 37 percent greater than for communicable diseases. The same review reports that "14.3% of high-income families in China experienced some form of household income loss due to cardiovascular disease (CVD) hospitalization, rising to 26.3% in India, to 63.5% in Tanzania, and to 67.5% in Argentina" (Jaspers et al. 2015, 170).

Recent WHO data from a sample of low-income countries show that more than half of current spending for the treatment of CVD is out of pocket from patients and their households, 33 percent is from domestic governments (but only drawing on ministries of health accounts), and 13 percent is from donors (Figure 7.12).

In higher-income countries, out-of-pocket spending on NCDs is less common (WHO 2014c). Government financing for NCDs also varies substantially across countries. In high- and middle-income countries, government financing of NCD prevention and control often exceeds financing for other health needs, since NCDs are the main health burden. But governments in low- and lower-middle-income countries have, to date, allocated very little to NCD prevention and control, including for nutrition-related needs (WHO 2015b). While half of all countries now have costed NCD plans (see WHO 2012a, fig. 4), few countries actually track government expenditures across the entire budget. To better understand the totality of government spending on NCDs and the nutrition-related component, it will be essential to undertake NCD public expenditure reviews. This will promote the efficiency, effectiveness, and accountability of such spending.

FIGURE 7.12 Sources of expenditures on cardiovascular diseases, average of eight low-income countries



Source: Authors, based on country health accounts reports posted on the World Health Organization's Global Health Expenditure Database (WHO 2016w).

Notes: The countries included are Benin, Burkina Faso, Burundi, Cambodia, Democratic Republic of the Congo, Niger, Togo, and United Republic of Tanzania. Three types of health expenditures are added to derive the national health account figures. These are earmarked expenditures (for example, TB control program spending, drugs, and specific commodities); shared expenditures (such as salaries) distributed among diseases using utilization information; and proportionately distribution of nondirectly allocatable expenditures such as central administration of health (for example, minister of health salary). This creates a standard way to allocate shared expenditures for all diseases, ensures internally consistent estimates, and minimizes multiple parallel data collection initiatives at the country level that are labor intensive.

Donor funding for all NCDs

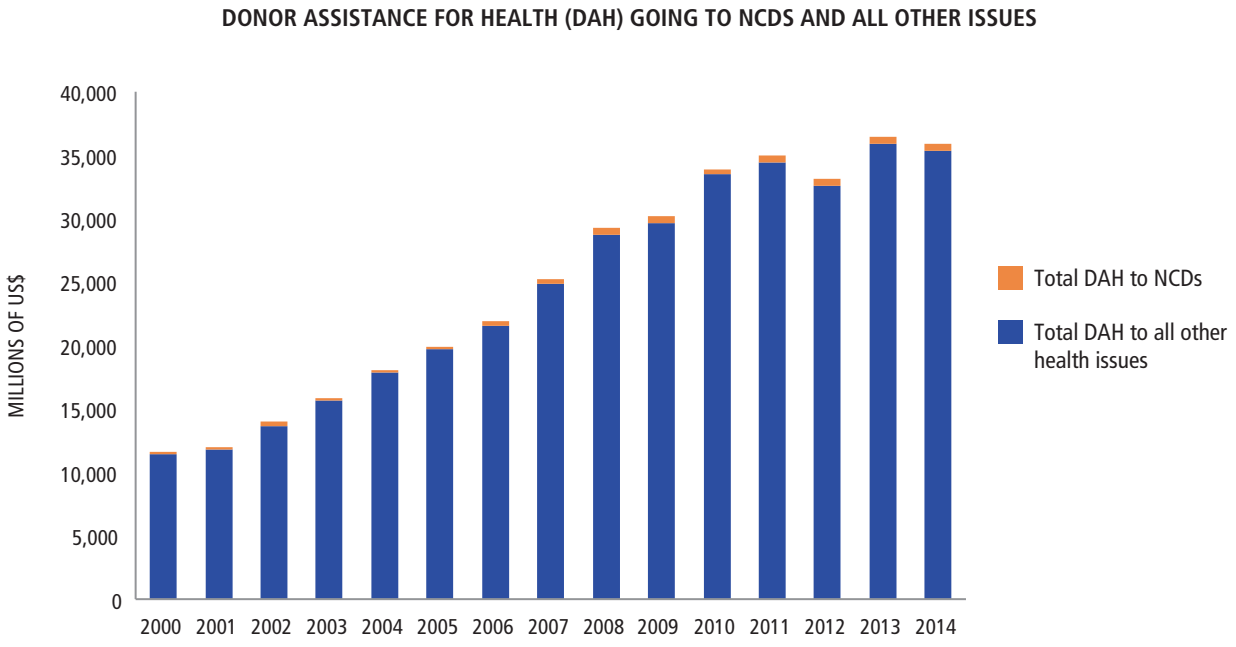
Donor funding can be an important catalyst for national NCD funding, but it should not substitute for a national response. As we will see in this section, donor funding for NCDs is low. Dain (2015, 924) notes that "NCDs—namely cancer, cardiovascular disease, chronic respiratory diseases, and diabetes—cause 49.8% of death and disability in low-income and middle-income countries." In fact, a recent analysis concluded that nongovernmental organizations collectively provided more aid for NCDs than bilateral donors, and almost as much as multilateral organizations (Nugent and Feigl 2010).

Figure 7.13 provides the most recent estimates of development assistance for all health issues and for NCDs specifically. Development assistance going to all health issues other than NCDs has increased significantly since 2000, whereas the small percentage of health-related development assistance to NCDs has increased only slowly, reaching 1.7 percent in 2014, or $611 million (Dieleman et al. 2014). It is important to note that nutrition-related conditions are just one component of NCDs.

Donor funding for nutrition-related NCDs

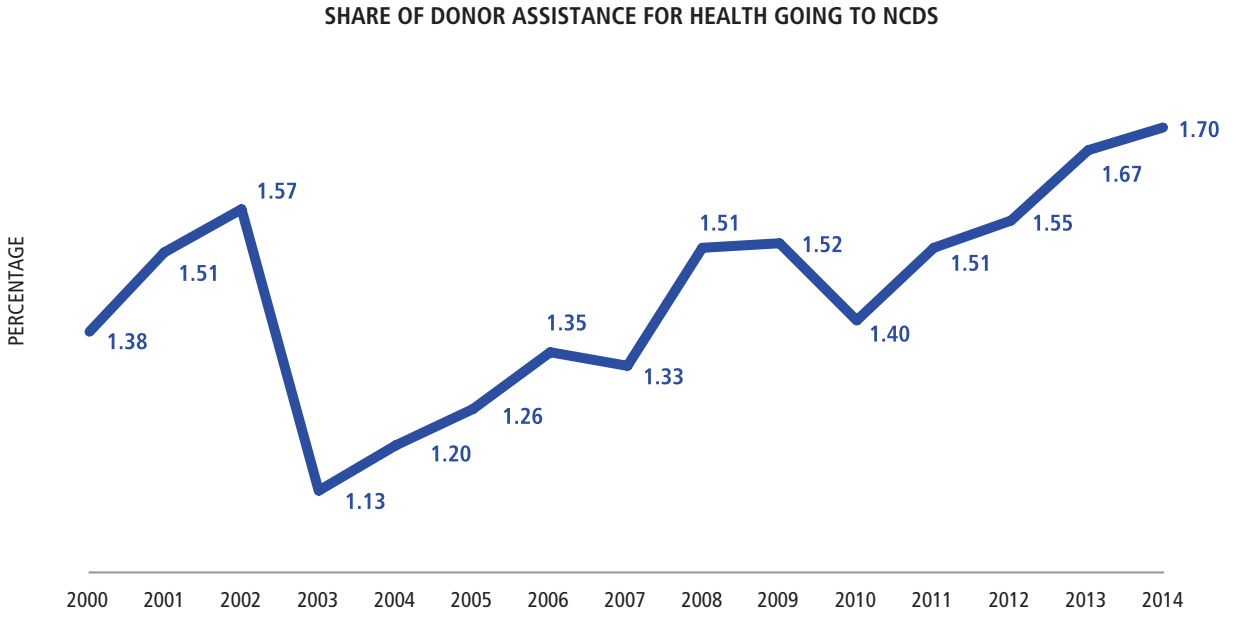
As we noted, IHME estimates that donors allocated $611 million (or 1.7 percent of all development health

FIGURE 7.13 Donor assistance for all health issues and for NCDs, 2000–2014



Source: Authors, based on data from IHME data described in Dieleman et al. (2014).

Note: The "other health issues" make up seven focus areas: HIV/AIDS; malaria; tuberculosis; health-sector support; maternal, newborn, and child health; tobacco use prevention and control; and other.



Source: Authors, based on data from IHME data described in Dieleman et al. (2014).

assistance) to NCDs in 2014. However, not all of that was allocated to nutrition-related NCDs, and not all nutrition-related NCD allocations are found in the health sector.

Here we make a start on analyzing data on official development assistance (ODA) to nutrition-related NCDs. At present there is no Creditor Reporting System code to track ODA to NCDs.[15] While discussions are under way for an improved NCD tracking system through the CRS, it will still combine funding for all forms of NCDs rather than allocations just to the nutrition-related aspects of NCDs—unhealthy diet, obesity, and the disease outcomes themselves. The ability to track NCD-related donor expenditures is about efficiency and effectiveness, but it is also about accountability. To begin to address this gap, we performed a search of the entire CRS dataset to identify any activities relating to nutrition-related NCDs and to produce an estimate of nutrition-related NCD funding in the year 2014.[16]

Of the 441 records originally identified through the word searches, 153 were deemed relevant based on a review of the reported information. These 153 activities have associated total spending of $49.1 million (in ODA disbursements) and commitments equal to $44.7 million. This represents a tiny fraction of the total ODA disbursement of $135.2 billion in 2014 (OECD 2015) and 5 percent of OECD DAC spending on nutrition-specific interventions (Figure 7.9).

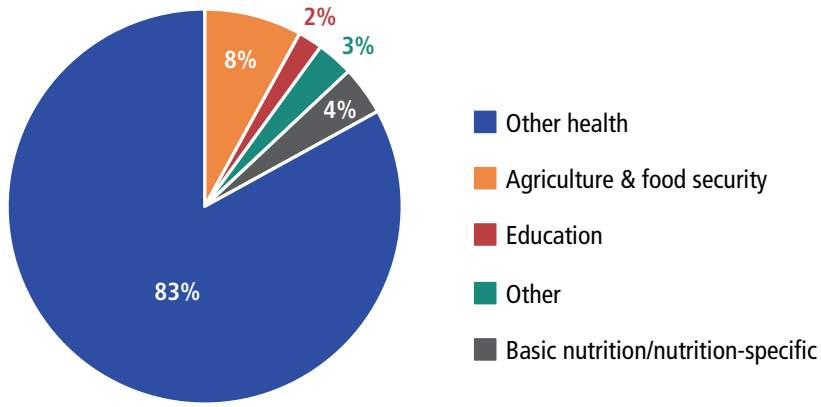
The top donors of these funds were the United States and Australia, disbursing $14.3 million and $13.5 million, respectively. These funds were disbursed to at least 55 different countries. The top recipients were Kenya and Fiji, receiving $14.8 million and $7.9 million, respectively. The majority of records (86 percent of disbursements) were reported under the health sector, $2.1 million of which was disbursed to projects under the "basic nutrition" purpose code, the proxy for nutrition-specific spending. Other NCD-related spending was identified among projects that related to agriculture and food security and education (Figure 7.14).

The mismatch between donor assistance going to health and the burden of disease is well known (Dieleman et al. 2014). Based on this comparison, donor funding directed toward NCDs is extremely underpowered, even for low-income countries. In the short term, nutrition champions need to find ways of embedding nutrition-related NCD programs within areas that are currently donor priorities. One example is the growing emphasis on the integration of NCDs with primary health care (Pettigrew et al. 2015).

CALLS TO ACTION

1. **Increase budgetary allocations to nutrition-specific programs.** In line with analyses reported in Chapter 7, governments and donors must triple their allocations to high-impact interventions that address stunting, wasting, anemia, and exclusive breastfeeding over the 2016–2025 period to meet global targets.

FIGURE 7.14 ODA spending on nutrition-related NCDs, by sector, 2014



Source: Development Initiatives, based on OECD (2016a).

Note: Amounts based on gross official development assistance disbursements in 2014.

2. **Increase budgetary allocations to obesity and nutrition-related noncommunicable diseases.** The funding of obesity and nutrition-related noncommunicable disease policy and interventions represents a small fraction of spending of government budgets and international aid. Governments should cost their national noncommunicable disease plans as they develop them, and funders should support these plans.
3. **Expand the share of sectoral budgets that aim to improve nutritional status.** Governments, civil society, and development agencies need to step up their efforts to make a larger percentage of budgets in agriculture, education, the food system, health systems, social protection, and WASH work more directly for all forms of nutrition. These budgets are large, yet a small fraction of them factor nutrition explicitly into their aims. An essential first step is to set a baseline and a SMART spending target in each sector. Countries that have led the way on nutrition budgeting could set the example again by reporting on such targets in the 2017 *Global Nutrition Report*.
4. **All actors must track their complete nutrition spending more consistently.** Donors, given their catalytic role and relatively strong capacity, need to report commitments to—and disbursements of—nutrition-specific financing. They should also report nutrition-sensitive commitments and disbursements—from the broader development and social sectors that affect nutrition—every year, using the same methodology, starting with the 2017 *Global Nutrition Report*.
5. **Make the Creditor Reporting System codes work better for nutrition accountability.** By the 2020 N4G Summit, the Organization for Economic Co-operation and Development's Development Assistance Committee's database should develop codes for aid spending on nutrition-sensitive undernutrition projects and on nutrition-related noncommunicable disease projects.

8 MEASURING PROGRESS IN ATTAINING TARGETS

KEY FINDINGS

This chapter focuses on data disaggregation: what it tells us about where we should focus our efforts and what the possibilities are for collecting and using disaggregated data

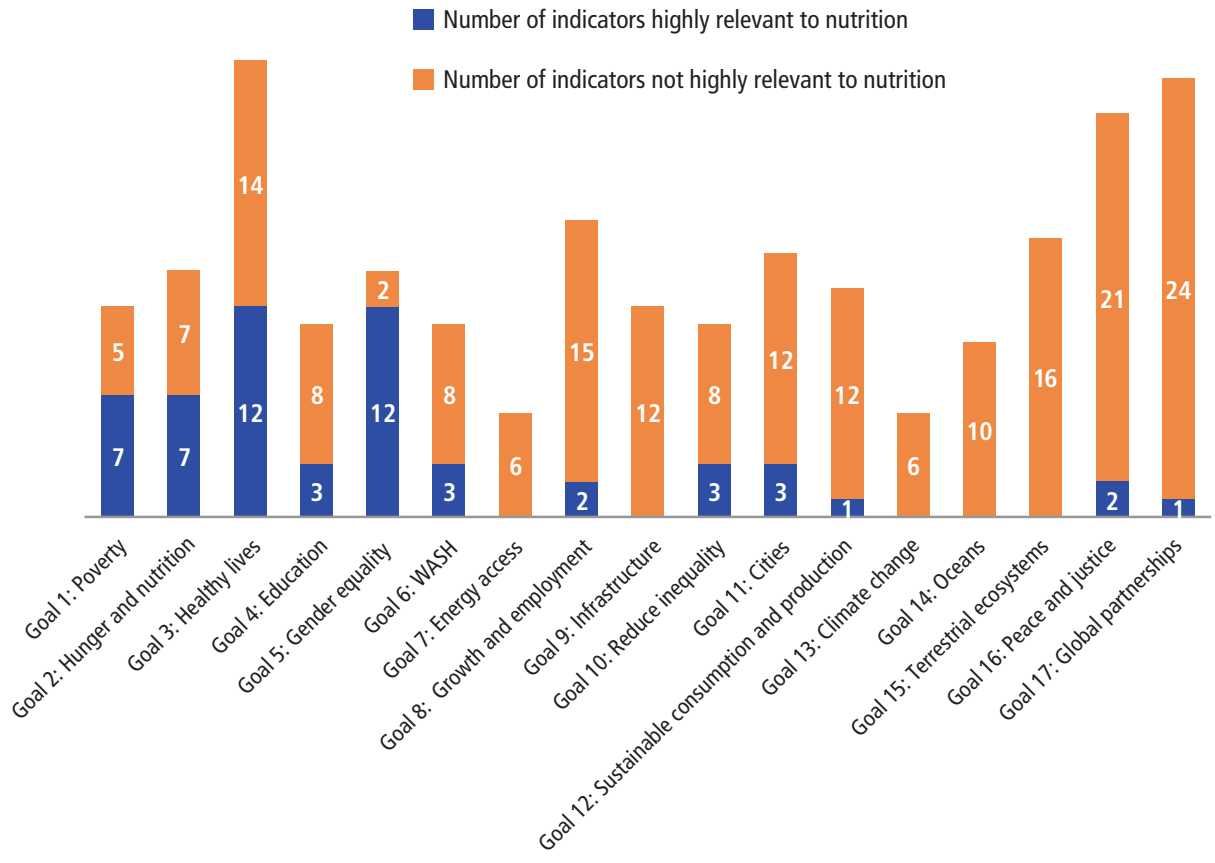
- Of the 17 Sustainable Development Goals (SDGs), 12 contain indicators that are highly relevant for nutrition. This means that those pushing for nutrition accountability should focus their efforts well beyond SDG 2.
- Disaggregated national data identify subgroups that are often more likely to be malnourished. For example, mothers age 18 or younger are more likely to have stunted children, and children are less likely to be stunted if their mothers have secondary schooling. In many countries, even the wealthiest quintile sees stunting rates of 20 percent and greater.
- Subnational data can help target nutrition spending where it is most needed. The data show wide variations in stunting within countries, with many subnational regions having stunting rates three times higher than the region with the lowest stunting rate.
- The supply of more disaggregated data is constrained by demand, capacity, context, and cost. Some countries are exploring measuring priority indicators closer to the ground and measuring a broader array of indicators at a regional level. Others are looking at combining different surveys to identify trends and target interventions.
- Nearly 60 million people are displaced by conflict, but there are limited data on their access to services or their nutrition status. They are usually absent from national nutrition plans.
- The prevalence of stunting and wasting is higher in the 50 countries classified by the Organisation for Economic Co-operation and Development as "fragile states." We do not know enough about trends in malnutrition in these states, so we cannot tackle this challenge as effectively as we might.

TO GUIDE, TRACK, AND LEARN FROM OUR EFFORTS TO REDUCE MALNUTRITION, WE REQUIRE CREDIBLE, TIMELY, AND USEFUL DATA ON NUTRITION OUTCOMES AND INPUTS. IN THE ERA of the Millennium Development Goals (MDGs), the amount of data available to assess progress in development grew rapidly through formal surveys, administrative data, civil registration, and mobile telephones (United Nations 2014b; World Bank and WHO 2014).

As we enter the era of the Sustainable Development Goals (SDGs), the adoption of these goals has already sparked a great deal of discussion on the breadth and depth of data needed for a data revolution for development (for example, World Bank 2015b). In the nutrition context, several new reports—for example, IFPRI (2014, 2015a); Global Panel on Agriculture and Food Systems for Nutrition (2015)—and initiatives have started to look at these issues. They are building support for open access (such as the Global Open Data for Agriculture and Nutrition [GODAN] initiative), capacity building around metrics and methods (such as Innovative Methods and Metrics for Agriculture and Nutrition Actions [IMMANA]), data reuse and interoperability (for example, SDG2 Accountability), and the use of new technologies (for example, mNutrition).

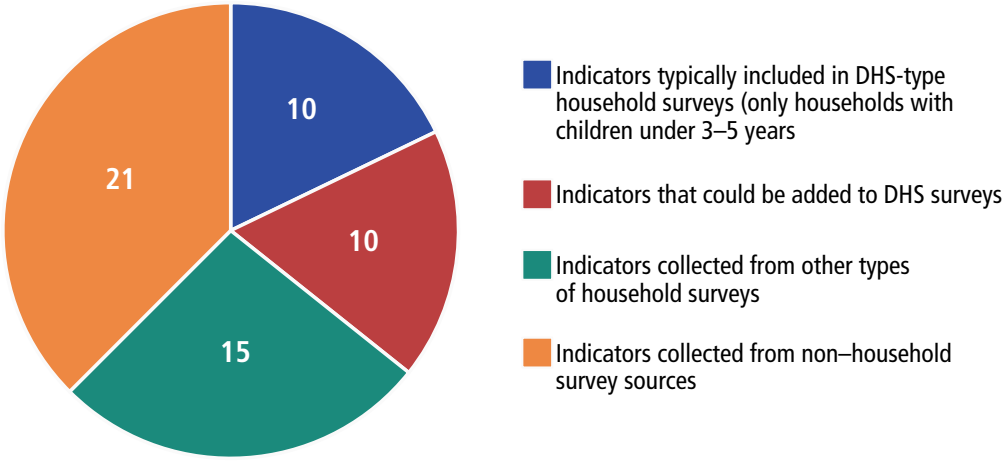
The focus of this chapter is primarily on data disaggregation. We choose this part of the nutrition data terrain for several reasons. As Chapter 1 stated, we need to be clear about whom SMART (specific, measurable, achievable, relevant, and time bound) commitments need to focus on. This means looking beyond national averages. In addition, the SDG challenge is to move toward zero prevalence of malnutrition (for example, Goal 2.2, "By 2030 end all forms of malnutrition"). This means improving the nutrition status of all groups, no matter how excluded or marginal they are. So we ask, what are the possibilities

FIGURE 8.1 Number of Sustainable Development Goals indicators that are highly relevant for nutrition, by goal



Source: Authors.

FIGURE 8.2 Nutrition-relevant SDG indicators



Source: Authors.
Note: DHS = Demographic and Health Survey.

for disaggregating existing data? And what other options are there for estimating nutrition status at very disaggregated levels? We pay attention to the costs as well as the benefits of disaggregating data. We also pay particular attention to our ability to monitor the nutrition status of one highly vulnerable group—people displaced by conflict—whose numbers have grown rapidly in the past year to 60 million worldwide.

But before looking in depth at disaggregated data as a way of promoting accountability to various vulnerable populations, we review the breadth of indicators that the SDGs encourage us to bring to bear when tracking nutrition outcomes and inputs at all levels.

NUTRITION-RELEVANT INDICATORS IN THE SDGS

When thinking about the relevance of the SDGs for nutrition, it is tempting to look only in SDG 2 ("End hunger, achieve food security and improved nutrition, and promote sustainable agriculture") for indicators that document nutrition outcomes and inputs. Indeed SDG 2 includes three of the World Health Assembly indicators for undernutrition: stunting, wasting, and overweight among children under 5. However, the SDGs offer many more accountability opportunities to those who want to accelerate nutrition improvements.

An analysis of the nutrition relevance of all 242 indicators proposed for the 17 goals (online Appendix 8) identified 53 indicators that serve as inputs to nutrition (of varying proximity) and 3 that help describe the nutrition situation: 56 in total. The distribution of these 56 indicators by the different sustainable development goals is described in Figure 8.1. Note that SDG 2 contains only 7 of the 56 indicators. It is important to note that others will make their own determination of what should be in the broader SDG nutrition set. In fact, once the SDG indicator list is fully settled, the nutrition community should develop a consensus around the nutrition indicators that should be tracked most closely. The new Health Data Collaborative (2016) with its 100 core health indicators (12 of which are nutrition outcomes and practices that are listed as "risk factors") could prove to be a useful model for the nutrition community to follow in establishing a consensus set.

The SDGs represent a rich opportunity to strengthen accountability in nutrition. That opportunity needs to be taken. Countries need to identify their own broad set of nutrition SDG indicators in the context of national-level processes for strengthening nutrition plans, setting national targets, and establishing capacity to assess progress toward meeting these targets.

Data on the SDG nutrition indicators will come from a variety of sources. Some will be found in the main sources of nutrition data—the Demographic and Health Surveys (DHSs) and Multiple Indicator Cluster Surveys (MICSs)—but these surveys cannot necessarily be relied upon to cover many additional indicators.

Figure 8.2 allocates the 56 indicators in Figure 8.1 into four categories: those that (1) are typically included in DHSs, (2) could be added to DHSs, (3) are collected by

PANEL 8.1 PERU CONTINUOUS DHS CASE STUDY

MONICA KOTHARI AND SHEA RUTSTEIN

Peru was the first country to undertake the Continuous Demographic and Health Survey (Continuous-DHS). The DHS is identified as a continuous survey (CS) when it is undertaken on an annual basis. This CS replaced the standard DHS in Peru, which had been conducted every three to five years. The CS responded to two of Peru's expressed needs. First, the country needed to meet an increasing demand to have data available more frequently than the typical five-year interval between standard DHSs in order to more effectively monitor progress in population and health programs. Second, it needed to institutionalize the capacity to conduct DHSs.

The Peru CS started with 6,000 sample households in 2004 (2004–2007 cycle) and has now expanded to a sample of about 40,000 households. In the 2008 round, the government of Peru wanted to increase the sample size to get estimates at the subnational (department) level every year. The Child Nutrition Initiative, started under President Alan Garcia, required anthropometric data from every department in 2008. Around the same time, the Ministry of Finance started a "governing by results" framework, which required annual department-level data for implementation. To support this data need, Peru's Congress approved and continues to approve a line item of about $2.5 million to conduct the CS every year. Hence over time there has been a strong political commitment to support data collection and reporting from the Office of the President down to lower political offices.

The Peru CS is currently in its 11th cycle. There is a permanent CS unit established within the National Institute of Statistics and Information (INEI), and INEI has several staff members who are government employees dedicated full time to the survey. This unit has experienced very low staff turnover.

The financial benefits of institutionalizing DHS within the country are clear: the country is no longer dependent on unpredictable donor funding and priorities. In addition, institutionalization allows for retaining full-time staff dedicated to the DHS, rather than spending resources on training and retraining short-term staff every few years. Furthermore, the CS has the potential to yield data of higher quality, since permanent staff would have a greater stake in adhering to performance standards than would short-term staff. Data quality is also assumed to be higher with the CS model because the model allows for timely identification and correction of errors. Due to the more frequent data collection cycles in the CS model, the CS design can be more flexible and sensitive to users' needs for special information. Moreover, updated data become available more frequently with the CS model.

However, there are also several potential challenges associated with the CS model. Integration of CS into existing organizational infrastructures can be difficult, especially in cases where current staff have little extra time to devote to additional activities. The CS design is more complex and demands more technical support than standard DHS designs. Securing a consistent flow of funding for the CS model may also be difficult. In addition, conducting surveys every year in difficult field settings may result in staff fatigue. Finally, there may be data demands that cannot be easily accommodated within the CS design (Rutstein and Way 2014).

other household surveys, and (4) are collected from non–household survey sources.[1] As Figure 8.2 shows, fewer than one-fifth of the SDG nutrition-relevant indicators are covered in a typical DHS. A similar proportion are covered in MICSs. Clearly SDG nutrition data collection will need to draw on a wide set of sources. Indeed one of the SDG indicators is the proportion of total SDG indicators that are produced at the national level. Thus a good accountability indicator for the nutrition community to track is the proportion of the nutrition-relevant SDG indicators produced at the national level.

Recognizing that many of these SDG indicators do not yet exist, we count only about 15 of the 56 SDG nutrition indicators in the *Global Nutrition Report* nutrition country profiles,[2] and we will, accordingly, reassess the nutrition country profiles for the 2017 *Global Nutrition Report* in light of the SDG indicator set and explore the possibilities for greater alignment between the two.

If the SDG reporting process follows the MDGs, there will be an annual reporting on SDG indicators. Annual collection of data—especially data based on household surveys—is a time-consuming activity. Peru provides a valuable example of the benefits and costs of institutionalizing the annual collection of nutrition survey data (Panel 8.1).[3] In theory, Peru provides one model of a self-sustained data collection and reporting institution. Realistically, though, as the panel indicates, it has been challenging to find the resources needed to replicate the model elsewhere.

DISAGGREGATION OF DHS STUNTING DATA

The preamble of the 2030 Agenda for Sustainable Development, in which world leaders announced the SDGs, states, "We are resolved to free the human race from the tyranny of poverty and want, and to heal and secure our planet. We are determined to take the bold and transformative steps which are urgently needed to shift the world onto a sustainable and resilient path. As we embark on this collective journey, *we pledge that no one will be left behind*" (United Nations 2015, emphasis added).[4]

This section describes some subnational patterns in stunting rates for DHS datasets. We do this to emphasize the wide variations in malnutrition rates by wealth, education, age of mother at birth, residence, and sex. The data are summarized in Figures 8.3 to 8.7.[5] The surveys are the most recent disaggregated DHSs available for each country. The analysis benefits from the availability of more recent data than the analyses in Black et al. (2013) and Bredenkamp et al. (2014). In addition, we order the data in different ways to try to gain some new insights.

- **Wealth:** Figure 8.3a compares stunting rates by lowest and highest wealth quintile. The patterns are similar to those observed in Black et al. (2013). We order the countries by the stunting rate in the highest wealth quintile. As expected, stunting rates are lower in this quintile, yet levels in the wealthiest 20 percent of households can be high (for example, in Timor-Leste, Madagascar, Burundi, Malawi, Niger, and Ethiopia). Many countries have rates of stunting of more than 20 percent for children in the top quintile of household wealth. This is partly because the countries are low income and even households in the top fifth of wealth are quite poor. But it is also because the correlation between income and stunting is not as strong as sometimes thought (Ruel and Alderman 2013). Leaders of the countries on the left-hand side of this figure should not assume that their relatively wealthier households are able to address stunting.

  Figure 8.3b orders the countries by the size of the gap in stunting prevalence between the highest and lowest wealth quintiles. The existence of a large gap indicates inequality within a country. All countries should strive to ensure equal opportunity of access to good nutrition inputs for all people. Various approaches are outlined in Chopra et al. (2012) for nutrition and health program coverage and in Haddad (2015) for poverty interventions.

- **Rural/urban location:** Figure 8.4 compares stunting rates for those living in urban with those in rural locations. Again, patterns are similar to those observed in Black et al. (2013). Children in rural settings have higher stunting rates, but in 13 countries even children in urban areas have stunting rates of 30 percent or greater. The figure orders countries by the rural-urban gap, and a number of countries at the left-hand side of the figure are also on the left-hand side of Figure 8.3b, reflecting a similar set of inequalities, manifest this time between rural and urban areas.

- **Mother's age at birth:** Figure 8.5 displays the stunting prevalence for children under 5 by the age of their mother at their birth. Low age of mother at birth is a risk factor for small birth size (Kozuki et al. 2013). We compare the stunting prevalence of children under 5 with mothers who were less than 18 years of age at the time of birth, with the stunting prevalence of children under 5 with mothers who were 18 years of age or older at the time of birth. For some countries the differences between the two groups are striking. In Ghana and Uganda the differences in stunting prevalence approach 20 percentage points, and for more than half of the countries the gap is greater than 5 percentage points.

- **Mother's education:** We know from Chapter 1 that women's empowerment is key to ending malnutrition and that education is an important driver of empowerment. Figure 8.6 contrasts stunting rates by the extremes of the mother's education level (high level—that is, beyond secondary school—versus no formal education). The differences in stunting rates between the two extremes of education are bigger than the wealth group differences in Figures 8.3, emphasizing the high value of girls' education for the nutrition status of their children. But having a level of education beyond secondary school is no guarantee against high stunting rates: eight countries have stunting rates of 20 percent or greater for mothers with higher than a secondary level of schooling.

- **Sex of child:** Figure 8.7 presents stunting data by the sex of the child. In nearly all countries male stunting rates are higher than female rates, but the differences are small relative to other stratifiers.[6] As Panel 8.2 notes, while there are no major gender disparities in rates of stunting under the age of 5, as boys and girls get older the disparities become more apparent. There are no major disparities in under-5 overweight (Figure 8.8) or exclusive breastfeeding rates (Figure 8.9) by sex of child.

Household surveys can be used to explore and identify differences in outcomes by ethnic group, level of disability, and history of domestic or international displacement. Panel 8.2 highlights results from a recent report that uses

PANEL 8.2 NUTRITION AND EXCLUSION

MARIE RUMSBY, KATHERINE RICHARDS, FAIZA SHAHEEN, JONATHAN GLENNIE, AMANDA LENHARDT, AND JOSE MANUEL ROCHE

Many countries have shown it is possible to address malnutrition. Yet for millions of children who still suffer because of malnutrition, progress has not been fast enough or equal enough. A recent report (Shaheen et al. 2016) shows how certain groups are being left behind at the start of an era in which the commitment from world leaders is to "leave no one behind."

Our research (including data from Save the Children's GRID[1] database) shows that children's life chances and health outcomes are lower than average if they are girls, refugees, displaced or disabled, or from a regionally disadvantaged area within a country or an excluded ethnic group. Not only are such children poor, but they are discriminated against and have little or no say in the decisions that affect their lives. Findings include the following:

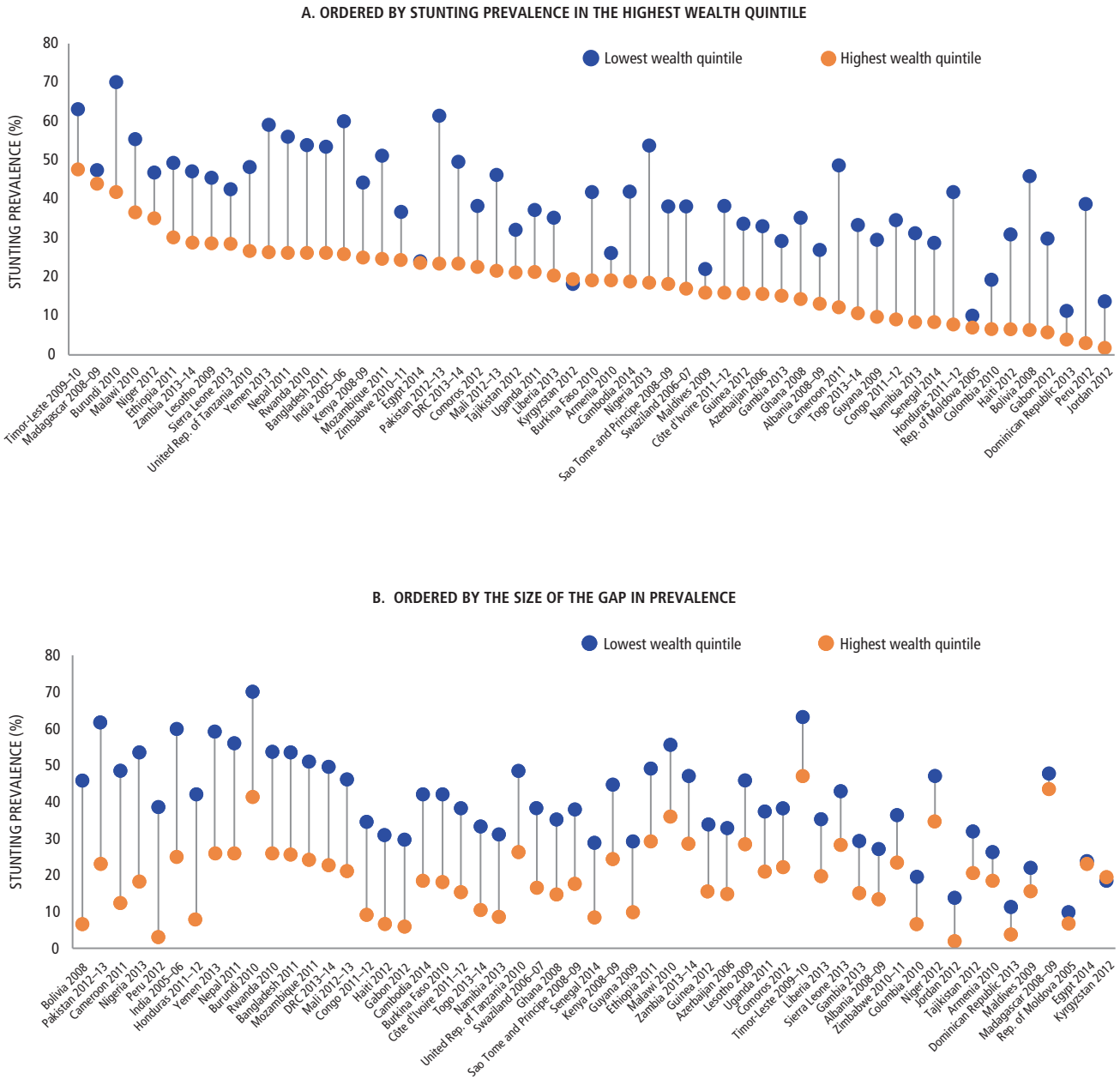
- Inequalities in stunting between regions within countries are increasing in 52 percent of countries for which we have data (Shaheen et al. 2016).
- In Ghana, Gurma people are more than three-and-a-half times more likely to be stunted than the Ga and Dangme people. The gap has increased from two times more likely in 2008 (Shaheen et al. 2016).
- In Viet Nam, malnutrition rates are nearly four times higher among children from minority ethnic groups than those from the majority Kinh (GSO 2011).
- A child in the remote North West region of Nigeria—where stunting rates are around 55 percent—is nearly four times more likely to experience malnutrition than a child in the South East region (Shaheen et al. 2016).
- Children with a disability are consistently reported to have a high incidence of malnutrition, stunting, and wasting (AbdAllah et al. 2007). For example, children with cerebral palsy can be up to three times more likely to be underweight than nondisabled children (Tuzun et al. 2013).

What is underlying these statistics?

- Ethnicity: Poor indicators of health and nutrition among disadvantaged ethnic groups are common, especially among indigenous peoples. Commonly reported barriers include lack of sanitation coverage; inequitable income distribution; and poor access to education, as seen in the cases of Brazil (Ferreira et al. 2012) and South Africa (Gradin 2015).
- Disability: Many types of disability can be caused by malnutrition through lack of micronutrients or macronutrients or through exposure to high concentrations of antinutrients—toxins found in food, such as those in poorly processed cassava, that can lead to permanent neurological damage (Groce et al. 2013; Kuper et al. 2014). Disability can also lead to malnutrition through decreased nutrient intake, increased nutrient loss, and need for increased nutrients, which can put children at risk of further complications (Gradin 2015).
- Children on the move: Worldwide displacement of people is now at the highest level ever recorded, with an estimated 59.5 million people (as of 2014) forcibly displaced as a result of persecution, conflict, generalized violence, or human rights violations (UNHCR 2014b). Refugees have a high burden of malnutrition and anemia; treatable noncommunicable diseases, exacerbated by lack of access to regular medication; and infectious diseases, including hepatitis A and B and parasitic diseases (Langlois et al. 2016).
- Gender: Preferential treatment based on gender can result in differing feeding practices and food intake. In Kenya, a strong gender bias in intrahousehold food distribution was found to lead to more girls with malnutrition, stunting, wasting, and infectious diseases (Ndiku et al. 2011). Globally, while there are no major gender disparities in rates of stunting in children under 5 (Shaheen et al. 2016), as boys and girls get older, the disparities become more apparent (Bhutta and Zlotkin 2014)—up to half of all adolescent girls are stunted in some countries (Black et al. 2013). Women are particularly vulnerable to malnutrition because of their high nutrient requirements during pregnancy and lactation and because of gender inequalities in poverty (Delisle 2008). In some settings, high rates of adolescent pregnancy and early marriage can further compound these disparities.

DHS and MICS data for this purpose. The panel authors argue that accountability to excluded groups under the SDGs must be far more comprehensive than it has been under the MDGs. Governments have a human responsibility to ensure that they collect sufficiently disaggregated and transparent information to understand which groups may be excluded and how they are excluded, in order to design policy and program solutions that include all social and economic groups, and remedy such exclusion in any given context.

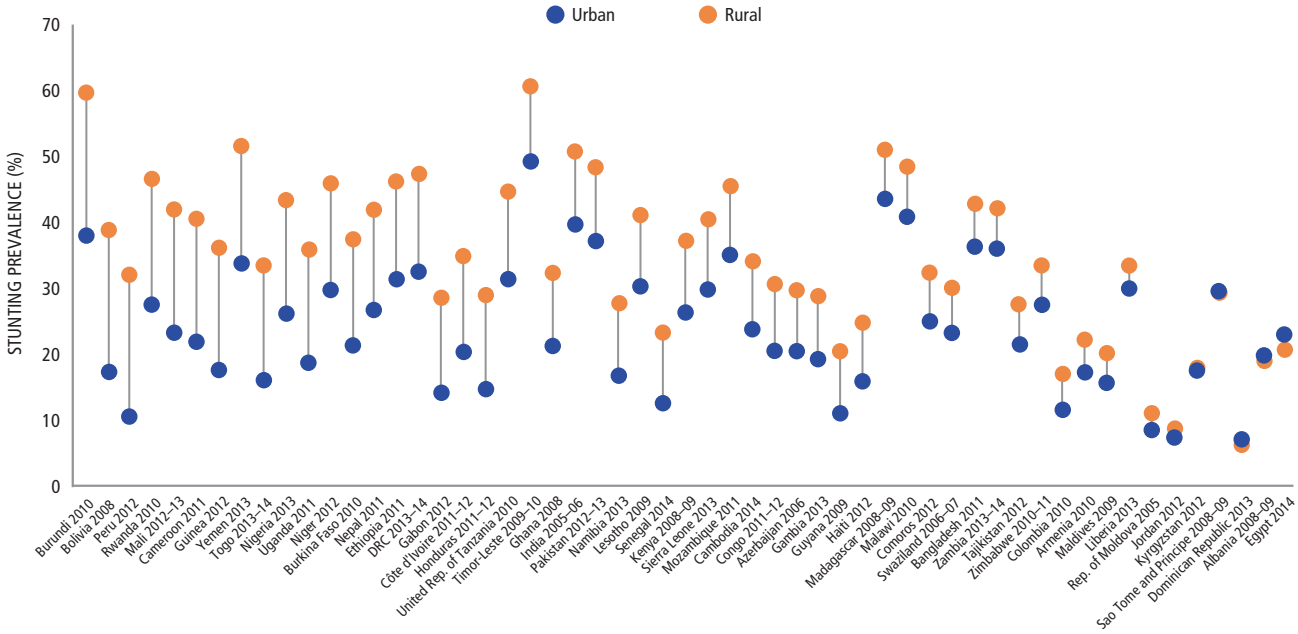
FIGURE 8.3 Stunting prevalence in children under 5 by wealth quintile



Source: Authors, based on data and analysis by Monica Kothari, Demographic and Health Surveys (DHSs), 2005–2015.

Note: There may be discrepancies from data reported in the DHS reports because of subsequent transformations by the DHS team. All categories of prevalence have $n > 50$. DRC = Democratic Republic of the Congo.

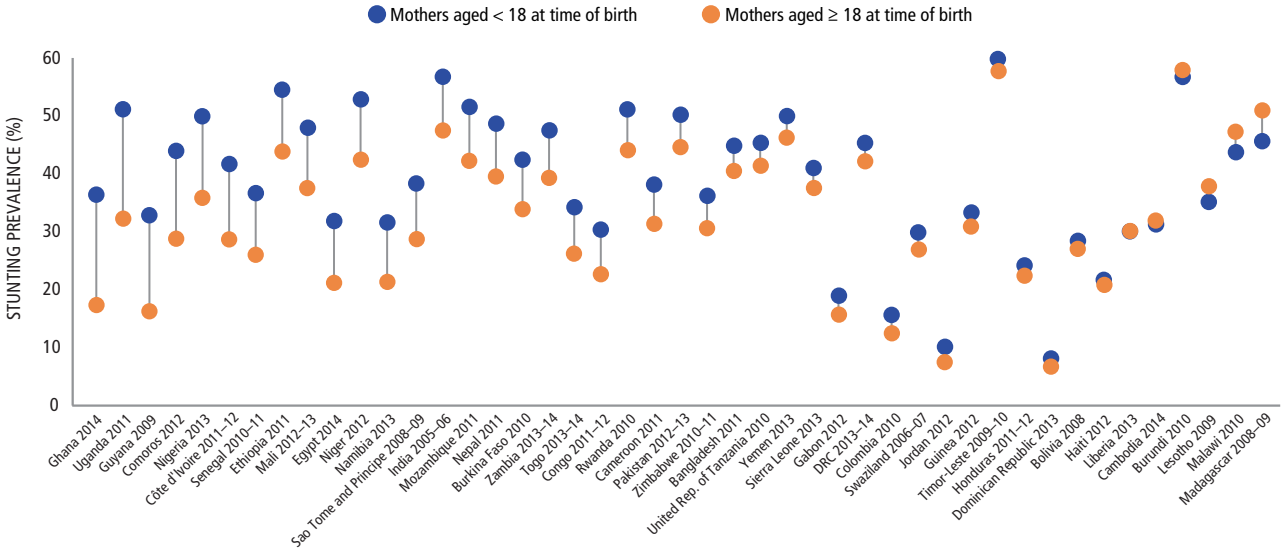
FIGURE 8.4 Stunting prevalence in children under 5, urban or rural, ordered by size of gap



Source: Authors, based on data and analysis by Monica Kothari, Demographic and Health (DHS) surveys, 2005–2014.

Note: There may be discrepancies from data reported in the DHS reports because of subsequent transformations by the DHS team. All categories of prevalence have $n > 50$. DRC = Democratic Republic of the Congo.

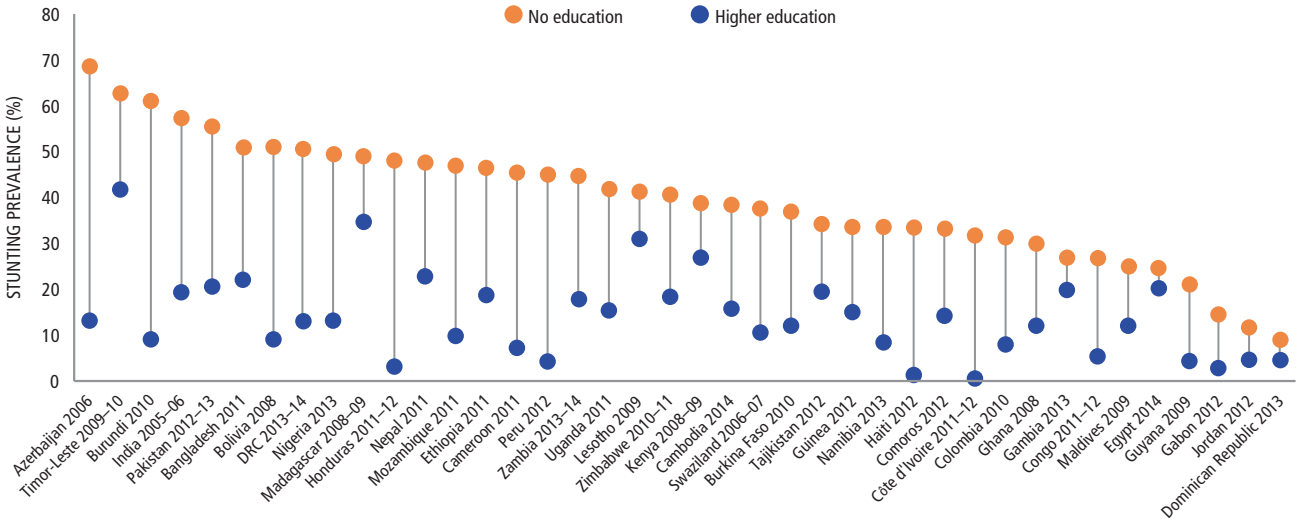
FIGURE 8.5 Stunting prevalence in children under 5 by age of mother at time of child's birth, ordered by size of gap



Source: Authors, based on data and analysis by Monica Kothari, Demographic and Health (DHS) surveys, 2005–2014.

Note: There may be discrepancies from data reported in the DHS reports because of subsequent transformations by the DHS team. All categories of prevalence have $n > 50$. DRC = Democratic Republic of the Congo.

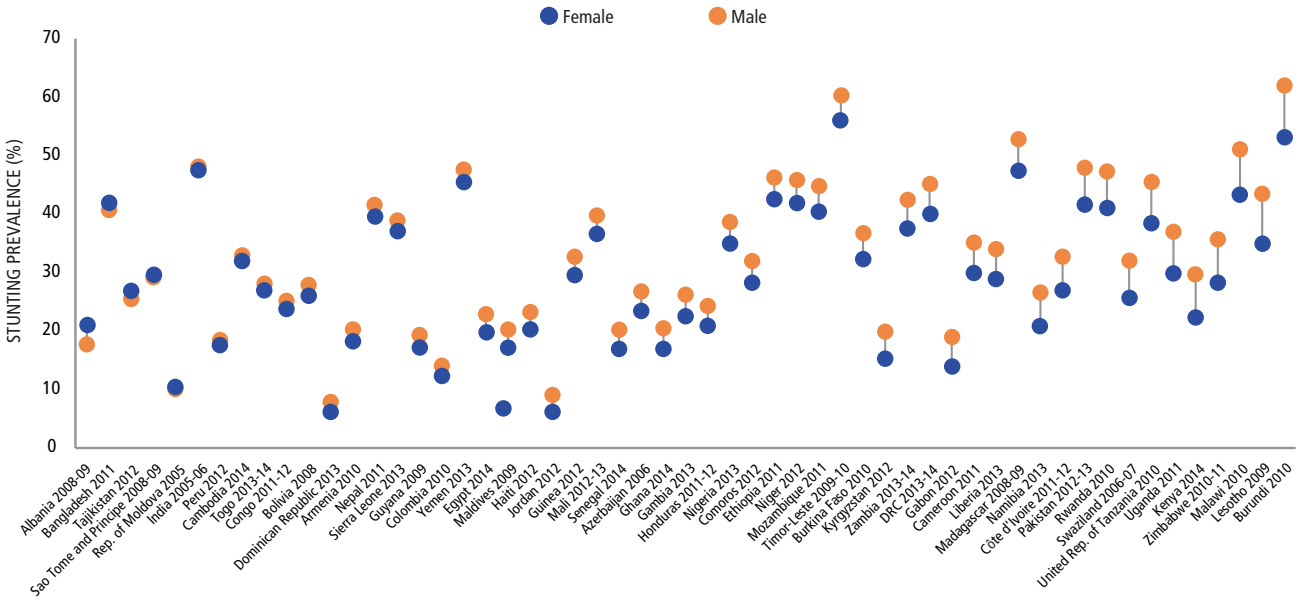
FIGURE 8.6 Stunting prevalence in children under 5 by mother's education, ordered by prevalence among children whose mothers have no education



Source: Authors, based on data and analysis by Monica Kothari, Demographic and Health (DHS) surveys, 2005–2014.

Note: There may be discrepancies from data reported in the DHS reports because of subsequent transformations by the DHS team. All categories of prevalence have $n > 50$. "Higher education" means higher than secondary school. DRC = Democratic Republic of the Congo.

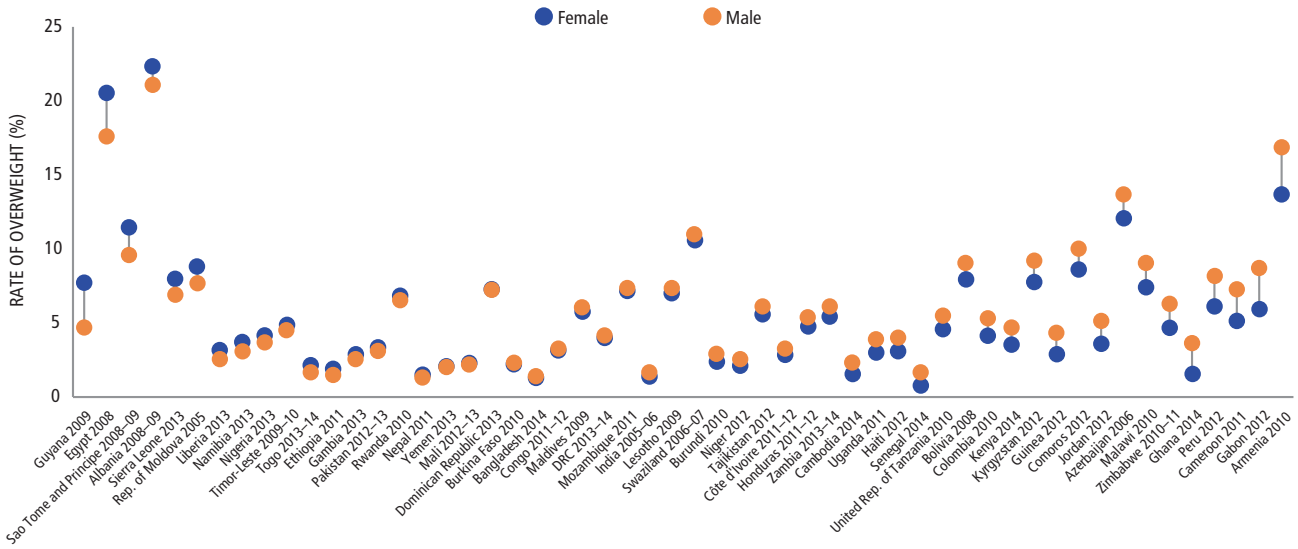
FIGURE 8.7 Stunting prevalence in children under 5 by sex, ordered by size of gap



Source: Authors, based on data and analysis by Monica Kothari, Demographic and Health (DHS) surveys, 2005–2014

Note: There may be discrepancies from data reported in the DHS reports because of subsequent transformations by the DHS team. All categories of prevalence have $n > 50$. DRC = Democratic Republic of the Congo.

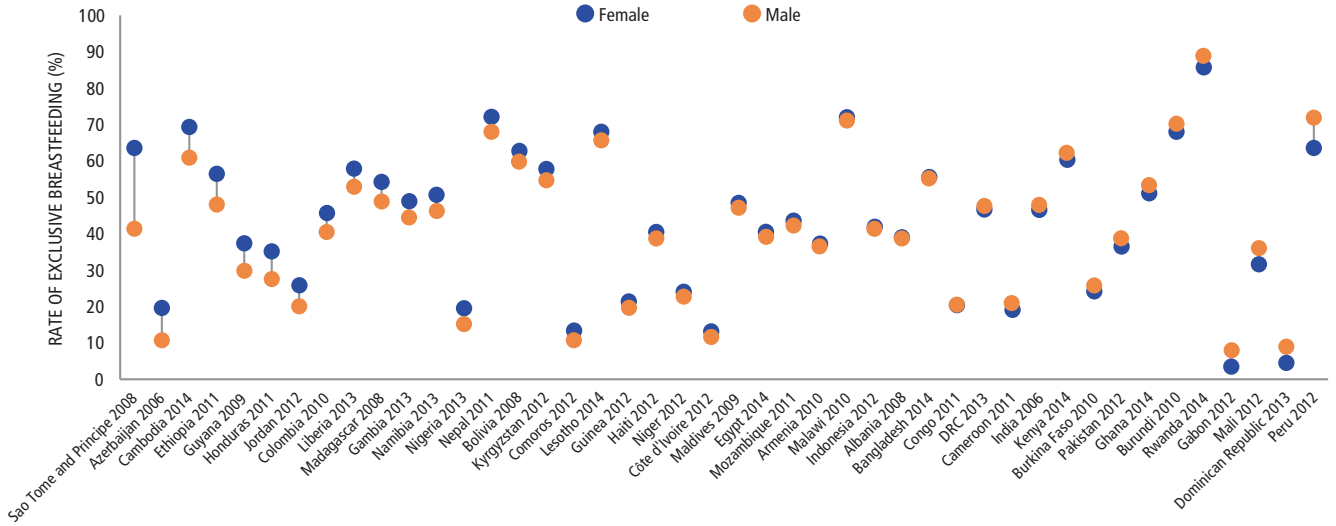
FIGURE 8.8 Overweight status of children under 5 by sex, ordered by female-male gap



Source: : Authors, based on data and analysis by Monica Kothari, Demographic and Health Surveys (DHSs), 2005–2014.

Note: There may be discrepancies from data reported in the DHS reports because of subsequent transformations by the DHS team. All categories of prevalence have $n > 50$. DRC = Democratic Republic of the Congo.

FIGURE 8.9 Exclusive breastfeeding by sex, ordered by female-male gap



Source: Authors, based on data and analysis by Monica Kothari, Demographic and Health Surveys (DHSs), 2005–2014.

Note: There may be discrepancies from data reported in the DHS reports because of subsequent transformations by the DHS team. All categories of prevalence have $n > 50$. DRC = Democratic Republic of the Congo.

PANEL 8.3 FACTORS TO TAKE INTO ACCOUNT WHEN CONSIDERING WHETHER TO COLLECT GEOGRAPHICALLY DISAGGREGATED DATA

MONICA KOTHARI, FRED ARNOLD, BERNARD BARRERE, ANN WAY, ANNE CROSS, RUILIN REN, JOY FISHEL, AND SRI POEDJASTOETI

Demand

While national stakeholders might be interested in subnational data, are the subnational units from which the data would be collected prepared to use and act on the information? Are they making their own policy and program design decisions? If so, are the decisions informed by data at the subnational level really going to be different from the program or policy decisions that would be made if only regional data were available?

Capacity

The decision to obtain data at the subnational level is country specific. In countries with weak statistical infrastructure (for example, those that cannot independently manage normal Demographic and Health Survey [DHS] samples, which are already large), it would be challenging to expand surveys to obtain estimates below the regional level. Asian, Latin American, and Caribbean countries with strong implementing agencies are in the best position to carry out expanded surveys. However, even in those settings, it is debatable whether the benefits are worth the monetary costs and the risk of compromising the survey data quality. Increasing sample size means increasing the cost, but more important, it means increasing the number of teams, and the number of people to train and to supervise the survey. It has been the experience of DHS that the quality of training and data collection may decrease when the survey size increases.

Context

Trends in lower-level estimates for some indicators are sometimes counterintuitive because of the large confidence intervals around the estimates. These unexpected changes over time may be questioned and may cause considerable political fallout. Alternative data collection options should be explored to fulfill country-specific data needs. Data sources like routine health management information systems should be able to fill some data gaps by reporting on public-sector nutrition intervention coverage at frequent intervals. Large-scale surveys should continue to provide the higher-level nutrition prevalence and coverage estimates for the general population that are comparable across countries and time.

Costs

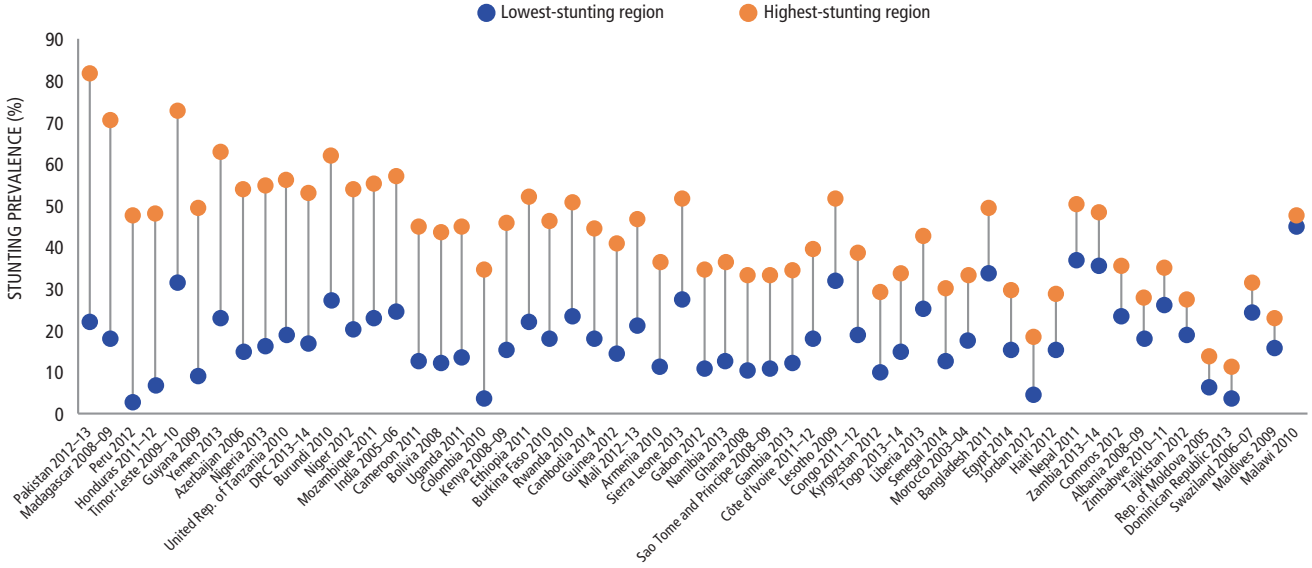
The costs for large-scale household surveys are mainly related to the number of sampling domains for which information is desired. The required sample size for a survey that is representative at an administrative domain level depends on the number of administrative domains there are in the country. The general rule of thumb for determining the sample size for a large-scale survey like the DHS is that about 800–1,000 women need to be interviewed in each sample domain to get reliable estimates of the total fertility rate and the infant mortality rate. Many nutrition indicators included in a DHS usually require smaller sample sizes to obtain reasonably precise estimates at the domain level. If one wants to double the number of domains, the sample size also needs to be doubled, which substantially increases the survey cost.

WEIGHING THE BENEFITS AND COSTS OF GEOGRAPHICALLY DISAGGREGATED DATA

The demand for nutrition data at the level of the subnational administrative unit is increasing. Policy makers need it for guiding action to get to zero levels of malnutrition, subnational administrators need it as the responsibility for nutrition program implementation gets decentralized, businesses need it to identify opportunities, external donors need it to target their interventions, and those in civil society need it to promote accountability for the most vulnerable.

This demand for more fine-grained data is based on the assumption that there are wide variations in nutrition status by region. As Figure 8.10 highlights, this assumption is well founded. For many countries, the figure illustrates the wide differences between administrative regions with the highest and lowest stunting rates. For example, the median ratio between the highest and lowest stunting rates is 2.96 and the range is 1.06 to 17.59. These differences reflect a wide range of historical, cultural, geographic, economic, and political differences in opportunity that will not be narrowed quickly. Nevertheless, awareness of these vast differences is essential for national plans of action and for the effective allocation of resources.

FIGURE 8.10 Stunting prevalence by subnational region with lowest and highest stunting rate, ordered by size of gap



Source: Authors, based on data and analysis by Monica Kothari, Demographic and Health Surveys (DHSs), 2005–2014.

Note: There may be discrepancies from data reported in the DHS reports because of subsequent transformations by the DHS team. All categories of prevalence have $n > 50$. DRC = Democratic Republic of the Congo.

If the demand for more disaggregated data is strong, its availability is quite limited. For example, so far the DHS team has been involved in only two national surveys that have collected data at the lowest administrative level: the 2014 Kenya DHS and the 2015–2016 India National Family Health Survey. In Kenya, earlier DHSs provided data for each of the eight provinces (seven plus Nairobi) because the next administrative level down was the district, and there were too many districts—more than 80—to disaggregate the survey data by district. In 2010, however, Kenya approved a new constitution, which organized the country into 47 counties. In the most recent DHS, the survey sample was increased to allow estimates to be made at the new lowest administrative unit level—the county level. In India, for the 2015–2016 National Family Health Survey, the national government stipulated that separate estimates were needed for each of the 640 districts in India at the time of the 2011 census.

Based on the experiences of the DHS team, the supply of more disaggregated data is constrained by certain key factors: demand, capacity, context, and costs (Panel 8.3).

Are there cost-effective options to obtain subnational data?[7] For some indicators, like fertility, mortality, and vaccination coverage, DHS and similar surveys are providing data that might alternatively be covered through routine surveillance systems, if those systems produced complete, accurate, and timely data. If high-quality surveillance systems were in place in countries and they covered a high proportion of cases, some of these indicators could be removed from household surveys, but the cost savings of doing so would be only marginal.

Recently, Kenya used two different questionnaires and different subsamples to conduct the DHS. Enumerators measured priority indicators at the district level and then measured a broader array of indicators at a higher, regional level. The India survey is using a similar procedure to measure some indicators at the provincial level and others at only the state level. This could be one cost-effective way to get subnational data without compromising data quality.

In Indonesia, the DHS competes with other national and subnational surveys. DHS is only one of several annual household surveys conducted by the Central Bureau of Statistics. The Ministry of Health's surveys are carried out by each province/regency/municipality. Each of these surveys presents data at the regency/municipality level. In this way, Indonesia has built the internal capacity to conduct surveys and over time has required less technical assistance.

The World Food Programme and DHS, among others, have regularly explored the potential for using small-area estimation techniques that use survey estimates at a higher

PANEL 8.4 WHY HIGHLY DISAGGREGATED UNDERNUTRITION MAPS ARE VITAL IN THE SUSTAINABLE DEVELOPMENT GOALS ERA

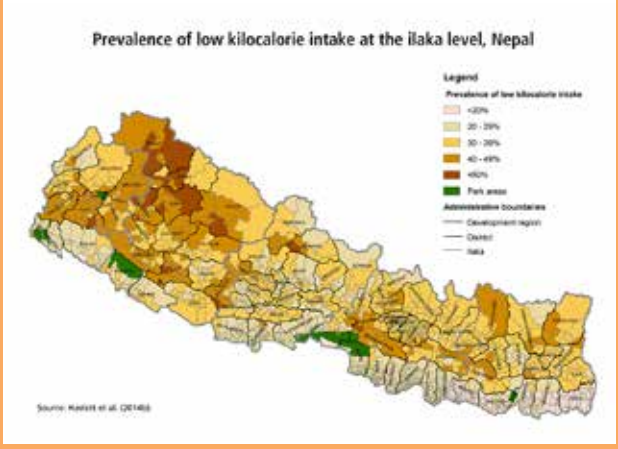
KURT BURJA, STEPHEN HASLETT, SIEMON HOLLEMA, GEOFF JONES, KAYENAT KABIR, AND CHRISTA RADER

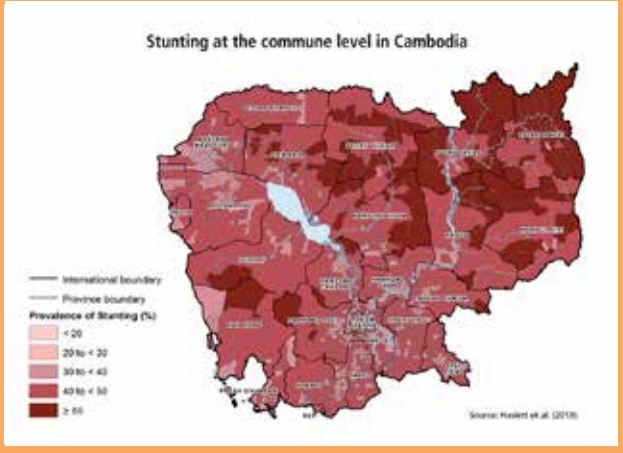
While small-area estimation poverty maps are more and more common, such finely detailed maps for undernutrition are rare. Yet we need such maps for undernutrition. For example, small-area maps for stunting, underweight, and wasting in children under 5 years of age may not correlate closely with those for poverty because different factors influence nutrition outcomes.

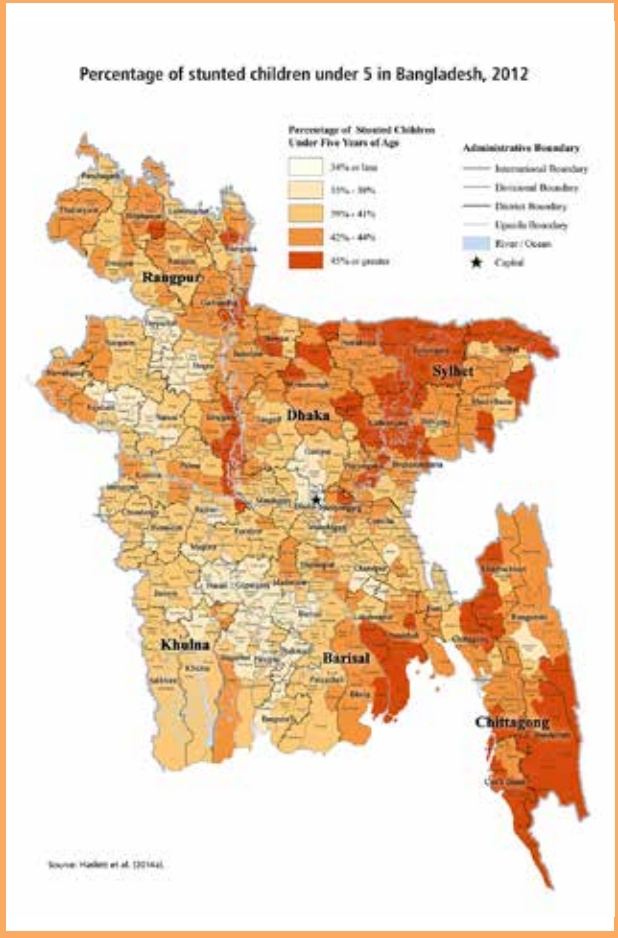
Small-area estimation of undernutrition involves combining nutrition surveys like the DHS and MICS with a contemporaneous census (which does not record nutrition outcomes). Common variables, such as household assets, construction materials, and water and sanitation provision, and personal characteristics, such as mother's education and child's age, that are available in both surveys and censuses, are used to develop a statistical relationship with the undernutrition outcomes available only in the DHS/MICS. Then this relationship is used to estimate nutrition for groupings of 20,000 to 30,000 contiguous households based on predictions from the census. Often there is a focus on children younger than 5. Although the underlying concepts are simple, the modeling is time consuming and requires considerable expertise. Many models need to be considered and tested to find a suitable one. Other complexities include quality of measurement, especially child's height. The resulting maps, based on sound, well-tested models, tend to concur with expert opinion on the location of high and low rates of undernutrition.[1]

The maps and small-area estimates of undernutrition are highly valuable. Generally, no one map is sufficient, but together they give a detailed picture of undernutrition rates and where the largest numbers of undernourished people are. They help guide prioritization and geographic targeting of assistance programs, whether these are based on rates of undernutrition or on the number of undernourished by area. They are also a common tool for reaching consensus with stakeholders on which geographic areas to prioritize and are useful in predisaster contingency planning and postdisaster needs estimation. Maps can also aid in policy analysis and planning. Examples of these maps for Bangladesh (stunting), Cambodia (stunting), and Nepal (calorie intake) are shown here.

More such maps are needed. The methods are complex, but expertise is available. The Sustainable Development Goals' focus on ending malnutrition calls for detailed geographic information on prevalence and severity to address the problem in the most effective way. Small-area estimation maps of undernutrition can help us do just that.







level (for example, the province level) and census data for age-sex-education-urban-rural breakdowns by smaller areas. The method basically attributes the indicator from the province to each of the districts within the province proportionally to the age-sex-education of the districts. Based on the World Food Programme's experience, Panel 8.4 provides a positive assessment of the potential of such maps for highlighting subnational variation in nutrition status.

PROMOTING ACCOUNTABILITY IN CHALLENGING CONTEXTS OF THE HUMANITARIAN SPACE

As the *Global Nutrition Report 2015* reported, extreme poverty is forecast to become more and more concentrated in fragile states; global poverty is declining sharply, but not in the 50 countries that the Organisation for Economic Co-operation and Development (OECD) designates as fragile (Burt et al. 2014).[8]

We do not have enough trend data to be able to replicate this analysis for stunting or wasting. However, Figure 8.11 shows that for the most recent surveys since 2008 the prevalence of stunting and wasting is higher in states that OECD designates as fragile.

Emergencies and humanitarian activity are more likely to occur in these fragile contexts. As the 2015 *Global Nutrition Report* (Panel 9.8) outlined in its accountability recommendations to the World Humanitarian Summit of 2016, there are many accountability gaps in the humanitarian system.

As part of its humanitarian reform process, the UN initiated the cluster approach in 2005 to improve the effectiveness of humanitarian response through greater predictability, accountability, responsibility, and partnership.[9] In 2011, the Inter-agency Standing Committee set a framework to guide UN agencies in monitoring accountability to crisis-affected populations. Furthermore, in December 2014, the Core Humanitarian Standard was launched, setting out nine commitments that organizations and individuals involved in humanitarian response can use to improve the quality and effectiveness of the assistance they provide.

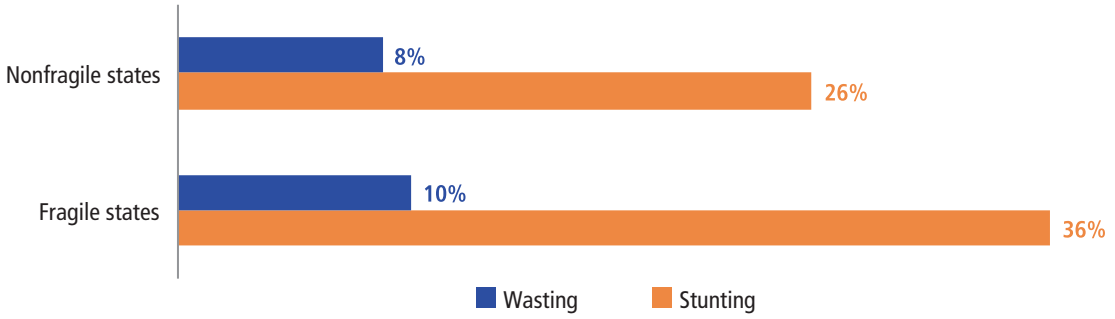
Although increasing numbers of humanitarian agencies are engaging in accountability initiatives, there remains a systemwide gap in applying and monitoring such mechanisms in emergency contexts, including for nutrition. In Panel 8.5, the Global Nutrition Cluster team outlines some problems and proposes some solutions.[10]

NUTRITION IN DISPLACED POPULATIONS

The number of people displaced by war has increased sharply in the past two to three years, with the latest estimate placing it at 59.5 million (Figure 8.12). The refugee population is also at an all-time high of 19.6 million, half of whom are children (Langlois et al. 2016).

Displaced populations are more likely to be vulnerable and marginalized during their flight and within camps, in addition to experiencing the stress and trauma of displacement. They have a high burden of infection and noncommunicable diseases (Gornall 2015; Norredam et al. 2006). Panel 8.6 outlines the challenges of protecting the nutrition status of displaced people and makes some recommendations to strengthen accountability to them, including the need to refine existing mechanisms—and

FIGURE 8.11 Stunting and wasting rates in fragile and nonfragile states



Source: Authors.

Note: For stunting, *n* = 104 of 133 low- and middle-income countries (41/48 fragile, 63/85 nonfragile). For wasting, *n* = 103 of 133 low- and middle-income countries (40/48 fragile, 63/85 nonfragile). Data are for the latest survey starting in 2008, and surveys are from 2008 to 2015. The average year of surveys for fragile and nonfragile countries is virtually identical (2012).

PANEL 8.5 IMPROVING ACCOUNTABILITY FOR NUTRITION ACTIONS IN EMERGENCY CONTEXTS

JOSEPHINE IPPE

Based on the experience of the Global Nutrition Cluster, established in 2006 as part of the humanitarian reform process, what is needed to address nutrition accountability within programs in emergency contexts?

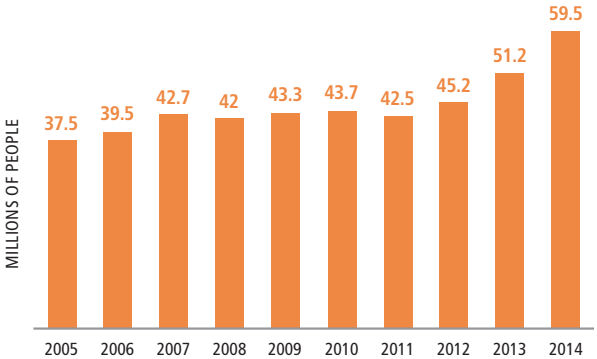
1. **Invest in technical capacity to scale up nutrition programming in emergency situations.** Systematic performance monitoring done in line with Sphere minimum standards (Sphere Project 2016) and other packages, such as the Minimum Reporting Package (Emergency Nutrition Network 2011), has consistently shown poor achievement of targets in the area of infant and young child feeding in emergencies, largely owing to lack of capacity and the low priority donors give this program area. Overall, capacity to scale up a nutrition program in emergency settings remains a problem. Leadership, support for capacity building in technical areas, and operational research on nutrition issues need to be clarified, and accountability for these roles made explicit within the cluster system.
2. **Provide incentives to reward partners who meet accountability standards.** Although the cluster system clearly articulates the accountability between the cluster lead agency and the humanitarian coordinator, the accountability of the cluster partners is not defined but rather implied within the principle-of-partnership documents. The cluster system is not equipped to redress lack of accountability within a cluster. Additionally, the cluster approach stipulates that where funding and access permit, the cluster lead agency serve as the provider of last resort by filling gaps. This expectation is sometimes unrealistic because of the additional financial resources and capacity required, so an incentive system to reward partners who meet accountability targets or the Core Humanitarian Standards, either by individual donors or through the efforts of the entire humanitarian system, would go a long way in promoting accountability.
3. **Ensure that country nutrition plans of action incorporate contingency plans for emergencies** and that the capacity to respond to nutritional needs in an emergency is built into these plans. Resources also need to be made available at the national level to promote resilience and ensure a smooth transition from humanitarian response to development.
4. **Incorporate nutrition-sensitive interventions in emergency contexts.** Increased operational linkages are needed between emergency nutrition interventions and other sectors: water, sanitation and hygiene; health and agriculture; food security; and livelihoods.
5. **Establish a common data and accountability platform across partners.** In 2015 the Global Nutrition Cluster developed an operational framework and guidance on accountability for nutrition with an aim to establish a common platform across partners. The implementation of operational guidance will ensure that cluster partners address accountability in a measurable way.

find new ones—to target food assistance to the most nutritionally and economically vulnerable refugees.

CONCLUSIONS

Governments, civil society, donors, and nutrition champions from all walks of life measure progress, guide actions, and strengthen accountability by making SMART commitments backed up by data systems that provide credible, useful, and timely information. The data systems need to be focused on nutrition outcomes, but they draw on inputs from a wide range of sectors and data collection mechanisms. They need to focus on the most vulnerable:

FIGURE 8.12 Number of people displaced by war



Source: UNHCR (2015).

PANEL 8.6 PROTECTING THE NUTRITION STATUS OF REFUGEES IN THE SUSTAINABLE DEVELOPMENT GOALS ERA

CAROLINE WILKINSON, VALERIE GATCHELL, AND PAUL SPIEGEL

Given various ongoing conflicts in the Middle East and Africa, the number of forcibly displaced persons has continued to rise throughout 2015 and the beginning of 2016. By the end of 2014, the total population of concern to the UN High Commissioner for Refugees (UNHCR) stood at an unprecedented 55 million persons; this included 14.4 million refugees, 1.8 million asylum seekers, 32.3 million internally displaced persons (IDPs), 3.5 million stateless persons, and 1.8 million returnees.

Refugees are persons outside their country of origin for reasons of fear, persecution, conflict, or generalized violence. The governments of host countries have the primary responsibility for the protection of refugees. UNHCR is mandated to lead and coordinate international action to protect and provide solutions for refugees, asylum seekers (individuals whose refugee status has not yet been determined but who could be eligible to become refugees), stateless people (individuals with no nationality), and returnees (refugees that have returned to their countries of origin). Out of the 12 million refugees for whom information on accommodation type was available, 7.6 million (63 percent) resided in individual accommodation types as opposed to planned/managed or self-settled camps, collective centers, or reception/transit camps. It was estimated that some 6.4 million refugees (45 percent) were in protracted situations.[1]

Nutritional Status among Refugees

In 2015, of UNHCR's 93 refugee sites where acute malnutrition was measured (representing approximately 336,000 children 6–59 months old), 54 sites (58 percent) met the UNHCR standards of less than 10 percent global acute malnutrition (GAM),[2] while 21 sites (22.6 percent) were above the emergency threshold of greater than or equal to 15 percent. Stunting among children 6–59 months met the standard of less than 20 percent in 13 sites (14 percent), whereas 65 sites (69.9 percent) registered stunting prevalence above the critical level of greater than or equal to 30 percent. The prevalence of child anemia met the standard of greater than 20 percent in only 6 of 90 sites (6.7 percent),[3] and 33 of 90 sites (36.7 percent) were under the critical level of less than 40 percent. The majority of sites where data are available across several years show that the prevalence of GAM, stunting, and anemia have been relatively stable (80.6 percent, 66.7 percent, and 59.3 percent, respectively). Significant improvements have been made in reducing GAM and anemia in 14.9 percent and 25.4 percent of sites, respectively. Compared with national statistics (UNICEF 2015), the prevalence of GAM and stunting in refugee sites was higher in 48.4 percent and 55.9 percent, respectively, of the measured sites; anemia data at the national level are unavailable for comparison.

Vulnerability to Food Insecurity and Nutrition

Because refugees are not citizens of the asylum country, in most cases their legal status is in itself an element of vulnerability. Refugees often have limited or no access to land as well as limited economic rights and freedom of movement. They are often excluded from national social security or safety net mechanisms and often do not have access to national health and nutrition services, where they exist.

Many refugee populations are largely dependent on food assistance provided by the World Food Programme (WFP) (more than 5 million refugees as of February 2016). However, from September 2015 to February 2016, WFP funding shortfalls resulted in food ration cuts to 61 percent of refugees (3.4 million) across 20 countries, with additional cuts expected over the coming months. Nutrient-rich and fortified foods are among the first to be cut, owing to their higher costs.

Additionally, a key challenge UNHCR and its partners face is assessing and supporting nutrition and basic services in "out-of-camp" populations, in part because of difficulties in establishing direct contact with refugee populations who are mixed among national populations. In these cases, such as in Jordan, UNHCR works with authorities and partners to facilitate access to national health and nutrition services. Increasingly, UNHCR measures nutritional status among these populations and monitors access to adequate health care.

Continued

those who are in real danger of being left behind because they are excluded from power or lack basic rights. This requires data collected at disaggregated levels: by groups or by region. Collecting such data can be expensive, and so ways need to be found of using existing data (for example, small-area estimation) as well as lower-cost ways of collecting more fine-grained data (for example, using mobile phones). The capacity to analyze and act on such disaggregated data needs to be in place and, to the extent possible, should involve communities themselves in analysis and decision making. The *Global Nutrition Report 2014* (Panel 4.3) showed how data disaggregated at the

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PANEL 8.6 PROTECTING THE NUTRITION STATUS OF REFUGEES IN THE SUSTAINABLE DEVELOPMENT GOALS ERA

CAROLINE WILKINSON, VALERIE GATCHELL, AND PAUL SPIEGEL

Recommendations

The 2030 Agenda for Sustainable Development commits to "leave no one behind" in pursuit of ending poverty and promoting peaceful and inclusive societies. It recognizes that refugees, IDPs, and host communities are among the most vulnerable (UNOCHA et al. 2015). To progress on the 2030 agenda for these populations, the international community needs to work collaboratively with governments to do the following:

- Continue to regularly monitor the nutrition (GAM, stunting, and anemia) and food security situation of refugees to foster accountability.
- Strengthen linkages among governments, other UN agencies, and development partners to effectively address stunting and anemia in protracted refugee populations.
- Strengthen coordination among host governments, UNICEF, and UNHCR to ensure availability of basic health, nutrition, and WASH (water, sanitation, and hygiene) services for refugees, IDPs, and host communities, integrating into and supporting national systems whenever possible.
- Further understand reasons behind global food assistance funding deficits and identify predictable funding to ensure an adequate (in quantity and quality) food ration or cash transfer, while continuing to monitor the impact of cuts and refine mechanisms to target food assistance to the most nutritionally and economically vulnerable refugees.
- Support and advocate for the development of legal frameworks that allow refugees the right to work, access to land, and freedom of movement to improve their food security and livelihoods.

The year 2016 provides unprecedented opportunity for raising the profile of nutrition and food insecurity among refugees and other displaced populations, given the World Humanitarian Summit and the UN General Assembly Summit on Refugees and Migrants. Now is the time to collectively advocate and demand coordinated action for improved nutrition and food security for these populations.

district level in India could be used to spark dialogue and debate between civil society and district officials about the who, what, why, when, where, how—and how much—of nutrition action.

CALLS TO ACTION

1. **Look well beyond SDG 2 when tracking progress in nutrition: SDG 2 is just the start of nutrition accountability, not the end.** Country governments should develop inclusive annual national and subnational reporting mechanisms to assess progress in nutrition outcomes and actions.
2. **Align Demographic and Health Surveys (DHSs) and Multiple Indicator Cluster Surveys (MICSs) with the SDG indicators for nutrition.** In the next 12 months, the implementing and funding partners behind the DHSs and MICSs should work together to identify which SDG indicators can be added to surveys.
3. **Incentivize innovation in nutrition data collection.** More creative ways to use and collect subnational data are needed. Research funders should stimulate this through innovation prizes. By the end of 2018, a multiyear, multicountry research program on this subject should be announced.
4. **Measure inequalities and honor the SDG commitment to leave no one behind.** Governments, donors, and civil society should do more to identify and address inequalities in nutrition outcomes and access to nutrition services. At a minimum, all new DHS and MICS reports should report on the set of stratifiers we reported on in Chapter 8.
5. **Strengthen nutrition accountability for those affected by conflicts and emergencies.** UN agencies and governments should do more to assess the nutrition status of displaced people and their access to food, care, and health services, and to address gaps therein. Countries vulnerable to emergencies need to do more to incorporate emergency planning into their national nutrition plans. By the end of 2017, as part of the Decade of Action, country governments should consider performing a review of emergency preparedness within their current national nutrition plans.

9 CALLS TO ACTION

ASSESS PROGRESS AGAINST GLOBAL TARGETS

1. **Support more nutrition progress stories.** Every country is an example of nutrition success, failure, or stagnation, but these stories need to be told. Countries that are on track to meet global goals can provide guidance and inspiration on how to reduce malnutrition; countries that are not on track also demand further understanding and analysis. Funders should encourage researchers to undertake these assessments, journals should publish these reports, and findings should be disseminated in mainstream media. The need for credible stories is particularly great wherever indicators are stagnating or worsening. Given the urgent need for progress stories, by 2018 a major multiyear, multicountry research program should be funded on why change does or does not happen.

2. **Invest in more and better data to assess progress.** The availability of internationally comparable data on nutrition outcomes is still weak, either because high-quality data are not collected at the country level or because they are not reported to the United Nations—but these data are essential to ensuring accountability.

   - Surveys on rates of under-age-5 stunting, wasting, and overweight, as well as exclusive breastfeeding, should be conducted at least every three to five years. More surveys need to assess anemia. The funders of Demographic Health Surveys, Multiple Indicator Cluster Surveys, and other such surveys should be prepared to coordinate more among themselves and respond to government demand for surveys every three years. Countries with high burdens of malnutrition and with data more than five years old should be a priority for new data collection.
   - By 2020 all high-income countries should make their data compatible with UN databases.
   - Within the next 12 months, nutrition champions within the UN and multilateral agencies should strengthen nutrition's presence in the ongoing "data revolution" discussion to ensure that nutrition is not left behind. This effort could start with the World Data Revolution for Sustainable Development Forum in the second half of 2016.

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3. **Start assessing national progress on nutrition every year.** Countries should consider producing annual national reports on nutrition, linked to current processes, and use these data to assess progress and evidence on what works, adjust tactics and budgets, amend national nutrition plans, and be accountable for progress.

MAKE SMART COMMITMENTS

1. **Set more SMART targets.** All national governments should establish SMART (specific, measurable, achievable, relevant, and time-bound) national targets for stunting, wasting, exclusive breastfeeding, low birthweight, anemia, childhood overweight, adult obesity, diabetes, and salt reduction by the end of 2017. These targets should be ambitious but achievable and aligned.
2. **Establish more subnational targets.** National nutrition plans should develop and incorporate nutrition outcome and input targets for major administrative regions.
3. **Food and beverage companies should set and report against a larger number of SMART targets to improve nutrition.** Key areas are adherence to the International Code of Marketing of Breast-milk Substitutes, significant reductions in advertising and marketing to children, and the reduction of sugar, salt, and fat across their entire product lines. Companies should also clearly publish these targets, as well as their performance against them. The next Access to Nutrition Index evaluation should report substantial progress in these areas from the 22 largest global food and beverage companies assessed.
4. **Make all commitments SMART.** Governments, agencies, parliaments, civil society organizations (CSOs), donors, and businesses: Make nutrition commitments that are specific, measurable, achievable, and time bound. Our SMART guide can help you.
5. **Make commitments that address all forms of malnutrition.** UN member states and agencies, parliaments, CSOs, donors, and businesses: Ensure that future nutrition commitments address all forms (and combinations) of malnutrition according to their nutritional contexts—stunting, wasting, micronutrient deficiencies, obesity, overweight, and nutrition-related noncommunicable diseases.
6. **Use all new opportunities to make SMART commitments.** UN member states and agencies, parliaments, CSOs, and donors: Use the Decade of Action, the Sustainable Development Goals (SDGs), and the Nutrition for Growth (N4G) process as an opportunity to raise your level of ambition for SMART nutrition commitments.
7. **Agree upon one strong and independent global reporting mechanism for nutrition in all its forms.** By the end of 2017, all nutrition stakeholders should engage in a process, as part of the Decade of Action, to agree on one inclusive, independent mechanism to monitor progress on outcomes, actions, and inputs relating to all forms of nutrition under the SDGs.
8. **Report on commitments.** UN member states and agencies, CSOs, donors, and businesses: Be accountable by reporting on your progress on nutrition annually. The *Global Nutrition Report 2017* should be able to report a better than 90 percent response rate.

ACCELERATE IMPLEMENTATION

1. **Strengthen interministerial task forces across malnutrition in all its forms.** By the end of 2018, all national governments should build interministerial task forces to implement nutrition policies, as well as national advisory councils or commissions. Such mechanisms should do the following:
   - Have a direct line to the office of the head of state
   - Include bottom-up, social participation (for example, academia and CSOs)
   - Oversee the development and/or implementation of policies and programs to address malnutrition in all its forms

   In addition, by 2018 the donor community should provide funding for at least 25 such mechanisms, to allow them to build capacity and ensure that they are working effectively.
2. **Convert recommendations into legislation.** Governments should implement and monitor widely recommended policies and programs that support breastfeeding. Specifically, governments should make SMART commitments to
   - implement all the provisions outlined in the International Code of Marketing of Breast-milk Substitutes by the time of the N4G Summit in 2020; and
   - also by 2020, ratify the International Labour Organization's convention to provide maternity leave protection and other workplace support,

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and monitor and report on workplace policies for continued breastfeeding and child care.

3. **Implement policies to support recommendations.** Governments should implement and monitor widely recommended policies and programs that promote healthy diets, such as salt/sodium reduction policies (including legislated targets); policies to replace saturated fats and trans fats with unsaturated fats; restrictions on marketing of foods high in fats, sugars, and salt to children; and taxes on sugar-sweetened beverages. To date, only 10 percent of countries report progress on three core policies (implementing the World Health Organization's recommendations on marketing to children, salt reduction, and trans and saturated fat reduction): by 2030 all countries should be able to report significant progress on these three.

4. **Scale up the 13 proven nutrition-specific interventions.** Governments and international stakeholders should work to scale up coverage of proven nutrition-specific interventions—at both the global and national levels—with a focus on integrating nutrition actions into health system platforms. Of the 13 interventions we review, the median coverage rate ranges from 1 to 79 percent. By 2030 the median coverage rate for all 13 should be 90 percent.

5. **Deepen understanding of scale-up and quality implementation of all proven nutrition interventions.** Researchers should explore the technical, political, and economic enablers and barriers to the uptake, implementation, and enforcement of nutrition interventions. Areas where more research is needed include

   - lessons learned from successful task forces and councils;
   - why some countries achieve better coverage than others for a given nutrition-specific intervention, and why some nutrition-specific interventions are more scalable than others, even within the same country; and
   - how incorporating proven nutrition-specific interventions into health systems affects nutrition and broader health outcomes.

By the end of 2018, research funders should have announced at least two major multicountry-funded research programs on the enablers and barriers to uptake, implementation, and enforcement of proven nutrition policies and programs.

ACCELERATE THE CONTRIBUTION OF THE UNDERLYING DRIVERS

1. **Set targets for underlying driver outcomes.** During the next revision of their national nutrition and noncommunicable disease plans, country governments and CSOs should identify the primary underlying drivers of their unique nutrition contexts and establish targets to accelerate improvement in them.

2. **Set targets for nutrition-sensitive spending.** Governments, UN agencies, CSOs, donors, and businesses should make more ambitious commitments about the percentages of their investments in food systems; water, sanitation, and hygiene (WASH); education; gender equity; and social protection programs that are explicitly designed to help address all forms of malnutrition.

3. **Deepen understanding of common drivers of poor nutrition.** Researchers need to create a unified, conceptual framework for understanding the underlying drivers of overweight/obesity, micronutrient deficiency, stunting, and wasting—and identify common drivers of all forms of malnutrition. This will help guide specific commitments by governments, donors, the UN, and businesses at the underlying level. This should be published in a Lancet nutrition series and supported by funders and governments.

4. **Strengthen nutrition action for those affected by conflict and emergencies.** Leading national and international humanitarian stakeholders must ensure that their actions are more nutrition oriented, and they need to do a better job of

   - monitoring access of vulnerable groups to humanitarian interventions that tackle malnutrition and bridge the gap between humanitarian and development interventions;
   - meeting Sphere standards on the implementation of humanitarian response in food and nutrition as a way to strengthen accountability to vulnerable groups; and
   - systematically using climate science, social protection mechanisms, and new data technologies to improve the ability of underlying drivers to improve preparedness for and response to shocks.

These stakeholders should be encouraged to make SMART commitments in the aforementioned areas as part of the 2016 N4G process, and as they set country-level SDG targets.

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FINANCE THE GLOBAL TARGETS

1. **Increase budgetary allocations to nutrition-specific programs.** In line with analyses reported in Chapter 7, governments and donors must triple their allocations to high-impact interventions that address stunting, wasting, anemia, and exclusive breastfeeding over the 2016–2025 period to meet global targets.
2. **Increase budgetary allocations to obesity and nutrition-related noncommunicable diseases.** The funding of obesity and nutrition-related noncommunicable disease policy and interventions represents a small fraction of spending of government budgets and international aid. Governments should cost their national noncommunicable disease plans as they develop them, and funders should support these plans.
3. **Expand the share of sectoral budgets that aim to improve nutritional status.** Governments, civil society, and development agencies need to step up their efforts to make a larger percentage of budgets in agriculture, education, the food system, health systems, social protection, and WASH work more directly for all forms of nutrition. These budgets are large, yet a small fraction of them factor nutrition explicitly into their aims. An essential first step is to set a baseline and a SMART spending target in each sector. Countries that have led the way on nutrition budgeting could set the example again by reporting on such targets in the 2017 *Global Nutrition Report*.
4. **All actors must track their complete nutrition spending more consistently.** Donors, given their catalytic role and relatively strong capacity, need to report commitments to—and disbursements of—nutrition-specific financing. They should also report nutrition-sensitive commitments and disbursements—from the broader development and social sectors that affect nutrition—every year, using the same methodology, starting with the 2017 *Global Nutrition Report*.
5. **Make the Creditor Reporting System codes work better for nutrition accountability**. By the 2020 N4G Summit, the Organization for Economic Co-operation and Development's Development Assistance Committee's database should develop codes for aid spending on nutrition-sensitive undernutrition projects and on nutrition-related noncommunicable disease projects.

MEASURE PROGRESS AT THE NATIONAL AND SUBNATIONAL LEVELS

1. **SDG 2 is just the start of nutrition accountability, not the end.** Country governments should look well beyond SDG 2 when tracking progress in nutrition, and develop inclusive annual national and subnational reporting mechanisms to assess progress in nutrition outcomes and actions.
2. **Align Demographic and Health Surveys (DHSs) and Multiple Indicator Cluster Surveys (MICSs) with the SDG indicators for nutrition**. In the next 12 months, the implementing and funding partners behind the DHSs and MICSs should work together to identify which SDG indicators can be added to surveys.
3. **Incentivize innovation in nutrition data collection.** More creative ways to use and collect subnational data are needed. Research funders should stimulate this through innovation prizes. By the end of 2018, a multiyear, multicountry research program on this subject should be announced.
4. **Measure inequalities and honor the SDG commitment to leave no one behind.** Governments, donors, and civil society should do more to identify and address inequalities in nutrition outcomes and access to nutrition services. At a minimum, all new DHS and MICS reports should report on the set of stratifiers we have reported on in Chapter 8.
5. **Strengthen nutrition accountability for those affected by conflicts and emergencies.** UN agencies and governments should do more to assess the nutrition status of displaced people and their access to food, care, and health services, and to address gaps therein. Countries vulnerable to emergencies need to do more to incorporate emergency planning into their national nutrition plans. By the end of 2017, as part of the Decade of Action, country governments should consider doing a review of the emergency preparedness within their current national nutrition plans.

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APPENDIX 1 WHERE FORMS OF MALNUTRITION OVERLAP

TABLE A1.1 Countries where under-5 stunting, anemia in women of reproductive age, and adult overweight and obesity overlap

Overlap/indicator group	Number of countries	Total population (millions)	Countries
Under-5 stunting only	2	111	Ethiopia, Rwanda
WRA anemia only	5	258	Ghana, Japan, Senegal, Sri Lanka, Thailand
Adult (18+ years) overweight/obesity (BMI ≥ 25) only	14	919	Argentina, Australia, Brazil, Chile, Colombia, Costa Rica, Germany, Mexico, Paraguay, Peru, The former Yugoslav Republic of Macedonia, Tonga, United States, Uruguay
Under-5 stunting and WRA anemia only	48	2,910	Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic People's Republic of Korea, Democratic Republic of the Congo, Djibouti, Eritrea, Gambia, Guinea, Guinea-Bissau, India, Indonesia, Kenya, Lao People's Democratic Republic, Liberia, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Nigeria, Pakistan, Philippines, Sao Tome and Principe, Sierra Leone, Somalia, Sudan, Timor-Leste, Togo, Uganda, United Republic of Tanzania, Zambia, Zimbabwe
Under-5 stunting and adult overweight/obesity only	2	15	Honduras, Nicaragua
WRA anemia and adult overweight/obesity only	35	484	Algeria, Azerbaijan, Barbados, Belarus, Belize, Bolivia, Bosnia and Herzegovina, Brunei Darussalam, Dominican Republic, El Salvador, Gabon, Georgia, Guyana, Iran, Jamaica, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Malaysia, Mongolia, Montenegro, Morocco, Oman, Panama, Republic of Moldova, Saint Lucia, Saudi Arabia, Serbia, Seychelles, Suriname, Tunisia, Turkey, Uzbekistan, Venezuela
Under-5 stunting, WRA anemia, and adult overweight/obesity	20	303	Albania, Armenia, Botswana, Ecuador, Egypt, Equatorial Guinea, Guatemala, Haiti, Iraq, Lesotho, Libya, Namibia, Papua New Guinea, Solomon Islands, South Africa, Swaziland, Syria, Tajikistan, Vanuatu, Yemen
Below cutoff for all three indicators	3	1,545	China, Republic of Korea, Viet Nam
Total with data	129	6,544	
Missing data for at least one indicator	64		
Total	193		

Source: Authors.

Data sources: UNICEF, WHO, and World Bank (2015) (stunting data are from 2005–2015); Stevens et al. (2013) (anemia data are from 2011); WHO (2015a) (overweight and obesity data are from 2014); United Nations (2013) (population data are from 2015).

Notes: WRA = women of reproductive age; BMI = body mass index. The cutoffs for placing countries in each indicator category are as follows: under-5 stunting ≥ 20 percent, WRA anemia ≥ 20 percent, and adult overweight and obesity ≥ 35 percent. These cutoffs were selected because the World Health Organization considers them to indicate public health significance (WHO 2010a).

APPENDIX 2 RULES TO DETERMINE WHETHER COUNTRIES ARE ON OR OFF COURSE TO MEET GLOBAL GOALS (IN *GLOBAL NUTRITION REPORT 2015*)

TABLE A2.1 Rules to determine progress on World Health Assembly maternal, infant, and young child nutrition indicators

Indicator	On course		Off course	
Wasting (in children under 5 years old)	Current rate < 5%		Current rate ≥ 5%	
Anemia (in women of reproductive age)	Current AARR ≥ 5.2%		Current AARR < 5.2%	
	Good progress	**At risk**	**Some progress**	**No progress**
Stunting (in children under 5 years old)	Current rate ≤ 5% and current AARR ≥ 0 (rate at 5% or below and declining further) Or Current AARR ≥ country-specific required AARR, irrespective of prevalence (rate of decrease faster than rate needed to meet global goal)	Current rate ≤ 5% and current AARR < 0 (rate at 5% or below, but increasing)	Current rate > 5% and current AARR > 0, but < country-specific AARR to meet global goal (rate above 5% and declining, but not fast enough to meet global target)	Current rate > 5% and current AARR ≤ 0 (rate above 5% and stationary or getting worse)
Overweight (in children under 5 years old)	Current rate < 7% and current AARR ≥ 0 (rate below the 7% threshold and decreasing)	Current rate < 7% and current AARR < 0 (rate below the 7% threshold, but increasing)	Current rate ≥ 7% and current AARR is > 0 (rate is at or above the 7% threshold and decreasing)	Current rate ≥ 7% and current AARR ≤ 0 (rate is at or above the 7% threshold and increasing)
	On course	**Some progress**	**No progress**	**Reversal**
Exclusive breastfeeding (in infants under 6 months old)	AAPPI ≥ target AAPPI	AAPPI ≥ 25% and < 100% of target AAPPI	AAPPI (positive or negative) is < 25% target AAPPI, and there is no decrease in EBF rates of 10% or more	A greater than 10% decrease in EBF rates has taken place over any recent time period at any EBF level

Source: Authors.

Note: In 2015 no rules were proposed by the World Health Organization and UNICEF for assessing progress on low birth weight (live births < 2,500 grams). AARR = annual average rate of reduction; EBF = exclusive breastfeeding; AAPPI = average annual percentage point increase.

TABLE A2.2 Rules to determine progress on noncommunicable disease indicators

Adult overweight and obesity (BMI ≥ 25)		Progress category	
	Change in prevalence rates between 2010 and 2014	Baseline prevalence of adult overweight and obesity < 35% (below mean)	Baseline prevalence of adult overweight and obesity ≥ 35% (above mean)
On course	No change or decrease	Low and stable/decreasing	High but stable/decreasing
Off course	Increase	Low but increasing	High and increasing

Adult obesity and diabetes	On course	Off course
Adult obesity (BMI ≥ 30)	No change or a decrease in prevalence rate between 2010 and 2014	An increase in prevalence rates between 2010 and 2014
Adult diabetes	No change or a decrease in prevalence rate between 2010 and 2014	An increase in prevalence rates between 2010 and 2014

Source: Authors.

Note: Adults are 18 years and older. The diabetes indicator is measured as raised blood glucose (fasting glucose ≥ 7.0 mmol/l [126 mg/dl] or on medication for raised blood glucose or with a history of diagnosis of diabetes). BMI = body mass index.

APPENDIX 3 COUNTRY NUTRITION STATUS AND PROGRESS

TABLE A3.1 Countries with new data points since *Global Nutrition Report 2015* and consequent change in assessment of progress toward WHA targets

Target/country	2015 assessment	2016 assessment
Exclusive breastfeeding of infants < 6 months		
Bhutan	Insufficient data to make assessment	Off course, some progress
Cameroon	Off course, no progress	On course
Congo	Off course, no progress	On course
DPR Korea	Insufficient data to make assessment	Insufficient data to make assessment
Guatemala	Insufficient data to make assessment	Off course, some progress
Oman	Insufficient data to make assessment	Insufficient data to make assessment
Sao Tome and Principe	Off course, no progress	On course
Swaziland	On course	On course
The FYR Macedonia	Insufficient data to make assessment	Off course, some progress
Timor-Leste	Insufficient data to make assessment	On course
Turkmenistan	Insufficient data to make assessment	Insufficient data to make assessment
Vanuatu	On course	On course
Chad	Insufficient data to make assessment	Off course, no progress
Panama	Insufficient data to make assessment	Insufficient data to make assessment
Under-5 stunting		
El Salvador	Off course, some progress	On course, good progress
India	Off course, some progress	Off course, some progress
Nepal	On course, good progress	Off course, some progress
Yemen	Off course, some progress	Off course, some progress
Under-5 overweight		
El Salvador	On course, good progress	On course, at risk
Nepal	On course, at risk	On course, at risk
Yemen	On course, good progress	On course, at risk
Under-5 wasting		
El Salvador	On course	On course
India	Off course	Off course
Nepal	Off course	Off course
Yemen	Off course	Off course

Source: Authors. Data for the 2016 assessment are based on Joint Malnutrition Estimates September 2015 Update (UNICEF, WHO, and World Bank 2015), except exclusive breastfeeding of infants < 6 months, which was updated in March 2016 (UNICEF 2016b).

Note: See Appendix 2 for rules to determine if countries are on or off course to meet the WHA Maternal and Child Nutrition targets 2025. DPR Korea = Democratic People's Republic of Korea. The FYR Macedonia = The former Yugoslav Republic of Macedonia.

TABLE A3.2 Countries ranked from lowest to highest, stunting prevalence

Rank	Country	Stunting prevalence (%)	Rank	Country	Stunting prevalence (%)	Rank	Country	Stunting prevalence (%)
1	Germany	1.3	47	Malaysia	17.2	93	Comoros	32.1
2	Chile	1.8	48	Gabon	17.5	93	Liberia	32.1
3	Australia	2.0	48	Peru	17.5	95	Cambodia	32.4
4	United States	2.1	50	Azerbaijan	18.0	96	Cameroon	32.6
5	Republic of Korea	2.5	51	Bolivia	18.1	97	Solomon Islands	32.8
5	Saint Lucia	2.5	52	Ghana	18.8	98	Burkina Faso	32.9
7	Belarus	4.5	53	Panama	19.1	98	Nigeria	32.9
8	The FYR Macedonia	4.9	54	Belize	19.3	100	Lesotho	33.2
9	Costa Rica	5.6	55	Senegal	19.4	101	Djibouti	33.5
10	Jamaica	5.7	55	Viet Nam	19.4	102	Bhutan	33.6
11	Kuwait	5.8	57	Uzbekistan	19.6	103	Benin	34.0
12	Serbia	6.0	58	Brunei Darussalam	19.7	104	Uganda	34.2
13	Republic of Moldova	6.4	59	Maldives	20.3	105	United Rep. of Tanzania	34.7
14	Iran	6.8	60	Armenia	20.8	106	Myanmar	35.1
15	Brazil	7.1	61	Libya	21.0	107	Bangladesh	36.1
15	Dominican Republic	7.1	62	Haiti	21.9	108	Indonesia	36.4
15	Japan	7.1	63	Mauritania	22.0	109	Nepal	37.4
18	Barbados	7.7	64	Egypt	22.3	110	Sierra Leone	37.9
19	Jordan	7.8	65	Iraq	22.6	110	Rwanda	37.9
20	Seychelles	7.9	66	Honduras	22.7	112	Sudan	38.2
21	Tonga	8.1	67	Nicaragua	23	113	Mali	38.5
22	Argentina	8.2	68	Albania	23.1	114	Chad	38.7
23	Suriname	8.8	68	Namibia	23.1	114	India	38.7
24	Bosnia and Herzegovina	8.9	70	South Africa	23.9	116	Zambia	40.0
25	Saudi Arabia	9.3	71	Nauru	24.0	117	Ethiopia	40.4
26	Montenegro	9.4	72	Gambia	24.5	118	Central African Republic	40.7
26	China	9.4	73	Congo	25.0	119	Afghanistan	40.9
28	Turkey	9.5	74	Ecuador	25.2	120	Malawi	42.4
29	Oman	9.8	75	Swaziland	25.5	121	DRC	42.6
30	Tuvalu	10.0	76	Somalia	25.9	122	Niger	43.0
31	Tunisia	10.1	77	Kenya	26.0	123	Mozambique	43.1
32	Uruguay	10.7	78	Equatorial Guinea	26.2	124	Lao PDR	43.8
33	Mongolia	10.8	79	Tajikistan	26.8	125	Pakistan	45.0
34	Paraguay	10.9	80	Syria	27.5	126	Yemen	46.5
35	Georgia	11.3	80	Togo	27.5	127	Guatemala	48.0
36	Algeria	11.7	82	Zimbabwe	27.6	128	Madagascar	49.2
37	Guyana	12.0	82	Guinea-Bissau	27.6	129	Papua New Guinea	49.5
38	Colombia	12.7	84	DPR Korea	27.9	130	Eritrea	50.3
39	Kyrgyzstan	12.9	85	Vanuatu	28.5	131	Burundi	57.5
40	Kazakhstan	13.1	86	Angola	29.2	132	Timor-Leste	57.7
41	Venezuela	13.4	87	Côte d'Ivoire	29.6			
42	Mexico	13.6	88	Philippines	30.3			
43	El Salvador	14.0	89	South Sudan	31.1			
44	Sri Lanka	14.7	90	Guinea	31.3			
45	Morocco	14.9	91	Botswana	31.4			
46	Thailand	16.3	92	Sao Tome and Principe	31.6			

Source: Authors, based on UNICEF, WHO, and World Bank (2015).

Note: DPR Korea = Democratic People's Republic of Korea. DRC = Democratic Republic of the Congo. Lao PDR = Lao People's Democratic Republic. The FYR Macedonia = The former Yugoslav Republic of Macedonia.

On course, good progress

Off course, some progress

Off course, no progress

Insufficient data to make assessment

TABLE A3.3 Countries ranked from lowest to highest, wasting prevalence

Rank	Country	Wasting prevalence (%)	Rank	Country	Wasting prevalence (%)	Rank	Country	Wasting prevalence (%)
1	Australia	0.0	45	Tuvalu	3.3	93	Myanmar	7.9
2	Chile	0.3	48	Gabon	3.4	93	Philippines	7.9
3	Peru	0.4	49	Saint Lucia	3.7	93	Nigeria	7.9
4	United States	0.5	50	United Rep. of Tanzania	3.8	96	DRC	8.1
5	Colombia	0.9	50	Malawi	3.8	97	Angola	8.2
6	Costa Rica	1.0	52	Serbia	3.9	98	Ethiopia	8.7
6	Nauru	1.0	53	Kenya	4.0	99	Albania	9.4
6	Germany	1.0	53	Iran	4.0	99	Sierra Leone	9.4
6	Mongolia	1.0	53	DPR Korea	4.0	101	Afghanistan	9.5
10	Guatemala	1.1	56	Algeria	4.1	101	Egypt	9.5
11	Argentina	1.2	56	Kazakhstan	4.1	103	Cambodia	9.6
11	Panama	1.2	56	Venezuela	4.1	104	Guinea	9.9
11	Republic of Korea	1.2	59	Armenia	4.2	104	Tajikistan	9.9
14	Uruguay	1.3	60	Solomon Islands	4.3	106	Maldives	10.2
15	Honduras	1.4	60	Seychelles	4.3	107	Pakistan	10.5
16	Nicaragua	1.5	60	Uganda	4.3	108	Burkina Faso	10.9
17	Bolivia	1.6	63	Vanuatu	4.4	109	Comoros	11.1
17	Mexico	1.6	64	Uzbekistan	4.5	110	Sao Tome and Principe	11.2
17	Brazil	1.6	64	Benin	4.5	111	Nepal	11.3
17	Georgia	1.6	66	Ghana	4.7	112	Gambia	11.5
21	Turkey	1.7	66	South Africa	4.7	112	Syria	11.5
22	The FYR Macedonia	1.8	68	Suriname	5.0	114	Mauritania	11.6
23	Republic of Moldova	1.9	69	Haiti	5.2	115	Saudi Arabia	11.8
24	Swaziland	2.0	69	Tonga	5.2	116	Indonesia	13.5
24	El Salvador	2.0	71	Liberia	5.6	117	Papua New Guinea	14.3
26	Belarus	2.2	72	Viet Nam	5.7	117	Bangladesh	14.3
26	Rwanda	2.2	73	Senegal	5.8	119	Somalia	14.9
28	Bosnia and Herzegovina	2.3	73	Cameroon	5.8	120	India	15.1
28	Morocco	2.3	75	Bhutan	5.9	121	Eritrea	15.3
28	Japan	2.3	75	Congo	5.9	121	Mali	15.3
28	Ecuador	2.3	77	Guinea-Bissau	6.0	123	Chad	15.7
28	China	2.3	78	Mozambique	6.1	124	Sudan	16.3
33	Jordan	2.4	78	Burundi	6.1	124	Yemen	16.3
33	Kuwait	2.4	80	Zambia	6.3	126	Niger	18.7
33	Dominican Republic	2.4	81	Lao PDR	6.4	127	Timor-Leste	18.9
36	Paraguay	2.6	81	Guyana	6.4	128	Sri Lanka	21.4
37	Tunisia	2.8	83	Libya	6.5	129	Djibouti	21.5
37	Montenegro	2.8	84	Thailand	6.7	130	South Sudan	22.7
37	Lesotho	2.8	84	Togo	6.7			
37	Kyrgyzstan	2.8	86	Barbados	6.8			
41	Brunei Darussalam	2.9	87	Oman	7.1			
42	Jamaica	3.0	87	Namibia	7.1			
43	Azerbaijan	3.1	89	Botswana	7.2			
43	Equatorial Guinea	3.1	90	Iraq	7.4			
45	Zimbabwe	3.3	90	Central African Republic	7.4			
45	Belize	3.3	92	Côte d'Ivoire	7.6			

Source: Authors, based on UNICEF, WHO, and World Bank (2015).

Note: DPR Korea = Democratic People's Republic of Korea. DRC = Democratic Republic of the Congo. The FYR Macedonia = The former Yugoslav Republic of Macedonia. Lao PDR = Lao People's Democratic Republic.

On course Off course

TABLE A3.4 Countries ranked from lowest to highest, under-5 overweight prevalence

Rank	Country	Overweight prevalence (%)	Rank	Country	Overweight prevalence (%)	Rank	Country	Overweight prevalence (%)
1	DPR Korea	0.0	46	Colombia	4.8	92	Swaziland	9.0
2	Sri Lanka	0.6	48	Guatemala	4.9	94	Chile	9.3
3	Mauritania	1.2	48	Republic of Moldova	4.9	95	Belarus	9.7
4	Senegal	1.3	50	Philippines	5.0	95	Equatorial Guinea	9.7
5	Bangladesh	1.4	51	Malawi	5.1	97	Argentina	9.9
6	Japan	1.5	52	Honduras	5.2	98	Seychelles	10.2
7	Oman	1.7	52	United Rep. of Tanzania	5.2	99	Mongolia	10.5
7	Benin	1.7	54	Guyana	5.3	100	Morocco	10.7
9	Central African Republic	1.8	55	Afghanistan	5.4	101	Thailand	10.9
9	Nigeria	1.8	56	Timor-Leste	5.8	101	Turkey	10.9
11	Eritrea	1.9	56	Uganda	5.8	101	Comoros	10.9
11	India	1.9	58	South Sudan	6.0	104	Botswana	11.2
13	Lao PDR	2.0	58	United States	6.0	105	Indonesia	11.5
13	Togo	2.0	58	El Salvador	6.0	106	Sao Tome and Principe	11.6
13	Cambodia	2.0	61	Saudi Arabia	6.1	107	Paraguay	11.7
13	Yemen	2.0	62	Zambia	6.2	108	Iraq	11.8
17	Nepal	2.1	62	Nicaragua	6.2	109	Barbados	12.2
18	Guinea-Bissau	2.3	64	Saint Lucia	6.3	110	Algeria	12.4
19	Solomon Islands	2.5	64	Tuvalu	6.3	110	The FYR Macedonia	12.4
20	Ghana	2.6	66	Venezuela	6.4	112	Uzbekistan	12.8
20	Ethiopia	2.6	67	Cameroon	6.5	113	Azerbaijan	13.0
20	Myanmar	2.6	67	Maldives	6.5	114	Kazakhstan	13.3
23	Gambia	2.7	69	Tajikistan	6.6	115	Papua New Guinea	13.8
24	Burkina Faso	2.8	69	China	6.6	116	Serbia	13.9
24	Chad	2.8	71	Kyrgyzstan	7.0	117	Tunisia	14.3
24	Nauru	2.8	72	Peru	7.2	118	Egypt	15.7
27	Somalia	2.9	72	Uruguay	7.2	119	Armenia	16.8
27	Burundi	2.9	74	Brazil	7.3	120	Tonga	17.3
29	Sudan	3.0	74	Republic of Korea	7.3	121	Bosnia and Herzegovina	17.4
29	Niger	3.0	76	Lesotho	7.4	122	Syria	17.9
31	Liberia	3.2	77	Ecuador	7.5	123	Georgia	19.9
31	Côte d'Ivoire	3.2	78	Dominican Republic	7.6	124	Montenegro	22.3
33	Germany	3.5	78	Bhutan	7.6	125	Libya	22.4
34	Zimbabwe	3.6	80	Gabon	7.7	126	Albania	23.4
34	Congo	3.6	80	Australia	7.7			
34	Haiti	3.6	80	Rwanda	7.7			
37	Guinea	3.8	83	Jamaica	7.8			
38	Suriname	4.0	84	Mozambique	7.9			
39	Namibia	4.1	84	Belize	7.9			
39	Kenya	4.1	86	Djibouti	8.1			
41	DRC	4.4	86	Costa Rica	8.1			
42	Viet Nam	4.6	88	Brunei Darussalam	8.3			
42	Vanuatu	4.6	89	Bolivia	8.7			
44	Mali	4.7	89	Kuwait	8.7			
44	Jordan	4.7	91	Sierra Leone	8.9			
46	Pakistan	4.8	92	Mexico	9.0			

Source: Authors, based on UNICEF, WHO, and World Bank (2015).

Note: DRC = Democratic Republic of the Congo. DPR Korea = Democratic People's Republic of Korea. Lao PDR = Lao People's Democratic Republic. The FYR Macedonia = The former Yugoslav Republic of Macedonia.

On course, good progress

On course, at risk

Off course, some progress

Off course, no progress

Insufficient data to make assessment

TABLE A3.5 Countries ranked lowest to highest, prevalence of anemia in women of reproductive age

Rank	Country	Anemia prevalence (%)	Rank	Country	Anemia prevalence (%)	Rank	Country	Anemia prevalence (%)
1	United States	11.9	47	Brunei Darussalam	20.4	93	Trinidad and Tobago	25.3
2	Chile	12.1	47	Greece	20.4	93	Solomon Islands	25.3
3	Nicaragua	12.9	49	Malaysia	20.7	93	St. Vincent and the Grenadines	25.3
4	Viet Nam	14.1	50	Burundi	20.9	96	Philippines	25.4
5	Mexico	14.4	50	Kiribati	20.9	97	Dominica	25.5
6	United Kingdom	14.7	52	Seychelles	21.2	98	Sri Lanka	25.7
7	New Zealand	14.8	53	Russian Federation	21.4	98	Guatemala	25.7
8	Argentina	15.6	54	Albania	21.5	100	Grenada	25.8
9	Canada	16.5	55	Vanuatu	21.7	101	Armenia	25.9
10	Andorra	17.0	55	Belize	21.7	102	Dominican Republic	26.0
10	Iceland	17.0	57	Singapore	22.0	102	Republic of Moldova	26.0
12	Malta	17.1	58	Japan	22.1	104	United Arab Emirates	26.2
12	Israel	17.1	59	Kuwait	22.4	105	Saint Lucia	26.4
14	Ireland	17.2	59	Belarus	22.4	106	Uganda	26.7
15	Norway	17.3	61	Timor-Leste	22.5	107	Lesotho	26.8
16	Uruguay	17.4	61	Indonesia	22.5	107	Fiji	26.8
16	Rwanda	17.4	61	Czech Republic	22.5	109	Djibouti	27.1
18	Australia	17.5	61	Venezuela	22.5	110	Lebanon	27.5
19	Luxembourg	17.6	65	Ukraine	22.8	110	Georgia	27.5
20	Finland	17.7	66	Lithuania	23.0	112	South Africa	27.6
20	Samoa	17.7	67	Bahamas	23.1	113	Cyprus	27.7
22	Sweden	17.8	67	Barbados	23.1	114	Swaziland	27.8
23	Germany	17.9	69	Poland	23.3	115	Qatar	27.9
24	Denmark	18.0	69	Slovakia	23.3	115	Libya	27.9
24	Belgium	18.0	71	Mauritius	23.4	117	Tunisia	28.0
24	Honduras	18.0	71	Cuba	23.4	118	Iran	28.1
27	Netherlands	18.1	73	El Salvador	23.5	119	Jordan	28.4
27	Spain	18.1	73	Latvia	23.5	119	Zimbabwe	28.4
29	Micronesia	18.3	73	Hungary	23.5	121	Botswana	28.5
30	Austria	18.5	76	Slovenia	23.6	122	Turkey	28.8
30	Peru	18.5	77	Thailand	23.8	122	Malawi	28.8
32	Tonga	18.6	78	Bulgaria	23.9	124	Zambia	29.2
33	France	18.9	79	Estonia	24.0	125	Papua New Guinea	29.8
33	Portugal	18.9	80	Montenegro	24.1	125	Kazakhstan	29.8
35	Costa Rica	19.0	81	Bosnia and Herzegovina	24.3	127	Myanmar	30.3
36	Switzerland	19.1	81	Ecuador	24.3	128	Comoros	30.8
37	Ethiopia	19.2	81	Romania	24.3	129	Syria	30.9
38	Paraguay	19.3	84	Jamaica	24.4	130	Lao PDR	31.0
38	The FYR Macedonia	19.3	85	Croatia	24.5	131	Iraq	31.3
40	Italy	19.4	86	Tajikistan	24.6	132	Sudan	31.5
40	Republic of Korea	19.4	87	Panama	24.8	133	Madagascar	31.8
42	China	19.5	88	Suriname	24.9	134	Turkmenistan	32.1
42	Colombia	19.5	88	Serbia	24.9	135	Bolivia	32.4
44	Brazil	19.6	88	Antigua & Barbuda	24.9	136	Kyrgyzstan	32.5
45	Marshall Islands	20.0	91	Kenya	25.0	137	Algeria	32.7
46	Mongolia	20.2	91	DPR Korea	25.0	137	Namibia	32.7

Source: Authors, based on Stevens et al. (2013).

Continued

On course Off course

Table A3.5 continued

Rank	Country	Anemia prevalence (%)	Rank	Country	Anemia prevalence (%)	Rank	Country	Anemia prevalence (%)
137	Azerbaijan	32.7	155	Cameroon	41.5	171	Guinea	48.4
140	Eritrea	32.8	156	Somalia	42.6	172	Nigeria	48.5
141	Afghanistan	33.0	157	Sao Tome and Principe	42.7	173	Côte d'Ivoire	48.8
142	Morocco	33.1	158	Bangladesh	43.5	174	DRC	49.0
143	Guyana	33.7	159	Bhutan	43.7	175	Liberia	49.3
144	Egypt	34.5	160	Cambodia	43.8	176	Burkina Faso	49.5
145	Oman	35.1	161	Mozambique	44.2	177	Benin	49.6
146	Nepal	36.1	162	Guinea-Bissau	44.6	178	Congo	50.7
147	Maldives	36.6	163	Angola	44.8	179	Gabon	50.8
148	Haiti	37.1	164	Sierra Leone	45.2	180	Pakistan	51.1
149	Yemen	37.5	165	Gambia	45.3	181	Uzbekistan	51.7
150	Bahrain	37.6	166	Equatorial Guinea	45.4	182	Togo	52.7
151	Cabo Verde	37.9	167	Central African Republic	46.0	183	Mali	56.2
152	Mauritania	39.0	168	Chad	46.6	184	Ghana	56.4
153	United Rep. of Tanzania	39.6	169	Niger	46.7	185	Senegal	57.5
154	Saudi Arabia	40.3	170	India	48.1			

Source: Authors, based on Stevens et al. (2013).

Note: DPR Korea = Democratic People's Republic of Korea. DRC = Democratic Republic of the Congo. Lao PDR = Lao People's Democratic Republic. The FYR Macedonia = The former Yugoslav Republic of Macedonia.

On course Off course

TABLE A3.6 Countries ranked from highest to lowest, exclusive breastfeeding (EBF) rate

Rank	Country	EBF rate (%)	Rank	Country	EBF rate (%)	Rank	Country	EBF rate (%)
1	Rwanda	87.0	48	India	46.4	95	China	27.6
2	Sri Lanka	75.8	49	South Sudan	45.1	96	Mauritania	26.9
3	Sao Tome and Principe	73.8	50	Swaziland	44.1	97	Uzbekistan	26.4
4	Solomon Islands	73.7	51	Colombia	42.9	98	Algeria	25.7
5	Vanuatu	72.6	52	Syria	42.6	99	Paraguay	24.4
6	Zambia	72.5	53	Madagascar	41.9	100	Viet Nam	24.3
7	Malawi	70.2	54	Indonesia	41.5	101	Jamaica	23.8
8	Burundi	69.3	55	Benin	41.4	102	Myanmar	23.6
9	Kiribati	69.0	56	United Rep. of Tanzania	41.1	103	Croatia	23.3
10	DPR Korea	68.9	56	Kyrgyzstan	41.1	103	Guyana	23.3
11	Eritrea	68.7	58	Zimbabwe	41.0	103	Niger	23.3
12	Peru	68.4	58	Mozambique	41.0	106	The FYR Macedonia	23.0
13	Nauru	67.2	60	Lao PDR	40.4	107	Jordan	22.7
14	Lesotho	66.9	61	Ecuador	40.0	108	Panama	21.5
15	Cambodia	65.0	62	Fiji	39.8	109	Mauritius	21.0
16	Bolivia	64.3	63	Haiti	39.7	110	Guinea	20.5
17	Uganda	63.2	63	Egypt	39.7	111	Botswana	20.3
17	Chile	63.2	65	Grenada	39.0	112	Barbados	19.7
19	Timor-Leste	62.3	66	Brazil	38.6	112	Ukraine	19.7
20	Kenya	61.4	66	Albania	38.6	114	Iraq	19.6
21	Micronesia (Fed. States of)	60.0	68	Mali	37.8	115	Belarus	19.0
22	Cabo Verde	59.6	69	Pakistan	37.7	116	Bosnia and Herzegovina	18.5
23	Palau	59.0	70	Republic of Moldova	36.4	117	Nigeria	17.4
24	Togo	57.5	71	Tuvalu	34.7	118	Montenegro	16.8
25	Nepal	56.9	72	Armenia	34.6	119	Romania	15.8
26	Papua New Guinea	56.1	73	Tajikistan	34.3	120	Lebanon	14.8
27	Saint Kitts and Nevis	55.6	74	United Arab Emirates	34.0	121	Belize	14.7
28	Sudan	55.4	74	Central African Rep.	34.0	122	Mexico	14.4
29	Bangladesh	55.3	74	Philippines	34.0	123	Trinidad and Tobago	12.8
30	Liberia	55.2	77	Bahrain	33.8	123	Serbia	12.8
31	Georgia	54.8	78	Cuba	33.2	125	Thailand	12.3
32	Uruguay	54.1	79	Senegal	33.0	126	Côte d'Ivoire	12.1
33	Guatemala	53.2	80	Congo	32.9	126	Azerbaijan	12.1
34	Iran	53.1	81	Oman	32.8	126	Comoros	12.1
35	Guinea-Bissau	52.5	82	Argentina	32.7	129	Kuwait	11.9
36	Ghana	52.3	83	Costa Rica	32.5	130	Turkmenistan	10.9
37	Tonga	52.2	84	Sierra Leone	32.0	131	Yemen	10.3
38	Ethiopia	52.0	85	Kazakhstan	31.8	132	Tunisia	8.5
39	Bhutan	51.4	86	Nicaragua	31.7	133	South Africa	8.3
40	Samoa	51.3	87	Marshall Islands	31.3	134	Equatorial Guinea	7.4
41	Burkina Faso	50.1	88	Honduras	31.2	135	Venezuela	7.1
42	Namibia	48.5	89	Saudi Arabia	31.0	136	Gabon	6.0
43	Maldives	47.8	90	Turkey	30.1	137	Somalia	5.3
44	DRC	47.6	91	Qatar	29.3	138	Dominican Republic	4.7
45	Mongolia	47.1	92	Malaysia	29.0	139	Suriname	2.8
46	El Salvador	47.0	93	Cameroon	28.2	140	Djibouti	1.3
47	Gambia	46.8	94	Morocco	27.8	141	Chad	0.3

Source: Authors, based on UNICEF (2016b).

On course | Off course, some progress | Off course, no progress | Off course, reversal | Insufficient data to make assessment

TABLE A3.7 Countries ranked from lowest to highest, adult overweight and obesity prevalence

Rank	Country	Adult overweight prevalence (%)	Rank	Country	Adult overweight prevalence (%)	Rank	Country	Adult overweight prevalence (%)
1	Timor-Leste	14.5	46	Senegal	30.2	91	Ukraine	54.2
2	Burundi	15.5	47	Mauritania	30.3	92	Serbia	54.5
3	Afghanistan	16.2	48	Côte d'Ivoire	30.6	93	Switzerland	54.7
4	Myanmar	17.6	49	Zimbabwe	30.7	94	Germany	54.8
4	Cambodia	17.6	50	Angola	30.9	95	Georgia	55.2
6	Nepal	18.0	51	Djibouti	31.9	95	Turkmenistan	55.2
7	Bangladesh	18.1	52	Gambia	32.5	95	Finland	55.2
8	Ethiopia	18.9	53	Singapore	32.8	95	Denmark	55.2
9	Eritrea	19.0	54	Nigeria	33.3	95	The FYR Macedonia	55.2
9	Lao PDR	19.0	55	Republic of Korea	33.5	100	Seychelles	55.3
11	Niger	19.4	55	Cameroon	33.5	101	Armenia	55.5
12	Rwanda	19.8	57	Ghana	33.6	102	Portugal	55.6
13	DPR Korea	20.4	57	Congo	33.6	103	Montenegro	55.8
14	Viet Nam	20.6	59	China	34.4	104	Netherlands	55.9
14	DRC	20.6	60	Sao Tome and Principe	34.8	104	Sweden	55.9
16	Somalia	20.7	61	Lesotho	35.4	106	Dominican Republic	56.3
17	Central African Republic	21.6	62	Cabo Verde	36.9	106	St. Vincent and Grenadines	56.3
18	Mozambique	21.8	63	Haiti	38.5	108	Morocco	56.5
18	Uganda	21.8	63	Malaysia	38.5	108	Colombia	56.5
20	Malawi	21.9	65	Swaziland	41.4	110	Estonia	56.7
21	India	22.0	66	Equatorial Guinea	41.7	110	El Salvador	56.7
22	Madagascar	22.8	67	Namibia	42.9	112	Belgium	56.9
23	Pakistan	23.0	68	Gabon	44.8	113	Saint Lucia	57.4
24	Philippines	23.6	69	Tajikistan	44.9	114	Grenada	57.5
24	Burkina Faso	23.6	70	Mauritius	45.1	115	Romania	57.6
26	Japan	24.2	71	Republic of Moldova	46.6	116	Latvia	57.9
27	Indonesia	24.5	72	Yemen	46.8	116	Iceland	57.9
28	Comoros	24.6	73	Brunei Darussalam	47.0	116	Iraq	57.9
29	Liberia	25.0	74	Kyrgyzstan	47.2	119	Belarus	58.0
30	Mali	25.1	75	Botswana	48.0	119	Luxembourg	58.0
31	Sri Lanka	25.2	76	Paraguay	48.5	121	Azerbaijan	58.1
32	Guinea	25.5	77	Uzbekistan	49.0	122	Peru	58.2
33	United Rep. of Tanzania	25.6	78	Nicaragua	49.4	123	Dominica	58.4
34	Chad	25.8	79	Mongolia	50.4	124	Syrian Arab Rep.	58.5
34	Sierra Leone	25.8	80	Honduras	51.5	124	Norway	58.5
36	Togo	25.9	81	Bosnia and Herzegovina	51.8	124	Suriname	58.5
37	Guinea-Bissau	26.1	82	Guatemala	52.0	127	Cuba	58.6
38	Kenya	26.2	83	Bolivia	52.1	128	Russian Federation	58.7
39	Bhutan	27.1	84	Albania	52.7	129	Italy	58.8
40	Sudan	27.8	85	Guyana	52.9	129	Kazakhstan	58.8
40	South Sudan	27.8	86	Austria	53.1	129	Croatia	58.8
42	Benin	28.9	87	Belize	53.8	132	Saint Kitts and Nevis	58.9
43	Zambia	29.2	88	South Africa	53.9	133	Algeria	59.1
44	Maldives	29.6	89	Ecuador	54.1	133	Bulgaria	59.1
45	Thailand	29.7	89	Brazil	54.1	133	Jamaica	59.1

Source: Authors, based on WHO (2015a).

Continued

Off course

Table A3.7 continued

Rank	Country	Adult overweight prevalence (%)	Rank	Country	Adult overweight prevalence (%)	Rank	Country	Adult overweight prevalence (%)
136	Hungary	59.6	154	Panama	62.2	173	Vanuatu	67.9
137	Lithuania	60.1	155	Barbados	62.3	174	Libya	68.7
138	Solomon Islands	60.2	155	Venezuela	62.3	174	Lebanon	68.7
139	Ireland	60.3	155	Iran	62.3	176	Micronesia	68.9
139	Cyprus	60.3	158	Tunisia	62.9	177	Bahamas	69.0
141	Costa Rica	60.4	159	Chile	63.1	178	Saudi Arabia	69.6
142	Greece	60.5	160	United Kingdom	63.4	179	Fiji	71.2
143	Slovenia	60.6	160	Czech Republic	63.4	180	Bahrain	71.7
144	Papua New Guinea	60.7	162	Israel	63.5	181	Kiribati	73.1
144	France	60.7	163	Malta	64.0	182	Tuvalu	73.2
146	Spain	60.9	163	New Zealand	64.0	183	United Arab Emirates	74.0
147	Slovakia	61.0	163	Australia	64.0	184	Samoa	74.3
148	Poland	61.1	166	Mexico	64.4	185	Tonga	74.8
149	Trinidad and Tobago	61.4	166	Canada	64.4	186	Kuwait	75.4
150	Uruguay	61.7	168	Jordan	65.9	187	Marshall Islands	75.8
150	Argentina	61.7	169	Turkey	66.3	188	Nauru	77.8
152	Antigua and Barbuda	61.9	170	Andorra	66.9	189	Qatar	78.1
153	Egypt	62.0	171	United States	67.3	190	Palau	79.3
154	Panama	62.2	172	Oman	67.4			

Source: Authors based on WHO (2015a).

Note: Lao PDR = Lao People's Democratic Republic. DPR Korea = Democratic People's Republic of Korea. DRC = Democratic Republic of the Congo. The FYR Macedonia = The former Yugoslav Republic of Macedonia.

Off course

TABLE A3.8 Countries ranked from lowest to highest, adult obesity prevalence

Rank	Country	Adult obesity prevalence (%)	Rank	Country	Adult obesity prevalence (%)	Rank	Country	Adult obesity prevalence (%)
1	Timor-Leste	2.2	46	Thailand	8.5	91	Netherlands	19.8
2	DPR Korea	2.4	47	Zambia	8.9	92	Montenegro	20.0
3	Burundi	2.6	48	Côte d'Ivoire	9.2	92	Brazil	20.0
4	Afghanistan	2.9	49	Benin	9.3	94	Turkmenistan	20.1
4	Myanmar	2.9	50	Djibouti	9.6	94	Ukraine	20.1
6	Cambodia	3.2	51	Mauritania	9.7	94	Germany	20.1
7	Japan	3.3	52	Senegal	9.8	94	Portugal	20.1
7	Nepal	3.3	53	Angola	10.2	98	Belgium	20.2
9	Lao PDR	3.5	54	Zimbabwe	10.5	99	Sweden	20.5
10	Viet Nam	3.6	55	Gambia	10.9	100	Finland	20.6
10	Bangladesh	3.6	56	Nigeria	11.0	101	Georgia	20.8
12	Ethiopia	4.0	56	Congo	11.0	102	Italy	21.0
12	Rwanda	4.0	58	Cameroon	11.4	102	Colombia	21.0
14	Eritrea	4.1	59	Haiti	11.9	104	Peru	21.1
15	Niger	4.3	60	Ghana	12.2	105	Romania	21.7
16	DRC	4.4	61	Sao Tome and Principe	12.3	106	El Salvador	21.8
17	Somalia	4.6	62	Cabo Verde	13.0	107	Morocco	22.3
18	India	4.9	63	Malaysia	13.3	108	Botswana	22.4
18	Uganda	4.9	64	Tajikistan	13.6	109	Belize	22.5
20	Philippines	5.1	65	Lesotho	14.2	109	Azerbaijan	22.5
20	Central African Republic	5.1	66	Kyrgyzstan	14.4	111	Estonia	22.6
22	Mozambique	5.3	67	Republic of Moldova	14.9	112	Iceland	22.8
22	Malawi	5.3	68	Uzbekistan	15.5	113	Greece	22.9
24	Madagascar	5.4	69	Paraguay	16.3	113	Guyana	22.9
24	Pakistan	5.4	70	Mongolia	16.7	115	Norway	23.1
26	Indonesia	5.7	71	Nicaragua	17.1	115	Luxembourg	23.1
27	Republic of Korea	5.8	71	Bolivia	17.1	117	Bulgaria	23.2
28	Singapore	6.2	73	Yemen	17.2	118	Croatia	23.3
29	Burkina Faso	6.3	74	Equatorial Guinea	17.5	119	Belarus	23.4
30	Sri Lanka	6.5	75	Albania	17.6	119	Kazakhstan	23.4
31	Liberia	6.6	75	Gabon	17.6	121	Syrian Arab Rep.	23.5
31	Comoros	6.6	77	Swaziland	17.7	122	Spain	23.7
33	Bhutan	6.7	78	Mauritius	17.9	122	Latvia	23.7
34	Guinea	6.8	78	Bosnia and Herzegovina	17.9	124	Iraq	23.8
34	Mali	6.8	80	Brunei Darussalam	18.1	124	Cyprus	23.8
36	China	6.9	81	Honduras	18.2	126	Dominican Republic	23.9
37	Kenya	7.0	82	Austria	18.4	126	France	23.9
38	United Rep. of Tanzania	7.1	83	Guatemala	18.6	128	Hungary	24.0
39	Guinea-Bissau	7.2	84	Ecuador	18.7	129	Russian Federation	24.1
40	Sudan	7.5	85	Namibia	18.9	130	Costa Rica	24.3
40	South Sudan	7.5	86	Denmark	19.3	130	St. Vincent and Grenadines	24.3
40	Togo	7.5	87	Switzerland	19.4	132	Venezuela	24.8
43	Sierra Leone	7.6	88	Serbia	19.5	132	Algeria	24.8
44	Maldives	7.9	88	Armenia	19.5	134	Slovenia	25.1
45	Chad	8.1	90	The FYR Macedonia	19.6	135	Cuba	25.2

Source: Authors, based on WHO (2015a).

Off course

Continued

Table A3.8 continued

Rank	Country	Adult obesity prevalence (%)	Rank	Country	Adult obesity prevalence (%)	Rank	Country	Adult obesity prevalence (%)
135	Poland	25.2	155	Solomon Islands	27.7	173	Libya	33.1
137	Israel	25.3	156	Chile	27.8	174	United States	33.7
138	Ireland	25.6	157	Papua New Guinea	27.9	175	Saudi Arabia	34.7
139	Slovakia	25.7	158	Canada	28.0	176	Bahrain	35.1
140	Dominica	25.8	159	Mexico	28.1	177	Vanuatu	35.4
141	Lithuania	25.9	159	United Kingdom	28.1	178	Bahamas	36.2
142	Iran	26.1	161	Saint Kitts and Nevis	28.3	179	Fiji	36.4
142	Suriname	26.1	162	Australia	28.6	180	United Arab Emirates	37.2
144	Grenada	26.2	163	Egypt	28.9	180	Micronesia	37.2
145	Seychelles	26.3	164	New Zealand	29.2	182	Kuwait	39.7
145	Argentina	26.3	165	Andorra	29.5	183	Tuvalu	40.3
147	Malta	26.6	165	Turkey	29.5	184	Kiribati	40.6
148	Uruguay	26.7	167	Jordan	30.5	185	Qatar	42.3
149	South Africa	26.8	168	Antigua and Barbuda	30.9	186	Marshall Islands	42.8
149	Czech Republic	26.8	168	Oman	30.9	187	Tonga	43.3
149	Panama	26.8	170	Trinidad and Tobago	31.1	188	Samoa	43.4
152	Saint Lucia	26.9	171	Barbados	31.3	189	Nauru	45.6
153	Tunisia	27.1	172	Lebanon	31.9	190	Palau	47.6
154	Jamaica	27.2						

Source: Authors, based on WHO (2015a).

Note: DPR Korea = Democratic People's Republic of Korea. Lao PDR = Lao People's Democratic Republic. DRC = Democratic Republic of the Congo. The FYR Macedonia = The former Yugoslav Republic of Macedonia.

Off course

TABLE A3.9 Countries ranked from lowest to highest, adult diabetes prevalence

Rank	Country	Diabetes prevalence (%)	Rank	Country	Diabetes prevalence (%)	Rank	Country	Diabetes prevalence (%)
1	Belgium	5.1	47	United Kingdom	7.8	88	Benin	9.0
1	Burundi	5.1	47	Liberia	7.8	94	Argentina	9.1
3	Denmark	5.2	47	Croatia	7.8	94	Comoros	9.1
4	Switzerland	5.5	47	Brazil	7.8	94	Sao Tome Principe	9.1
5	DPR Korea	5.6	47	Mozambique	7.8	94	Senegal	9.1
5	Netherlands	5.6	47	Serbia	7.8	98	Slovenia	9.3
7	Austria	5.7	53	New Zealand	7.9	99	Lithuania	9.4
8	Rwanda	6.1	53	Haiti	7.9	99	Bangladesh	9.4
8	DRC	6.1	53	Republic of Korea	7.9	99	Nepal	9.4
10	Uganda	6.2	53	Nigeria	7.9	99	Republic of Moldova	9.4
10	Germany	6.2	57	Ireland	8.0	99	Congo	9.4
12	France	6.3	57	Guinea-Bissau	8.0	104	China	9.5
12	Israel	6.3	57	Albania	8.0	104	Honduras	9.5
14	Sweden	6.4	57	Sierra Leone	8.0	104	India	9.5
15	Viet Nam	6.5	57	Ukraine	8.0	107	Afghanistan	9.6
16	Australia	6.6	57	Estonia	8.0	107	Bosnia and Herzegovina	9.6
16	Italy	6.6	57	Malawi	8.0	109	Mauritania	9.7
16	Iceland	6.6	57	Hungary	8.0	109	Sri Lanka	9.7
19	Finland	6.7	65	Czech Republic	8.1	109	Thailand	9.7
19	Norway	6.7	66	Cyprus	8.2	112	Cabo Verde	9.8
19	Eritrea	6.7	66	Cambodia	8.2	113	Chad	9.9
22	Somalia	6.8	66	Ecuador	8.2	113	Gambia	9.9
22	Madagascar	6.8	66	Burkina Faso	8.2	113	Dominica	9.9
24	Luxembourg	6.9	66	Peru	8.2	116	Chile	10.0
24	Zimbabwe	6.9	71	Ghana	8.3	116	Dominican Republic	10.0
26	Montenegro	7.0	71	Togo	8.3	116	South Sudan	10.0
27	Greece	7.1	71	Zambia	8.3	116	Nicaragua	10.0
27	Canada	7.1	71	Central African Republic	8.3	116	Sudan	10.0
27	Myanmar	7.1	75	United States	8.4	121	Panama	10.4
30	Portugal	7.2	75	Andorra	8.4	121	Namibia	10.4
31	Malta	7.3	75	Bulgaria	8.4	121	Maldives	10.4
31	Philippines	7.3	78	Colombia	8.5	124	El Salvador	10.5
31	Romania	7.3	78	Singapore	8.5	124	Lesotho	10.5
34	Ethiopia	7.4	80	Mali	8.6	124	Guatemala	10.5
34	Paraguay	7.4	80	Lao PDR	8.6	127	Saint Vincent and the Grenadines	10.6
34	Timor-Leste	7.4	82	Indonesia	8.7	128	Mexico	10.7
37	Spain	7.5	82	Djibouti	8.7	129	Pakistan	10.8
37	Japan	7.5	84	Belarus	8.8	130	Kyrgyzstan	11.1
37	Guinea	7.5	84	Cuba	8.8	130	Malaysia	11.1
37	Niger	7.5	86	Poland	8.9	132	Mongolia	11.5
41	United Rep. of Tanzania	7.6	86	Slovakia	8.9	132	Armenia	11.5
41	Latvia	7.6	88	Cameroon	9.0	132	Jamaica	11.5
41	Bolivia	7.6	88	Venezuela	9.0	135	Brunei Darussalam	11.6
41	Kenya	7.6	88	Russian Federation	9.0	136	Guyana	11.8
45	Côte d'Ivoire	7.7	88	Costa Rica	9.0	137	Grenada	11.9
45	The FYR Macedonia	7.7	88	Uruguay	9.0	137	Botswana	11.9

Source: Authors, based on WHO (2015a).

On course Off course

Continued

Table A3.9 continued

Rank	Country	Diabetes prevalence (%)	Rank	Country	Diabetes prevalence (%)	Rank	Country	Diabetes prevalence (%)
137	Mauritius	11.9	157	Syrian Arab Rep.	13.9	174	Libya	17.0
140	Uzbekistan	12.0	157	Georgia	13.9	175	Bahrain	17.3
140	Suriname	12.0	159	Algeria	14.2	176	Fiji	17.7
140	Gabon	12.0	160	Jordan	14.9	177	Saudi Arabia	18.3
143	Tajikistan	12.1	160	Seychelles	14.9	178	United Arab Emirates	18.6
143	Angola	12.1	162	Barbados	15.0	179	Egypt	18.9
145	Iran	12.2	162	Azerbaijan	15.0	180	Vanuatu	19.0
146	Bhutan	12.4	164	Turkmenistan	15.1	181	Marshall Islands	19.9
146	Belize	12.4	165	Saint Lucia	15.2	182	Kuwait	20.1
148	Lebanon	12.6	166	Yemen	15.5	183	Tuvalu	20.5
149	Swaziland	12.7	167	Equatorial Guinea	15.8	184	Kiribati	21.4
150	Bahamas	12.8	168	Saint Kitts and Nevis	15.9	185	Micronesia	22.5
151	South Africa	12.9	168	Papua New Guinea	15.9	186	Palau	23.0
152	Kazakhstan	13.2	170	Oman	16.4	186	Qatar	23.0
153	Tunisia	13.3	171	Solomon Islands	16.8	188	Nauru	24.5
154	Turkey	13.4	171	Trinidad and Tobago	16.8	189	Samoa	25.2
155	Morocco	13.5	171	Iraq	16.8	190	Tonga	26.0
156	Antigua and Barbuda	13.7						

Source: Authors, based on WHO (2015a).

Note: Diabetes prevalence is based on raised blood glucose. DPR Korea = Democratic People's Republic of Korea. DRC = Democratic Republic of the Congo. The FYR Macedonia = The former Yugoslav Republic of Macedonia. Lao PDR = Lao People's Democratic Republic.

On course Off course

APPENDIX 4 METHODOLOGY FOR SMART TARGET ANALYSIS

CHIZURU NISHIDA AND KAIA ENGESVEEN, WORLD HEALTH ORGANIZATION

DATA SOURCES

Since the 1992 International Conference on Nutrition, the World Health Organization (WHO) has been monitoring countries' progress in developing and implementing national nutrition-related policies, strategies, and action plans. This monitoring of countries' policy development and implementation of actions has been undertaken through the WHO Global Database on the Implementation of Nutrition Action (GINA) as well as through periodic global and regional reviews, including Global Nutrition Policy Reviews.[1] This analysis is based on a review of national policies, strategies, and plans that were compiled by the WHO through these processes and published between 2005 and 2015.

The documents reviewed included comprehensive nutrition policy documents as well as health sector plans or other national plans with nutrition targets. In addition, some documents were extracted from other WHO databases (for example, the Country Planning Cycles database [WHO 2016a] and WHO MiNDbank [WHO 2016r]) or partners' databases such as FAOLEX (FAO 2016b). A more extensive analysis will be undertaken as part of the second Global Nutrition Policy Review, to be conducted in 2016.

INCLUSION CRITERIA

We reviewed the goals, objectives, and monitoring and evaluation framework sections in each policy and strategy document to determine whether the national policies included targets and indicators related to the World Health Assembly (WHA) maternal and child nutrition target indicators, based on these criteria:

- **Stunting:** Included targets and indicators on stunting in children under 5 years of age and in subgroups within this age group (for example, 6–59 months, 0–2 years, or 0–3 years).
- **Anemia:** Included targets and indicators on anemia in pregnant or nonpregnant women. Excluded indicators related to sickle cell anemia.
- **Low birth weight:** Included targets and indicators on rates of low birth weight (less than 2,500 grams). Excluded targets related to mortality or morbidity among low-birth-weight infants.
- **Child overweight:** Included targets and indicators on overweight in children under 5 years of age. Excluded targets related to school-age children or whole population. Excluded targets if only on child obesity.
- **Exclusive breastfeeding:** Included targets and indicators on exclusive breastfeeding for 6 months. Excluded targets on exclusive breastfeeding for shorter time periods less than 6 months and targets related to protecting, promoting, or supporting breastfeeding.
- **Wasting:** Included targets and indicators on wasting or moderate acute malnutrition. Excluded targets on screening or treatment, as well as on severe acute malnutrition.

ASSESSMENT OF SMART-NESS OF TARGETS

The following criteria are used to assess whether targets included in policy and strategy documents met the requirements to be considered SMART (that is, specific, measurable, achievable, relevant, and time bound):

- **Specific:** The specificity of the targets was assessed based on whether they are aligned with the global target indicators included in the WHO's Global Monitoring Framework.
- **Measurable:** Whether a target is measurable or not was assessed based on whether it includes both a baseline and an end-line value (although the baseline sometimes required further searching in Demographic and Health Surveys or other databases). It should also be noted that the baseline year was set to the year of the baseline survey, not the starting year of the policy. Where the baseline survey spanned two years, the most recent year was used. The criterion of having a baseline value was not applied to the wasting target.

- **Achievable:** Achievability was not used as inclusion criteria for this analysis. Achievability can be partly assessed by comparing policy targets against current average annual rate of reduction calculated by the global nutrition targets tracking tool. However, a true assessment of achievability would need to take into account the availability of financial and human resources and capacities for nutrition in each country, which is beyond the scope of this desk review.
- **Relevant:** Policy targets related to the global targets are considered relevant because the global targets have been endorsed by the WHA, and therefore all member states are committed to achieving them.
- **Time bound:** Whether the target clearly states a specific time frame or not was assessed for each of the included policy targets.

APPENDIX 5 MAKING SMART COMMITMENTS TO NUTRITION ACTION: A GUIDANCE NOTE

JESSICA FANZO, CORINNA HAWKES, AND KATHERINE ROSETTIE

BACKGROUND

Given the mounting evidence that malnutrition is a serious global problem with devastating consequences, governments, donors, and development practitioners are increasingly adopting goals and targets for improving people's nutrition.

- Governments around the world have established national nutrition targets based on the World Health Organization's (WHO's) Comprehensive Implementation Plan on Maternal, Infant, and Young Child Nutrition, the six Global Targets 2025, and the nine global targets on noncommunicable diseases (NCDs), both endorsed by the 2013 World Health Assembly (WHA).
- In November 2014, at the Second International Conference on Nutrition (ICN2), governments committed to ending hunger and malnutrition in all its forms.
- The Sustainable Development Goals (SDGs), adopted in 2015, include a target to end all forms of malnutrition by 2030.
- Plans are well underway for a potentially landmark Nutrition for Growth (N4G) Summit in Rio de Janeiro in 2016 and the formulation of a strong compact for nutrition.

Meeting these targets requires converting global and national-level targets into clear commitments and actions for which governments can be held accountable. So what kinds of commitments will meet this standard?

The *Global Nutrition Report*, an independent accountability mechanism for progress and action on nutrition, calls on all actors to make SMART Commitments to Nutrition Action—that is, commitments that are specific, measurable, achievable, relevant, and time bound.

Specifically, we call on governments to make SMART Commitments to Action to achieve national nutrition targets and to put in place monitoring systems that allow them and others to assess progress. We also call on all actors—governments, international agencies, bilateral agencies, civil society organizations, and businesses—to revise or extend SMART and ambitious commitments as part of the 2016 N4G Rio Summit process. Actors in other sectors should also specify in a SMART manner how commitments in their own sectors can help advance nutrition.

All commitments should contribute to achieving the 2025 nutrition and NCD targets adopted by the WHA and, in line with the SDGs, should aim to end all forms of malnutrition by 2030. The Commitments to Nutrition Action should take into account the many forms of malnutrition and be aligned with the ICN2 Rome Declaration on Nutrition and its Framework for Action.

Commitments that are SMART will make it easier to track progress at the national and global level. Given the many initiatives countries are undertaking at different levels, SMART Commitments to Action can also help avoid redundant efforts and facilitate the alignment of different processes (such as the SDGs, ICN2, and WHA). SMART commitments will allow for focus, consensus, and clarity around key issues for nutrition.

How can actors develop SMART commitments, and what do such commitments look like in practice? To answer these questions, the *Global Nutrition Report* has developed the following guidelines.[1]

WHAT IS A SMART COMMITMENT TO ACTION?

A SMART commitment[2] is

- **S** = specific
- **M** = measurable
- **A** = achievable
- **R** = relevant
- **T** = time bound

Specific: Each commitment should identify a specific action and indicate who is responsible for achieving it. Such actions must be compatible with country-level priorities and must address the country's needs and context.

Measurable: Every country should state up front the indicators to be used to measure progress on meet-

ing commitments, taking into consideration global indicator frameworks and building on those frameworks. Each country should also state how implementation will be measured, including monitoring by national information systems. Countries should consider the resources that will be necessary to measure these indicators. Quantifiable indicators are always easier to monitor and should indicate the baseline where relevant and whenever possible.

Bring together several actors to get different perspectives on country priorities, and build consensus on how these priorities will help end malnutrition in all its forms.

Achievable: Commitments should, at a minimum, be consistent with the level of progress achieved in the past. They should be as ambitious as possible but mindful of the limits of what those working on nutrition actions in the country can deliver in a realistic timeframe.

Relevant: Commitments should reflect a country's nutrition situation and the challenges it faces. These challenges can include sector bottlenecks, such as limited healthcare personnel, and aligning with broader national priorities.

Time bound: Ideally, commitments should have a realistic timeframe for achievement, with some commitments having a longer timeframe, and others a shorter one. In all cases, commitments should specify key milestones to be achieved within the realistic timeframe.

HOW DO YOU START FORMULATING SMART COMMITMENTS?[3]

- **Bring stakeholders together:** Bring together several actors to get different perspectives on country priorities, and build consensus on how these priorities will help end malnutrition in all its forms. Use existing multilevel stakeholder platforms at the country level whenever possible. The dialogue process should be government led and should bring together a wide range of voices, including development partners, civil society, and representatives of other relevant sectors, such as health, agriculture, environment, and education.
- **Analyze barriers:** Identify past and current country-specific progress, as well as barriers to progress for nutrition, and review evidence on how to address those barriers. Draw lessons from other similar country contexts on how they achieved certain commitments.
- **Balance national and sector priorities:** Consider current national priorities to address malnutrition that can be adopted by the sectors that are central to nutrition (such as health, agriculture, and social protection), but also consider emerging priorities and ambitious targets. For example, if the old priorities include strengthening institutional capacity and the new identified bottleneck is developing human resources for nutrition, then creating capacity in the longer term for nutrition is a good compromise.
- **Link to global initiatives:** Use the SDGs and WHA targets as an opportunity to define priorities and to link country-level activities to consultations on the 2030 agenda. Align commitments with the ICN2 Framework for Action.
- **Align with regional processes:** Look to regional processes to complement the existing commitments your country has made, such as the Comprehensive Africa Agriculture Development Programme (CAADP) process in Africa.
- **Formulate commitment takeaways:** Make sure commitments are monitored in a credible and transparent way, but don't overcomplicate things. Set a limited number of targets at first, and expand as you are able. It is better to start in a limited way than not to start at all.

WHAT DO SMART COMMITMENTS LOOK LIKE?

The following are examples of SMART commitments and explanations of what makes them SMART.

COMMITMENT #1: Reduce stunting in children under age five from 35 percent in 2015 to 20 percent by 2030, led by the Ministries of Health and Agriculture.

Specific	Measurable	Achievable	Relevant	Time bound
Yes: The "who" and the action are identified.	Yes: Baseline stunting is stated, and stunting can be tracked to see if it falls over the next 15 years.	Yes: The WHO Tracking Tool shows that other countries have reduced stunting at this rate.	Yes: Stunting is a significant issue for this country, with 35 percent of children under five stunted.	Yes: A concrete timeframe is included

This is a SMART commitment because it addresses who will lead on the commitment and what they will do in what timeframe. It also provides a baseline and an end goal that can be measured.

COMMITMENT #2: **Increase the public-sector district-level government budget for malaria control, iron-folic acid supplementation, and food fortification programs in the Northern, Eastern, and Southern districts from the current $50,000 to $500,000 between January 2016 and December 2020**.

Specific	Measurable	Achievable	Relevant	Time bound
Yes: The "who" and the action are identified.	Yes: Baseline funding is listed, and funding can be tracked to see if the budget increases 10-fold over the four years.	Yes: Other countries have shown that it is possible to have an effective, multi-prong iron-deficiency anemia strategy in place.	Yes: Anemia and iron deficiency are significant issues.	Yes: A concrete timeframe is included.

This is a SMART commitment because it states who will lead on the commitment and what action will take place in what timeframe. It provides a baseline and an end goal that can be measured, it fits well within the country's needs, and it draws on evidence of what works.

COMMITMENT #3: By December 2016, the Ministry of Health will develop a salt-reduction strategy that will increase salt labeling in restaurant chains from 0 to 75 percent by 2020, in collaboration with the Ministry of Finance and local government.

Specific	Measurable	Achievable	Relevant	Time bound
Yes: The "who" and the action are identified.	Yes: The goal (percentage of labeling in restaurants) is clearly stated and measurable.	Yes: Other countries or cities have shown that salt-reduction strategies, including labeling, can be in place.	Yes: Salt intake and its contribution to hypertension are on the rise and constitute a major public health issue. Labeling is one potential avenue to educate the public.	Yes: Both the strategy and the labeling have clear deadlines.

This commitment meets all five criteria for SMART-ness. This is an "overnutrition" commitment, one that countries should begin thinking about to tackle NCDs.

COMMITMENT #4: The Ministries of Water Resources and Health together will reduce open defecation nationwide from 30 percent currently to 0 percent by 2020 and raise coverage of a minimum standard package of water, sanitation, and hygiene (WASH) from 20 percent of the population currently to 100 percent by 2030.

Specific	Measurable	Achievable	Relevant	Time bound
Yes: The "who" and the action are identified.	Yes: Current levels of the outcome and the coverage are listed along with the goal. It is assumed that these are measured on a regular basis.	Yes: Timescale is fairly realistic.	Yes: Open defection is a determinant of stunting, and WASH plays an important role in reducing malnutrition.	Yes: The goals are time-bound.

This is an example of a nutrition-sensitive commitment that directly meets all the SMART criteria. Notice how the current baseline levels of open defecation and WASH coverage are listed to allow for measurability over time.

WHAT DO UN-SMART COMMITMENTS LOOK LIKE?

COMMITMENT #1: Decrease stunting in the next 10 years.

Specific	Measurable	Achievable	Relevant	Time bound
No: The "who" is not identified, and there is no specific indication of how.	Partially: Assuming there is a baseline, any reduction can be measured, but the commitment would benefit from a specific target.	Yes: It has been demonstrated that a country can achieve a reduction in stunting.	Yes: It is assumed that stunting is a significant issue for this country.	No: Consider adding a date or timeframe.

Even though this commitment is trying to tackle a major nutrition issue such as stunting, it does not identify a specific action to address the problem, who would take action, or a timeframe, and it offers no indicators of measurement.

COMMITMENT #2: Increase healthy eating among children and young people.

Specific	Measurable	Achievable	Relevant	Time bound
No: The "who" is not identified, and there is no specific action.	Partially: Assuming there is a baseline, any increase can be measured, but the commitment would benefit from specific targets.	Partially: Interventions have been shown to increase or decrease consumption of specific foods, but not change overall diets at the national level.	Yes: Unhealthy diets are a significant issue in every country.	No: Consider adding a date or timeframe.

Even though this commitment concerns a relevant problem, it does not identify a specific action for addressing the problem, who would take action, or a timeframe, and it offers no indicators of measurement.

COMMITMENT #3: The Ministry of Agriculture will convene a donors' platform on innovations in the food sector to be attended by all sector partners.

Specific	Measurable	Achievable	Relevant	Time bound
No: The convening "who" is identified, but the commitment is not specific about who the donors and sector partners are. The action is also not clear because there is no hint of what innovations would be discussed.	Partially: Unclear how "convening" is measured and how "sector partners" is defined for measurement.	Somewhat: Other countries have established donor platforms that bring together stakeholders to tackle issues across the food sector.	Not necessarily: Convening a platform is one thing, but what it does and its impact is another. It is not clear what issues the platform is trying to address. The commitment does not say what problem the platform is trying to solve.	No: Consider adding a date or timeframe.

This commitment is important in that it would bring together stakeholders to address the multisectoral nature of the food system in relation to nutrition, but it is not specific, measurable, relevant, or time-bound.

COMMITMENT #4: Increase vitamin A coverage of children ages 6–59 months by 80 percent by 2017 and 100 percent by 2020, led by the Ministry of Health.

Specific	Measurable	Achievable	Relevant	Time bound
Yes: The "who" and the action are identified.	Somewhat: Assuming coverage of vitamin A is being measured in the country, it is unclear what the baseline is in order to increase coverage *by* 80 and 100 percent respectively. If we were to increase coverage *to* 80 and 100 percent, it is more measurable.	Somewhat: Some countries have achieved universal coverage, but it is difficult to judge achievability without knowing the country's current level of coverage. Is it at 10 percent coverage, for example, or 75 percent?	Yes: Vitamin A deficiency is a significant issue.	Yes: Short- and long-term timeframes are included.

This commitment almost makes the grade, but not quite, because measurability is not straightforward. Without a baseline, it is hard to assess the 80 and 100 percent goals over time. The achievability of this commitment cannot be assessed without knowing the baseline level of coverage.

APPENDIX 6 UNDERLYING DRIVERS OF NUTRITION

TABLE A6.1 Threshold values of underlying drivers for achieving a stunting rate of less than 15 percent

Country	Stunting prevalence (%)	Total calories in food supply (kilocalories per day per capita)	Calories from nonstaples (%)	Access to piped water (%)	Access to improved sanitation (%)	Female secondary school enrollment rate[a] (%)	Ratio of female-to-male life expectancy
Albania	23.1	3,000	59	82	93	80.33	1.08
Algeria	11.7	3,430	42	77	88	99.55	1.05
Angola	29.2	2,250	40	15	52	24.80	1.06
Argentina	8.2	2,920	64	98	96	111.92	1.10
Armenia	20.8	2,930	56	99	89	104.09	1.09
Azerbaijan	18.0	3,160	35	66	89	99.53	1.09
Bangladesh	36.1	2,470	19	12	61	57.19	1.02
Barbados	7.7	3,020	69	98	96	111.02	1.07
Belarus	4.5	3,510	62	91	94	103.83	1.16
Belize	19.3	2,770	60	81	91	88.73	1.09
Benin	34.0	2,890	29	18	20	42.93	1.05
Bolivia	18.1	2,310	48	84	50	80.10	1.07
Botswana	31.4	2,300	51	74	63	84.28	0.97
Brazil	7.1	3,260	66	94	83	110.64	1.10
Burkina Faso	32.9	2,630	34	8	20	25.98	1.02
Cambodia	32.4	2,530	28	21	42	41.34	1.08
Cameroon	32.6	2,550	46	17	46	46.44	1.04
Central African Republic	40.7	2,240	45	2	22	12.09	1.08
Chad	38.7	2,330	33	6	12	14.28	1.03
Chile	1.8	2,960	56	99	99	90.59	1.07
China	9.4	3,040	48	73	76	89.98	1.03
Colombia	12.7	2,810	65	88	81	96.64	1.10
Congo	25.0	2,170	39	25	15	49.84	1.05
Costa Rica	5.6	2,710	66	97	95	112.81	1.06
Côte d'Ivoire	29.6	2,670	33	43	22	31.53	1.03
Djibouti	33.5	2,510	45	53	47	42.69	1.05
Dominican Republic	7.1	2,510	68	72	84	80.25	1.09
Ecuador	25.2	2,350	67	85	85	105.75	1.08
Egypt	22.3	3,430	35	99	95	85.46	1.07
El Salvador	14.0	2,580	52	78	75	70.53	1.14
Ethiopia	40.4	2,240	23	12	28	22.30	1.05
Gabon	17.5	2,760	49	65	42	45.27	1.03
Gambia	24.5	2,500	37	33	59	55.97	1.05
Ghana	18.8	3,220	35	19	15	64.94	1.03
Guatemala	48.0	2,240	53	85	64	62.51	1.10
Guinea	31.3	2,670	37	14	20	29.41	1.03

Continued

Table A6.1 continued

Country	Stunting prevalence (%)	Total calories in food supply (kilocalories per day per capita)	Calories from nonstaples (%)	Access to piped water (%)	Access to improved sanitation (%)	Female secondary school enrollment rate[a] (%)	Ratio of female-to-male life expectancy
Guinea-Bissau	27.6	2,700	35	6	21	12.64	1.06
Guyana	12.0	3,050	50	67	84	108.74	1.08
Honduras	22.7	2,890	54	90	83	78.02	1.07
India	38.7	2,390	40	28	40	66.29	1.05
Indonesia	36.4	2,820	30	22	61	83.89	1.06
Iran	6.8	3,230	47	92	90	83.44	1.05
Iraq	22.6	2,360	37	75	86	45.29	1.11
Jamaica	5.7	2,750	61	72	82	79.27	1.07
Japan	7.1	2,700	59	98	100	102.01	1.08
Jordan	7.8	3,040	51	91	99	89.05	1.05
Kazakhstan	13.1	3,390	61	61	98	96.09	1.14
Kenya	26.0	2,180	44	22	30	64.50	1.06
Kyrgyzstan	12.9	2,910	46	58	93	87.99	1.12
Lao People's Democratic Republic	43.8	2,400	27	28	71	47.54	1.04
Lesotho	33.2	2,440	19	22	30	62.26	1.01
Liberia	32.1	2,280	33	2	17	33.12	1.03
Madagascar	49.2	2,160	21	7	12	37.65	1.05
Malawi	42.4	2,380	29	8	41	34.86	1.00
Malaysia	17.2	2,840	54	96	96	68.50	1.06
Maldives	20.3	2,870	59	46	98	76.73	1.03
Mali	38.5	2,750	33	16	25	39.84	1.00
Mauritania	22.0	2,870	49	33	40	28.56	1.05
Mexico	13.6	3,220	56	92	85	89.03	1.06
Mongolia	10.8	2,540	53	24	60	94.82	1.12
Montenegro	9.4	3,040	64	84	96	91.21	1.06
Morocco	14.9	3,270	38	64	77	63.44	1.05
Mozambique	43.1	2,180	27	9	21	24.85	1.03
Namibia	23.1	2,240	45	51	34	69.56	1.09
Nepal	37.4	2,530	29	24	46	69.08	1.03
Nicaragua	23.0	2,570	49	66	68	72.21	1.08
Niger	43.0	2,520	38	9	11	12.76	1.01
Nigeria	32.9	2,740	35	2	29	41.17	1.01
Pakistan	45.0	2,520	51	39	64	32.21	1.03
Panama	19.1	2,740	55	92	75	75.44	1.08
Paraguay	10.9	2,460	56	83	89	71.39	1.06
Peru	17.5	2,670	43	78	76	92.90	1.07
Philippines	30.3	2,610	40	43	74	88.03	1.11
Republic of Moldova	6.4	2,420	54	54	76	88.92	1.12
Rwanda	37.9	2,240	49	9	62	33.66	1.05
Sao Tome and Principe	31.6	2,770	53	33	35	84.55	1.06
Senegal	19.4	2,320	40	53	48	39.11	1.05
Serbia	6.0	2,890	61	94	96	95.73	1.07
Sierra Leone	37.9	2,260	37	5	13	41.66	1.01
Solomon Islands	32.8	2,430	33	26	30	47.01	1.04
South Africa	23.9	3,180	47	73	66	114.44	1.07

Continued

Table A6.1 continued

Country	Stunting prevalence (%)	Total calories in food supply (kilocalories per day per capita)	Calories from nonstaples (%)	Access to piped water (%)	Access to improved sanitation (%)	Female secondary school enrollment rate[a] (%)	Ratio of female-to-male life expectancy
Sri Lanka	14.7	2,520	42	34	95	102.34	1.09
Suriname	8.8	2,670	56	66	79	85.90	1.09
Swaziland	25.5	2,100	41	37	57	60.32	0.97
Tajikistan	26.8	2,290	37	45	95	82.10	1.10
Thailand	16.3	3,010	50	57	93	89.40	1.09
The former Yugoslav Republic of Macedonia	4.9	2,960	63	92	91	82.43	1.06
Timor-Leste	57.7	1,920	29	25	41	57.17	1.05
Togo	27.5	2,530	27	5	12	30.44	1.03
Tunisia	10.1	3,290	48	82	92	93.31	1.06
Turkey	9.5	3,770	52	100	95	83.78	1.10
Uganda	34.2	2,290	55	5	19	25.00	1.04
United Republic of Tanzania	34.7	2,210	42	13	16	31.60	1.05
United States	2.1	3,700	75	99	100	93.86	1.06
Uruguay	10.7	2,720	54	99	96	96.26	1.09
Vanuatu	28.5	2,760	52	35	58	59.47	1.06
Venezuela	13.4	3,100	59	86	94	97.09	1.08
Zimbabwe	27.6	2,260	41	28	37	46.55	1.03

Source: Authors, based on the following sources: stunting: UNICEF, WHO and World Bank (2015); total calories in food supply and calories from nonstaples: FAO (2015c); access to piped water and improved sanitation: JMP (2015b); female schooling: UNESCO Institute for Statistics (2015); female-to-male life expectancy: World Bank (2016).

Note: green = this result is above the threshold associated with achieving a rate of stunting of less than 15 percent; red = this result is below the threshold associated with achieving a rate of stunting of less than 15 percent.

[a] The rate can exceed 100 percent because of the inclusion of over-aged and under-aged students owing to early or late school entrance or grade repetition.

NOTES

EXECUTIVE SUMMARY

1 The term "nutrition targets" refers to targets adopted by the World Health Assembly for maternal, infant, and young child nutrition and the nutrition-related targets in the Global Monitoring Framework for the Prevention and Control of NCDs.

CHAPTER 1

1 Global anemia rates were estimated at 33 percent in 1995 and 29 percent in 2011 (Stevens et al. 2013). The 2015 Joint Child Malnutrition Estimates dataset puts stunting numbers at 198 million in 2000 and 159 million in 2014 (UNICEF, WHO, and World Bank 2015).

2 See Haddad (2016) for one view on what the global governance of nutrition looks like and what it should strive to enable.

PANEL 1.2

1 Analysis available on request. Regression is as follows: Existence of specific undernutrition target (0,1) = 0.95 + 13.11 (GDP growth 2000–2010) - 1.47 (Africa) + 0.34 (stunting AARR). *P* value on stunting AARR < 0.05. *n* = 41 observations (countries). AARR = average annual rate of reduction.

PANEL 1.4

1 The United Kingdom's *Budget 2016* announced the introduction of a "soft drinks industry levy" to come into effect in September 2017 (United Kingdom 2016).

CHAPTER 2

1 Data on the sixth target, low birth weight, are being remodeled for release in early 2017 (see Panel 2.2).

2 The gaps are measured as follows: stunting = actual average annual rate of reduction (AARR) – required AARR; wasting = distance from 5 percent (countries furthest below 5 percent go to the top of ranking); under-5 overweight = actual AARR – required AARR; anemia = actual AARR – required AARR; exclusive breastfeeding = actual average annual percentage-point increase (AAPPI) – required AAPPI; adult overweight/obesity = difference in absolute change 2010–2014 from zero; adult obesity = difference in absolute change 2010–2014 from zero; adult diabetes = difference in absolute change 2010–2014 from zero.

3 We used the Demographic and Health Survey (DHS) dataset (DHS 2005–2015) and UNICEF's Multiple Indicator Cluster Survey (MICS) dataset (UNICEF 2016c). Where both MICS and DHS data were available and eligible, the most recent dataset was selected for analysis.

CHAPTER 3

1 The text in this section is based on text and analysis provided by Chizuru Nishida and Kaia Engesveen.

2 A baseline is not applied to the wasting target.

3 All targets were considered relevant because the global targets have been endorsed by the WHA, and therefore all member states are committed to achieving them. Achievable was not used as an inclusion criterion since a true assessment of achievability would need to take into account the availability of financial and human resources and capacities for nutrition in each country, and these factors were beyond the scope of the review. Details on the methods used appear in Appendix 4.

4 The tools are available from WHO (2016k).

5 Much of the text in this section was contributed by Rachel Crossley from the Access to Nutrition Foundation.

CHAPTER 4

1 These results are broken down by stakeholder group in Appendix Figures A7.5a and A7.5b.

CHAPTER 5

1 Twenty-five countries have had their assessment downgraded from having "many provisions enshrined in law" to having "few provisions enshrined in law." Only six countries have been upgraded: two from "few" to "many"; one from "no data" to "many"; and three from "measures drafted, awaiting approval" to "many."

2 The next few paragraphs were written by Chessa Lutta.

3 Reporting relates to progress achieved in implementing the national commitments included in United Nations General Assembly (2011) and United Nations (2014a) (see Chapter 3).

4 The values presented in Table 5.1 are unweighted means and medians and are therefore not aligned with global estimates from the UN. The estimates are unweighted because many of the indicators do not have enough population coverage to generate weighted estimates and many are not in UN databases.

5 This median coverage is not population weighted. The UN coverage estimate of vitamin A supplementation, which is a population-weighted average, indicated that only about two-thirds of children were fully protected.

6 Minimum acceptable diet is defined, for breastfed children 6–23 months of age, as having had at least the minimum dietary diversity and the minimum meal frequency during the previous day, and for nonbreastfed children 6–23 months of age, having received at least two milk feedings and had at least the minimum dietary diversity and minimum meal frequency during the previous day. Minimum dietary diversity for

children 6–23 months of age is defined as receiving foods from four or more food groups (WHO 2008).

7 Minimum meal frequency is defined as the proportion of breastfed and nonbreastfed children 6–23 months of age who receive solid, semisolid, or soft foods (including milk feedings for nonbreastfed children) the minimum number of times per day or more. The minimum number of times is defined as two times for breastfed infants 6–8 months, three times for breastfed children 9–23 months, and four times for nonbreastfed children 6–23 months (WHO 2008).

8 Data are available on request from the *Global Nutrition Report* Secretariat.

9 The 17 countries are Afghanistan (in 6 districts), Burkina Faso (12), Central African Republic (1), Côte d'Ivoire (2), Chad (5), Democratic Republic of the Congo (3), Ethiopia (3), India (1), Kenya (6), Mali (21), Niger (5), Nigeria (20), Pakistan (5), Senegal (1), Somalia (2), South Sudan (6), and Uganda (3). Coverage assessment estimates are made using the semi-quantitative evaluation of access and coverage (SQUEAC) methodology (technical reference at USAID 2012). SQUEAC coverage data are available for the following 14 countries: Afghanistan (in 6 districts), Burkina Faso (5), Central African Republic (1), Chad (2), Democratic Republic of the Congo (3), Ethiopia (3), Kenya (4), Mali (8), Niger (2), Nigeria (14), Pakistan (3), Senegal (1), Somalia (2), and South Sudan (4).

PANEL 5.1

1 This panel is based on HCC (2014, 2015).

CHAPTER 6

1 These studies have limitations because data on a full set of candidate underlying drivers is never available. For example, the Smith and Haddad (2015) analysis does not contain health system data because no one collects them at multiple points in time, and the Headey and Hoddinott (2014) and Headey (forthcoming) analyses do not include food security data because Demographic and Health Surveys do not collect them.

2 Headey noted that "most of these models do a relatively good job of explaining total HAZ [height-for-age Z-score] change over time. The share of total estimated HAZ change (from all explanatory variables) to actual HAZ change varies from 52 percent in India [to] 65 percent in Bangladesh and 84 percent in Nepal. In Pakistan the model explains 21 percent more HAZ change than is actually observed in practice, most likely because of the exceptionally large coefficient" (Headey forthcoming, 8).

3 It is important to note that while the thresholds represent the line of best fit, some countries will have stunting levels far above or far below 15 percent for the given underlying determinant thresholds.

4 Specifically, less than 25 percent of the documents are judged by the authors to cover these issues.

CHAPTER 7

1 Unless otherwise specified, references to dollars in the text are to US dollars.

2 The World Bank/R4D team set out to estimate the costs of achieving the global wasting target, which would focus on both treating and preventing wasting, but they were unable to do this. For further details, see Shekar et al. (2016).

3 On the two remaining WHA undernutrition indicators, we noted in Chapter 2 (Panel 2.2) that models to estimate low-birth-weight (LBW) data are being improved, and so it makes sense to wait for the new data to be released before extending this analysis to LBW. The exercise is not being undertaken for under-5 overweight because the intervention evidence base is not, to date, considered strong enough by the study authors.

4 For purposes of this estimation, the subset of interventions included in the "priority package" include vitamin A supplementation for children, promotion of good infant and young child nutrition and hygiene practices, antenatal micronutrient supplementation, intermittent preventive treatment of malaria for pregnant women, iron and folic acid supplements for adolescent girls, staple food fortification, pro-breastfeeding social policies, use of available mass and social media to promote breastfeeding, and treatment of severe acute malnutrition.

5 This section draws heavily on the report *Analysis of Nutrition-Sensitive Budget Allocations* (Greener et al. 2016).

6 The eight countries are Bangladesh, Gambia, Ghana, Pakistan, Philippines, South Sudan, Tajikistan, and Yemen.

7 Thirty countries started the domestic nutrition budget exercise, but six countries were excluded from the analysis for various reasons (see Greener et al. 2016); therefore we are left with 24 country estimates of domestic budget allocations to nutrition.

8 The definition that SUN countries use for "nutrition specific" comprises the following categories of interventions: (1) high-impact stand-alone nutrition interventions; (2) stand-alone nutrition programs; (3) nutrition interventions integrated in health programs; and (4) nutrition interventions integrated in nonhealth programs.

9 Unlike for agriculture, education, social protection, and health, broad sector allocations to WASH are not available from the IFPRI SPEED database.

10 One possible reason is that Zambia has started its analysis by including three ministries only (Ministry of Community Development, Ministry of Health, and Ministry of Agriculture and Livestock).

11 Most of this analysis was undertaken by Jordan Beecher at Development Initiatives.

12 The standard source for data on official development assistance is the OECD Creditor Reporting System database maintained by the OECD Development Assistance Committee (DAC). The SUN Donor Network methodology proxy for nutrition-specific spending is disbursements under the CRS category code 12440: basic nutrition. This method combines data from all government agencies within a given country.

13 The top five OECD DAC donors are defined as those spending the greatest amounts over the period 2010–2014.

14 Refers to country-allocable disbursements only.

15 As noted earlier, the standard source for data on ODA is the OECD Creditor Reporting System database maintained by the OECD DAC.

16 First the title and description fields of each record in the CRS dataset were searched for one or more keywords: diet, diets, obesity, NCD, non communicable disease, non-communicable disease, chronic disease, diabetes, obésité, maladies non transmissibles, maladie chronique, diabète. Among the 225,126 records in the 2014 CRS dataset, 441 records contained one or more keywords. Second, these were then reviewed individually to discard any irrelevant projects. Projects were deemed irrelevant when the information contained in their title and descriptions clearly indicated the project did not concern NCDs. We have also excluded projects that appeared primarily to target agriculture or undernutrition, as well as specifically anti-tobacco interventions and sports-based interventions.

PANEL 7.1

1 The Zero Hunger Pact Plan is multisectoral and implemented through programs operated by national institutions through the budget.

2 Based on a presentation by Peru's SUN government focal point at the SUN Regional Workshop on Costing and Financial Tracking, held April 28–30, 2015, in Guatemala.

PANEL 7.4

1 The US government designates 100 percent of four DAC categories (basic drinking water supply and basic sanitation; basic drinking water supply; basic sanitation; and emergency food aid) to the nutrition-sensitive category and 25 percent of 17 additional DAC categories to the nutrition-sensitive category, including health care, women's equality organizations, and a wide range of agricultural categories. The SUN Donor Network methodology applies 100 percent or 25 percent to projects below the category level according to a set of criteria that together indicate explicit intent to improve nutrition outcomes of women or adolescent girls or children. See SUN Donor Network (2013).

For nutrition-sensitive spending, the SUN Donor Network agreed on a set of 35 Creditor Reporting System (CRS) purpose codes for members to use to identify nutrition activities. One code (13022), however, does not exist in the overall OECD/DAC purpose code structure. The US government reviewed the definition for the codes and developed a subset of 22 CRS codes (18 from the original 34, and 4 additional codes) that most strongly reflect its nutrition-sensitive programs. For nutrition-sensitive codes, the US government applied coefficients of either 25 percent or 100 percent to each of the 22 purpose codes. A coefficient of 25 percent is applied to totals for the following 18 CRS purpose codes: 12110, 12220, 12250, 12261, 12281, 13020, 15170, 31120, 31161, 31163, 31166, 31182, 31191, 31192, 31195, 31320, 31382, and 31391 (the codes in bold are the additional codes selected by the US government). Drinking water supply and sanitation and direct feeding through emergency food aid have strong and direct associations with nutrition-sensitive outcomes. Accordingly, a coefficient of 100 percent is applied to the following four CRS purpose codes: 14030 (basic drinking water supply and basic sanitation), 14031 (basic drinking water supply), 14032 (basic sanitation), and 72040 (emergency food aid). Please note that all funds recorded in CRS code 72040 for nutrition-sensitive include only the investments not captured in the 3.1.9 US government framework under nutrition-specific.

CHAPTER 8

1 The details of this analysis are provided in Appendix Table A8.2. We understand from UNICEF colleagues that related analyses are ongoing for the other main source of nutrition surveys, the Multiple Indicator Cluster Surveys (MICSs), collected by UNICEF and national partners. MICS is leading methodological work on many of the candidate indicators in column two of Appendix Table A8.2, which are currently being piloted and validated before inclusion in MICS6.

2 Analysis available on request.

3 The text in this subsection is written by Monica Kothari, with inputs from Fred Arnold, Bernard Barrere, Ann Way, Annie Cross, Ruilin Ren, Joy Fishel, and Sri Poedjastoeti from the DHS program.

4 The text and data analysis for this section were conducted by Monica Kothari and colleagues from ICF International. The figures are based on the latest disaggregated DHS data available.

5 All points on the figures represent subsets that contain at least 50 observations.

6 It would be interesting to try to detect a pattern as to why there are differences in some countries rather than others, but this is beyond the scope of this report.

7 The following three paragraphs were written by Monica Kothari, with inputs from Fred Arnold, Bernard Barrere, Ann Way, Annie Cross, Ruilin Ren, Joy Fishel, and Sri Poedjastoeti from the DHS program.

8 The list of countries found in OECD (2015) is based on World Bank (2015a) and Fund for Peace (2014).

9 Much of the text in this section was provided by Josephine Ippe.

10 The Global Nutrition Cluster is a group of 32 international partners working on nutrition in emergencies (http://nutritioncluster.net/gnc/partners/).

PANEL 8.2

1 The Groups and Inequality Database (GRID) developed by Save the Children and the Overseas Development Institute is based on direct data processing of DHS and MICS data.

PANEL 8.4

1 For further details, see Elbers et al. (2003); Haslett et al. (2013, 2014a, 2014b); Pratesi (2016); and Rao and Molina (2015).

PANEL 8.6

1 UNHCR defines a protracted refugee situation as one in which 25,000 or more refugees from the same nationality have been in exile for five years or more in a given asylum country.

2 Population data are available for 96.8 percent of sites. Data sources are UNHCR (2014a, b). Global acute malnutrition (GAM) is the term used to include all children with moderate wasting (weight-for-height Z-score less than or equal to 2 but greater than or equal to 3), severe wasting (weight-for-height Z-score less than or equal to 3), edema, or any combination of these conditions (SMART 2006).

3 Of the 93 sites where nutrition surveys were conducted in 2015, 90 sites (96.8 percent) reported on anemia in children 6–59 months old.

APPENDIX 4

1 The first Global Nutrition Policy Review was conducted during 2009–2010, and the second one is being implemented in 2016.

APPENDIX 5

1 These guidelines were reviewed by an external advisory group made up of experts from the United Nations, civil society organizations, the Scaling Up Nutrition (SUN) Movement, and donors.

2 This definition of SMART commitments was adapted from Sanitation and Water for All (2014).

3 These steps were adapted from Sanitation and Water for All (2014).

REFERENCES

AbdAllah, A. M., S. S. A. El-Sherbeny, and S. Khairy. 2007. "Nutritional Status of Mentally Disabled Children in Egypt." *Egyptian Journal of Hospital Medicine* 29: 604–615.

Ahmed, A. U., J. F. Hoddinott, S. Roy, E. Sraboni, W. R. Quabili, and A. Margolies. 2016. *Which Kinds of Social Safety Net Transfers Work Best for the Ultra Poor in Bangladesh? Operation and Impacts of the Transfer Modality Research Initiative*. Report to the Government of Bangladesh from World Food Programme and International Food Policy Research Institute.

Ahuja, A., S. Baird, J. H. Hicks, M. Kremer, E. Miguel, and S. Powers. 2015. "When Should Governments Subsidize Health? The Case of Mass Deworming." *World Bank Economic Review* 29 (suppl. 1): S9–S24.

Anand, S. S., C. Hawkes, R. J. De Souza, A. Mente, M. Dehghan, R. Nugent, et al. 2015. "Food Consumption and Its Impact on Cardiovascular Disease: Importance of Solutions Focused on the Globalized Food System: A Report from the Workshop Convened by the World Heart Federation." *Journal of the American College of Cardiology* 66 (14): 1590–1614.

Arifeen, S. E., D. E. Hoque, T. Akter, M. Rahman, M. E. Hoque, K. Begum, E. K. Chowdhury, R. Khan, L. S. Blum, S. Ahmed, and M. A. Hossain. 2009. "Effect of the Integrated Management of Childhood Illness Strategy on Childhood Mortality and Nutrition in a Rural Area in Bangladesh: A Cluster Randomised Trial." *Lancet* 374 (9687): 393–403.

Avula, R., S. S. Kim, S. Chakrabarti, P. Tyagi, N. Kohli, and P. Menon. 2015. *Delivering for Nutrition in Odisha: Insights from a Study on the State of Essential Nutrition Interventions*. POSHAN Report 7. New Delhi: International Food Policy Research Institute. http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/129277.

Bagriansky, J. 2014. *Situation Analysis and Proposed Communication Plan to Support of Government of Ethiopia in Development of a Central Iodization Facility in Afar*. UNICEF report.

Beer, H., S. Luna, L. Pompano, E. Przybyszewski, S. Udipi, P. Ghugre, and B. Haas. 2014. "Consuming Iron-biofortified Pearl Millet Increased Hemoglobin Concentrations and Prevented a Decline in Energy Efficiency in Indian Girls." *FASEB Journal* 28 (1): Supplement 646.7. www.fasebj.org/content/28/1_Supplement/646.7.

Bereuter, D., and D. Glickman. 2015. *Healthy Food for a Healthy World: Leveraging Agriculture and Food to Improve Global Nutrition*. Chicago Council on Global Affairs. Accessed April 19, 2015. www.thechicagocouncil.org/sites/default/files/GlobalAg-HealthyFood_FINAL.pdf.

Bhutta, Z. A., and S. Zlotkin. 2014. *Why Adolescent Health and Why Now?* Toronto: SickKids Centre for Global Child Health.

Bhutta, Z. A., J. K. Das, A. Rizvi, M. F. Gaffey, N. Walker, S. Horton, P. Webb, A. Lartey, and R. E. Black. 2013. "Evidence-Based Interventions for Improvement of Maternal and Child Nutrition: What Can Be Done and at What Cost?" *Lancet* 382 (9890): 452–477.

Black, R. E., C. G. Victora, S. P. Walker, Z. A. Bhutta, P. Christian, M. de Onis, M. Ezzati, S. Grantham-McGregor, J. Katz, R. Martorell, and R. Uauy. 2013. "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries." *Lancet* 382 (9890): 427–451.

Bougma, K., G. Marquis, F. Aboud, E. Frongillo, T. Lemma, and A. Samuel. 2015. "Iodized Salt Improves Child's Iodine Status, Mental Development, and Physical Growth in a Cluster Randomized Trial in Ethiopia." *FASEB Journal* 29 (1) Supplement 28.6.

Bray, G. A., and B. M. Popkin. 2014. "Dietary Sugar and Body Weight: Have We Reached a Crisis in the Epidemic of Obesity and Diabetes? Health Be Damned! Pour on the Sugar." *Diabetes Care* 37 (4): 950–956.

Brazil, Presidência da República, Casa Civil, Subchefia para Assuntos Jurídicos. 2015. Decreto no. 8552. Accessed March 2016. www.planalto.gov.br/ccivil_03/_Ato2015-2018/2015/Decreto/D8552.htm.

Bredenkamp, C., L. R. Buisman, and E. Van De Poel. 2014. "Persistent Inequalities in Child Undernutrition: Evidence from 80 Countries, from 1990 to Today." *International Journal of Epidemiology* 43 (4): 1328–1335. doi: 10.1093/ije/dyu075.

Breierova, L., and E. Duflo. 2004. *The Impact of Education on Fertility and Child Mortality: Do Fathers Really Matter Less Than Mothers?* NBER Working Paper 10513. Cambridge, MA, US: National Bureau of Economic Research.

Brown, R., T. Khara, and P. Brunet. 2015. *Maximising the Nutritional Impact of Humanitarian Food Assistance*. INSPIRE Consortium. Accessed February 2016. www.cashlearning.org/downloads/hfanutrition-report-final-nov-2015.pdf.

Burlandy, L., C. Rocha, and R. Maluf. 2014. "Integrating Nutrition into Agricultural and Rural Development Policies: The Brazilian Experience of Building an Innovative Food and Nutrition Security Approach." In *Improving Diets and Raising Levels of Nutrition: Food-Based Approaches (Proceedings—International Symposium on Food and Nutrition Security: Food-Based Approaches for Improving Diets and Raising Levels of Nutrition)*, edited by B. Thompson and L. Amoroso. Rome: Food and Agriculture Organization of the United Nations.

Burt, A., B. Hughes, and G. Milante. 2014. *Eradicating Poverty in Fragile States: Prospects of Reaching the "High-Hanging" Fruit* by 2030. World Bank Policy Research Working Paper 7002. Washington, DC: World Bank. http://ssrn.com/abstract=2479667.

CAISAN (Câmara Interministerial de Segurança Alimentar e Nutricional). 2013. *Balanço das Ações do plano Nacional de Segurança Alimentar e Nutricional: PLANSAN 2012–2015*. Brasilia: MDS, Secretaria-Executiva da CAISAN. http://www4.planalto.gov.br/consea/publicacoes/balanco-plansan.

Carlson, G. J., K. Kordas, and L. E. Murray-Kolb. 2015. "Associations between Women's Autonomy and Child Nutritional Status: A Review of the Literature." *Maternal and Child Nutrition* 11 (4): 452–482.

CBGA (Centre for Budget and Governance Accountability). 2016a. *Budget Track* 11 (February). http://www.cbgaindia.org/newsite/wp-content/uploads/2016/03/Budget-Track-on-Nutrition-Compressed.pdf.

———. 2016b. *Connecting the Dots: An Analysis of Union Budget 2016–17*. New Delhi. Accessed March 2016. http://www.cbgaindia.org/new_publications.php?action=details&id=85.

Centre for Social Protection (CSP), Institute of Development Studies (IDS), Family for Every Child, and CH. 2014. *Researching the Linkages between Social Protection and Children's Care in Ghana: LEAP and Its Effects on Child Well-Being, Care, and Family Cohesion*. Brighton, UK: Centre for Social Protection at the Institute of Development Studies.

Chmielewska, D., and D. Souza. 2011. *The Food Security Policy Context in Brazil*. Country Study. Brasilia: International Policy Centre for Inclusive Growth. www.ipc-undp.org/pub/IPCCountryStudy22.pdf.

Chopra, M., A. Sharkey, N. Dalmiya, D. Anthony, and N. Binkin. 2012. "Strategies to Improve Health Coverage and Narrow the Equity Gap in Child Survival, Health, and Nutrition." *Lancet* 380 (9850): 1331–1340.

Chuko, T., J. Bagriansky, and A. T. Brown. 2015. "Ethiopia's Long Road to USI." *Iodine Deficiency Disorder Newsletter*, May.

Colchero, M. A., B. M. Popkin, J. A. Rivera, and S. W. Ng. 2016. "Beverage Purchases from Stores in Mexico under the Excise Tax on Sugar Sweetened Beverages: Observational Study." *BMJ* 352: h6704.

CONSEA (Conselho Nacional de Segurança Alimentar e Nutricional). 2009. *Building Up the National Policy and System for Food and Nutrition Security: The Brazilian Experience*. Brasilia.

———. 2010. *Food and Nutritional Security and the Human Right to Adequate Food in Brazil*. Brasilia.

Cunningham, K., M. Ruel, E. Ferguson, and R. Uauy. 2015. "Women's Empowerment and Child Nutritional Status in South Asia: A Synthesis of the Literature." *Maternal and Child Nutrition* 11 (1): 1–9.

Curtis, V., S. Cairncross, and R. Yonli. 2000. "Domestic Hygiene and Diarrhoea—Pinpointing the Problem." *Tropical Medicine and International Health* 5 (1): 22–32. PubMed PMID: 10672202.

Dain, K. 2015. "Sustainable Financing: The Achilles Heel of the Non-communicable Diseases Response." *Lancet Diabetes and Endocrinology* 3 (12): 923–925.

Danaei, G., G. M. Singh, C. J. Paciorek, J. K. Lin, M. J. Cowan, M. M. Finucane, F. Farzadfar, G. A. Stevens, L. M. Riley, Y. Lu, M. Rao, M. Ezzati, and C. H. Fall. 2013. "The Global Cardiovascular Risk Transition Associations of Four Metabolic Risk Factors with National Income, Urbanization, and Western Diet in 1980 and 2008." *Circulation* 127 (14): 1493–1502.

Danysh, H. E., R. H. Gilman, J. C. Wells, W. K. Pan, B. Zaitchik, G. Gonzálvez, M. Alvarez, and W. Checkley. 2014. "El Niño Adversely Affected Childhood Stature and Lean Mass in Northern Peru." *Climate Change Responses* 1 (1): 7.

Das, J. K., R. A. Salam, R. Kumar, and Z. A. Bhutta. 2013. "Micronutrient Fortification of Food and Its Impact on Woman and Child Health: A Systematic Review." *Systematic Reviews* 2: 67.

Delisle, H. F. 2008. "Poverty: The Double Burden of Malnutrition in Mothers and the Intergenerational Impact." *Annals of the New York Academy of Sciences* 1136: 172–184. doi: 10.1196/annals.1425.026.

De Moura, F., A. Palmer, J. Finkelstein, J. Haas, L. Murray-Kolb, M. Wenger, E. Birol, E. Boy, and J. P. Peña-Rosas. 2014. "Are Biofortified Staple Food Crops Improving Vitamin A and Iron Status in Women and Children? New Evidence from Efficacy Trials." *Advances in Nutrition* (5): 56–570. doi: 10.3945/an.114.006627Adv.

de Onis, M., K. G. Dewey, E. Borghi, A. W. Onyango, M. Blossner, B. Daelmans, E. Piwoz, and F. Branca. 2013. "The World Health Organization's Global Target for Reducing Childhood Stunting by 2025: Rationale and Proposed Actions." *Maternal and Child Nutrition* 9 (2): 6–26.

De Schutter, O. 2014. *Report of the Special Rapporteur on the Right to Food, Olivier De Schutter. Final Report: The Transformative Potential of the Right to Food.* Submitted to the United Nations Human Rights Council, New York.

Devereux, S. 2015. "Social Protection for Enhanced Food Security in Sub-Saharan Africa." *Food Policy*, April.

DFID (UK Department for International Development). 2015. "Preparing for El Niño." News story, October 16. Accessed April 9, 2016. www.gov.uk/government/news/preparing-for-el-nino.

DHS (Demographic and Health Survey). 2005–2015. The DHS Program: Data. http://dhsprogram.com/data.

Dieleman, J. L., C. M. Graves, T. Templin, E. Johnson, R. Baral, K. Leach-Kemon, A. M. Haakenstad, and C. J. L. Murray. 2014. "Global Health Development Assistance Remained Steady in 2013 but Did Not Align with Recipients' Disease Burden." *Health Affairs* 10: 1377.

Dolan, C., M. Mwangome, and T. Khara. 2015. "Extent of Stunting and Wasting in the Same Children." Panel 2.1 in *Global Nutrition Report 2015: Actions and Accountability to Advance Nutrition and Sustainable Development*. Washington, DC: International Food Policy Research Institute.

Duflo, E., M. Greenstone, R. Guiteras, and T. Clasen. 2015. *Toilets Can Work: Short and Medium Run Health Impacts of Addressing Complementarities and Externalities in Water and Sanitation*. Cambridge, MA, US: National Bureau of Economic Research.

Dutta, P., R. Murgai, M. Ravallion, and D. P. Van de Walle. 2012. *Does India's Employment Guarantee Scheme Guarantee Employment?* Policy Research Working Paper 6003. Washington, DC: World Bank.

EHNRI (Ethiopian Health and Nutrition Research Institute), FMoH (Federal Ministry of Health), and UNICEF. 2005. *Iodine Deficiency Disorders (IDD) National Survey in Ethiopia*. Addis Ababa.

Elbers, C., J. O. Lanjouw, and P. Lanjouw. 2003. "Micro-level Estimation of Poverty and Inequality." *Econometrica* 71 (1): 355–364.

Emergency Nutrition Network. 2011. *Development of a Minimum Reporting Package for Emergency Supplementary Feeding Programmes*. Project report. Washington, DC: Emergency Nutrition Network, Save the Children UK, and US Agency for International Development. http://files.ennonline.net/attachments/1611/mrp-report-final.pdf.

———. 2014. Minimum Reporting for Supplementary Feeding Programmes (SFPs). Accessed April 9, 2016. www.ennonline.net/ourwork/research/minimumreportingsfps.

Fanzo, J., D. Hunter, T. Borelli, and F. Mattei, eds. 2013. *Diversifying Food and Diets*. London and New York: Routledge.

FAO (Food and Agriculture Organization of the United Nations). 2002. *Anti-Hunger Programme: A Twin-Track Approach to Hunger Reduction: Priorities for National and International Action*. Rome.

———. 2013. *Food Systems for Better Nutrition*. Rome.

———. 2015a. *Key Recommendations for Improving Nutrition through Agriculture and Food Systems*. Accessed February 2016. www.fao.org/3/a-i4922e.pdf.

———. 2015b. *State of Food Insecurity in the World 2015*. Accessed February 2016. www.fao.org/hunger/en/.

———. 2015c. Food Security/Suite of Food Security Indicators. Accessed April 21, 2015. http://faostat3.fao.org/faostat-gateway/go/to/download/D/FS/E.

———. 2016a. *2015–2016 El Niño: Early Action and Response for Agriculture, Food Security, and Nutrition*. Working draft (15 March 2016). Accessed April 9, 2016. www.fao.org/fileadmin/user_upload/emergencies/docs/FAOEl%20NinoReport-March2016.pdf.

———. 2016b. FAOLEX. Accessed April 9, 2016. http://faolex.fao.org/.

———. 2016c. FAOSTAT. http://faostat.fao.org/.

FAO, IFAD (International Fund for Agricultural Development), and WFP (World Food Programme). 2015. *The State of Food Insecurity in the World 2015: Meeting the 2015 International Hunger Targets: Taking Stock of Uneven Progress*. Rome: FAO.

Ferreira, A. A., J. R. Welch, R. V. Santos, S. A. Gugelmin, and C. E. A. Coimbra Jr. 2012. "Nutritional Status and Growth of Indigenous Xavante Children, Central Brazil." *Nutrition Journal* 11: 3.

Fitzgibbon, C. 2016. "Shock-Responsive Social Protection in Practice: Kenya's Experience in Scaling Up Cash Transfers." Blog, February 23. Humanitarian Practice Network. http://odihpn.org/blog/shock-responsive-social-protection-in-practice-kenyas-experience-in-scaling-up-cash-transfers/.

Forouzanfar, M. H., L. Alexander, H. R. Anderson, V. F. Bachman, S. Biryukov, M. Brauer, R. Burnett, D. Casey, M. M. Coates, A. Cohen, and K. Delwiche. 2015. "Global, Regional, and National Comparative Risk Assessment of 79 Behavioural, Environmental and Occupational, and Metabolic Risks or Clusters of Risks in 188 Countries, 1990–2013: A Systematic Analysis for the Global Burden of Disease Study 2013." *Lancet* 386 (10010): 2287–2323.

Frenk, J. 2015. "Leading the Way towards Universal Health Coverage: A Call to Action." *Lancet* 385 (9975): 1352–1358.

Fuller, J. A., J. Goldstick, J. Bartram, and J. N. Eisenberg. 2016. "Tracking Progress towards Global Drinking Water and Sanitation Targets: A Within and Among Country Analysis." *Science of the Total Environment* 541: 857–864.

Fund for Peace. 2014. *Fragile States Index 2014*. Washington, DC. http://library.fundforpeace.org/library/cfsir1423-fragilestatesindex2014-06d.pdf.

Garrett, G. S., and R. Prczewlofsky. 2013. "Sustainable Supplies of Potassium Iodate for Africa." *Iodine Deficiency Disorder Newsletter*, November.

Ghana, Ministry of Food and Agriculture. 2010. *Medium Term Agricultural Sector Investment Plan (METASIP): 2011–2015*. Accra, Ghana.

Ghana, Ministry of Health. 2007. *Under 5 Child Health Strategy: 2007–2015*. Accra, Ghana. http://ghanamedicalassociation.org/Documents/Child%20Health%20Strategy.pdf.

Global Nutrition Cluster. 2013. Who We Are. Accessed April 9, 2016. http://nutritioncluster.net/gnc/partners/.

Global Panel on Agriculture and Food Systems for Nutrition. 2014. *How Can Agriculture and Food System Policies Improve Nutrition?* Technical Brief. London.

———. 2015. *Improved Metrics and Data Are Needed for Effective Food System Policies in the Post-2015 Era*. Technical Brief. London: Global Panel on Agriculture and Food Systems for Nutrition.

———. 2016. "AfDB President Adesina Addresses the Issues of Malnutrition during Global Panel Annual Meeting." Accessed April 17, 2016. www.glopan.org/news/afdb-president-adesina-addesses-issues-malnutrition-during-global-panel-annual-meeting.

Godfray, H. C. J., J. R. Beddington, I. R. Crute, L. Haddad, D. Lawrence, J. F. Muir, J. Pretty, S. Robinson, S. M. Thomas, and C. Toulmin. 2010. "Food Security: The Challenge of Feeding 9 Billion People." *Science* 327 (5967): 812–818.

Gornall, J. 2015. "Healthcare for Syrian Refugees." *BMJ* 351: h4150. doi: 10.1136/bmj.h4150.

Goryakin, Y., and M. Suhrcke. 2014. "Economic Development, Urbanization, Technological Change, and Overweight: What Do We Learn from 244 Demographic and Health Surveys?" *Economics and Human Biology* 14: 109–127.

Goryakin, Y., T. Lobstein, W. P. T. James, and M. Suhrcke. 2015. "The Impact of Economic, Political, and Social Globalization on Overweight and Obesity in the 56 Low and Middle Income Countries." *Social Science and Medicine* 133: 67–76.

Gradin, C. "Poverty and Ethnicity among Black South Africans." 2015. *European Journal of Development Research* 27: 921–942.

Green, R., J. Sutherland, A. D. Dangour, B. Shankar, and P. Webb. 2016. "Global Dietary Quality, Undernutrition, and Non-communicable Disease: A Longitudinal Modelling Study." *BMJ* Open 6 (1): e009331.

Greener, R., C. Picanyol, P. Fracassi, W. Knechtel, A. Mujica, and S. Allan. 2016. *Analysis of Nutrition-Sensitive Budget Allocations: Experience from 30 Countries*. Report for Scaling Up Nutrition (SUN). Oxford, UK: Oxford Policy Management.

Groce, N., E. Challenger, M. Kerac, and L. Cheshire. 2013. *Stronger Together: Nutrition-Disability Links and Synergies*. Briefing note. Accessed February 2016. www.unicef.org/disabilities/files/Stronger-Together_Nutrition_Disability_Groce_Challenger_Kerac.pdf.

GSO (General Statistical Office). 2011. *Viet Nam Multiple Indicator Cluster Survey 2011, Final Report*. Hanoi.

GSS (Ghana Statistical Service). 2014. *Ghana Living Standards Round 6: Main Report*. Accra.

GSS, GHS (Ghana Health Service), and ICF International. 2015. *Demographic and Health Survey 2014*. Rockville, MD, US: GSS, GHS, and ICF International.

Guha-Sapir, D., R. Below, and P. Hoyois. 2016. EM-DAT: The CRED/OFDA International Disaster Database. Accessed April 2016. www.emdat.be. Université Catholique de Louvain, Brussels, Belgium.

Gujarat, Health and Family Welfare Department. 2012. "Setting Up of Gujarat Starte Nutrition Mission (GSNM)." https://nrhm.gujarat.gov.in/Portal/Document/1_11_1_gr_setting_up_of_gsnm.pdf.

Haddad, L. 2015. "Equity: Not Only for Idealists." *Development Policy Review* 33 (1): 5–13.

———. 2016. "The Global Governance of Nutrition: Why It Matters." Development Horizons blog, February 25. http://www.developmenthorizons.com/2016/02/the-global-governance-of-nutrition-why.html.

Hahn, Y., A. Islam, K. Nuzhat, R. Smyth, and H.-S. Yang. 2015 "Education, Marriage, and Fertility: Long-Term Evidence from a Female Stipend Program in Bangladesh." Paper presented at the Population Association of America meeting, April 30–May 2, San Diego, CA, US.

Harrington, D. W., and S. J. Elliott. 2009. "Weighing the Importance of Neighbourhood: A Multilevel Exploration of the Determinants of Overweight and Obesity." *Social Science and Medicine* 68 (4): 593–600.

Haslett, S., G. Jones, and A. Sefton. 2013. *Small-Area Estimation of Poverty and Malnutrition in Cambodia*. National Institute of Statistics, Ministry of Planning, Royal Government of Cambodia, and the United Nations World Food Programme. Accessed February 2016. www.wfp.org/content/cambodia-small-area-estimation-poverty-and-malnutrition-april-2013.

Haslett, S., G. Jones, and M. Isidro. 2014a. *Small-Area Estimation of Child Undernutrition in Bangladesh*. Bangladesh Bureau of Statistics, United Nations World Food Programme, and International Fund for Agricultural Development. Accessed February 2016. www.wfp.org/sites/default/files/Undernutrition%20Maps%20of%20Bangladesh%202012_Technical%20Report_Massey%20WFP%20BBS%20IFAD.pdf.

Haslett, S., G. Jones, M. Isidro, and A. Sefton. 2014b. *Small-Area Estimation of Food Insecurity and Undernutrition in Nepal*. Central Bureau of Statistics, National Planning Commissions Secretariat, UN World Food Programme, UNICEF, and World Bank, Kathmandu, Nepal. Accessed February 2016. www.wfp.org/content/nepal-small-area-estimation-food-insecurity-and-undernutrition-december-2014.

Hawkes, C. 2015. *Enhancing Coherence between Trade Policy and Nutrition Action*. Discussion Paper 1. United Nations System. Standing Committee on Nutrition. Accessed March 2016. www.unscn.org/files/ICN2_TPM/UNSCN_ENGLISH_Trade_and_Nutrition_Dec_2015.pdf?platform=hootsuite.

Hawkes, C., and M. Ruel. 2010. *Value Chains for Nutrition*. Washington, DC: International Food Policy Research Institute. Accessed February 2016. www.ifpri.org/publication/value-chains-nutrition.

HCC (Healthy Caribbean Coalition). 2014. *A Civil Society Regional Status Report: Responses to NCDs in the Caribbean Community*. Accessed March 2016. https://ncdalliance.org/sites/default/files/resource_files/HCC%20NCDA%20RSR%20FINAL.pdf.

———. 2015. *A Civil Society Report on National NCD Commissions in the Caribbean: Towards a More Effective Multisectoral Response to NCDs. Part I*. Accessed March 2016. www.healthycaribbean.org/meetings-june-2015/june-5/resources/A-Civil-Society-Report-on-National-NCD-Commissions-in-the-Caribbean-Towards-a-more-Effective-Multisectoral-Response-to-NCDs-Part-1.pdf.

Headey, D. Forthcoming. "Of Nutritional Change in Four South Asian Countries: A Dynamic Observational Analysis." *Maternal and Child Nutrition*.

Headey, D. D., and J. F. Hoddinott. 2014. *Understanding the Rapid Reduction of Undernutrition in Nepal, 2001–2011*. Discussion Paper 1384. Washington, DC: International Food Policy Research Institute. Accessed March 2016. http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/128471.

Health Data Collaborative. 2016. 100 Core Health Indicators. Accessed May 4, 2016. www.healthdatacollaborative.org/resources/100-core-health-indicators/.

Heymann, J., A. Raub, and A. Earle. 2013. "Breastfeeding Policy: A Globally Comparative Analysis." *Bulletin of the World Health Organization* 91: 398–406.

Hoddinott, J., R. Rosegrant, and M. Torero. 2012. "Investments to Reduce Hunger and Undernutrition." Challenge Paper, Copenhagen Consensus 2012. http://www.copenhagenconsensus.com/sites/default/files/hungerandmalnutrition.pdf.

Horton, R. 2015. "Offline: Chronic Diseases—The Social Justice Issue of Our Time." Comment. *Lancet* 386 (10011): 2378. http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(15)01178-2.pdf.

Horton, S., and R. H. Steckel. 2013. "Malnutrition: Global Economic Losses Attributable to Malnutrition 1900–2000 and Projections to 2050." In *How Much Have Global Problems Cost the World? A Scorecard from 1900 to 2050*, edited by B. Lomborg, 247–272. Cambridge, UK: Cambridge University Press.

Hotz, C., C. Loechl, A. Lubowa, J. K. Tumwine, G. Ndeezi, A. N. Masawi, R. Baingana, A. Carriquiry, A. de Brauw, J. V. Meenakshi and D. O. Gilligan. 2012. "Introduction of ß-carotene–rich Orange Sweet Potato in Rural Uganda Resulted in Increased Vitamin A Intakes among Children and Women and Improved Vitamin A Status among Children. *Journal of Nutrition* 142 (10): 1871–1880.

Howe-Heyman, A., and M. Lutenbacher. 2016. "The Baby-Friendly Hospital Initiative as an Intervention to Improve Breastfeeding Rates: A Review of the Literature." *Journal of Midwifery and Women's Health* 61 (1): 77–102.

Humphrey, J. H. 2009. "Child Undernutrition, Tropical Enteropathy, Toilets, and Handwashing." *Lancet* 374 (9694): 1032–1035. doi: 10.1016/S0140-6736(09)60950-8.

IDEC (Instituto Brasileiro de Defesa do Consumidor). 2016. "Mais Rigor, por Favor." *Revista do IDEC*, January–February.

IFPRI (International Food Policy Research Institute). 2014. *Global Nutrition Report 2014: Actions and Accountability to Accelerate the World's Progress on Nutrition*. Washington, DC.

———. 2015a. *Global Nutrition Report 2015: Actions and Accountability to Advance Nutrition and Sustainable Development*. Washington, DC.

———. 2015b. SPEED Database 2015. Accessed February 2016.

———. 2015c. "Global Nutrition Report Nutrition Country Profile 2015: Brazil." Washington, DC. Accessed February 2016. http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/129817/filename/130028.pdf.

IHME (Institute for Health Metrics and Evaluation). 2015. "Financing Global Health." University of Washington. Accessed February 2016. http://vizhub.healthdata.org/fgh/.

———. 2016. Global Health Data Exchange. Accessed April 14, 2016. http://ghdx.healthdata.org.

ILO (International Labour Organization). 2014. *Maternity and Paternity at Work: Law and Practice across the World*. Geneva.

India, Ministry of Finance. 2016. "Mother and Child." Accessed March 2016. http://indiabudget.nic.in/es2015-16/echapvol1-05.pdf.

IPCC (Intergovernmental Panel on Climate Change). 2007. *Fourth Assessment Report: Climate Change 2007*. Accessed March 2016. www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_full_report.pdf.

IPEA (Instituto de Pesquisa Econômica Aplicada [Institute for Applied Economic Research]). 1993. "O mapa da fome: subsídios à formulação de uma política de segurança alimentar." Documento de Política no. 14. Brasília. Mimeo.

———. 2014. *Objetivos de Desenvolvimento do Milênio—Relatório Nacional de Acompanhamento*. Brasília.

Jaacks, L. M., M. M. Slining, and B. M. Popkin. 2015. "Recent Underweight and Overweight Trends by Rural-Urban Residence among Women in Low- and Middle-Income Countries." *Journal of Nutrition* 145 (2): 352–357.

Jaspers, L., V. Colpani, L. Chaker, S. J. van der Lee, T. Muka, D. Imo, S. Mendis, R. Chowdhury, W. M. Bramer, A. Falla, and R. Pazoki. 2015. "The Global Impact of Non-communicable Diseases on Households and Impoverishment: A Systematic Review." *European Journal of Epidemiology* 30 (3): 163–188.

JMP (WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation). 2015a. "Key Facts from JMP 2015 Report." Accessed March 2016. www.wssinfo.org/fileadmin/user_upload/resources/JMP-2015-update-key-facts-English.pdf.

———. 2015b. Data and Estimates/Tables. Accessed June 30, 2015. www.wssinfo.org/data-estimates/tables/.

Karnataka Comprehensive Nutrition Mission. 2016. Karnataka Comprehensive Nutrition Mission. Accessed April 26. http://www.karnutmission.org/.

Kenya, Ministry of Health, Division of Nutrition. 2013. M*aternal, Infant, and Young Child Nutrition: National Operational Guidelines for Health Workers*. Nairobi. pdf.usaid.gov/pdf_docs/PA00JTGD.pdf.

Kenya, Ministry of Public Health and Sanitation. 2012. *National Nutrition Action Plan 2012–2017*. Accessed February 2016. http://scalingupnutrition.org/wp-content/uploads/2013/10/Kenya-National-Nutrition-Action-Plan-2012-2017-final.pdf.

Kim, S., D. Ali, A. L. Kennedy, R. Tesfaye, A. Worku, T. Hailu, R. Rawat, and P. Menon. 2015. "Assessing Implementation Fidelity of a Community-Based Infant and Young Child Feeding Intervention in Ethiopia Identifies Delivery Challenges That Limit Reach to Communities." *BMC Public Health* 15 (1): 316.

Kothari, M. 2016. "Global Nutrition Report 2016 Supplementary Dataset: Demographic and Health Survey Intervention Coverage Data: Percentage of Children and Pregnant Women Who Received Various Essential Nutrition Interventions as Reported in the DHS Surveys Conducted between 2005–2015." Washington, DC, February 4.

Kozuki, N., A. C. C. Lee, M. F. Silveira, A. Sania, J. P. Vogel, L. Adair, F. Barros, L. E. Caulfield, P. Christian, W. Fawzi, J. Humphrey, L. Huybregts, A. Mongkolchati, R. Ntozini, D. Osrin, D. Roberfroid, J. Tielsch, A. Vaidya, R. E. Black, and J. Katz. 2013. "The Associations of Parity and Maternal Age with Small-for-Gestational-Age, Preterm, and Neonatal and Infant Mortality: A Meta-analysis." *BMC Public Health* 13 (suppl 3): S2.

Kristjansson, B., M. Petticrew, B. MacDonald, J. Krasevec, L. Janzen, T. Greenhalgh, G. A. Wells, J. MacGowan, A. P. Farmer, B. Shea, A. Mayhew, P. Tugwell, and V. Welch. 2007. "School Feeding for Improving the Physical and Psychosocial Health of Disadvantaged Students." *Cochrane Database of Systematic Reviews*, issue 1, article CD004676. www.cochrane.org/reviews/en/ab004676.html.

Kroll, M., R. K. Phalkey, and F. Kraas. 2015. "Challenges to the Surveillance of Non-communicable Diseases: A Review of Selected Approaches." *BMC Public Health* 15 (1): 1.

Kuper, H., A. Monteath-van Dok, K. Wing, L. Danquah, J. Evans, M. Zuurmond, and J. Gallinetti. 2014. "The Impact of Disability on the Lives of Children: Cross-Sectional Data Including 8,900 Children with Disabilities and 898,834 Children without Disabilities across 30 Countries." *PLOS ONE* 9 (9): e107300.

Laar, A., R. Aryeetey, R. Akparibo, F. Zotor, and Ghana SUN Academic Platform. 2015. "Nutrition Sensitivity of the 2014 Budget Statement of Republic of Ghana." *Proceedings of the Nutrition Society* 74 (4): 526–532.

Labbok, M. 2012. "Global Baby-Friendly Hospital Initiative Monitoring Data: Update and Discussion." *Breastfeeding Medicine* 7: 210–222.

Langlois, E. V., A. Haines, G. Tomson, and A. Ghaffar. 2016. "Refugees: Towards Better Access to Health Care Services." *Lancet* 387 (10016): 319–321.

Liu, X., and C. Zhu. 2014. "Will Knowing Diabetes Affect Labor Income? Evidence from a Natural Experiment." *Economics Letters* 124 (1): 74–78.

Lobstein, T., R. Jackson-Leach, M. L. Moodie, K. D. Hall, S. L. Gortmaker, B. A. Swinburn, W. P. T. James, Y. Wang, and K. McPherson. 2015. "Child and Adolescent Obesity: Part of a Bigger Picture." *Lancet* 385 (9986): 2510–2520.

Luo, R., Y. Shi, L. Zhang, C. Liu, S. Rozelle, B. Sharbono, A. Yue, Q. Zhao, and R. Martorell. 2012. "Nutrition and Educational Performance in Rural China's Elementary Schools: Results of a Randomized Control Trial in Shaanxi Province." *Economic Development and Cultural Change* 60 (4): 735–772.

Luthringer, C. L., L. A. Rowe, M. Vossenaar, and G. S. Garrett. 2015. "Regulatory Monitoring of Fortified Foods: Identifying Barriers and Good Practices." *Global Health: Science and Practice* 3 (3): 446–461.

Madhya Pradesh, Women and Child Development Department. 2016. General Information. Accessed April 26. http://www.mpwcd.nic.in/en/general-information.

Maharashtra, Health and Nutrition Mission. 2016. Health and Nutrition Mission. Accessed April 26. http://nutritionmissionmah.gov.in/Site/Home/Index.aspx.

Malta, D. C., S. C. Andrade, R. M. Claro, R. T. I. Bernal, and C. A. Monteiro. 2014. "Trends in Prevalence of Overweight and Obesity in Adults in 26 Brazilian State Capitals and the Federal District from 2006 to 2012." *Revista Brasileira de Epidemiologia* 17 (Supplement 1): 267–276.

Mamun, A., and J. Finlay 2015. "Shifting of Undernutrition to Overnutrition and Its Determinants among Women of Reproductive Ages in the 36 Low to Medium Income Countries." *Obesity Research and Clinical Practice* 9 (1): 75–86.

Mbuya, M. N. N., N. V. Tavengwa, R. J. Stoltzfus, V. Curtis, G. H. Pelto, R. Ntozini, R. A. Kambarami, D. Fundira, T. R. Malaba, D. Maunze, P. Morgan, G. Mangwadu, and J. H. Humphrey. 2015. "Design of an Intervention to Minimize Ingestion of Fecal Microbes by Young Children in Rural Zimbabwe." *Clinical Infectious Diseases* 61 (suppl 7): S703–S709. doi: 10.1093/cid/civ845.

Mejía Acosta, A., and L. Haddad. 2014. "The Politics of Success in the Fight against Malnutrition in Peru." *Food Policy* 44 (2014): 26–35.

Menon, P., C. M. McDonald, and S. Chakrabarti. 2015. *Estimating the Cost of Delivering Direct Nutrition Interventions at Scale: National and Subnational-Level Insights from India*. POSHAN Report 9. New Delhi: International Food Policy Research Institute.

Miljkovic, D., S. Shaik, S. Miranda, N. Barabanov, and A. Liogier. 2015. "Globalisation and Obesity." *World Economy* 38 (8): 1278–1294.

Miller, G., R. Luo, L. Zhang, S. Sylvia, Y. Shi, P. Foo, Q. Zhao, R. Martorell, A. Medina, and S. Rozelle. 2012. "Effectiveness of Provider Incentives for Anaemia Reduction in Rural China: A Cluster Randomised Trial." *BMJ* 345: e4809. doi: 10.1136/bmj.e4809.

MQSUN (Maximising the Quality of Scaling Up Nutrition Programmes Framework). 2016. *Addressing Overweight and Obesity in Low- and Middle-Income Countries 2016*. Seattle, WA, US: PATH.

Ndiku, H., M. Ndiku, K. Jaceldo-Siegl, P. Singh, and J. Sabaté. 2011. "Gender Inequality in Food Intake and Nutritional Status of Children under 5 Years Old in Rural Eastern Kenya." *European Journal of Clinical Nutrition* 65 (1): 26–31.

Neuman, M., I. Kawachi, S. Gortmaker, and S. V. Subramanian. 2014. "National Economic Development and Disparities in Body Mass Index: A Cross-Sectional Study of Data from 38 Countries." *PloS One* 9 (6): e99327.

Ngure, F. M., J. H. Humphrey, M. N. Mbuya, F. Majo, K. Mutasa, M. Govha, E. Mazarura, B. Chasekwa, A. J. Prendergast, V. Curtis, K. J. Boor, and R. J. Stoltzfus. 2013. "Formative Research on Hygiene Behaviors and Geophagy among Infants and Young Children and Implications of Exposure to Fecal Bacteria." *American Journal of Tropical Medicine and Hygiene* 89 (4): 709–716. doi: 10.4269/ajtmh.12-0568.

Ngure, F. M., B. M. Reid, J. H. Humphrey, M. N. Mbuya, G. Pelto, and R. J. Stoltzfus. 2014. "Water, Sanitation, and Hygiene (WASH), Environmental Enteropathy, Nutrition, and Early Child Development: Making the Links." *Annals of the New York Academy of Sciences* 1308 (1): 118–128.

Nguyen, P. H., S. S. Kim, S. Keithly, N. Hajeebhoy, L. M. Tran, M. T. Ruel, R. Rawat, and P. Menon. 2014. "Incorporating Elements of Social Franchising in Government Health Services Improves the Quality of Infant and Young Child Feeding Counseling Services at Commune Health Centers in Vietnam." *Health Policy and Planning* 29 (8): 1008–1020. doi: 10.1093/heapol/czt083.

Norredam, M., A. Mygind, and A. Krasnik. 2006. "Access to Health Care for Asylum Seekers in the European Union: A Comparative Study of Country Policies." *European Journal of Public Health* 16 (3): 285–289.

Nugent, R. 2011. *Bringing Agriculture to the Table*. Chicago: Chicago Council on Global Affairs.

Nugent, R., and A. B. Feigl. 2010. *Where Have All the Donors Gone? Scarce Donor Funding for Non-communicable Diseases*. Working paper. Accessed February 2016. http://www.cgdev.org/publication/where-have-all-donors-gone-scarce-donor-funding-non-communicable-diseases-working-paper.

Nutrition for Growth. Accessed April 9, 2016. http://nutrition4growth.org.

ODI (Overseas Development Institute). 2016. *Women's Work: Mothers, Children, and the Global Childcare Crisis*. Accessed April 9, 2016. http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/10333.pdf.

Odisha, Women and Child Development Department. 2016. Nutrition Operation Plan. Accessed April 26. http://wcdodisha.gov.in/node/42.

OECD (Organisation for Economic Co-operation and Development). 2015. List of Fragile States and Economies Used for Preparing the 2015 OECD Report on States of Fragility. Accessed April 9, 2016. http://www.oecd.org/dac/governance-peace/conflictandfragility/docs/List%20of%20fragile%20states.pdf.

———. 2016a. Creditor Reporting System. OECD.Stat. Accessed April 9, 2016. https://stats.oecd.org/Index.aspx?DataSetCode=CRS1.

———. 2016b. Data. Accessed February 2016. https://data.oecd.org.

———. 2016c. "Development Aid Stable in 2014 but Flows to Poorest Countries Still Falling." Press release, April 8. Accessed April 14, 2016. www.oecd.org/dac/stats/development-aid-stable-in-2014-but-flows-to-poorest-countries-still-falling.htm.

Ofei-Aboagye, E. 2013. *Advancing Social Accountability in Social Protection and Socio-Economic Interventions: The Ghana School Feeding Programme*. Accra: Institute of Local Government Studies.

Olney, D. K., A. Pedehombga, M. T. Ruel, and A. Dillon. 2015. "A 2-Year Integrated Agriculture and Nutrition and Health Behavior Change Communication Program Targeted to Women in Burkina Faso Reduces Anemia, Wasting, and Diarrhea in Children 3–12.9 Months of Age at Baseline: A Cluster-Randomized Controlled Trial." *Journal of Nutrition* 145 (6): 1317–1324.

PAA Africa. 2016. "Purchase from Africans for Africa." Accessed March 2016. http://paa-africa.org.

PAHO (Pan American Health Organization). 2015a. *Baby Friendly Hospital Initiative in Latin America and the Caribbean: Current Status, Challenges, and Opportunities*. Washington, DC.

———. 2015b. *Ultra-processed Food and Drink Products in Latin America: Trends, Impact on Obesity, Policy Implications*. Washington, DC.

Pérez-Escamilla, R., J. L. Martinez, and S. Segura-Pérez. 2016. "Impact of the Baby-Friendly Hospital Initiative on Breastfeeding and Child Health Outcomes: A Systematic Review." *Maternal and Child Nutrition*. doi: 10.1111/mcn.12294.

Pettigrew, L. M., J. De Maeseneer, M. I. P. Anderson, A. Essuman, M. R. Kidd, and A. Haines. 2015. "Primary Health Care and the Sustainable Development Goals." *Lancet* 386 (10009): 2119–2121.

Pickering, A. J., and J. Davis. 2012. "Freshwater Availability and Water Fetching Distance Affect Child Health in Sub-Saharan Africa." *Environmental Science and Technology* 46 (4): 2391–2397. doi: 10.1021/es203177v.

Popkin, B. M., S. Kim, E. R. Rusev, S. Du, and C. Zizza. 2006. "Measuring the Full Economic Costs of Diet, Physical Activity and Obesity-related Chronic Diseases." *Obesity Reviews* 7 (3): 271–293.

Pratesi, M., ed. 2016. *Analysis of Poverty Data by Small Area Estimation*. Chichester, UK: Wiley.

Rao, J. N. K., and I. Molina. 2015. *Small Area Estimation*. 2nd ed. Hoboken, NJ, US: Wiley.

Reddy, K. S. 2015. "India's Aspirations for Universal Health Coverage." *New England Journal of Medicine* 373 (1): 1–5.

Rocha, C. 2016. "Work in Progress: Addressing Food Insecurity in Brazil." In *Food Poverty and Insecurity: International Food Inequalities*, edited by M. Caraher and J. Coveney, 105–115. Cham, Switzerland: Springer International.

Roelen, K., H. K. Chettri, and E. Delap. 2015. "Little Cash to Large Households: Cash Transfers and Children's Care in Disadvantaged Families in Ghana." *International Social Security Review* 68 (2): 63–83.

Rollins, N. C., N. Bhandari, N. Hajeebhoy, S. Horton, C. K. Lutter, J. C. Martines, E. G. Piwoz, L. M. Richter, and C. G. Victora. 2016. "Why Invest, and What It Will Take to Improve Breastfeeding Practices?" *Lancet* 387 (10017): 491–504.

Ruel, M. T., and H. Alderman. 2013. "Nutrition-Sensitive Interventions and Programmes: How Can They Help to Accelerate Progress in Improving Maternal and Child Nutrition?" *Lancet* 382 (9891): 536–551.

Rutstein, S. O., and A. Way. 2014. *The Peru Continuous DHS Experience*. DHS Occasional Paper 8. Rockville, MD, US: ICF International.

Saha, K.K., M. Billah, P. Menon, S. El Arifeen, and N. V. N. Mbuya. 2015. *Bangladesh National Nutrition Services: Assessment of Implementation Status*. Washington, DC: World Bank.

Saleh, K. 2013. *The Health Sector in Ghana: A Comprehensive Assessment*. Washington, DC: World Bank.

Sanitation and Water for All. 2014. *Developing SMART Commitments for the 2014 High Level Meeting (HLM): Guidance for Governments and SWA Partners in Country*. New York. http://sanitationandwaterforall.org/partner-workspace/high-level-commitments-dialogue/.

Savedoff, W. D., D. de Ferranti, A. L. Smith, and V. Fan. 2012. "Political and Economic Aspects of the Transition to Universal Health Coverage." *Lancet* 380 (9845): 924–932.

Scaling Up Nutrition. 2015. *Sun Movement Annual Progress Report*. Accessed April 9, 2016. http://scalingupnutrition.org/news/the-2015-sun-movement-annual-progress-report-is-launched.

Shaheen, F., J. Glennie, A. Lenhardt, and J. M. Roche. 2016. *Every Last Child*. London: Save the Children.

Shekar, M., et al. 2015a. *Scaling Up Nutrition in the DRC: What Will It Cost?* Health, Nutrition, and Population (HNP) Discussion Paper. Washington, DC: World Bank.

Shekar, M., M. Mattern, M. W. Eozenou, P. Hoang-Vu, J. Dayton Eberwein, J. K. Akuoku, J. Kweku, E. Di Gropello, and R. W. Emanuela. 2015b. *Scaling Up Nutrition for a More Resilient Mali: Nutrition Diagnostics and Costed Plan for Scaling Up*. Health, Nutrition, and Population (HNP) Discussion Paper. Washington, DC: World Bank.

Shekar, M. et al. 2015c. *Costed Plan for Scaling Up Nutrition: Togo*. Health, Nutrition, and Population (HNP) Discussion Paper. Washington, DC: World Bank.

Shekar, M., J. Kakietek, M. D'Alimonte, D. Walters, H. Rogers, J. Dayton Eberwein, S. Soe-Lin, and R. Hecht. 2016. *Investing in Nutrition: The Foundation for Development: An Investment Framework to Reach the Global Nutrition Targets*. Washington, DC: World Bank, Results for Development, Bill & Melinda Gates Foundation, Children's Investment Fun Foundation, and 1,000 Days. Available at http://www.worldbank.org/en/topic/nutrition/publication/investing-in-nutrition-the-foundation-for-development and http://thousanddays.org/resource/investing-in-nutrition/.

Slow Food. 2015. Our Philosophy. Accessed April 9, 2016. http://www.slowfood.com/about-us/our-philosophy/.

SMART (Standardized Monitoring and Assessment of Relief and Transitions). 2006. *Measuring Mortality, Nutritional Status, and Food Security in Crisis Situations: SMART Methodology Version 1*. Accessed April 9, 2016. http://pdf.usaid.gov/pdf_docs/Pnadi428.pdf.

Smith, L. C., and L. Haddad. 2015. "Reducing Child Undernutrition: Past Drivers and Priorities for the Post-MDG Era." *World Development* 68: 180–204.

South Africa, Department of Health. 2015. *Strategy for the Prevention and Control of Obesity in South Africa, 2015–2020*. Pretoria. https://www.health-e.org.za/wp-content/uploads/2015/12/National-Strategy-for-prevention-and-Control-of-Obesity-4-August-latest.pdf.

Sphere Project. 2015. *Sphere Handbook*. Accessed January 19, 2016. http://www.spherehandbook.org/en/1-food-security-and-nutrition assessment/.

Spohrer, R., and G. S. Garrett. 2013. "Engaging Small-Scale Salt Producers." *Iodine Deficiency Disorder Newsletter*, November.

Stevens, G. A., M. M. Finucane, L. M. De-Regil, C. J. Paciorek, S. R. Flaxman, F. Branca, J. Pablo Peña-Rosas, Z. A. Bhutta, and M. Ezzati. 2013. "Global, Regional, and National Trends in Haemoglobin Concentration and Prevalence of Total and Severe Anaemia in Children and Pregnant and Non-pregnant Women for 1995–2011: A Systematic Analysis of Population-Representative Data." *Lancet Global Health* 2013 (1): e16–e25.

Stufkens, J. 2014. "Summary of the 2014 Country Reports." Presentation made at the Eighth Meeting of BFHI Coordinators: Industrialized Countries, Eastern Europe and the Commonwealth of Independent States (CEE/CIS), June 6–8, Vilnius, Lithuania. www.bfiontario.ca/wp-content/uploads/2015/04/WHO-BFI-Global-perspective-handout-Marianne-Brophy.pdf.

Su, W., J. Huang, F. Chen, W. Iacobucci, M. Mocarski, T. M. Dall, and L. Perreault. 2015. "Modeling the Clinical and Economic Implications of Obesity Using Microsimulation." *Journal of Medical Economics* 18 (11): 886–897.

SUN (Scaling Up Nutrition) Donor Network. 2013. "Methodology and Guidance Note to Track Global Investments in Nutrition." Geneva. http://scalingupnutrition.org/wp-content/uploads/2013/12/RESOURCE_TRACKING_METHODOLOGY_SUN_DONOR_NETWORK.pdf.

Sunguya, B., K. Ong, S. Dhakal, L. Mlunde, A. Shibanuma, J. Yasuoka, and M. Jimba. 2014. "Strong Nutrition Governance Is Key to Addressing Nutrition Transition in Low and Middle-Income Countries: Review of Countries' Nutrition Policies." *Nutrition Journal* 13 (1): 65.

Tang, K. C., D. Nutbeam, C. Aldinger, L. St Leger, D. Bundy, A. M. Hoffmann, E. Yankah, D. McCall, G. Buijs, S. Arnaout, and S. Morales. 2009. "Schools for Health, Education, and Development: A Call for Action." *Health Promotion International* 24 (1): 68–67.

Trieu, K., B. Neal, C. Hawkes, E. Dunford, N. Campbell, R. Rodriguez-Fernandez, et al. 2015. "Salt Reduction Initiatives around the World—A Systematic Review of Progress towards the Global Target." *PLoS ONE* 10 (7): e0130247. doi: 10.1371/journal.pone.0130247.

Tüzün, E. H., D. K. Güven, L. Eker, B. Elbasan, and S. F. Bülbül. 2013. "Nutritional Status of Children with Cerebral Palsy in Turkey." *Disability and Rehabilitation* 35 (5): 413–417.

Tzioumis, E., and L. Adair. 2014. "Global Trends in the Childhood Dual Burden of Malnutrition." *FASEB Journal* 28 (1) Supplement: 621–622.

Tzioumis, E., M. C. Kay, M. E. Bentley, and L. S. Adair. 2016. "Prevalence and Trends in the Childhood Dual Burden of Malnutrition in Low- and Middle-Income Countries, 1990–2012." *Public Health Nutrition*: 1–14 [Epub ahead of print].

UN DESA (United Nations Department of Economic and Social Affairs). 2014. "Goal 2. End Hunger, Achieve Food Security and Improved Nutrition, and Promote Sustainable Agriculture." Sustainable Development Knowledge Platform. Accessed February 2016. https://sustainabledevelopment.un.org/?page=view&nr=164&type=230&menu=2059.

UNESCO (United Nations Educational, Scientific, and Cultural Organization) Institute for Statistics. 2015. Data Centre. Accessed April 21, 2015. www.uis.unesco.org/DataCentre/Pages/BrowseEducation.aspx.

UNHCR (United Nations High Commissioner for Refugees). 2014a. "Malnutrition a Serious Threat as Food Shortages Impact Maban Refugee Camps." Accessed January 15, 2016. http://www.unhcr.org/5370cfbb6.html.

———.2014b. *World at War: UNHCR Global Trends: Forced Displacement in 2014*. Accessed January 15, 2016. http://unhcr.org/556725e69.html#_ga=1.183170982.1419369449.1434622495.

———. 2015. "Worldwide Displacement Hits All-Time High as War and Persecution Increase." Accessed February 2016. http://www.unhcr.org/558193896.html.

———. 2016a. Population Statistics. http://popstats.unhcr.org/en/overview.

———. 2016b. Standardised Expanded Nutrition Survey database. http://sens.unhcr.org/.

UNICEF. 2014. "Nutridash 2014." New York. Unpublished.

———. 2015. *State of the World's Children 2015*. New York.

———. 2016a. "Malnutrition Mounts as El Niño Takes Hold." Press release, February 17. http://www.unicef.org/media/media_90252.html.

———. 2016b. UNICEF Global Databases. "Nutrition: Infant and Young Child Feeding." Accessed April 2016. www.data.unicef.org/nutrition/iycf.

———. 2016c. MICS (Multiple Indicator Cluster Surveys). http://mics.unicef.org/surveys.

———. 2016d. UNICEF Global Databases. Accessed April 2016. www.data.unicef.org.

UNICEF and WHO. 2015. *Progress on Sanitation and Drinking Water: 2015 Update and MDG Assessment*. Accessed April 9, 2016. www.wssinfo.org/fileadmin/user_upload/resources/JMP-Update-report-2015_English.pdf.

UNICEF, WHO (World Health Organization), and World Bank. 2015. 2014 Joint Child Malnutrition Estimates: Levels and Trends (September 2015 update). Accessed April 17, 2016. http://data.worldbank.org/ child-malnutrition.

United Kingdom. 2013a. *Global Nutrition for Growth Compact*. Accessed April 9, 2016. www.gov.uk/government/uploads/system/uploads/attachment_data/file/248760/Endorserscompact_update7_10_2013.pdf.

———. 2013b. *Nutrition for Growth Commitments: Executive Summary*. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/207274/nutrition-for-growth-commitments.pdf.

———. 2016. *Budget 2016*. Policy Paper. Accessed April 17, 2016. www.gov.uk/government/publications/budget-2016-documents/budget-2016.

United Nations. 2013. *World Population Prospects: The 2012 Revision*. New York: United Nations, Department of Economic and Social Affairs, Population Division. Accessed June 2015. http://esa.un.org/unpd/wpp/Excel-Data/population.htm.

———. 2014a. "High-Level Meetings and the General Debate of the Sixty-eighth Session of the General Assembly." Agenda Item 118, Follow-Up to the Outcome of the Millennium Summit. Accessed March 2016. https://papersmart.unmeetings.org/ga/68th-session/plenary-meetings/agenda/i/118/.

———. 2014b. *A World That Counts*. New York. http://www.undatarevolution.org/wp-content/uploads/2014/11/A-World-That-Counts.pdf.

———. 2015. *Transforming Our World: The 2030 Agenda for Sustainable Development*. Accessed April 9, 2016. https://sustainabledevelopment.un.org/post2015/transformingourworld.

United Nations Economic and Social Council. 2016. *Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators*. E/CN.3/2016/2/Rev.1. New York. http://unstats.un.org/unsd/statcom/47th-session/documents/2016-2-IAEG-SDGs-Rev1-E.pdf.

United Nations General Assembly. 2011. *Political Declaration of the High-level Meeting of the General Assembly on the Prevention and Control of Non-communicable Diseases*. New York.

———. 2014. *Outcome Document of the High-Level Meeting of the General Assembly on the Comprehensive Review and Assessment of the Progress Achieved in the Prevention and Control of Non-communicable Diseases*. Resolution 68/300, 10 July 2014. Accessed February 2016. www.who.int/nmh/events/2014/a-res-68-300.pdf?ua=1.

UNOCHA (United Nations Office for the Coordination of Humanitarian Affairs). 2016. "El Nino: Overview of Impact and Projected Humanitarian Needs and Response as of 29 January 2016." Accessed April 9, 2016. http://reliefweb.int/report/world/el-ni-o-overview-impact-and-projected-humanitarian-needs-and-response-29-january-2016.

UNOCHA, UNDP (United Nations Development Programme), UNHCR (United Nations High Commissioner for Refugees, UNICEF, WFP (World Food Programme), and World Bank. 2015. *Addressing Protracted Displacement: A Framework for Development-Humanitarian Cooperation*. New York: Center on International Cooperation.

UNSCN (United Nations Standing Committee on Nutrition). 2014. *The Nutrition Sensitivity of Agriculture and Food Policies: A Synthesis of Eight Country Case Studies*. Accessed March 2016. http://www.unscn.org/en/publications/country_case_studies/the_nutrition_sensitivity.php.

UN SDSN (Sustainable Development Solutions Network). 2015. *Data for Development: An Action Plan to Finance the Data Revolution for Sustainable Development*. Accessed April 8, 2016. http://unsdsn.org/wp-content/uploads/2015/04/Data-For-Development-An-Action-Plan-July-2015.pdf.

USAID (US Agency for International Development). 2012. Semi-Quantitative Evaluation of Access and Coverage (SQUEAC)/ Simplified Lot Quality Assurance Sampling Evaluation of Access and Coverage (SLEAC) Technical Reference. Accessed April 9, 2016. http://www.fantaproject.org/sites/default/files/resources/SQUEAC-SLEAC-Technical-Reference-Oct2012_0.pdf.

Uttar Pradesh, State Nutrition Mission. 2014. *Vision Document*, 2014–2024. http://www.snmup.in/MediaGallery/vision_eng.pdf.

van Jaarsveld, P., M. Faber, S. Tanumihardjo, P. Nestel, C. Lombard, and A. Spinnler Benadé. 2005. "ß-Carotene–Rich Orange-Fleshed Sweet Potato Improves the Vitamin A Status of Primary School Children Assessed with the Modified-Relative-Dose-Response Test." *American Journal of Clinical Nutrition* 81 (5): 1080–1087.

Victora, C. G., and J. A. Rivera. 2014. "Optimal Child Growth and the Double Burden of Malnutrition: Research and Programmatic Implications." *American Journal of Clinical Nutrition* 100 (6): 1611S–1612S.

Victora, C. G., R. Bahl, A. J. D. Barros, G. V. A. França, S. Horton, J. Krasevec, S. Murch, M. J. Sankar, N. Walker, and N. C. Rollins. 2016. "Breastfeeding in the 21st Century: Epidemiology, Mechanisms, and Lifelong Effect." *Lancet* 387 (10017): 475–490.

von Grebmer, K., J. Bernstein, A. de Waal, N. Prasai, S. Yin, and Y. Yohannes. 2015. *Global Hunger Index: Armed Conflict and the Challenge of Hunger*. Bonn, Germany; Washington, DC; and Dublin, Ireland: Welthungerhilfe; International Food Policy Research Institute (IFPRI); and Concern Worldwide.

Waters, E., A. de Silva-Sanigorski, B. J. Hall, T. Brown, K. J. Campbell, Y. Gao, R. Armstrong, L. Prosser, and C. D. Summerbell. 2011. "Interventions for Preventing Obesity in Children." *Cochrane Database of Systematic Reviews* 12 (CD001871).

WBTi (World Breastfeeding Trends Initiative). 2016. WBTi Tracking, Assessing, and Monitoring Systems. Accessed February 2016. http://worldbreastfeedingtrends.org/.

WCRF International (World Cancer Research Fund International). 2016. "NOURISHING Framework." Accessed March 2016. www.wcrf.org/int/policy/nourishing-framework.

WCRF International and NCD Alliance. 2016. "Ambitious, SMART Commitments to Address NCDs, Overweight, and Obesity: Make the UN Decade for Action on Nutrition Count for All Forms of Malnutrition." London.

WFP (World Food Programme). 2016. *WFP El Niño: Preparedness and Response*. Situation Report 3, 4 March 2016. Accessed April 9, 2016. http://documents.wfp.org/stellent/groups/public/documents/ep/wfp282093.pdf.

WHO (World Health Organization). 1981. *International Code of Marketing of Breast-Milk Substitutes*. Geneva.

———. 2003. *Global Strategy for Infant and Young Child Feeding*. Geneva.

———. 2007. *Preventing and Controlling Micronutrient Deficiencies in Population Affected by an Emergency: Multiple Vitamin and Mineral Supplements for Pregnant and Lactating Women, and for Children Aged 6 to 59 Months*. www.who.int/nutrition/publications/WHO_WFP_UNICEFstatement.pdf. Geneva.

———. 2008. *Indicators for Assessing Infant and Young Child Feeding Practices: Conclusions of a Consensus Meeting Held 6–8 November 2007 in Washington D.C., USA*. Accessed February 2016. www.unicef.org/nutrition/files/IYCF_updated_indicators_2008_part_1_definitions.pdf.

———. 2009. *Guidelines on Food Fortification with Micronutrients*. Geneva. http://www.who.int/nutrition/publications/micronutrients/9241594012/en/.

———. 2010a. *Nutrition Landscape Information System (NLIS) Country Profile Indicators: Interpretation Guide*. Geneva.

———. 2010b. *Set of Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children*. Geneva.

———. 2012a. *Assessing National Capacity for the Prevention and Control of Noncommunicable Diseases: Report of the 2010 Global Survey*. Accessed April 14, 2016. www.who.int/cancer/publications/national_capacity_prevention_ncds.pdf?ua=1.

———. 2012b. "Maternal, Infant, and Young Child Nutrition: Draft Comprehensive Implementation Plan." Geneva. Accessed March 19, 2016. http://apps.who.int/gb/ebwha/pdf_files/WHA65/A65_11-en.pdf and http://apps.who.int/gb/ebwha/pdf_files/WHA65/A65_11Corr1-en.pdf.

———. 2013a. *Essential Nutrition Actions: Improving Maternal, Newborn, Infant, and Young Child Health and Nutrition*. Geneva. Accessed March 2016. www.who.int/nutrition/publications/infantfeeding/essential_nutrition_actions/en/.

———. 2013b. *Global Nutrition Policy Review: What Does It Take to Scale Up Action?* Geneva.

———. 2014a. "Global Nutrition Targets 2025: Low Birth Weight Policy Brief." Geneva. http://www.who.int/nutrition/publications/globaltargets2025_policybrief_lbw/en/.

———. 2014b. *Global Status Report on Noncommunicable Diseases 2014*. Accessed February 2016. http://www.who.int/nmh/publications/ncd-status-report-2014/en/.

———. 2014c. *WHO Global Health Expenditure Atlas 2014*. Accessed February 2016. http://www.who.int/health-accounts/atlas2014.pdf.

———. 2014d. *Global Nutrition Targets 2025: Policy Brief Series*. Accessed March 23, 2016. http://www.who.int/nutrition/publications/globaltargets2025_policybrief_overview/en/.

———. 2015a. Global Health Observatory Data Repository. Accessed June 2015. http://apps.who.int/gho/data/node.main.A897A?lang=en.

———. 2015b. National Health Account Tracking, 2015. Accessed April 2016. http://apps.who.int/nha/database/Country_Profile/Index/en.

———. 2015c. *Noncommunicable Diseases Progress Monitor 2015*. Accessed March 2016. www.who.int/nmh/publications/ncd-progress-monitor-2015/en/.

———. 2016a. Country Planning Cycle Database. Accessed April 9, 2016. http://www.nationalplanningcycles.org/.

———. 2016b. *Developing Country Scale-up Plans.* Accessed February 2016. www.who.int/nutrition/EB128_18_backgroundpaper3_developingcountryscaleupplans.pdf.

———. 2016c. "Diabetes." Accessed February 2016. www.who.int/mediacentre/factsheets/fs312/en/.

———. 2016d. eLENA (e-Library of Evidence for Nutrition Actions). Accessed February 2016. www.who.int/elena/en/.

———. 2016e. Global Database on the Implementation of Nutrition Action (GINA). Accessed February 2016. www.who.int/nutrition/gina/en/.

———. 2016f. Global Targets Tracking Tool. Accessed February 2016. www.who.int/nutrition/trackingtool/en/.

———. 2016g. *The Healthy Growth Project*. Accessed February 2016. www.who.int/nutrition/healthygrowthproj/en/index1.html.

———. 2016h. Landscape Analysis Country Assessments. Accessed February 2016. www.who.int/nutrition/landscape_analysis/country_assessments/en/.

———. 2016i. Nutrition Landscape Information System (NLiS). Accessed February 2016. http://apps.who.int/nutrition/landscape/report.aspx.

———. 2016j. "Obesity and Overweight." Accessed February 2016. www.who.int/mediacentre/factsheets/fs311/en/.

———. 2016k. Objective 6 of the Global NCD Action Plan. Accessed April 9, 2016. http://www.who.int/nmh/ncd-tools/objective6/en/.

———. 2016l. *Planning and Costing Nutrition Actions: The OneHealth Tool*. Accessed February 2016. www.who.int/nutrition/publications/onehealth_tool/en/.

———. 2016m. *Prioritizing Areas for Action in the Field of Population-Based Prevention of Childhood Obesity*. Accessed February 2016. www.who.int/dietphysicalactivity/childhood/tools/en/.

———. 2016n. "Progress on Sanitation and Drinking-Water: Fast Facts." Accessed March 2016. http://www.who.int/water_sanitation_health/monitoring/jmp_fast_facts/en/ .

———. 2016o. *Report of the Commission on Ending Childhood Obesity*. Accessed March 2016. http://apps.who.int/iris/bitstream/10665/204176/1/9789241510066_eng.pdf.

———. 2016p. Set of 9 Voluntary NCD Targets for 2025. Accessed April 9, 2016. http://www.who.int/nmh/global_monitoring_framework/gmf1_large.jpg?ua=1.

———. 2016q. "UN, Kenyan Government Take Broad-Based Approach to Fighting NCDs." Accessed February 2016. www.who.int/nmh/events/2014/kenya-ncd-prevention/en/.

———. 2016r. WHO MiNDbank: More Inclusiveness Needed in Disability and Development. Accessed April 9, 2016. https://www.mindbank.info/.

———. 2016s. "Noncommunicable Diseases and Mental Health." Accessed February 1, 2016. http://www.who.int/nmh/ncd-tools/definition-targets/en/.

———. 2016t. "Nutrition: Global Targets 2025: Posters." Accessed February 1, 2016. http://www.who.int/nutrition/topics/nutrition_globaltargets2025/en/.

———. 2016u. Cost Effectiveness and Strategic Planning (WHO-CHOICE): OneHealth Tool. Accessed April 25. http://www.who.int/choice/onehealthtool/en/.

———. 2016v. Health Accounts Production Tool (HAPT). Accessed April 25. http://www.who.int/health-accounts/tools/HAPT/en/.

———. 2016w. Global Health Expenditure Database. Documentation Centre. http://apps.who.int/nha/database/DocumentationCentre/Index/en.

WHO, UNICEF, and IBFAN (International Baby Food Action Network). 2016. *Marketing of Breast-milk Substitutes: National Implementation of the International Code, Status Report 2016*. Geneva: WHO.

WHO, UNICEF, and USAID (United States Agency for International Development). 2015. *Improving Nutrition Outcomes with Better Water, Sanitation, and Hygiene: Practical Solutions for Policies and Programmes*. Geneva: WHO.

World Bank. 2014. *Costed Plan for Scaling Up Nutrition: Nigeria*. Health, Nutrition, and Population (HNP) Discussion Paper. Washington, DC.

———. 2015a. *Harmonized List of Fragile Situations FY14*. Washington, DC. http://siteresources.worldbank.org/EXTLICUS/Resources/511777-1269623894864/HarmonizedlistoffragilestatesFY14.pdf.

———. 2015b. *Open Data for Sustainable Development*. Accessed April 9, 2016. http://pubdocs.worldbank.org/pubdocs/publicdoc/2015/8/999161440616941994/Open-Data-for-Sustainable-Development.pdf.

———. 2016. *World Development Indicators*. Accessed April 1, 2016. http://data.worldbank.org/data-catalog/world-development-indicators.

World Bank and WHO (World Health Organization). 2014. *Global Civil Registration and Vital Statistics: Scaling Up Investment Plan 2015–2024*. Washington, DC: World Bank.

World Economics. 2016. *Global Growth Tracker*. Accessed March 2016. www.worldeconomics.com/papers/Global%20Growth%20Monitor_7c66ffca-ff86-4e4c-979d-7c5d7a22ef21.paper.

GLOBAL NUTRITION REPORT PARTNERS 2016

Ethiopia

Guatemala (SESAN)

Indonesia

Malawi

Nigeria

Pakistan

Senegal (CLM)

Food and Agriculture Organization of the United Nations

unicef

WFP
wfp.org

World Health Organization

UNSCN

1000 DAYS

CGIAR Research Program on Agriculture for Nutrition and Health

Bill & Melinda Gates foundation

Government of Canada / Gouvernement du Canada

CIFF Children's Investment Fund Foundation

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Irish Aid
Rialtas na hÉireann
Government of Ireland

Government of the Netherlands

UKaid
from the British people

USAID
FROM THE AMERICAN PEOPLE

THE AGA KHAN UNIVERSITY

UCL
INSTITUTE FOR GLOBAL HEALTH

THE UNIVERSITY OF AUCKLAND
NEW ZEALAND

Scaling Up NUTRITION
ENGAGE • INSPIRE • INVEST

Countdown to 2015
Maternal, Newborn & Child Survival

CITY UNIVERSITY LONDON

Development Initiatives

RTI INTERNATIONAL

University of Abomey-Calavi

gain
Global Alliance for Improved Nutrition

DCP3 Disease Control Priorities
economic evaluation for health

APHRC

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BLOOMBERG SCHOOL of PUBLIC HEALTH

JOHNS HOPKINS
BERMAN INSTITUTE of BIOETHICS

University of Indonesia

IRD
Institut de recherche pour le développement

MAHIDOL UNIVERSITY
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IFPRI

Micronutrient Initiative

SickKids | Centre for Global Child Health