2015

GLOBAL NUTRITION REPORT

ACTIONS AND ACCOUNTABILITY

TO ADVANCE NUTRITION & SUSTAINABLE DEVELOPMENT

The *Global Nutrition Report 2015* reminds us of the paramount importance of nutrition to human well-being and productivity. The underlying message of the report is that, unless governments, donors, and stakeholders commit to and make themselves accountable for improved nutrition in our societies, achievement of the Sustainable Development Goals presently being set for the next 15 years will be in jeopardy. We would do well to heed this warning

FAZLE HASAN ABED FOUNDER AND CHAIRMAN, BRAC

The world needs nutrition accountability. Food insecurity, hunger, and malnutrition affecting millions of the poor and children are simply unacceptable. The most important infrastructure is "gray matter infrastructure." Yet millions of children in Africa grow up without adequate nutrition and become stunted, depriving them of the "gray matter infrastructure" they need to improve cognitive and learning capabilities that will expand economic opportunities for them throughout life. Access to adequate nutritious food is a basic human right. The *Global Nutrition Report 2015* is timely and will help foster accountability on malnutrition as the world drives the Sustainable Development Goals. Let us end the scourge of malnutrition. It is well within our reach to do so, and the evidence is overwhelming that we must act. I strongly endorse this report's call for action. By investing in nutrition for all, we all win. Malnutrition is not sustainable.

AKINWUMI ADESINA PRESIDENT, AFRICAN DEVELOPMENT BANK

Governments and other stakeholders must be held accountable for the actions they say they will take to address public health problems. If commitments are not honored, then health falls down the priority list. The *Global Nutrition Report* creates a mechanism through which governments and other stakeholders can be held accountable for progress in addressing malnutrition in all its forms. It reports on the latest available data on nutrition status and on the actions that stakeholders have taken—and presents the way forward for the wider set of actions across sectors that they need to take to make further progress. In many ways it is a model of a report that can be used to ensure accountability: it is independent yet developed with the full engagement of the stakeholders which should be held to account; it points out the data gaps which should be filled; it reports with academic rigor but communicates clearly to those it seeks to influence; it is produced annually but also highlights longer-term needs.

GEORGE ALLEYNE DIRECTOR EMERITUS, PAN AMERICAN HEALTH ORGANIZATION

The 2015 *Global Nutrition Report* conveys very clear messages of real value to policymakers. It demonstrates that momentum for nutrition improvement is strengthening at global and national levels. It makes clear that significant reductions in malnutrition in all its forms by 2030 are possible. But it is coldly realistic about the political, policy, financing, and capacity challenges to be addressed if such reductions are to be achieved. I believe that the 55 countries that are members of the Scaling Up Nutrition (SUN) Movement will be at the forefront of meeting these challenges and achieving real progress in reducing all forms of malnutrition.

TOM ARNOLD COORDINATOR, SCALING UP NUTRITION MOVEMENT

Undernutrition and obesity harm billions of people around the world—and they are preventable. By taking action, we help young and old alike live longer and healthier lives—and this report, with its wealth of data, can guide the way.

MICHAEL R. BLOOMBERG FOUNDER, BLOOMBERG LP AND BLOOMBERG PHILANTHROPIES, AND THREE-TERM MAYOR OF NEW YORK CITY

Nearly every country in the world faces serious health problems linked to the consumption of either too little nutrient-rich food or too much energy-dense food. As the world enters a new era for development, the *Global Nutrition Report 2015* uses abundant facts, figures, and country experiences to call the world to action on what is needed to end all forms of malnutrition by 2030. The report's coverage is commendably broad—from the impact of a changing climate on food security and nutrition, to the consequences that different food systems have on food affordability, dietary diversity, nutrition and health, and sustainable development. The overarching message is optimistic. A range of high-impact, cost-effective nutrition interventions exists, as noted during the Second International Conference on Nutrition. Any country that wants to achieve rapid improvements in nutrition can do so.

MARGARET CHAN DIRECTOR GENERAL, WORLD HEALTH ORGANIZATION

The 2015 *Global Nutrition Report* shows that progress is being made in addressing malnutrition in all its forms, but that coverage and speed of progress can be improved. The report calls for meeting nutrition targets and commitments to action throughout the food and health value chains. Furthermore, the report stresses the need to expand our action in nutrition, ensuring that the global response takes into account climate change, food systems, and other actors such as businesses. Emphasis on accountability and multisectorality is essential at this stage to take the nutrition agenda to the next level. To achieve this, special attention must also be given to fragile and conflict-affected states and to linking humanitarian and development approaches.

ERTHARIN COUSIN EXECUTIVE DIRECTOR, WORLD FOOD PROGRAMME

I believe that the single most important intervention I can support through my foundation, to help build human capital in my country, is to support better nutrition in Nigeria. From the first 1,000 days of a person's life and throughout their life span, we now understand how ending malnutrition will help address myriad other issues, including health, education, and the ability to sustain a livelihood. Everyone's involvement is required, especially political commitment from our countries.

ALIKO DANGOTE PRESIDENT AND FOUNDER, DANGOTE FOUNDATION, NIGERIA

The *Global Nutrition Report* has become an important reference for all those—within civil society, across academia, but especially among policymakers—who work to combat hunger and malnutrition in all its forms. This edition will not disappoint. It demonstrates that, far from being an outcome of sustainable development, improved nutrition should be seen, primarily, as an ingredient to realize other societal goals: better nutrition means stronger growth and populations better equipped to contribute to shared prosperity. It makes a convincing case for accountability and monitoring of progress as indispensable tools to mobilize action and ensure that policies in all areas contribute to the removal of the causes of malnutrition. It shows, finally, that nutrition cannot be dealt with in isolation: rather, it should be placed at the heart of the policies pursued in health and education, trade and investment, social protection and agriculture. I am grateful to the authors for the remarkable contribution they make to the promotion of the right to food.

OLIVIER DE SCHUTTER CO-CHAIR, INTERNATIONAL PANEL OF EXPERTS ON SUSTAINABLE FOOD SYSTEMS (IPES-FOOD)

The *Global Nutrition Report* brings together a remarkable combination of vision and practicality. Both are critically important tools for any attempt to reverse the sad state of malnutrition and its devastating effects worldwide. The report provides us with invaluable knowledge which then serves as our incentive to take action—individually, as civic groups, and as nations. As pollution and climate change continue to rise and create negative conditions, the skillful and compassionate management of our resources is one of the few remaining means left to us to restore a natural balance to the environments that sustain us all. What should we do now that the situation has become so critical? We need to join hands together—all beings living on this planet right now. We must not give up on each other or on the Earth. Remembering the values of compassion and interdependence, our actions must flow from our aspiration to benefit all sentient beings and safeguard our mother Earth.

ORGYEN TRINLEY DORJE H.H. THE 17TH GYALWANG KARMAPA

As we move into the era of the Sustainable Development Goals (SDGs), the world faces many seemingly intractable problems. Malnutrition should not be one of them. Countries that are determined to make rapid advances in malnutrition reduction can do so. If governments want to achieve the SDG target of ending all forms of malnutrition by 2030, there are clear pathways for them to follow. This report provides many examples of countries that have done so with intent. The report is both a mirror and a beacon for nutrition action. It is a mirror because it shows us where we are making good progress and where we are not. It is a beacon because it highlights actions that need to be taken to end malnutrition. Perhaps most importantly, the report helps make all of us more accountable for our efforts to end malnutrition—efforts that must be redoubled as we enter the post-2015 era.

SHENGGEN FAN DIRECTOR GENERAL, INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE

The latest science from the Intergovernmental Panel on Climate Change underlines that climate change will increasingly challenge the basic building blocks of life, food and water security. The urgent need to act—by dramatically reducing emissions and building strong, resilient societies—is about ensuring that everyone has the fundamental necessities to sustain themselves and their families. But we now see that climate action can deliver far more than simply ensuring basic needs are met. It opens economic opportunity, creates smarter ways of doing things, and brings real improvements to countries and communities. Similarly, food security is not just about access to enough food; it's about nutritious food, but also about managing its supply to ensure that what we grow is used, not wasted. The *Global Nutrition Report 2015* should help countries implement the outcomes of the Paris climate change agreement in ways that ensure access to sufficient, healthy, and nutritious food for generations to come.

CHRISTIANA FIGUERES EXECUTIVE SECRETARY, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

After years of underinvestment, the world is finally starting to recognize the critical role that nutrition plays in global health and development. But we still have more work to do. Malnutrition is linked to about half of all children's deaths. Stunting caused by malnutrition makes it much harder for children to get an education and for communities to escape poverty. The 2015 *Global Nutrition Report* should be a call to action for all of us to invest more in the nutrition programs that we know are effective, while also identifying and filling data gaps that may be barriers to progress. I am optimistic that we can create a world where every child has the opportunity to survive and thrive.

BILL GATES CO-CHAIR, BILL & MELINDA GATES FOUNDATION

The year 2015 presents another opportunity to set off on a journey of sustainable development for all by 2030. We need to quickly shed the baggage of malnutrition to make fast progress. The food system can contribute to this effort because it determines the availability and accessibility of diverse nutritious foods to the consumer. Enhancing our food systems to deliver healthy diets and improved nutrition is a call to all governments and indeed nonstate actors. The *Global Nutrition Report* rightly calls for SMART indicators on "nutrition-friendly food systems" to support governments in assessing progress.

JOSÉ GRAZIANO DA SILVA DIRECTOR-GENERAL, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

As the world embraces a new set of development goals, the 2015 *Global Nutrition Report* provides a timely reminder that good nutrition is a critical foundation for achieving many of the targets set for 2030. There is a lot to celebrate as we head to the Nutrition Event in Rio in 2016; we have made real progress, but we cannot become complacent. One area the report importantly highlights is the lack of data about the nutrition of women and adolescent girls. Well-nourished, empowered women are central to eliminating malnutrition entirely and to achieving gender equality. We must all do more to make sure the voices of women and girls are heard and that they truly benefit from this global nutrition movement.

JUSTINE GREENING UK SECRETARY OF STATE FOR INTERNATIONAL DEVELOPMENT

I welcome the remarkable progress made in the field of nutrition and of maternal and infant health in Francophone countries. Yet we are still seeing some of the highest malnutrition rates in many of these countries. At the most recent summit held in Dakar in November 2014, member states and governments of *La Francophonie* committed themselves to emphasizing the singular importance of nutrition programs. This also constitutes an essential component of my advocacy for coherent strategies with regard to food security, poverty reduction, economic development, and support for women and young people as key economic stakeholders in Francophone countries. In this perspective, the *Global Nutrition Report* is an essential tool for guiding the efforts of *La Francophonie* and supporting member states and governments in their work in this field. This takes on particular importance in the context of discussions over the renewal of the Sustainable Development Goals, a process in which member countries of *La Francophonie* are actively involved.

MICHAËLLE JEAN SECRETARY GENERAL, ORGANISATION INTERNATIONALE DE LA FRANCOPHONIE

Young children are especially deserving of our obligation to give equal opportunity to the poor and the vulnerable. Poverty and malnutrition cause stunting or underdevelopment to approximately 162 million children under five. Children—and societies—pay a lifelong price from the impacts of stunting. We must develop a more productive and sustainable food system to help them and future generations reach their full potential. The 2015 *Global Nutrition Report* helps tackle this challenge. It provides analysis of country-level progress on nutrition and highlights crucial connections between nutrition and climate-smart agriculture. This information can help us solve some of the most difficult problems in the world, such as ending malnutrition and combating climate change.

JIM YONG KIM PRESIDENT, WORLD BANK GROUP

Recent reports seem to indicate a downward trend in child malnutrition in India, but the battle is far from won. Naandi Foundation's work on this issue has been two-pronged—making real-time, accurate data available to all and working on the ground to create templates that clearly demonstrate improvement in the nutrition status of children. In other words, implement solutions and continually measure outcomes. We see the *Global Nutrition Report* as an initiative that—by tracking accountability and measuring progress year on year—lives by the same mantra. It has already brought nutrition out from the back shelves of libraries and research institutions and onto annual agendas and action plans of governments.

MANOJ KUMAR CEO, NAANDI FOUNDATION, INDIA

The impressive progress made that is highlighted in this report should inspire us all. New data show that acceleration in reducing stunting is possible when countries make the right investments and implement sound policies. The stakes are high. Stunting saps the potential of millions of children around the world. Every reduction in stunting rates means more children with a better chance to grow well, healthier children, children who learn better and will be more productive in later life. But while we applaud the gains, we must remember how much more there is to do. New evidence confirms the critical importance of breastfeeding not only for child health; data from Brazil show that prolonged breastfeeding improved income in adult life by more than one-third. Scaling up nutrition-specific investments in low- and middle-income countries can provide a return on investment of 10–13 percent.

The conclusion is clear: without improving nutrition, the world will fail to achieve many of the Sustainable Development Goals. There is an urgent moral and practical imperative for the world to make ambitious, measurable, and time-bound commitments to equitably improve nutrition. In monitoring these commitments, the *Global Nutrition Report* will help us hold ourselves accountable. Lives depend on it.

ANTHONY LAKE EXECUTIVE DIRECTOR, UNICEF

The battle to scale up the nutrition focus in policy discussions in Africa is being won through the power of example. Countries that understand the real structural transformation of their economies know such wonderful aims will not be met if they do not address the nutrition deficits of their population, particularly the irreparable damage malnutrition can have on their future workforce if they do not look after their children. The report rightly points to the need for good information for good accountability. The range of institutions with identified critical roles shows the thoroughness of the analysis. It is the same thoroughness that we found in the previous installment, making this report a must-read for economists and development specialists, as well as policymakers interested in making real change.

CARLOS LOPES EXECUTIVE SECRETARY, UNITED NATIONS ECONOMIC COMMISSION FOR AFRICA

The world produces twice the amount of food needed to feed all humankind, yet hunger strikes more than 500 million of the world's inhabitants. This is because there is a lack of political will and commitment from decisionmakers to face social inequity. The *Global Nutrition Report* collects data on malnutrition around the globe and highlights some of the successful country experiences that may help pave the way in the global fight against hunger. The Brazilian experience over the past years has proven that overcoming hunger is possible if the fight against poverty becomes a public policy, if proper government financial resources are invested, and if cross-cutting initiatives are aimed at tackling both the consequences and causes of social inequity. I congratulate these report authors as I believe this document will contribute to the discussion, accountability, and action around fighting malnutrition and hunger. Ensuring food security is more than just the dream of a few: It is a cause that belongs to all humankind and a challenge to be taken up by all of us.

LUIZ INÁCIO LULA DA SILVA FORMER PRESIDENT, BRAZIL

The *Global Nutrition Report* is an important tool for governments and advocates to better understand the extent of the malnutrition challenge and to get actionable guidance on the policies that can be put in place to address this challenge. The report shows that with political commitment, significant progress can be made to reduce malnutrition.

ANTÓNIO MASCARENHAS MONTEIRO FORMER PRESIDENT, CAPE VERDE

We must focus on using our leadership and convening power to bring together local, national, and global partnerships to address one of the 21st century's great challenges: malnutrition. This is one challenge that we can and must overcome. We cannot have the technological advances that we have today and still have millions of children dying from a problem that we can address, where the tools are readily available. The *Global Nutrition Report* reminds us of these tools and compels us to deploy them in a smart and coordinated manner.

STRIVE MASIYIWA CHAIR AND FOUNDER, ECONET WIRELESS, AND CHAIR, MICRONUTRIENT INITIATIVE

I am delighted to support the *Global Nutrition Report*. It is a vital tool in the drive to end malnutrition. In fact it is extraordinary that an annual compilation of this kind has only recently been produced. But this report is not just important because it shines a light on the facts about malnutrition wherever it occurs. The report also raises hard questions about the actions, data, and accountability which are critical to progress. This is especially important in the kind of conflict situations and fragile states where IRC works. These places will soon account for more than half of extreme poverty in the world. They are the front line in the fight for survival. But investing in nutrition improvement in such contexts is challenging. Access is difficult; people are scared and mobile; health systems are broken; good data are often one of the first casualties of conflict; and of course it is hard to get good evidence on what works. That puts a special onus on all of us to use the information in this report to stimulate critical thinking about the right way to help people fulfill the most basic of human needs. We need to think and learn about how to use resources for greatest and most sustainable impact. Good nutrition is the currency of human resilience—individual and collective. It is also the most basic test for the international community. We cannot afford to fail.

DAVID MILIBAND PRESIDENT AND CEO, INTERNATIONAL RESCUE COMMITTEE

Malnutrition can be eradicated within the Sustainable Development Goals. The *Global Nutrition Report* is built around this simple but fundamental fact. It reminds us that we have the resources, knowledge, and skills to achieve this goal. It also tells us that while we are achieving progress in the reduction of stunting globally, there is still much more to be done. This includes turning commitments into action and improving global accountability. This report has the potential to become an important tool to reach all key development players and persuade them that good nutrition is one of the fundamental drivers of development and inclusive growth.

NEVEN MIMICA EUROPEAN COMMISSIONER FOR INTERNATIONAL COOPERATION AND DEVELOPMENT

Malnutrition affects one in three people in the world. This is shocking. Good nutrition is important for children to reach their full potential, whether they want to be teachers, nurses, entrepreneurs, or footballers. Leaders everywhere—in government, communities, business, and families—should pay close attention to the nutrition of the people in their care, because poor nutrition is invisible and dangerous. I closely monitor the diet and exercise of the footballers in my care because I want them to fully express their talents and do the best job for the team and its supporters. We spend a lot of time at the football club monitoring player diet and performance. That is because we want to know how to improve. So I am very happy to know that the World Food Programme—for which I am proud to be an ambassador—supports the *Global Nutrition Report* because it measures our collective performance in helping people all over the world to overcome malnutrition and realize their hopes and dreams.

JOSÉ MOURINHO FIRST TEAM MANAGER, CHELSEA FOOTBALL CLUB, AND WORLD FOOD PROGRAMME GLOBAL AMBASSADOR AGAINST HUNGER

There is a clear dearth of policy attention to nutrition in countries where children growing up healthy are in a minority. Amongst the plethora of reasons for this is the fluidity of nutrition as a sector, which is why it washes down (institutional) cracks. In many countries, it is difficult to find an institutional home for nutrition amidst the archipelago of government departments and ministries. An intersectoral solution for nutrition necessitates the creation of intermediary agencies skilled at convening, instruments to map asset allocation, incentives for collaborative division of labor, and metrics for assessing whole-of-government performance. The *Global Nutrition Report* has brilliantly referred to these in terms of the "accountability of all nutrition stakeholders" and centers its strategic pitch around this notion.

SANIA NISHTAR FOUNDER AND PRESIDENT, HEARTFILE, PAKISTAN

The *Global Nutrition Report* provides encouraging evidence of the growing convergence of international, national, and local actors around the priority of ending malnutrition in all its forms. IFAD shares the conviction that nutrition is crucially important to development and, through investing in rural women and men, will work to maximize the contribution of agriculture and food-based approaches to improving nutrition. The report is a welcome call for collective action and accountability at international, national, and local levels to deliver results that will end malnutrition.

KANAYO NWANZE PRESIDENT, INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

Improved nutrition status is vital for saving lives and preventing illness. It is also a key driver of attainment in school and in the labor force, and so it reduces poverty now and in the future. Together, all of these impacts mean that improved nutrition is a major driver of GDP growth. Every finance minister should be as interested in investing in nutrition as they are in investing in roads, industry, and trade. They should be as interested in child growth as they are in economic growth. Investing in explicit nutrition actions—whether embedded in health, agriculture, education, social protection, WASH, and women's empowerment programs—builds brain infrastructure, which is even more important than hard infrastructure. The last *Global Nutrition Report* told us that for every dollar invested in scaling up nutrition actions, $16 are realized in return. The latest *Global Nutrition Report* confirms these figures from a range of other studies. Fellow finance ministers, this is one of the best investments you will ever sanction for your people and nation. It needs to be a central feature of all economic plans.

NGOZI OKONJO-IWEALA MINISTER OF FINANCE, NIGERIA

Positive eating habits are created when informed people have access to food that is both nutritious and affordable. As this report shows, too many people lack the knowledge, confidence, or food environment to make healthier choices. Alarmingly, adult obesity is on the rise in virtually every country in the world, but, encouragingly, this report shows that in many places rates of overweight infants are declining—we urgently need to jump on this trend and ensure the decline continues. My company and charitable foundation use food education to improve the lives of people all over the world, empowering everyone with the knowledge and skills to shape their health and well-being for the better. I believe we all have a responsibility to take action, for the sake of our future generations, and this report makes us accountable for doing so.

JAMIE OLIVER CHEF AND CAMPAIGNER

I recently experienced my sister having her first child, who is now over a year old, and she breastfed her exclusively … and I see the beautiful effects that breast milk has on her.… It strengthens the immune system and helps develop the brain, and, as the new *Global Nutrition Report* shows, it helps babies throughout their lives in lots of different ways. Breastfeeding is awesome. It's cool and it's natural.

KATY PERRY UNICEF GOODWILL AMBASSADOR AND GLOBAL POP SUPERSTAR

I am heartened that the *Global Nutrition Report 2015* identifies the strong links between climate change and nutrition security. Enormous efforts are underway around the world to end malnutrition, and it is clear that gains are happening but are hard won. In 2015, improving nutrition will be recognized as a cornerstone of sustainable development in the post-2015 development agenda—but we must realize that without action on climate change it will not be possible to achieve universal nutrition. Across the world, changing climate patterns are undermining people's access to nutritious food. This is felt most acutely by those communities with the least capacity to adapt—communities that are also the least responsible for climate change. This is an injustice. In 2015 our governments have a unique opportunity to set the world on a path for a safe and prosperous future, and I hope their work will be informed by the contents of this report. We have a moral obligation to take comprehensive action to end malnutrition and to stabilize the climate.

MARY ROBINSON PRESIDENT, MARY ROBINSON FOUNDATION – CLIMATE JUSTICE

Climate change and nutrition are natural partners in the quest for sustainable development. Seasonality already has large impacts on nutrition, and these are likely to get more unpredictable and severe as our climate changes, and so nutrition policymakers need their work to become more climate resilient. Extreme weather events will become increasingly intense and destroy lives and livelihoods and the ability to produce or acquire food. For climate policymakers, the drive for improved nutrition is also a huge opportunity to strengthen both production and consumption mitigation opportunities. Low-carbon agricultural practices, such as enhancing soil carbon and systems of root intensification, can be climate resilient, lower emitting, more productive, and nutrition safe. Healthier choices, such as a focus on vegetables, tend on average to have a smaller greenhouse-gas footprint. The *Global Nutrition Report* provides valuable insights into how these issues overlap and intertwine. It makes recommendations for how these two areas of activity and associated communities can come together to work for these common goals and how to measure and track their efforts to do so.

NICHOLAS STERN CHAIR, CENTRE FOR CLIMATE CHANGE ECONOMICS AND POLICY

The need for a global initiative to combat and alleviate malnutrition is gaining global recognition. Good nutrition contributes to the enhanced physical and mental health of present and future citizens, enhances individuals' productivity, and provides the basis for the economic sustainability of a nation. A meaningful impact on improving levels of nutrition can only be achieved through meaningful collaboration between governments and a wide range of stakeholders. This collaboration needs to be executed in a holistic manner consisting of the delivery of nutritious foods, basic health access, safe drinking water, and hygiene and sanitation. This report on combating malnutrition is a much-needed endeavor to create awareness and to define a time-bound roadmap to meet said objectives. As conscientious citizens, we must accept that combating malnutrition will not just happen on its own. It needs sustained commitment and leadership from government agencies working with a wide range of stakeholders including those from the private sector. We need to take action now. We owe this to our future generations.

RATAN N. TATA CHAIRMAN, TATA TRUSTS

Between a new development financing agenda in Addis Ababa, Sustainable Development Goals in New York, and a universal, legally binding climate agreement at COP21 in Paris, the year 2015 is set to be a pivotal year. Poverty alleviation, energy access, water security, human rights, nutrition, and climate: issues that for too long had been treated separately are finally understood as part of a common challenge—that of equitable access to sustainable development. The climate talks have so far been impervious to nutrition concerns, but this could change soon, as more and more actors push for a mention of "food security" in the Paris agreement. The *Global Nutrition Report* provides robust evidence on the need to start connecting the dots between nutrition and climate, and many inspiring proposals on how to do it. It is required reading for anyone refusing to make a false choice between adequate nutrition and a stable climate.

LAURENCE TUBIANA SPECIAL REPRESENTATIVE OF THE FRENCH MINISTER OF FOREIGN AFFAIRS TO THE CONFERENCE OF PARTIES (COP21)

In our common mission to achieve a world free from hunger, we have worked for too long on the basis of a partial picture. Reflecting the multiple dimensions of hunger, food insecurity can no longer be measured by looking at calorie intake only. Rather, it must encompass the composition of diets, including micronutrients; how we produce, prepare, and eat our food; and whether our body is able to make the best use of it. Nutrition is a complex, multifaceted issue, and CFS, the most inclusive international and intergovernmental UN platform on food security and nutrition policy issues, recognizes it needs to do more to address the nutrition part of its core mandate. The 2015 *Global Nutrition Report* will be an important resource that can support CFS as it determines what concrete contributions it can make to commitments made at the Second International Conference on Nutrition. CFS is committed to joining forces to support governments' and multiple stakeholders' efforts to help all people worldwide to realize their full physical and intellectual potential, to strive for improved livelihoods, and to support their countries' growth.

GERDA VERBURG CHAIR, COMMITTEE ON WORLD FOOD SECURITY (CFS)

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A PEER-REVIEWED PUBLICATION

This report was produced by an Independent Expert Group (IEG) empowered by the Global Nutrition Report Stakeholder Group. The writing was a collective effort by the IEG members, supplemented by additional analysts and writers. They are all listed here:

Lawrence Haddad (cochair), International Food Policy Research Institute, Washington, DC; **Corinna Hawkes** (cochair), independent, UK; **Emorn Udomkesmalee** (cochair), Mahidol University, Bangkok, Thailand; **Endang Achadi**, University of Indonesia, Jakarta; **Arti Ahuja**, Women and Child Development, Odisha, India; **Mohamed Ag Bendech**, Food and Agriculture Organization of the United Nations, Rome; **Komal Bhatia**, Institute of Development Studies, Brighton, UK; **Zulfiqar Bhutta**, Centre for Global Child Health, Toronto, and the Centre of Excellence in Women and Child Health, Aga Khan University, Karachi, Pakistan; **Monika Blossner**, World Health Organization, Geneva; **Elaine Borghi**, World Health Organization, Geneva; **Kamilla Eriksen**, MRC Human Nutrition Research, Cambridge, UK; **Jessica Fanzo**, Johns Hopkins University, Baltimore; **Patrizia Fracassi**, Scaling Up Nutrition Secretariat, Geneva; **Laurence M. Grummer-Strawn**, World Health Organization, Geneva; **Elizabeth Kimani**, African Population and Health Research Centre, Nairobi, Kenya; **Julia Krasevec**, UNICEF, New York, NY; **Natasha Ledlie**, International Food Policy Research Institute, Washington, DC; **Yves Martin-Prével**, Institut de recherche pour le développement, Marseille, France; **Purnima Menon**, International Food Policy Research Institute, New Delhi; **Eunice Nago Koukoubou**, University of Abomey-Calavi, Benin; **Holly Newby**, UNICEF, New York, NY; **Rachel Nugent**, University of Washington, Disease Control Priorities Network, Seattle, USA; **Stineke Oenema**, Interchurch organization for development cooperation (ICCO) Alliance, Utrecht, Netherlands; **Leonor Pacheco Santos**, University of Brasilia, Brazil; **Judith Randel**, Development Initiatives, Bristol, UK; **Jennifer Requejo**, Partnership for Maternal, Newborn & Child Health, World Health Organization, Geneva; **Tara Shyam**, Institute of Development Studies, Brighton, UK; **Boyd Swinburn**, University of Auckland, New Zealand.

We acknowledge the contributions from IEG member **Rafael Flores-Ayala,** Centers for Disease Control and Prevention, Atlanta.

Lead authors for specific chapters and sections are as follows: *Chapter 3:* **Jessica Fanzo**, Johns Hopkins University, Baltimore, and **Meghan Arakelian**, Columbia University, New York, NY. *Chapter 6:* **Madeleine Thomson**, International Research Institute for Climate and Society, Earth Institute at Columbia University, New York, NY, with support from **Jessica Fanzo**, Johns Hopkins University, Baltimore, and **Tara Garnett**, Food Climate Research Institute, London, UK. *Chapter 7:* **Rachel Nugent**, **Carol Levin**, and **Daniel Grafton**, University of Washington, Disease Control Priorities Network, Seattle, USA; **Jessica Fanzo**, Johns Hopkins University, Baltimore; **Roseline Remans**, Columbia University, New York, NY; and **C. Leigh Anderson**, University of Washington, Seattle. The following people also contributed to specific portions of chapters: *Chapter 5: "Innovative Financing: Sources and Leveraging":* **Robert Hecht** and **Mary D'Alimonte**, Results for Development, Washington, DC, and **Meera Shekar**, World Bank, Washington, DC. *Chapter 5: "New Cost Estimates for Scaling Up Nutrition Actions":* **Meera Shekar**, **Julia Dayton Eberwein,** and **Jakub Kakietek**, World Bank, Washington, DC. *Chapter 5: "Performance Incentives: Can They Work for Nutrition?":* **Jay Goulden**, independent, Lewes, UK. *Chapter 5: "Leadership" and Chapter 9: "Assessing Whether the Commitment Has Been Met":* **Nicholas Nisbett**, Institute of Development Studies, Brighton, UK.

Authors of the panels in this report are as follows: **Inka Barnett**, Institute of Development Studies, Brighton, UK; **Emily Bielecki**, Cornell University, Ithaca, USA; **Jessica Blankenship**, independent consultant, Nairobi, Kenya; **Maurice A. Bloem**, Church World Service, New York, NY; **Shelley Bowen**, ICF International, Atlanta, USA; **Dayna Brown**, Emergency Nutrition Network, Oxford, UK; **Olivier De Schutter**, International Panel of Experts on Sustainable Food Systems (IPES-Food), Brussels; **Damiano de Felice**, Access to Medicine Foundation, Amsterdam, Netherlands; **Carmel Dolan**, Emergency Nutrition Network, Oxford, UK; **Patrick Eozénou**, World Bank, Washington, DC; **Stuart Gillespie**, International Food Policy Research Institute, Washington, DC; **Lola Gostelow**, Emergency Nutrition Network, Oxford, UK; **Daniel Grafton**, University of Washington, Disease Control Priorities Network, Seattle, USA; **Jere Haas**, Cornell University, Ithaca, USA; **Lawrence Haddad**, International Food Policy Research Institute, Washington, DC; **John Hoddinott**, Cornell University, Ithaca, USA; **Johann Jerling**, Centre of Excellence for Nutrition, Vanderbijlpark, South Africa; **Aparna John**, Institute of Development Studies, Brighton, UK; **Andrew Kennedy**, International Food Policy Research Institute, Washington, DC; **Tanya Khara**, Nutrition Works, Oxford, UK; **Jef L. Leroy**, International Food Policy Research Institute, Washington, DC; **Carol Levin**, University of Washington, Disease Control Priorities Network, Seattle, USA; **Yves Martin-Prével**, Institut de recherche pour le développement, Marseille, France; **Purnima Menon**, International Food Policy Research Institute, Washington, DC; **Martha Mwangome**, KEMRI Wellcome Trust, Nairobi, Kenya; **Rachel Nugent**, University of Washington, Disease Control Priorities Network, Seattle, USA; **Hee Young Paik**, Seoul National University, Seoul, Korea; **Diana Parra**, Washington University, St. Louis, USA; **Joy Phumaphi**, African Leaders Malaria Alliance, New York, NY; **Ellen Piwoz**, Bill & Melinda Gates Foundation, Seattle, USA; **Kathleen M. Rasmussen**, Cornell University, Ithaca, USA; **Melanie Renshaw**, African Leaders Malaria Alliance, New York, NY; **Francis Roberts**, Save the Children, London, UK; **Marie Rumsby**, Save the Children, London, UK; **Jeremy Shoham**, Emergency Nutrition Network, Oxford, UK; **Madeleine Thomson**, International Research Institute for Climate and Society, Earth Institute at Columbia University, New York, NY; **Andrea Warren**, International Food Policy Research Institute, Washington, DC; **Sivan Yosef**, International Food Policy Research Institute, Washington, DC.

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International Food Policy Research Institute
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SUPPLEMENTARY ONLINE MATERIALS

The following supporting materials are available at www.globalnutritionreport.org:

NUTRITION PROFILES

Global nutrition profile (data available for 84 indicators on a global scale)

Regional and subregional nutrition profiles (data available for 84 indicators for 6 United Nations regions and 22 subregions)

Nutrition country profiles (data available for 84 indicators for each of the 193 United Nations member states)

NUTRITION FOR GROWTH TRACKING TABLES

Country Progress: Nutrition for Growth Tracking Table

Business Progress: Nutrition for Growth Tracking Table

Civil Society Organization Progress: Nutrition for Growth Tracking Table

Donor Nonfinancial Progress: Nutrition for Growth Tracking Table

Other Organizations Progress: Nutrition for Growth Tracking Table

UN Progress: Nutrition for Growth Tracking Table

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Appendix 5 Additional Assessments of Country Progress toward Global Nutrition Targets

Appendix 6 Characteristics of Three Major Nutrition Leadership Development Programs

Appendix 7 Classifying Food Systems and Diets

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ABBREVIATIONS

AAPPI	average annual percentage point increase
AARI	average annual rate of increase
AARR	average annual rate of reduction
BMI	body mass index
CAADP	Comprehensive Africa Agriculture Development Programme
CSO	civil society organization
DAC	Development Assistance Committee of the OECD
DHS	Demographic and Health Survey
FAO	Food and Agriculture Organization of the United Nations
GNR	*Global Nutrition Report*
HANCI	Hunger and Nutrition Commitment Index
ICN2	Second International Conference on Nutrition
IDS	Institute of Development Studies
MAD	minimum acceptable diet
MAM	moderate acute malnutrition
MDAS	ministries, departments, and agencies
MDD	minimum dietary diversity
MICS	Multiple Indicator Cluster Survey
NCD	noncommunicable disease
NEPAD	New Partnership for Africa's Development
NGO	nongovernmental organization
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
PPP	purchasing power parity
R4D	Results for Development Institute
SAM	severe acute malnutrition
SDG	Sustainable Development Goal
SMART	specific, measurable, assignable, realistic, and time bound
SUN	Scaling Up Nutrition
UNICEF	United Nations Children's Fund
WHA	World Health Assembly
WHO	World Health Organization
WRA	women of reproductive age

EXECUTIVE SUMMARY

AS WE MOVE INTO THE POST-2015 ERA OF THE SUSTAINABLE DEVELOPMENT GOALS (SDGS), THE WORLD FACES MANY SEEMINGLY INTRACTABLE PROBLEMS. Malnutrition should not be one of them. Countries that are determined to make rapid advances in malnutrition reduction can do so. If governments want to achieve the SDG target of ending all forms of malnutrition by 2030, they have clear pathways to follow. There are many levers to pull, and this report provides many examples of countries that have done so.

Tackling malnutrition effectively is also key to meeting many other SDG targets. Good nutrition signals the realization of people's rights to food and health. It reflects a narrowing of the inequalities in our world. Without good nutrition, human beings cannot achieve their full potential. When people's nutrition status improves, it helps break the intergenerational cycle of poverty, generates broad-based economic growth, and leads to a host of benefits for individuals, families, communities, and countries. Good nutrition provides both a foundation for human development and the scaffolding needed to ensure it reaches its full potential. Good nutrition, in short, is an essential driver of sustainable development.

Malnutrition, though, is a problem of staggering size—large enough to threaten the world's sustainable development ambitions. Malnutrition takes many forms: children and adults who are skin and bone, children who do not grow properly, people who suffer because their diets are imbalanced, and people who are obese or suffer from nutrition-related noncommunicable diseases. Malnutrition affects all countries and one in three people on the planet. Nearly half of all countries face multiple serious burdens of malnutrition such as poor child growth, micronutrient deficiency, and adult overweight.

KEY MESSAGES

1. Ending malnutrition in all its forms will drive sustainable development forward. This point needs to be emphasized more strongly in efforts to achieve and monitor the Sustainable Development Goals.
2. Although a great deal of progress is being made in reducing malnutrition, it is still too slow and too uneven, while some forms of malnutrition, namely adult overweight and obesity, are actually increasing.
3. Concrete action to address malnutrition, backed by financing, is being scaled up—but not nearly enough to meet the 2025 World Health Assembly (WHA) targets or the SDG target of ending malnutrition in all its forms by 2030. Commitment to and financing for nutrition will need to be ramped up significantly if we are to meet these eminently reachable global targets.
4. A virtuous circle of improved nutrition and sustainable development can be unleashed if action to address malnutrition in all its forms can be embedded within key development sectors.
5. The accountability of all nutrition stakeholders needs to improve if this virtuous circle between sustainable development and nutrition is to be fully realized.
6. Significant reductions in malnutrition—in all its forms—are possible by 2030.

And the threat is growing. Some forms of malnutrition—such as stunted growth among children under age 5—are showing declines, although these are still too slow and uneven. Some forms, such as anemia in women of reproductive age, are stagnant. Still other types, such as adult overweight and obesity, are increasing.

Make no mistake, however: some countries have made tremendous gains in addressing malnutrition. The *Global Nutrition Report 2014* reported on the dazzling advances made by Bangladesh, Brazil, Colombia, Peru, Viet Nam, and the Indian state of Maharashtra. In the *Global Nutrition Report 2015* we report on new and significant progress in reducing malnutrition from Egypt, Ethiopia, Kenya, Nepal, Rwanda, Tanzania, and nearly all of the Indian states.

How did these countries and states do it? Analysis suggests that they brought multiple factors to bear on the challenge of malnutrition. The details differ from country to country, but their successes follow a common pattern. Each of them created a political environment conducive to nutrition-improving actions, made committed investments in high-impact, cost-effective nutrition interventions, and adopted policies in a wide range of economic and social sectors expected to contribute to nutrition advancement.

There is, then, a virtuous circle of escalating performance between improved nutrition status and sustainable development. On the one hand, individuals free of malnutrition can better realize their potential and that of their families, communities, and countries. They will be the drivers of sustainable development. On the other hand, sustainable development policy that is mindful of the need to improve nutrition will, in turn, drive more rapid improvements in nutrition. That virtuous circle has not yet been fully sprung. This report makes recommendations aimed at doing just that.

To contribute toward meeting this challenge, the *Global Nutrition Report* seeks to monitor progress, accelerate nutrition action, and enhance accountability. Specifically, the report shows that if we are to build on existing successes, several steps need to happen:

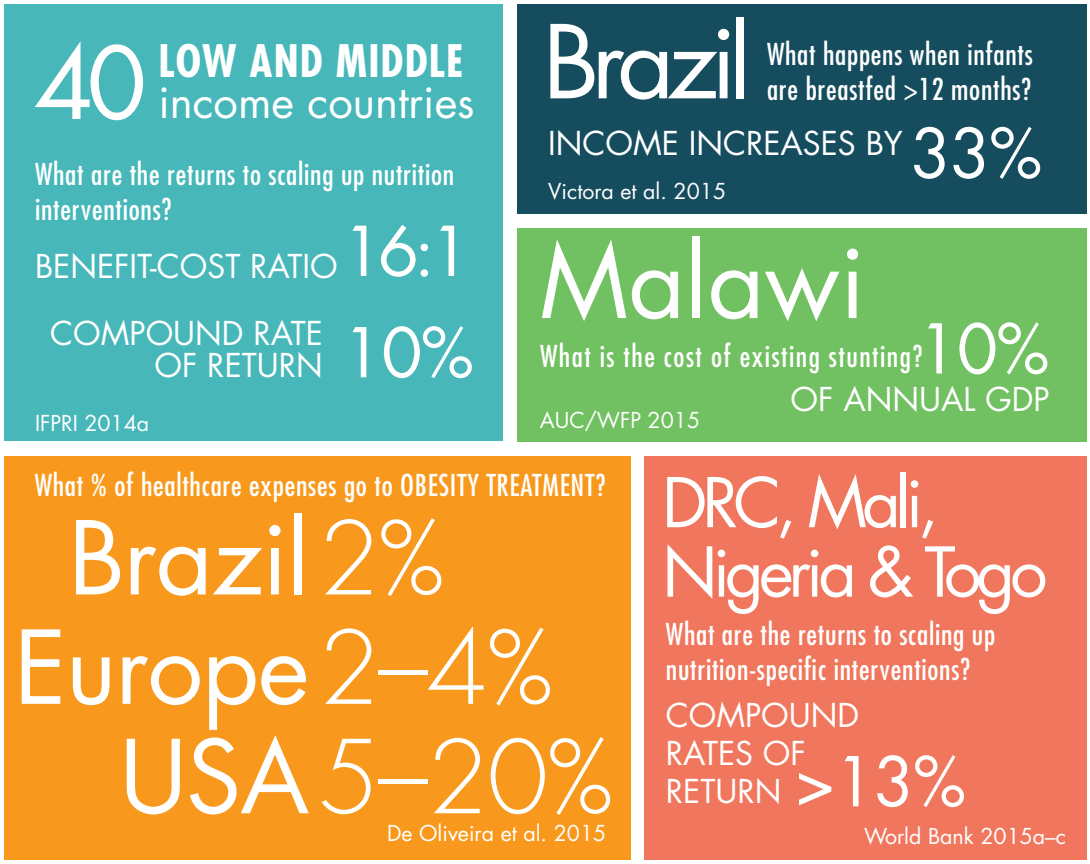
1. **MEET TARGETS ON NUTRITION OUTCOMES AND PRACTICES, AND DELIVER ON COMMITMENTS TO TAKE ACTION.** Countries, aid donors, development agencies, companies, and many others have made public commitments to combat malnutrition in recent years. It is time to make good on these commitments. The *Global Nutrition Report 2015* assesses progress in four domains: (1) How well are countries meeting the WHA global nutrition targets related to stunting, wasting, and overweight among children under 5, exclusive breastfeeding of infants, and adult obesity? (2) Are the 90 signatories to the Nutrition for Growth Compact following through on their pledges? (3) To what extent are actions—interventions, programs, and policies—being taken to address malnutrition in all its forms? (4) And how much is being done to scale up nutrition financing and capacity to meet nutrition needs?
2. **UNLEASH THE VIRTUOUS CIRCLE OF IMPROVED NUTRITION AND SUSTAINABLE DEVELOPMENT.** The forces that prevent good nutrition status are powerful and multisectoral, and they need to be counteracted by forces that are equally powerful and multisectoral. This report identifies important opportunities, actions, and metrics to accelerate nutrition within climate change policy, food systems, and business platforms. Improved nutrition status will, in turn, drive further sustainable development.
3. **STRENGTHEN ACCOUNTABILITY IN NUTRITION.** Our ability to hold duty bearers accountable for their commitments needs to be strong. Strong accountability will give all stakeholders—existing and new—more confidence that their actions will have an impact, that bottlenecks to progress will be identified and overcome, and that their successes will inspire others. The report highlights gaps in accountability and data and provides examples of how they can be filled.

Momentum for nutrition improvement is growing stronger at global and national levels. This commitment must be locked in for the future, multiplied exponentially, and converted into accelerated declines. The *Global Nutrition Report 2015* is driven by this imperative. The data and analysis in the report lead to six key messages and ten calls to action.

MESSAGE 1 Ending malnutrition in all its forms will drive sustainable development forward. This point needs to be emphasized in efforts to achieve and monitor the Sustainable Development Goals.

- Improving people's nutritional status will make a strong contribution to achieving the Sustainable Development Goals (SDGs) in the areas of poverty, hunger and nutrition, health, education, gender, work, growth, inequality, and climate change.
- New evidence of the economic returns to investing in improved nutrition confirms that the returns to investing in nutrition remain high (Figure ES.1). The returns comfortably outperform returns generated by the US stock market over the past 70 years.
- Despite this evidence, nutrition remains underrepre-

FIGURE ES.1 The economic benefits of improved nutrition: New estimates



sented in the SDGs. In 2014 we reported that out of the proposed 169 SDG targets, nutrition is mentioned in only one; this situation has not changed. New SDG documentation also shows that overweight and obesity are not mentioned once in the entire document, and none of the three implementation targets to achieve SDG 2 ("End hunger, achieve food security and improved nutrition, and promote sustainable agriculture") mentions nutrition actions.

MESSAGE 2 Although a great deal of progress is being made in reducing malnutrition, it is still too slow and too uneven, while some forms of malnutrition, namely adult overweight and obesity, are actually increasing.

- Seventy out of 74 countries are on course to meet at least one of five nutrition WHA targets. Thirty-nine of 114 countries are on course to meet the WHA stunting target compared with the corresponding number of 23 in 2014. Only 32 of 78 countries are on course for the exclusive breastfeeding target, while 6 countries show large reversals in rates. Progress on meeting the under-5 overweight target has improved modestly.
- New government data show that nearly all Indian states posted significant declines in stunting rates from 2006 to 2014, and all showed strong increases in exclusive breastfeeding rates over the same period.
- New analysis shows that in Bangladesh, Democratic Republic of the Congo, Ethiopia, Nigeria, and Pakistan, the percentage of children under age 5 who are not stunted or wasted ranges between 43 and 48 percent. Children growing up healthy are in a minority.
- In all but one country for which World Health Organization (WHO) data are available, the prevalence of adult overweight and obesity are increasing.

MESSAGE 3 Concrete action to address malnutrition, backed by financing, is being scaled up—but not nearly enough to meet the 2025 WHA targets or the SDG target of ending malnutrition in all its forms by 2030.

Commitment and financing to nutrition will need to be ramped up significantly if we are to meet these eminently reachable global targets.

- The Second International Conference on Nutrition (ICN2), held in Rome in November 2014, and its Framework for Action affirmed and stimulated governments' commitment to ending hunger and malnutrition in all its forms.
- 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.
- Forty-four percent of the commitments made by more than 100 countries and organizations at the 2013 N4G Summit are assessed as "on course" in 2015, whereas 10 percent are "off course." These shares are similar to those for 2014, when they were 42 percent and 9 percent, respectively.
- Preliminary estimates of national budget allocations to nutrition are newly available from 30 countries. For the 14 countries that have completed the weighting process, estimates of allocations to nutrition range from 0.06 percent of the total government budget to 2.90 percent. The median is 1.31 percent.
- Donors' disbursements to nutrition-specific interventions nearly doubled between 2012 and 2013—from US$0.56 billion to US$0.94 billion.
- New financing mechanisms for nutrition are emerging: the Global Financing Facility in Support of Every Woman Every Child (GFF), the Power of Nutrition, and UNITLIFE. The Rio 2016 N4G Summit is a key opportunity for governments and their partners to use these mechanisms to direct more financial resources to malnutrition-reducing actions.
- Results for Development (R4D) and the World Bank estimated the size of the investments in proven stunting interventions that would be required to achieve the WHA stunting target in 37 high-burden countries. Their analysis suggests that government domestic spending would have to more than double until 2025, and official development assistance (ODA) would have to more than quadruple over the same period.
- More governments at all income levels need to make their nutrition budget allocations more transparent. One example of how to do so is provided by the 30 Scaling Up Nutrition (SUN) member countries that have been working to identify and quantify nutrition allocations in their overall budgets.
- Of the seven donors that reported nutrition-sensitive disbursements in 2012 and 2013, five reported increases between the two years, but more than 90 percent of the total increase came from the United Kingdom. Information on which sectors received nutrition-sensitive disbursements is not available and, if known, would help guide countries' and donors' actions.
- In 2013, of the 29 OECD donors, only 16 reported nutrition-specific spending greater than US$1 million. Seven of these donors reported zero spending on nutrition.
- More countries are implementing population-wide policies to change food environments, which are an underlying determinant of unhealthy diets, obesity, and nutrition-related noncommunicable diseases. Yet progress is patchy and dominated by a handful of policies in high-income countries.
- Despite decades of discussion and the fact that many countries face both burdens, there is no agreed-upon set of actions for addressing both undernutrition and obesity/nutrition-related noncommunicable diseases. Steps to create more enabling political environments, healthier food environments, and nutrition-friendly food systems, as well as to promote nutrition in children's first 1,000 days, all offer opportunities for addressing both kinds of malnutrition synergistically.

MESSAGE 4 A virtuous circle of improved nutrition and sustainable development can be unleashed if commitment and action to improve nutrition in all its forms can be embedded within key development sectors.

- Many sectors—agriculture, education, health, social protection, water, sanitation, and hygiene, for example—can have an impact on people's nutrition. In doing so they also further their own sectoral goals of reducing poverty and improving health and education outcomes. But while the impact of these sectors on nutrition outcomes is increasingly understood, the impact of improved nutrition on education and poverty is less widely recognized. To speed up improvements in nutrition, we need to widen the number of sectors that recognize their stake in reducing malnutrition and then act on it. This report's analyses of nutrition advances in Colombia, Nepal, and Tanzania support this view, reinforcing the conclusions from the Brazil and Maharashtra case studies presented in the *Global Nutrition Report 2014*.
- A virtuous circle of improvements in nutrition status and advances in sustainable development needs to be unleashed. The report examines opportunities for em-

bedding nutrition interventions within social protection, climate policy, food systems, and the business sector.

SOCIAL PROTECTION

- As the *Global Nutrition Report 2014* pointed out, governments worldwide are spending more on social protection programs for their citizens, and much can be done to make these programs more effective at improving nutrition. This report highlights the example of Ethiopia's Productive Safety Net Programme, which has been redesigned to, among other things, have a much larger impact on nutrition.

CLIMATE CHANGE

It is hoped that a new international climate change agreement, covering all countries, will be announced at the United Nations Conference on Climate Change (COP21) in Paris in late 2015. Given that disease, food, and climate are intimately linked, this agreement could present opportunities for those in nutrition and climate to work together to advance their overlapping agendas.

- The evidence suggests multiple pathways through which climate change influences nutrition. These pathways—physical, biological, social, and economic—are outlined in the report.
- For the poorest groups in society, seasonal fluctuations in food access and drivers of infectious disease remain a reality. These cycles have a profound effect on nutrition status, season by season. This vulnerability of nutrition to regular weather cycles provides a stark indicator of the vulnerability of certain populations to the weather extremes that climate change could unleash.
- Different diets drive different production systems and have different emission and resource footprints. On average, meat-rich diets tend to have larger footprints. Dietary choices that are good for health can also be good for the planet.
- More could be done to create a win-win situation that both improves human nutrition and reduces greenhouse gas emissions. Countries are beginning to incorporate climate change considerations into national nutrition plans. But there are major gaps in data, knowledge, policy, and practice that need to be rapidly filled if win-win opportunities for improving nutrition while mitigating and adapting to climate change are to be realized.

FOOD SYSTEMS

The ICN2 in November 2014 gave prominence to the issue of food systems and their salience for malnutrition in all its forms. Growing evidence on the rise of obesity and nutrition-related noncommunicable disease in the context of undernutrition makes it increasingly clear that food systems are drivers of nutrition outcomes.

- Food system indicators can be used to categorize country food systems into different types.
- Developing outcome indicators for food systems can help guide policymakers toward better decisions for nutrition-friendly and sustainable food systems while also helping citizens hold their governments accountable for their policy choices; here we propose a dashboard of 10 indicators as an example.
- Missing and poor data present a significant challenge to accountability of food systems for nutrition and sustainability.
- Decisions about improving food systems depend not only on technical considerations, but also on the political economy of food systems.

BUSINESS

Businesses profoundly affect nutrition in many ways: They make available a wide range of foods and nonfoods that are important for good nutrition status. They shape the environment within which people make decisions about which goods to buy. They affect the services people receive, the workplace conditions they experience, and the environmental impacts they face. And they generate tax revenues needed for public service delivery. Like other actors, businesses make choices that may lead to both positive and negative outcomes for nutrition. Greater accountability should help increase the former and minimize the latter.

- There are many opportunities for businesses to promote better nutrition outside the usual sectors. For example, mobile phone networks could be used to deliver free government-validated nutrition messages.
- Areas of weak accountability can be identified. For example, the 2013 Access to Nutrition Index shows that major food and beverage companies are not adequately disclosing information on their use of health and nutrition claims and on their lobbying positions and activities.
- Many mechanisms exist for making businesses more accountable. These range from legislative (such as full implementation of the International Code of Marketing of Breast-Milk Substitutes) to voluntary (such as "traffic-light" food labeling) to informal (such as the global monitoring network INFORMAS). However, given the relative capacities of some governments and large corporations, implementation and enforcement of these mechanisms are likely to be weak.

- Moving business activity toward more positive nutritional outcomes will require a number of elements: (1) leadership to bring all parties to the table to generate a shared understanding of opportunities, roles, and responsibilities, (2) greater transparency of actions by businesses and those working with them, (3) a more robust evidence base about the influence of different types of businesses on nutrition outcomes, (4) metrics and criteria to guide decisions about appropriate engagement of governments and international agencies with businesses, (5) stronger government frameworks for regulating businesses, and (6) stronger accountability and enforcement mechanisms.

MESSAGE 5 The accountability of all nutrition stakeholders needs to improve if the virtuous circle between sustainable development and nutrition is to be unleashed.

Stronger mechanisms are needed to ensure that commitments result in action and give potential new champions and investors the confidence to work more strongly on nutrition. The report has detailed the need for commitments that are specific, measurable, assignable, realistic, and time bound (SMART). Too few nutrition commitments are of this type. Tracking of commitments needs to be stronger. For example, databases for tracking enabling environments are fragmented and out of date. Databases for assessing the nutrition sensitivity of different sectors are nonexistent. Databases for tracking nutrition-specific intervention coverage lack data. Enforcement mechanisms for those who fail to meet commitments are weak.

- In response to requests for updates on their progress on meeting N4G commitments, only 82 percent of signatories responded in 2015, compared with 92 percent in 2014. Only 30 percent of all 2013 N4G commitments are SMART.
- Data to track coverage are limited for 12 undernutrition-specific interventions that have been proven effective: folic acid supplementation or fortification, universal salt iodization, balanced energy-protein supplementation, calcium supplementation, multiple micronutrient supplementation, promotion of breastfeeding, promotion of complementary feeding, feeding for children with moderate acute malnutrition, therapeutic feeding for severely wasted children, vitamin A supplementation, preventative zinc supplementation, and zinc treatment for diarrhea. Of these 12, only 4 have internationally comparable coverage data, 2 have data collected on proxy indicators, and 6 have no internationally comparable data collected on them. Of the 6 interventions that do have some form of coverage data, only 13 countries collect them all.
- Financial reporting from donors to the *Global Nutrition Report* is patchy. Only 8 of 13 donors provided all of the data requested on official development assistance. Three major donors do not present disbursement data. Only 8 donors provide any data showing breakdowns between nutrition-specific and nutrition-sensitive activities, and 2 major donors provide no data on such breakdowns.
- Missing and poor data present a significant challenge to the accountability of food systems for nutrition, health, and sustainability. Few surveys collect data in all three of these domains: food consumption, agricultural production, and nutrition behaviors and status.
- More attention needs to be paid to the seasonality of data collection if the nutrition effects of a changing climate are to be anticipated and adapted to.
- On the frequency of data gaps in the nutrition country profiles, Africa and Asia are similar in the share of indicators available (75 percent). A particular priority is the need to collect more data on the diets of 6- to 23-month-olds given the severe and lifelong consequences of poor diets during this stage in the life cycle on mortality, morbidity, and development.

MESSAGE 6 Significant reductions in malnutrition — in all its forms — are possible by 2030.

Countries that are determined to make rapid advances in malnutrition reduction can do so. This report provides signposts to the many policy, program, and investment opportunities available to make these rapid advances, as well as numerous examples of countries that have surprised the world with the progress they have made.

- While existing funding needs to be used more effectively to reduce malnutrition, there is no escaping the fact that more funding for nutrition is also needed. With realistic amounts of additional resources, the 2025 WHA targets can be met.
- In June 2015 the Group of Seven committed to "aim to lift 500 million people in developing countries out of hunger and malnutrition by 2030" and to "improve the data input for monitoring our goal regarding food security and in particular nutrition by working closely with the UN bodies, the Global Nutrition Report and the SUN Movement" (White House 2015). It is vital that all nutrition stakeholders work together to hold the G7 countries accountable for these commitments.

- In 2016, three years after the groundbreaking London N4G Summit, Brazil will host the Rio N4G Summit. An enormous amount has been accomplished since 2013, and we should be proud of these accomplishments. But they are not enough. During the lead-up to the 2016 summit, governments, businesses, civil society groups, foundations, multilateral agencies, and concerned citizens need to make new commitments that can be announced in Rio de Janeiro. These commitments must be SMART and breathtakingly ambitious; those experiencing malnutrition do not need fuzzy or timid commitments. Almost one in three of us who share this planet today is experiencing malnutrition. The pledges should be for nothing less than to end malnutrition.

The *Global Nutrition Report* exists to monitor progress in accelerating nutrition improvement, identify new opportunities for action, and strengthen our accountability to act positively for nutrition. Accordingly, the 2016 *Global Nutrition Report* will assess the degree to which any pledges to be made at the Rio 2016 Summit are SMART and ambitious, and future reports will monitor the extent of their fulfillment.

TEN CALLS TO ACTION TO INCREASE ACCOUNTABILITY

Each of the chapters in this report makes recommendations for a series of SMART actions that aim to make those who must act to address malnutrition in all its forms more accountable for what they do and fail to do. These recommendations have been aggregated into 10 top-line calls to action as summarized here. The report argues that these calls are needed if, in 2030, we are to inhabit a world where our children have to look up the word "malnutrition" in their history books.

1. **ELEVATE THE ROLE OF NUTRITION ACROSS THE SUSTAINABLE DEVELOPMENT GOALS.** In recognition of the critical role of nutrition in achieving several of the Sustainable Development Goals, **leaders of the international financial institutions and the United Nations, other members of Scaling Up Nutrition Lead Group, and other national nutrition champions** should advocate strongly for the set of SDG Nutrition Indicators proposed by the UN Standing Committee on Nutrition, supported by a broad group of civil society organizations, to be included in the indicator set put forward to the UN Statistical Commission by the end of 2015.
2. **STRENGTHEN NATIONAL ACCOUNTABILITY ON NUTRITION TARGETS.** Presidential and prime ministerial offices of countries that are off course to meet the WHA global targets to improve maternal, infant, and young child nutrition should convene cross-government, cross-party, and multistakeholder consultations to discuss the challenges of meeting the global targets, what course corrections they can make, and what support they need. The findings should be reported at the 2016 N4G Summit hosted by the Government of Brazil in Rio de Janeiro and at any equivalent global or regional reporting opportunity. To improve accountability, **all countries** should establish national nutrition targets, based on the WHA global targets to improve maternal, infant, and young child nutrition and on the nutrition-related targets of WHO's global monitoring framework for noncommunicable diseases. Countries should follow up these target commitments with stronger monitoring.
3. **STRENGTHEN THE NUTRITION FOR GROWTH PROCESS.** Signatories of the Nutrition for Growth (N4G) Compact, adopted in 2013, should implement their commitments and fully report progress to the *Global Nutrition Report* team for publication in 2016. At the 2016 N4G Rio Summit, **more governments, international agencies, external funders, civil society organizations, and businesses** should make ambitious N4G commitments, which should be SMART. Commitments from existing and new signatories should have the aim of achieving the WHA global nutrition targets by 2025 and, in line with the SDGs, ending malnutrition by 2030.
4. **DELIVER BETTER NUTRITION OUTCOMES WITH EXISTING FUNDING.** To justify calls for more funding, **governments and donors** should continue to invest in ways of delivering better nutrition outcomes with existing funding. They should also demonstrate how they are seeking to improve the quality and effectiveness of current spending. **Governments** should continue to document their nutrition spending and engage with **researchers** to determine costs of nutrition strategies. **Donors** should report their disbursements, and **civil society organizations** should continue to call for transparent budgets. **Governments and donors** should increase their work with **researchers** to estimate budget allocations to obesity and nutrition-related noncommunicable diseases.
5. **INCREASE FUNDING FOR NUTRITION ACTION.** Governments and donors spend, on average, between 1 and 2 percent of their budgets on nutrition—far too little to meet global nutrition targets by 2025. Accordingly, governments should—at a minimum—double the share of their budgets allocated to improving nutrition. Donor spending on nutrition will also need to more than double.
6. **IMPLEMENT ACTIONS TO ADDRESS MALNUTRITION IN**

ALL ITS FORMS. Governments, international agencies, civil society organizations, and businesses should implement the ICN2 Framework for Action, which addresses malnutrition in all its forms. To encourage action, the **Food and Agriculture Organization of the United Nations (FAO) and WHO** should, by the end of 2016, develop objective and verifiable indicators for determining how well the Framework for Action is being implemented. The **Committee on Food Security** should identify opportunities for making nutrition actions across sectors more coherent. **Civil society** should raise awareness and mobilize support for implementing the framework and highlight areas where progress is lagging. To encourage a focus on malnutrition in all its forms, **researchers** should identify actions that address both undernutrition and obesity/nutrition-related noncommunicable diseases synergistically and clarify the factors that can create an enabling environment for improving nutrition.

7. **ACTIVELY BUILD ALLIANCES BETWEEN NUTRITION AND CLIMATE CHANGE COMMUNITIES AROUND COMMON GOALS.** By the time of COP21 in November 2016, **the climate change and nutrition communities** should form alliances to meet common goals. The **Intergovernmental Panel on Climate Change (IPCC)** should form a group comprising nutrition and climate-health experts to assess the climate-nutrition literature and define new research and policy agendas. **Governments** should build climate change explicitly into their national nutrition and health strategies. And **civil society** should use existing networks to build climate change–nutrition alliances to advocate for nutrition at the COP21 and other leading climate change events and processes.

8. **DEVELOP INDICATORS OF THE IMPACT OF FOOD SYSTEMS ON NUTRITION AND HEALTH OUTCOMES.** Building on the food systems focus of the ICN2 in 2014, **global food systems initiatives** should, by the end of 2016, propose indicators of the impact of food systems on nutrition and health outcomes.

9. **BUILD A GREATER SHARED UNDERSTANDING OF THE ROLES AND RESPONSIBILITIES OF BUSINESS IN NUTRITION.** Once the WHO Framework of Engagement with Non-State Actors is finalized, the **four large UN agencies most concerned with nutrition—FAO, UNICEF, World Food Programme (WFP), and WHO—together with other relevant international bodies**, should establish an inclusive, time-bound commission to clarify the roles and responsibilities of business in nutrition.

10. **IDENTIFY THE DATA GAPS THAT HINDER EFFECTIVE ACTION—AND FILL THEM. Countries, donors, and agencies** should work with the technical nutrition community to identify and prioritize the data gaps that are holding back action and then invest in the capacity to fill the gaps. **All countries, including high-income countries**, should reach out to UN agencies to facilitate the conversion of their own data into international databases convened by the UN agencies.

1 INTRODUCTION

GOOD NUTRITION SIGNALS THE REALIZATION OF PEOPLE'S RIGHTS TO FOOD AND HEALTH. IT REFLECTS A NARROWING OF THE INEQUALITIES IN OUR WORLD. Without good nutrition, human beings cannot achieve their full potential. When nutrition status improves, it helps break the intergenerational cycle of poverty, generates broad-based economic growth, and leads to a host of positive consequences for individuals, families, communities, and countries. Good nutrition provides both a foundation for human development and the scaffolding needed to ensure it reaches its full potential. Good nutrition, in short, is an essential driver of sustainable development.

The opposite of good nutrition—"bad" nutrition—takes many forms: children and adults who are skin and bone, children who do not grow properly, people who suffer because their diets lack nutrients or are unhealthy, people who are obese or suffer from diet-related noncommunicable disease such as diabetes, heart disease, and some cancers. These multiple forms of malnutrition have common causes: poor-quality diets, weak care of mother and child, insufficient access to health services, and unsanitary, unhealthy environments.

PANEL 1.1 THE SCALE OF MALNUTRITION

LAWRENCE HADDAD

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

- 2 billion people experience micronutrient malnutrition (WHO 2015m);
- 1.9 billion adults are overweight or obese (WHO 2015n);
- 161 million children under age 5 are too short for their age (stunted), 51 million don't weigh enough for their height (wasted), and 42 million are overweight; none of these children are growing healthily (UNICEF/WHO/World Bank 2015);
- 794 million people are estimated to be calorie deficient (FAO 2015f); and
- 1 in 12 adults worldwide have Type 2 diabetes (WHO 2015c).

In many countries, only a minority of children are growing healthily. In Bangladesh, Democratic Republic of the Congo, Ethiopia, Nigeria, and Pakistan, for example, the percentage of children under 5 who are not stunted or wasted ranges between 43 and 48 percent (see Panel 2.1 of this report).

Malnutrition is a problem of staggering size worldwide—large enough to threaten the world's sustainable development ambitions for the post-2015 period. Malnutrition affects all countries and almost one in three people on the planet (see Panel 1.1). Nearly half of all countries are dealing with more than one type of malnutrition at the same time (IFPRI 2014a). And the threat is growing. Although some forms of malnutrition, such as stunting, are showing slow and uneven declines, other forms, such as anemia in women of reproductive age, are stagnant. And still others, such as overweight and obesity, are increasing.

The resolve to act to reduce malnutrition is high. The causes of malnutrition have never been clearer. Our understanding of how to lower the number of malnourished people—albeit not perfect—has never been greater. We know that combating malnutrition in all of its complexity will require a combination of actions designed to (1) strengthen the political environment in ways that enable malnutrition reduction, (2) ensure that all sectors that affect nutrition contribute as much as they can to improving people's nutrition status, and (3) expand targeted nutrition interventions to cover all the people who need them. These actions, of course, will take different forms in different countries.

Momentum for improving nutrition is growing stronger, both globally and in individual countries (see Panel 1.2 for developments in the past year). The challenge now is not only to lock in existing commitments to reducing malnutrition in all its forms, but also to multiply them exponentially and convert them into faster progress. The time is right to rise to this challenge.

NUTRITION IS A POWERFUL DRIVER OF SUSTAINABLE DEVELOPMENT

This report is being issued just as the member states of the United Nations are deciding on a set of Sustainable Development Goals (SDGs) that will shape development priorities and spending for the next 15 years. At the time of writing, the proposed SDGs, likely to be adopted in September 2015, consist of 17 goals and 169 targets (126 outcome targets and 43 implementation targets) (Open Working Group on Sustainable Development Goals 2015). These goals are expansive in the development outcomes they cover, including health, environment, gender, education, and poverty. The second SDG—"end hunger, achieve food security and improved nutrition, and promote sustainable agriculture"—concerns nutrition and includes an ambitious target of ending malnutrition in all its forms

Our understanding of how to lower the number of malnourished people—albeit not perfect—has never been greater.

TABLE 1.1 How improving nutrition can contribute to the SDGs

Sustainable Development Goal (SDG)	Relevance of nutrition to the SDG
End poverty in all its forms everywhere	Nutrition is proven to reduce intergenerational poverty and enhance labor force performance, income earning, and wage rates.
End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	Target 2b is "by 2030, end all forms of malnutrition." The proposed SDG indicator set includes links to two World Health Assembly (WHA) global nutrition targets. Nutrition status boosts adult productivity in agricultural work. Better female nutrition status empowers women in agriculture.
Ensure healthy lives and promote well-being for all at all ages	A focus on the period before and the first part of 1,000 days reduces risk of low birth weight and improves women's nutrition status. Micronutrient malnutrition and maternal history of being stunted in childhood are linked to maternal mortality and low birth weight. Forty-five percent of deaths of children under 5 are linked to undernutrition. Stunting is linked to the onset of noncommunicable diseases later in life and to lower adult productivity. Reducing overweight and obesity contributes to lower prevalence of noncommunicable diseases. Infectious diseases (diarrhea, malaria, acute respiratory infections, tuberculosis, HIV/AIDS) are linked to nutrition-related morbidity and mortality.
Ensure inclusive and equitable quality education and promote life-long learning opportunities	Education is linked to early childhood development, for which nutrition is of vital importance. Nutrition status in first 1,000 days is linked to school grade completion and achievement, particularly in adolescent girls.
Achieve gender equality and empower all women and girls	Improving the nutrition status of girls, adolescents, and women increases their ability to perform well at school and to become empowered in the workforce and the wider society.
Ensure availability and sustainable management of water and sanitation for all	Water, sanitation, and hygiene are critical determinants of nutrition.
Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all	Cost of undernutrition is at least 8–11 percent of GNP. Preventing stunting among children increases their earned income as adults.
Reduce inequality within and among countries	Stunting rates by wealth quintile demonstrate how current inequality perpetuates future inequality.
Take urgent action to combat climate change and its impacts	Diet types affect greenhouse gas emissions and the wider environmental footprint related to food production, processing, and distribution.
Conserve and sustainably use oceans, seas, and marine resources for sustainable development	
Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	

Source: Authors and United Nations (2015a).

Note: The SDGs shown here are those in the United Nations Open Working Group's zero draft.

by 2030. Yet overall, nutrition is inadequately represented. This is the only target out of 169 in which nutrition is mentioned. None of the three implementation targets for the second SDG—the "how" of meeting the outcome targets—mentions nutrition actions. Obesity is not mentioned once in the entire draft document.

Yet nutrition clearly has a role to play in achieving sustainable development across the goals. Good nutrition makes vital contributions to goals related to, for example, poverty, health, education, gender, work, growth, inequality, and climate change (Table 1.1). In addition, there is growing and consistent evidence that improving nutrition practices and outcomes can generate large economic returns (Panel 1.3).

This compelling evidence creates an imperative to embed nutrition more broadly in the process of implementing the SDGs. One remaining opportunity to influence the process is through the indicators that will be used to measure progress. The United Nations Standing Committee on Nutrition has proposed a set of eight nutrition indicators for

PANEL 1.2 MOMENTUM FOR IMPROVING NUTRITION IS GROWING

LAWRENCE HADDAD

The momentum for nutrition is strengthening. Consider the following developments:

- At the Second International Conference on Nutrition in November 2014, UN member states recommitted to work to end hunger and malnutrition in all its forms, with a focus on enhancing food systems. They agreed on a comprehensive 60-point Framework for Action.
- Official development assistance for nutrition-specific interventions almost doubled between 2012 and 2013.
- Accountability in nutrition is being strengthened: member countries of the Scaling Up Nutrition (SUN) Movement are documenting their budgetary allocations on nutrition. New donor scorecards are being published by ACTION. A new round of Access to Nutrition Index (ATNI) scores is being prepared. Research and civil society groups such as the International Network for Food and Obesity/Noncommunicable Diseases Research, Monitoring, and Action Support (INFORMAS) and World Cancer Research Fund International are actively monitoring government policies to address obesity. And WHO and several leading nutrition donors are prioritizing gaps in data and related capacities with a view to filling them by.

But international development fashions come and go. Locking in existing commitments to improving nutrition, and then multiplying these commitments, will require nutrition to be firmly embedded in the set of indicators used to measure progress against the Sustainable Development Goals. It will require that a wider range of sectors engage in nutrition improvement and that those who invest in improving nutrition status become more accountable to citizens for the delivery and impact of their investments.

the SDGs, and these proposed indicators have the broad support of many civil society groups (UNSCN 2015). These include the indicators for the six nutrition targets already unanimously agreed to by the member states of the World Health Assembly in 2012:

1. prevalence of stunting (low height-for-age) in children under 5 years of age;
2. prevalence of wasting (low weight-for-height) in children under 5 years of age;
3. percentage of infants less than 6 months of age who are exclusively breastfed;
4. percentage of women of reproductive age (15–49 years of age) with anemia;
5. prevalence of overweight (high weight-for-height) in children under 5 years of age; and
6. percentage of infants born with low birth weight (< 2,500 grams).

The seventh proposed indicator is for dietary diversity (the percentage of women, 15–49 years of age, who consume at least 5 out of 10 defined food groups), which is a validated indicator of nutrient adequacy (FANTA III 2014). The eighth is the percentage of the national budget allocated to nutrition. The inclusion of these indicators would help hold countries and other stakeholders accountable to take action to address malnutrition in all its forms. Yet the most recent draft of indicators included only child stunting and wasting (Open Working Group on Sustainable Development Goals 2015).

SUSTAINABLE DEVELOPMENT HELPS FIGHT MALNUTRITION IN ALL ITS FORMS

Not only does nutrition contribute to many aspects of sustainable development, but the evidence shows that sustainable development, broadly speaking, leads to better-nourished people. At a global level, the evidence is clear: improvements in development outcomes such as female school enrollment, access to improved water and sanitation, and improved food supply are strong drivers of declines in stunting (Smith and Haddad 2015). At a national level, countries and states that have done especially well in tackling malnutrition have done so through combinations of progress in scaling up nutrition interventions and progress in development indicators: Viet Nam (O'Donnell et al. 2009), Brazil (Monteiro et al. 2009), Bangladesh (Headey et al. 2015), Nepal (Headey and Hoddinott 2014), and the state of Maharashtra in India (Haddad et al. 2014). Experiences in Colombia and Tanzania, described in panels later in this report, also suggest that a wide range of factors are associated with improvements in nutrition status.

PANEL 1.3 THE ECONOMIC BENEFITS OF IMPROVED NUTRITION

LAWRENCE HADDAD

Improving people's nutrition can have significant payoffs in terms of generating economic benefits and reducing costs, as estimates in a number of new studies show:

- In urban Brazil, a prospective cohort study of more than 3,000 individuals tracked over a 30-year period found that infants who were breastfed longer than 12 months achieved an additional year of education and incomes about a third higher than those with less than 1 month of breastfeeding (Victora et al. 2015). These long-term effects of good nutrition on schooling and income are similar to those estimated from preventing stunting in Guatemala (Hoddinott et al. 2013).
- Scaling up nutrition-specific investments in the Democratic Republic of Congo, Mali, Nigeria, and Togo would generate internal rates of return on investment of 13 percent (Shekar et al. 2014, 2015a–c).
- The 2015 Copenhagen Consensus reported that scaling up nutrition-specific interventions to address undernutrition has a benefit-cost ratio of 60. This ratio, the median for a set of 17 countries, is at the high end of a set of estimates reported in the 2014 *Global Nutrition Report* (IFPRI 2014a).
- The African Union Commission and the World Food Programme released a study estimating that malnutrition in Malawi reduced that country's GDP by 10.3 percent in 2012 (WFP 2015).
- A review from Brazil found that the share of healthcare expenses devoted to obesity treatment was 2 percent in Brazil, 2–4 percent in Europe, and 5–20 percent in the United States (de Oliveira et al. 2015).

This evidence suggests we have many opportunities for improving nutrition status and that we must look to a wide set of stakeholders in nutrition to implement what we know works (Taylor et al. 2013). We must also look more widely to address malnutrition problems that show little overall signs of progress, such as wasting in children under age 5, anemia in women ages 15–49, and adult overweight and obesity.

On obesity, a series of articles published in *The Lancet* in 2015 reframes it by emphasizing the reciprocity of the environments around people and the choices they make (*Lancet* 2015). The WHO Commission on Ending Childhood Obesity is working to identify the broad set of approaches likely to be most effective in tackling childhood and adolescent obesity, and it is hoped that this work will help accelerate progress (WHO 2015a).

The evidence suggests we have many opportunities for improving nutrition status.

A FOCUS ON CLIMATE, FOOD SYSTEMS, AND BUSINESS

Based on this evidence, this *Global Nutrition Report* seeks to expand the circle of commitment and investment in nutrition. In particular we focus on climate change, food systems, and business—all areas in which the actions of decisionmakers affect malnutrition.

The relationship with climate is emphasized because of the intimate links between disease, food, and climate—and because it is hoped that a new international climate change agreement, covering all countries, will be announced at the United Nations Climate Change Conference (COP21) in Paris in late 2015. Such an agreement would present opportunities for those in nutrition and climate to establish closer working relationships and to advance their overlapping agendas.

The attention to food systems is driven by the prominence given to this issue by the Second International Conference on Nutrition (ICN2) and its salience for malnutrition in all its forms, including obesity.

The focus on business arises because accountability deficits are often cited as holding back potentially productive engagements between public and private actors with a common goal of improving nutrition. The *Global Nutrition*

PANEL 1.4 KEY FACTS FROM THE *GLOBAL NUTRITION REPORT 2014*

LAWRENCE HADDAD

- Nearly every country has a serious health problem owing to malnutrition in one of its forms.
- Forty-five percent of all mortality of children under age 5 is linked to malnutrition (Black et al. 2013).
- Scaling up nutrition-specific undernutrition interventions to 90 percent coverage will generate a median benefit-cost ratio of 16:1.
- The cost of obesity in the United States is equivalent to 10 percent of median income. The cost of adult undernutrition in Africa and Asia is equivalent to 8–11 percent of GDP (Table 2.1 of *Global Nutrition Report 2014*).
- Sixty-nine countries out of the 99 with data are on course to meet at least one of four global nutrition targets—stunting, wasting, and overweight in children under age 5 and anemia in women age 15–49—adopted by World Health Assembly (WHA).
- Forty-nine percent of countries do not have enough nutrition data to determine if they are on or off course for meeting the global WHA targets.

Report, with its role in promoting accountability, may have something to contribute to breaking this roadblock.

But what do we want these actors in climate change, food systems, and business to do? For climate policymakers, the report suggests paying more attention to diet patterns as a driver of emissions. It highlights recent research that finds that some diets are associated with both better health *and* lower greenhouse gas emissions. The report helps national food system leaders analyze their own system for sensitivity to health and sustainability, presents a menu of initiatives and policies that show promise in driving the healthiness of a food system, and proposes a set of dashboard indicators to monitor food system performance and to hold it accountable for improvements in nutrition status. For businesses, the report highlights often-overlooked opportunities for action, dimensions of conduct where big businesses need to improve their performance for nutrition, and ways for all stakeholders considering public-private engagements to strengthen accountability.

What are the incentives for actors in these domains to invest in nutrition-improving actions? At a general level, more sustainable development facilitated by investments in nutrition is good for all actors. As nutrition improves, businesses can meet the needs of a wealthier set of consumers and work with a healthier set of employees. Food systems that promote health are likely to be more diverse and hence more resilient to external shocks, and if they do not challenge human and planetary health, they are likely to be more enduring.

ABOUT THIS REPORT

The *Global Nutrition Report* is an annual report that assesses progress in improving nutrition outcomes and identifies actions to accelerate progress and strengthen accountability in nutrition. It was called for at the Nutrition for Growth (N4G) Summit, held in London in 2013 and hosted by the Governments of Brazil and the United Kingdom and the Children's Investment Fund Foundation (CIFF). The call came on the basis that strong accountability enhances the enabling political environment for nutrition action by giving all stakeholders—existing and new—more confidence that their actions will have an impact, that bottlenecks to progress will be identified and overcome, and that successes will spread inspiration. The *Global Nutrition Report* series is thus designed to be an intervention in the ongoing discourses in and governance of global nutrition.

More sustainable development facilitated by investments in nutrition is good for all actors.

The first *Global Nutrition Report* was published in November 2014 and launched at the ICN2 meetings in Rome as well as at a series of 15 additional roundtables around the world. It focused on setting the baseline for global nutrition status: where are nutrition stakeholders making good progress in outcomes, actions, and account-

ability, and where can more be done? It measured progress at the country level against the six global nutrition targets adopted by the members of the WHA in 2012: stunting, wasting, and overweight in children under age 5; low birth weight; anemia in women of reproductive age; and exclusive breastfeeding. Panel 1.4 summarizes some key facts reported from 2014.

This report continues the monitoring and accountability processes established in the first report, but it also includes a number of new features. Some of these were promised in the 2014 report,[1] and some were added in response to consultations held in late 2014 and early 2015. These new features include the following:

- new analyses of concurrent stunting and wasting data from five countries (Chapter 2),
- more nuanced ways of tracking and presenting whether countries are on or off course to meet global nutrition targets (Chapter 2),
- an analysis of the quality of N4G commitments (Chapter 3),
- a greater focus on obesity and noncommunicable diseases throughout, and particularly in Chapters 2 and 4,
- more detailed data from countries and donors on financial allocations to nutrition (Chapter 5), and
- a focus on a wider set of actors that can be engaged to accelerate malnutrition reduction (Chapters 3, 6, 7, 8, and 9).

In the chapters that follow, we begin by assessing progress in four nutrition domains: nutrition status compared with global targets; the commitments made at the N4G summit ("N4G commitments"); actions to address malnutrition in all its forms; and the scaling up of nutrition finances and capacity. Next, we identify important opportunities, actions, and metrics to advance nutrition through climate policy, food systems, and business. We also recommend ways of making these domains more accountable for improving nutrition. We then highlight priorities for building stronger accountability in nutrition, drawing on lessons from other fields, identifying key gaps in data and capacity, and describing innovative ways of filling these gaps. Finally, we summarize our conclusions and put forward calls to action for different stakeholders.[2]

2 ASSESSING PROGRESS AGAINST NUTRITION STATUS TARGETS

THIS CHAPTER TRACKS COUNTRIES' PROGRESS IN IMPROVING THE NUTRITION STATUS OF THEIR POPULATIONS. IT BEGINS BY ASSESSING COUNTRIES' PROGRESS AT meeting the targets for reducing undernutrition by 2025, set by the World Health Assembly (WHA) in 2012.[1] As in the *Global Nutrition Report 2014*, we apply the global targets to each country to assess whether it is on or off course to meet the 2025 global targets. In this year's report we use more fine-grained assessments of progress that provide more information than whether a country is simply on or off course. In addition we present new data that describe progress made at the subnational level in India—the country with the largest burden of undernutrition.

Also for the first time, this report takes a closer look at how countries are faring in combating overweight, obesity, and noncommunicable diseases. In 2013 the WHA adopted the Non-Communicable Disease (NCD) Monitoring Framework, which monitors nine voluntary global targets for 2025. One of these targets is "Halt the rise in diabetes and obesity," and this year the report uses global and national World Health Organization (WHO) data on adult overweight, obesity, and diabetes to track progress in attaining this target.

KEY FINDINGS

1. For the World Health Assembly (WHA) nutrition indicators of stunting, wasting, and overweight in children under age 5, the trends in the number of countries meeting global targets are positive, especially for stunting.
2. For stunting, 39 of 114 countries with data are on course to meet the global target, compared with 24 in 2014. In 2015, 60 countries are off course but making some progress. The number of countries making no progress on stunting in 2015 is 15, compared with 19 in 2014.
3. For wasting, 67 of 130 countries with data are on course (defined as < 5 percent prevalence). For countries in both the 2014 and 2015 datasets, the number of countries on course has increased from 59 to 63 and the number off course has declined from 64 to 60.
4. Only 1 country—Kenya—is on course for all five WHA undernutrition targets. Four countries (Colombia, Ghana, Vanuatu, and Viet Nam) are on course for four targets. But only 4 countries are not on course for any target. Seventy-four countries have the required data to make an assessment on their progress on five WHA undernutrition indicators.
5. Less than half of children under age 5 avoid stunting or wasting in five large low-income countries: Bangladesh, Democratic Republic of the Congo, Ethiopia, Nigeria, and Pakistan.
6. Nearly all states in India showed significant declines in child stunting between 2006 and 2014. However, three states with very high rates in 2006—Bihar, Jharkhand, and Uttar Pradesh—showed some of the slowest declines. Changes in wasting rates are more variable across states.
7. For under-5 overweight rates, 24 of 109 countries with data are off course and making no progress toward meeting the WHA target. Thirty-nine are on course and making good progress (compared with 31 in 2014), 24 are on course but at risk of losing that status, and 22 are off course but making some progress.
8. For exclusive breastfeeding, 32 of 78 countries with data are on course, 10 are off course but making some progress, 30 are off course and making no progress, while 6 are off course and show large reversals in rates (Cuba, Egypt, Kyrgyzstan, Mongolia, Nepal, and Turkey). New data from India show that exclusive breastfeeding rates have nearly doubled in the past eight years.
9. In 2015, 151 new data points were added to the database on the five undernutrition WHA indicators. The percentage of data points for the 193 countries on the four WHA nutrition indicators (stunting, wasting, overweight, and anemia) increased from 71 percent in 2014 to 74 percent in 2015. Only 9 of these 151 were from OECD countries (Australia, Chile, and Japan).
10. For adult overweight, obesity, and diabetes, very few countries are on course to meet global targets.
11. All 193 countries are off course for the WHA target of no increase in adult overweight and obesity (body mass index ≥ 25); in fact, rates increased in every country between 2010 and 2014. Countries' rates of increase range from 0.2 to 4.3 percent and average 2.3 percent globally. Country progress varies across regions.
12. Only 1 country out of 193—Nauru—achieved even a small decline in adult obesity (BMI ≥ 30) between 2010 and 2014; prevalence for men there fell from 39.9 to 39.7 percent. The mean population-weighted age-standardized global prevalence of obesity is 15 percent among women and 10 percent among men.
13. Only 5 of 193 countries (Djibouti, Iceland, Malta, Nauru, and Venezuela) have halted the rise of the diabetes indicator (raised blood glucose).
14. One hundred and eighty-five countries are off course on all three adult indicators: overweight and obesity, obesity only, and diabetes.
15. The proposed 2030 WHA nutrition targets from WHO represent a useful basis on which to establish a broader consensus on these targets.

This chapter also summarizes and reviews plans to extend the WHA targets to 2030 to match up with the target date of the Sustainable Development Goals (SDGs).

Finally, the chapter summarizes new analysis on the population of children who are both stunted (too short for their age) and wasted (too thin for their height). This convergence of two forms of malnutrition has implications for the framing of nutrition progress and for nutrition programming.

ASSESSING PROGRESS IN ADDRESSING UNDERNUTRITION AT THE NATIONAL LEVEL USING GLOBAL TARGETS

Using the most up-to-date data provided by WHO, UNICEF, and the World Bank, this section assesses how many countries are on or off course to meet the global WHA nutrition targets, which are summarized in Table 2.1.

RULES

As we did for the *Global Nutrition Report 2014*, we assessed country progress on meeting the global nutrition targets for this year's report in the following way: (1) we used data on the WHA indicators from the most recent UNICEF/WHO/World Bank joint global database; (2) we drew on estimates from WHO on the required rates of change in country-level indicators to meet the global target applied at the country level; and (3) we applied on- or off-course rules proposed by the *Global Nutrition Report* team in consultation with WHO and UNICEF at the time of preparing this second report.[2]

The rules for the 2015 *Global Nutrition Report* differ in some important ways from those used in 2014. In response to feedback from readers and in consultation with WHO and UNICEF, we disaggregated "on course" and "off course" for stunting and overweight among children under age 5 into the narrower categories of "good progress," "at risk," "some progress," and "no progress" (Tables 2.2 and 2.3). We also created on- and off-course rules for exclusive breastfeeding of infants younger than 6 months (Table 2.4). The rules for assessing wasting of children under 5 and anemia in women of reproductive age remain the same (Table 2.5). As in 2014, low birth weight is not tracked because of ongoing methodological work being undertaken by UNICEF and its partners, including the London School of Hygiene and Tropical Medicine, Johns Hopkins University, and WHO.[3]

In the *Global Nutrition Report 2014*, to be classified as "on course" to meet the WHA stunting target, countries with rates of stunting under 5 percent had to show that their actual average annual rate of reduction (AARR) was greater than their country-specific AARR required to meet the global goal. This rule has been changed (Table

TABLE 2.1 World Health Assembly Global Targets 2025 to improve maternal, infant, and young child nutrition

WHA indicator and target	Baseline years	Baseline status	Target for 2025	Required average annual rate of change at global level
Stunting 40% reduction in the number of children under age 5 who are stunted[a]	2012	164 million	~100 million (~15%)	3.9% average annual rate of reduction (AARR)
Anemia 50% reduction of anemia in women of reproductive age (WRA)	2011	29%	15%	5.2% AARR
Low birth weight 30% reduction in low birth weight	2008–2012	15%	10%	2.74% AARR
Under-5 overweight No increase in childhood overweight	2012	7%	No increase	—
Exclusive breastfeeding Increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%	2008–2012	38%	50%	—
Wasting Reduce and maintain childhood wasting to less than 5%	2012	8%	<5%	—

Source: WHO (2014c).

Note: — indicates "not applicable."

[a] For more on the methods behind the WHA stunting target, see de Onis et al. (2013).

TABLE 2.2 Rules for determining countries' progress on meeting the WHA child stunting target

Year	On course		Off course	
Global Nutrition Report 2014	Current AARR ≥ country-specific AARR required to meet global goal		Current AARR < country-specific AARR required to meet global goal	
	Good progress	**At risk**	**Some progress**	**No progress**
Global Nutrition Report 2015	Current stunting rate ≤ 5% and current AARR ≥ 0 (the stunting rate is 5% or below and declining further), or current AARR ≥ country-specific AARR required to meet global goal, irrespective of prevalence (rate of decrease is faster than or euqla torate needed to meet global goal)	Current stunting rate ≤ 5% and current AARR < 0 (the stunting rate is 5% or below, but increasing)	Current stunting rate > 5% and current AARR > 0, but < country-specific AARR required to meet global goal (the stunting rate is above 5% and declining, but not fast enough to meet global target)	Current stunting rate > 5% and current AARR ≤ 0 (the stunting rate is above 5% and stationary or getting worse)

Source: Authors.

Note: AARR = average annual rate of reduction.

TABLE 2.3 Rules for determining countries' progress on meeting the WHA child overweight target

Year	On course		Off course	
2014	Current overweight rate < 7% and no increase in prevalence compared with country baseline		Current overweight rate ≥ 7% or increase in prevalence compared with country baseline	
	Good progress	**At risk**	**Some progress**	**No progress**
2015	Current overweight rate < 7% and current AARR ≥ 0 (overweight rate is below the 7% threshold and decreasing)	Current overweight rate < 7% and current AARR < 0 (overweight rate is below the 7% threshold but increasing)	Current overweight rate ≥ 7% and current AARR is > 0 (overweight rate is at or above the 7% threshold and decreasing)	Current overweight rate ≥ 7% and current AARR ≤ 0 (overweight rate is at or above the 7% threshold and increasing)

Source: Authors.

Note: AARR = average annual rate of reduction.

2.2). The new classification means that all countries with stunting rates below 5 percent are on course, regardless of the direction of change. In a healthy population, we would expect the rate of stunting to be 2.5 percent, and we arbitrarily doubled this rate to signify a threshold below which stunting rates are "on course." If we had applied this new rule to the 2014 assessment, two countries (Kuwait and the United States) would have migrated from the off-course to the on-course category.[4] For countries with stunting rates greater than or equal to 5 percent, the on-course/off-course rules have not changed. The off-course category has been disaggregated into "no progress" and "some progress" to recognize countries that are making progress but not at the rate required to meet the 2025 WHA target. The on-course category comprises two subcategories: "at risk" for countries whose stunting rates are less than 5 percent but on the increase, and "good progress" for countries whose rates are less than 5 percent with no increase or whose rates are greater than 5 percent but declining faster than required to meet the 2025 WHA targets.

To be "on course" for meeting the WHA target for overweight among children under 5 for the 2014 *Global Nutrition Report*, countries had to have overweight rates < 7 percent (the WHO global target threshold) and show no increase in rates (that is, AARR ≥ 0) (Table 2.3).[5] Countries with overweight rates < 7 percent but increasing were classified as "off course," which in retrospect seems punitive for countries that are actually below the WHA target. In the new rules, countries with rates < 7 percent but with increasing rates are now classified as "on course, at risk." This brings 24 countries into the "on course, at risk" category. In 2014, countries with rates ≥ 7 percent were all classified as "off course" irrespective of the trends in overweight prevalence. The new rules used here disaggregate "off course" into "no progress" (overweight rate ≥ 7 percent and no reduction in rate) and "some progress" (≥ 7 percent but falling). Because on- and off-course classification now requires trend as well as prevalence data we are unable to classify a further 18 countries owing to missing data, in addition to the 76 that were already uncategorized owing to insufficient data.

TABLE 2.4 Criteria for classifying progress on exclusive breastfeeding of infants younger than 6 months

Classification	Criteria for classification
On course	AAPPI ≥ target AAPPI
Off course, some progress	AAPPI between 25% and 100% of target AAPPI
Off course, no progress	AAPPI (positive or negative) is < 25% target AAPPI, and there is no decrease in exclusive breastfeeding rates of 10 percentage points or more
Off course, reversal	A greater than 10-percentage-point decrease in exclusive breastfeeding rates has taken place over any recent time period at any exclusive breastfeeding level

Source: Authors.

TABLE 2.5 Rules for determining countries' progress on meeting the WHA wasting and anemia targets

Indicator	On course	Off course
Wasting in children under age 5	Current wasting rate < 5%	Current wasting rate ≥ 5%
Anemia in women of reproductive age	Current AARR ≥ 5.2%	Current AARR < 5.2%

Source: Authors.

In 2014 WHO and UNICEF did not propose rules for determining progress on exclusive breastfeeding of infants under 6 months or low birth weight (live births < 2,500 grams). The WHA target for breastfeeding is to increase the rate of exclusive breastfeeding for infants' in the first six months up to 50 percent, and this year, the *Global Nutrition Report* team worked with preliminary rules from WHO and UNICEF to develop some on-/off-course rules for exclusive breastfeeding. These rules are still under development and so are not final, but they are applied here to give the reader an initial sense of country progress against suggested targets, which provide 2025 benchmarks even for countries already above the 50 percent global target at baseline. The rate of change indicator used to assess progress in exclusive breastfeeding is the average annual percentage point increase (AAPPI), instead of the average annual rate of increase (AARI) presented in *Global Nutrition Report 2014*. The AARI, a relative measure of change rather than an absolute one, implied that progress should be faster for countries that already have high rates of exclusive breastfeeding. For example, a target of a 10 percent AARI would imply that a country starting at a 60 percent rate of exclusive breastfeeding needs to improve by 6 percentage points, whereas a country starting at 10 percent needs to improve by only 1 percentage point.

Table 2.4 describes the rules used here. "On course" is straightforward: if the AAPPI is greater than the target AAPPI then the country is on course.[6] "Off course" is split into three groups: some progress, no progress, and reversal. A country classified as "off course, some progress" is demonstrating increases in exclusive breastfeeding rates that are above 25 percent of the required AAPPI but less than 100 percent. "Off course, no progress" is assigned when a country has either a small but positive AAPPI (below 25 percent of the target AAPPI) or an AAPPI that is negative, but not negative enough to generate a decline in exclusive breastfeeding rates of 10 percentage points over a recent time period, regardless of the exclusive breastfeeding rate. "Off course, reversal" is when a country has a decline in exclusive breastfeeding rates of over 10 percentage points over any recent time period, regardless of the initial exclusive breastfeeding rate.

The rules used to define countries' progress in meeting the WHA targets for child wasting and anemia in women of reproductive age did not change between 2014 and 2015 (Table 2.5). The WHO states the basis for the rule for wasting as the following: "The presentation of the wasting target is slightly different because trends for this condition are not meaningful. Wasting refers to children that are too thin for their height. Wasting rates can change rapidly following sudden impacts such as natural or man-made disasters" (WHO 2014c, 8).

WHAT DIFFERENCE DO THE NEW RULES MAKE?

Before moving to the 2015 dataset, we review the difference the 2015 rules would have made to the 2014 dataset classifications for stunting and under-5 overweight. This gives us a feel for how the new rules work. From Table 2.6 it is clear that the rule changes mainly affect the classification of progress regarding overweight among children under age 5. Under the 2014 rules countries were "off course" if they were below the global threshold of 7 percent but had increasing rates. The 2015 rules classify these countries as on course (because they are below the 7 percent global target) but at risk (because their rates are increasing).

THE 2015 DATASET

How many new data points are available in the 2015 *Global Nutrition Report*? Four WHA indicators are tracked in both reports—stunting, wasting, and overweight among children under 5 and anemia in women of reproductive age—with a maximum of 772 observations (4 WHA indicators × 193 countries). For these 4 indicators, the 2015 dataset contains 149 updated data points—126 that replace 2014 dataset points, and 23 that supply values missing in the 2014 dataset. Whereas in the 2014 *Global*

TABLE 2.6 Number of countries on and off course in 2014 using the 2014 and 2015 rules

WHA indicator	2014 data, 2014 rules		2015 data, 2014 rules	
	On course	Off course	On course	Off course
Child stunting	22	87	24	85
Child overweight	31	76	55	44

Source: Authors.

Nutrition Report, 71 percent of the potential data points were available (550 of 772), in the 2015 dataset 74 percent of the potential data points are available (573 of 772). But the 2015 *Global Nutrition Report* also includes a fifth WHA indicator—exclusive breastfeeding—and when we account for this indicator, the 2015 dataset has values for 73 percent of the potential data points (708 of 965).

It is important to note that many of the assessments in the 2014 *Global Nutrition Report* were based on old data—from between 2000 and 2006—for some countries (Algeria, Argentina, Belarus, Germany, India, Malaysia, Mali, Nicaragua, Paraguay, Republic of Moldova, Saudi Arabia, Somalia, and Uzbekistan). A plethora of new data, perhaps resulting from final reporting for the Millennium Development Goals, means that for some countries assessments of progress in 2015 are quite different from those in 2014. This result underscores the importance of having up-to-date data for policymakers and advocates alike.

RESULTS

Table 2.7 summarizes the results for the 2015 data and uses the same rules to compare the 2015 results to those generated using the 2014 data.[7] It paints a positive picture. More countries are on course to meet the targets for stunting, wasting, and overweight in 2015. Progress on stunting is particularly noteworthy: the percentage of countries on course to meet the stunting target rose from 22 percent in 2014 to 34 percent in 2015. Under-5 overweight is the indicator for which the highest percentage of countries are on course; the share rose from 56 percent in 2014 to 59 percent in 2015. Forty-one percent of countries with data are on course to meet the exclusive breastfeeding targets. Finally, for stunting, wasting, and overweight, fewer countries have missing values in 2015 than in 2014.

The following sections apply the disaggregated 2015 rules to the 2015 and 2014 datasets.

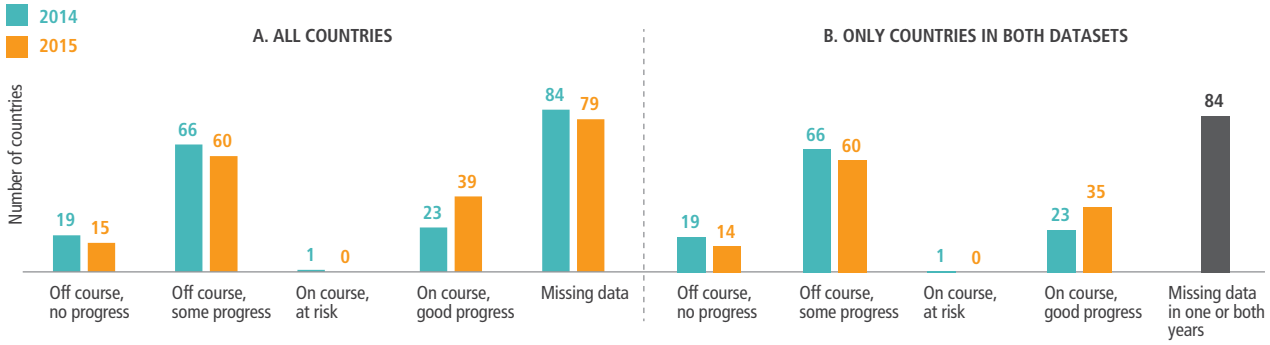
STUNTING

Figure 2.1 presents the outcomes of applying the 2015 stunting rules to the 2015 and 2014 data. Panel A provides the results for all countries with data, and panel B provides the results for countries with data in both datasets. The two panels tell a similar—and positive—story.

From panel A we can see that of the 114 countries with data in 2015, 39 are on course and a further 60 are making some progress. Only 15 countries are making no progress (they are Armenia, Botswana, Djibouti, Eritrea, Gambia, Kuwait, Montenegro, Pakistan, Papua New Guinea, Senegal, Sudan, Syria, Thailand, Timor-Leste, and Vanuatu). In 2014 the comparable numbers showed only 24 countries assessed as on course, with 19 assessed as making no progress. Panel B shows the same pattern, with progress being made in the same countries.

This is a relatively big jump in the number of on-course countries. Why is the increase so large? First, there are fewer countries with missing data. Panel A compares all countries for which we can make an assessment and the increase is 23 to 39. When we restrict the comparison to

FIGURE 2.1 Assessment of progress on stunting, 2014 and 2015



Source: Authors.

Note: This figure shows 2015 rules applied to data for both years.

TABLE 2.7 Number of countries on course to meet each of the WHA global nutrition targets, 2014 and 2015

Indicator	2014 data, 2015 rules			2015 data, 2015 rules		
	Number of countries on course (% of total with data)	Number of countries off course	Number of countries without data to determine on/off course	Number of countries on course (% of total with data)	Number of countries off course	Number of countries without data to determine on/off course
Stunting (rule change in 2015, new data)	24 (22%)	85	84	39 (34%)	75	79
Wasting (no rule change, new data)	59 (48%)	64	70	67 (52%)	63	63
Overweight (rule change in 2015, new data)	55 (56%)	44	94	63 (58%)	46	84
Exclusive breast-feeding (new rule)	n.a.	n.a.	n.a.	32 (41%)	46	115
Anemia (no rule change, no new data)	5 (3%)	180	8	5 (3%)	180	8
Low birth weight (no data)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: Authors.

Note: n.a. = not available. The data for anemia are the same as those presented in the *Global Nutrition Report 2014*.

countries in both datasets then the increase is 23 to 35. Second, the new data sometimes allow new baselines to be calculated that can lead to assessments of greater progress.

WASTING

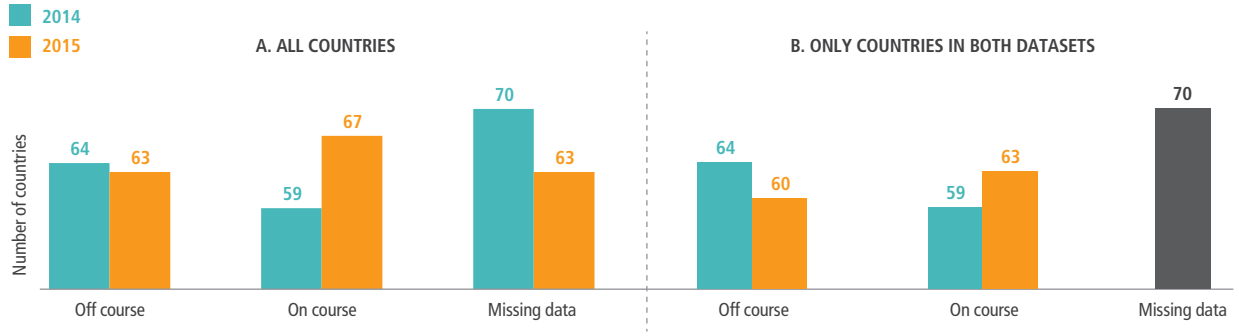
Figure 2.2 compares assessments for wasting between the 2015 and 2014 datasets using all country data (panel A) and countries with data in both datasets (panel B). The picture is similar for both panels: a little brighter in 2015 compared with 2014, with more countries on course than off.

EXCLUSIVE BREASTFEEDING

For the first time we present data assessing progress on exclusive breastfeeding rates. Figure 2.3 shows that only 32 countries out of 78 countries (41 percent) are on course, with 115 missing data points.

Because progress in this indicator is being assessed for the first time, we list the countries in each category (Table 2.8). Of particular concern are the 30 countries where

FIGURE 2.2 Assessment of progress on wasting, 2014 and 2015



Source: Authors.

Note: This figure shows 2015 rules applied to data for both years.

TABLE 2.8 Tracking exclusive breastfeeding across the 78 countries with data to make the assessment

Off course, reversal	Off course, no progress	Off course, some progress	On course
Cuba	Azerbaijan	Armenia	Albania
Egypt	Bangladesh	Belarus	Algeria
Kyrgyzstan	Bosnia and Herzegovina	Belize	Benin
Mongolia	Cambodia	Côte d'Ivoire	Bolivia
Nepal	Cameroon	Ethiopia	Burkina Faso
Turkey	Colombia	Jamaica	Burundi
	Congo	Nigeria	Central African Republic
	Dominican Republic	Peru	Democratic Republic of the Congo
	Guinea	Thailand	El Salvador
	Guyana	Ukraine	Gambia
	Haiti		Georgia
	Honduras		Ghana
	Iraq		Guinea-Bissau
	Jordan		Indonesia
	Madagascar		Kazakhstan
	Malawi		Kenya
	Montenegro		Lao People's Democratic Republic
	Mozambique		Lesotho
	Nicaragua		Liberia
	Pakistan		Mauritania
	Republic of Moldova		Namibia
	Sao Tome and Principe		Niger
	Senegal		Rwanda
	Serbia		Sudan
	Sierra Leone		Swaziland
	Somalia		Syrian Arab Republic
	Suriname		Tajikistan
	Togo		Uganda
	Tunisia		Vanuatu
	United Republic of Tanzania		Viet Nam
			Zambia
			Zimbabwe

Source: Authors.

no progress is being made and the 6 countries where there are significant reversals in rates. Note that there are no high-income countries with sufficient data to assess progress.

UNDER-5 OVERWEIGHT

Results in Table 2.7 showed that, for the rules we adopt, 63 countries out of 109 are "on course" to address under-5 overweight in 2015 compared with 55 in 2014. Figure 2.4 compares assessments for under-5 overweight between the 2015 and 2014 datasets using the more disaggregated categories, showing all country data (panel A) and countries with data in both datasets (panel B). Panel A shows progress in all categories, and panel B tells a similar story. Of the 63 on-course countries in 2015, 39 are making "good progress" while 24 are "at risk" (panel A, Figure 2.4). Forty-six countries are "off course." Applying the 2015 rules to the 2014 database presents a similar picture. Another way of viewing the under-5 picture is to note that 61 countries have under-5 overweight rates that

are decreasing (39 are "on course, good progress" and 22 are "off course, some progress").

The fact that a majority of countries are "on course" or show decreasing rates of under-5 overweight appears, on the face of it, to be a positive development given the global growth of obesity in past decades. However, the declines are a puzzle for at least two reasons. First, many of the countries making progress do not have under-5 overweight prevention programs in place (Popkin et al. 2012). If programs were in place (as they are for stunting prevention), we might have more confidence in these trends. Second, many of these countries are experiencing economic growth, urbanization, and increasing levels of food consumption outside the home, all of which are thought to be drivers of overweight rates (Popkin et al. 2012). It may be the case that overweight rates are rising for children age 5 and over in these countries, but we do not know. We need to get to the bottom of this puzzle in order to understand if the declines signal changes in the obesogenic environment or reflect other temporary or spurious factors. For the *Global Nutrition Report 2016*, we plan to commission more detailed analysis of the nature and drivers of the trends.

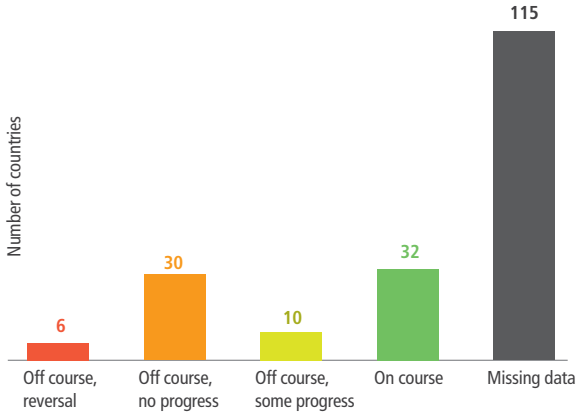
NUMBER OF COUNTRIES ON COURSE FOR MULTIPLE TARGETS

Figure 2.5 highlights the number of countries on course for different numbers of targets. Only four countries are not on course for any of the five targets.

As Table 2.9 shows, out of 74 countries for which we can make an assessment, only Kenya is on course for all five WHA targets. In the 2014 *Global Nutrition Report,* Kenya was on track for only two of four WHA indicator targets. This new status reflects the results of the Kenyan Demographic and Health Survey from 2014 (Kenya National Bureau of Statistics et al. 2015). Kenya shows that countries can shift from "off course" to "on course" from one survey to the next and reinforces the need for regular surveys to give nutrition champions the feedback they need to frame and guide their work.

How does this multiple indicator performance compare with 2014? Using the 98 countries for which we have data

FIGURE 2.3 Assessment of progress on exclusive breastfeeding, 2015



Source: Authors.

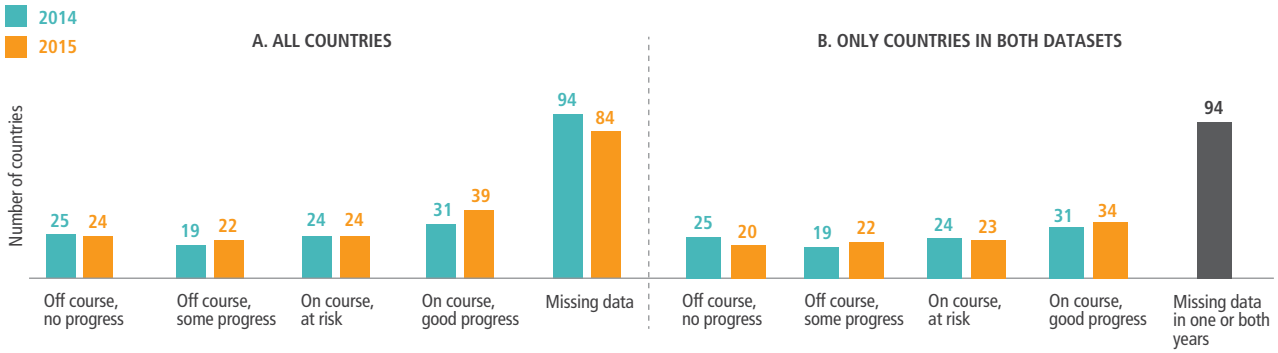
TABLE 2.9 Number of countries on course to meet five WHA targets, 2015

Number of targets	Number of countries on course for the number of targets	Countries
5	1	Kenya
4	4	Colombia, Ghana, Vanuatu, Viet Nam
3	12	Algeria, Benin, Bolivia, Burundi, El Salvador, Georgia, Jordan , Liberia, Republic of Moldova, Swaziland, Uganda, Zimbabwe
2	33	Albania, Azerbaijan, Bangladesh, Burkina Faso, Cambodia, Central African Republic, Democratic Republic of the Congo, Dominican Republic, Gambia, Guinea-Bissau, Guyana, Honduras, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Lesotho, Malawi, Mauritania, Mongolia, Namibia, Nepal, Nicaragua, Niger, Peru, Rwanda, Serbia, Sudan, Suriname, Tajikistan, Tunisia, Turkey, United Republic of Tanzania, Zambia
1	20	Armenia, Belize, Bosnia and Herzegovina, Cameroon, Congo, Côte d'Ivoire, Egypt, Ethiopia, Guinea, Haiti, Indonesia, Jamaica, Montenegro, Nigeria, Pakistan, Senegal, Sierra Leone, Somalia, Syrian Arab Republic, Togo
0	4	Iraq, Mozambique, Thailand, Sao Tome and Principe

Source: Authors.

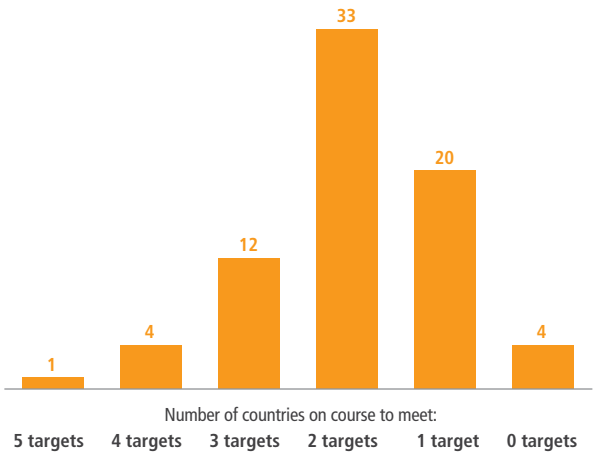
Note: The five targets included in this table are stunting, wasting, and overweight among children under 5, exclusive breastfeeding, and anemia in women of reproductive age. The data for anemia are the same as those presented in *Global Nutrition Report 2014.* Only countries with data to make assessments for all five WHA indicators are included in the table (n = 74 out of 193 countries).

FIGURE 2.4 Assessment of progress on under-5 overweight, 2015 compared with 2014



Source: Authors.

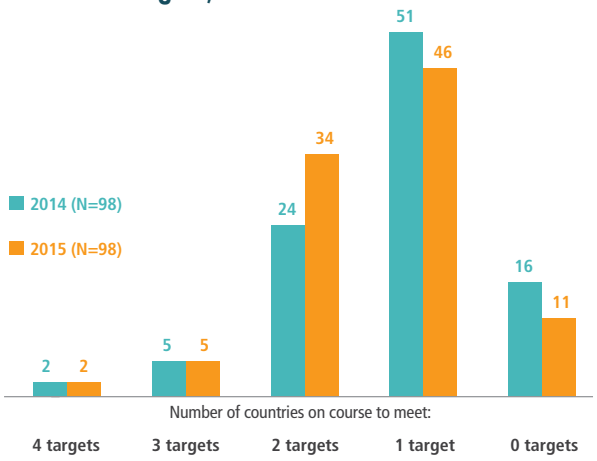
FIGURE 2.5 Number of countries on course to meet five WHA targets, 2015



Source: Authors.

Note: The five targets are stunting, wasting, overweight among children under 5, exclusive breastfeeding of infants up to 6 months, and anemia in women of reproductive age. The data for anemia are the same as presented in *Global Nutrition Report 2014*.

FIGURE 2.6 Number of countries on course to meet four WHA targets, 2014 and 2015



Source: Authors.

Note: The four targets are stunting, wasting, and overweight in children under 5 and anemia in women of reproductive age. Assessments of on and off course are based on 2015 rules. N = total number of countries. In 2015, 108 countries have data for all four indicators, but to make the numbers comparable, this analysis compares the same 98 countries in 2014 and 2015. The data for anemia are the same as those presented in the *Global Nutrition Report 2014*. The two countries on course for four targets in 2014 are Colombia and Viet Nam, and in 2015 they are Colombia and Kenya.

on the four WHA indicators in 2014 and 2015, Figure 2.6 shows that the picture has improved.[8] In 2015, 41 of the 98 countries are on course for two or more of the targets whereas in 2014 the corresponding number was 31.

DATA AVAILABILITY

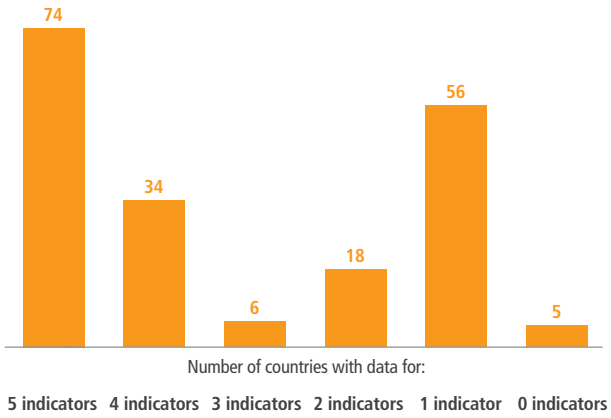
As Figure 2.7 shows, 108 countries now have sufficient data to make at least four assessments, and 74 have sufficient data for five assessments. Sixty-one countries do not have enough data to make more than one assessment.

Compared with the 2014 dataset, the data availability picture has improved somewhat in 2015. As Figure 2.8 shows, for example, in the 2014 dataset 123 countries could make an assessment on two or more targets and now 130 countries can.

CONCLUSION OF 2015 ASSESSMENT

In general, the picture is mixed. For countries that measure undernutrition outcomes, there has been some improvement. The number of countries reaching individual targets is up, the number reaching multiple targets is up, and the number of missing data points is down. It is encouraging to see these trends given that they are only based on 151 new data points out of a total 965 (16 percent new). Set

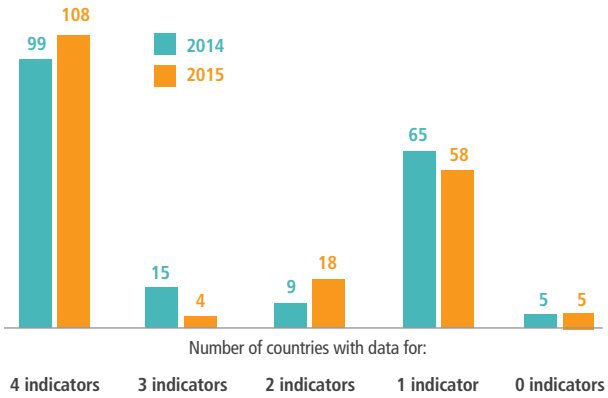
FIGURE 2.7 Number of countries that have data to assess progress on five WHA targets, 2015



Source: Authors.

Note: The five indicators are stunting, wasting, and overweight among children under 5, exclusive breastfeeding, and anemia in women of reproductive age. Total number of countries is 193.

FIGURE 2.8 Number of countries that have data to assess progress on four WHA targets, 2014 and 2015



Source: Authors.

Note: The four indicators are stunting, wasting, and overweight in children under 5 and anemia in women of reproductive age. The total number of countries is 193.

against this progress are the still high numbers of countries that remain off course for the various targets and others that do not even collect the data to allow assessments.

PROGRESS AT THE STATE LEVEL IN INDIA

Indian undernutrition data play a large role in shaping global statistics. India contains about 40 percent of the world's stunted children under the age of 5 and nearly 50 percent of the wasted children (UNICEF 2013). A new national survey—the Rapid Survey on Children (RSOC), conducted in 2013–2014 by the government and UNICEF—found that stunting had fallen from 48 percent in 2005–2006 to 39 percent in 2014.[9] As the *Global Nutrition Report 2014* noted, this reflects almost a doubling of the rate of decline compared with the period 1999–2006. Figure 2.9 compares stunting rates in the two time periods by state. Figure 2.10 plots state-level stunting AARRs by the initial level of stunting.[10] Figure 2.11 compares wasting rates in the two time periods by state, and Figure 2.12 does the same for exclusive breastfeeding rates.

As Figure 2.9 shows, stunting declined in every state, with the magnitude of the declines fairly even across most states. Figure 2.10 shows that the rate of decline as measured by AARR is not associated with initial levels of stunting. In other words, states with high levels of stunting do no worse in decreasing stunting than other states. However, Bihar, Jharkhand, and Uttar Pradesh are of particular concern, with high initial rates of stunting and subsequent declines in stunting that are lower than most other states.

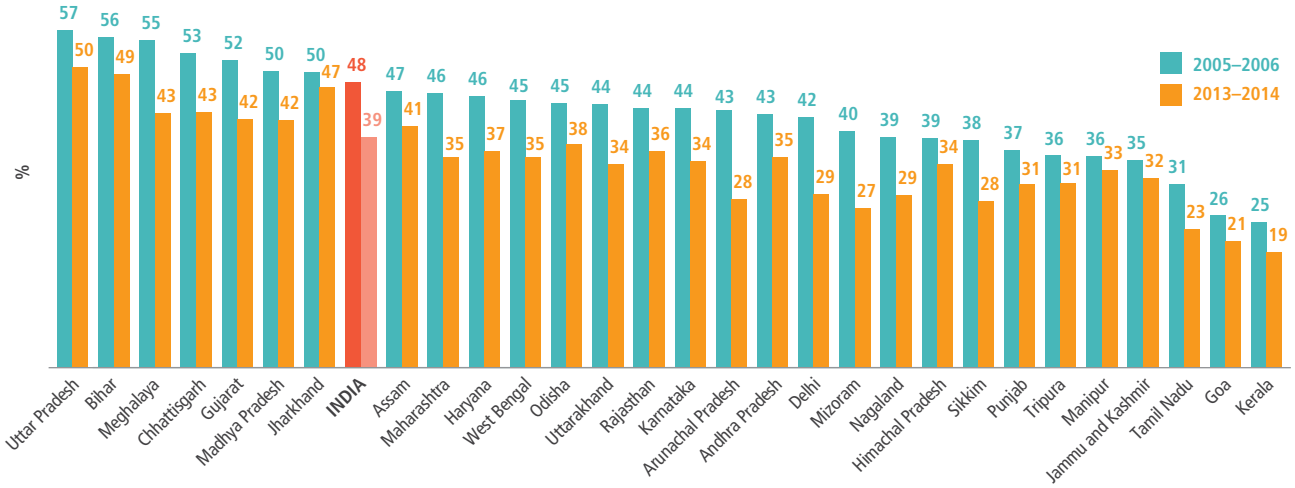
Figure 2.11 compares wasting rates across the two time periods. While most states show declines in wasting, not all do. Arunachal Pradesh, Maharashtra, Andhra Pradesh, Goa, and Mizoram show increases in wasting, although the increases for the first two are marginal. These figures should be viewed with caution because wasting rates vary by season even more than stunting rates do. More research is needed to understand why progress in reducing wasting in India appears to be so uneven.

Figure 2.12 shows a positive picture for exclusive breastfeeding rates in India. The all-India rate has increased from 34 to 62 percent. In 2005–2006 only four states had rates of 60 percent or higher. Now 28 states do. Equally important, states with the lowest rates in 2005–2006 have achieved rates in the 60–70 percent range. Bihar, the worst-ranked state in 2005–2006, quadrupled its rate of exclusive breastfeeding and is now ranked above 16 other states.

COUNTRY PROGRESS ON HALTING THE RISE IN DIABETES AND OBESITY

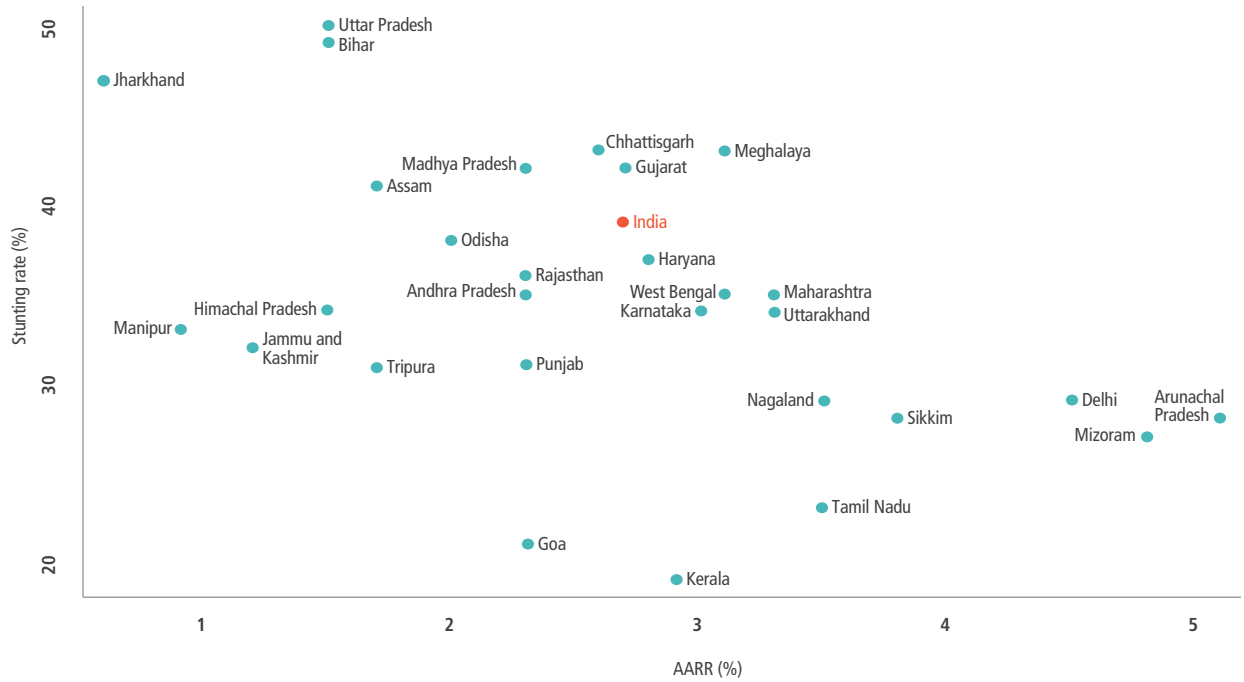
The WHA Noncommunicable Disease Global Monitoring Framework comprises nine global targets for 2025, of which Global Target 7 is to "halt the rise in diabetes and obesity" (WHO 2014b). The three indicators to track this target are (1) age-standardized prevalence of raised blood glucose/diabetes among people 18 years old and older, or on medication for raised blood glucose, (2) age-standardized prevalence of overweight and obesity in people 18 years old and older, and (3) prevalence of overweight and

FIGURE 2.9 Stunting rates in 2005–2006 and 2013–2014 in 29 Indian states



Source: Authors, based on data from India, Ministry of Women and Child Development (2015).

FIGURE 2.10 Stunting rates in 2005–2006 and AARR between 2005–2006 and 2013–2014, 29 Indian states



Source: Authors, based on data from India, Ministry of Women and Child Development (2015). AARR = average annual rate of reduction.

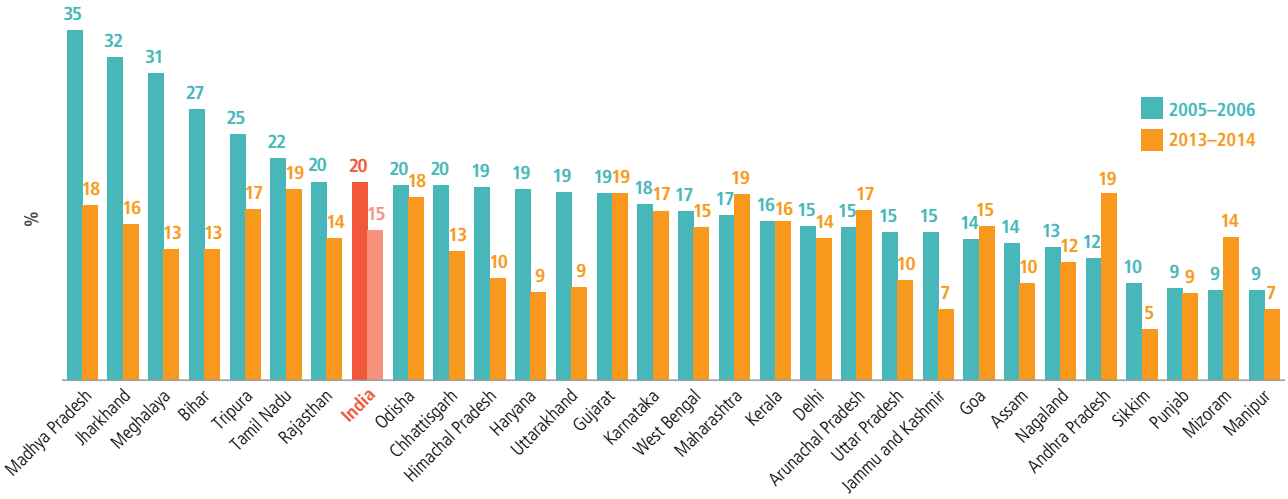
obesity in adolescents.

Using the latest prevalence estimates (WHO 2014b),[11] we examine how countries are progressing toward halting the rise in adult overweight and obesity (body mass index [BMI] ≥ 25), obesity (BMI ≥ 30), and diabetes (raised blood glucose) by 2025 from a baseline year of 2010. (The WHO does not currently report country-level statistics for the third indicator for global target 7, adolescent overweight and obesity.)

ADULT OVERWEIGHT AND OBESITY (BMI ≥ 25)

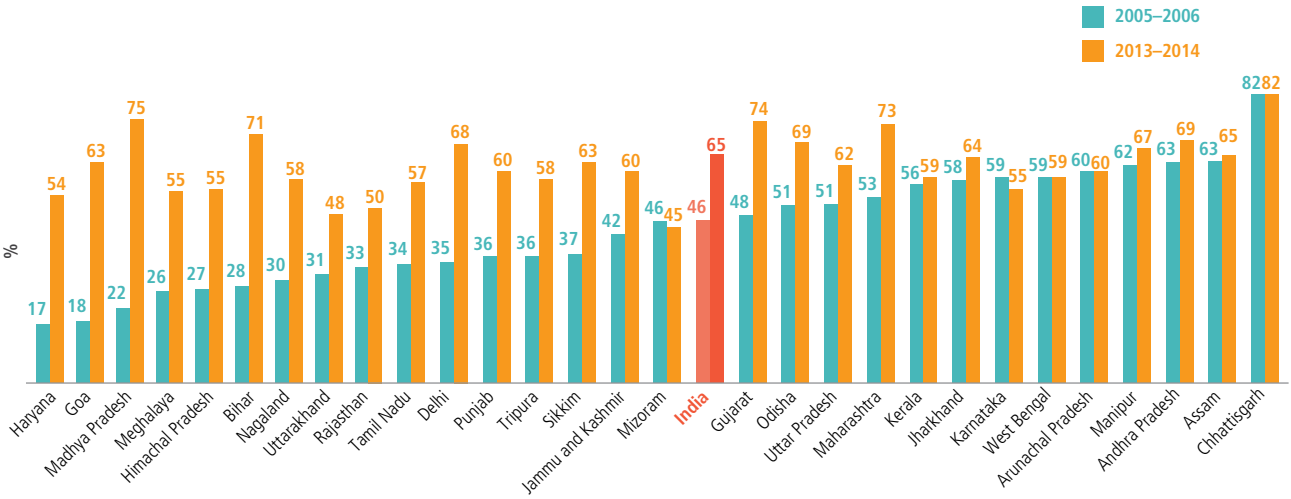
For overweight and obesity (BMI ≥ 25) we assess progress on the basis of both baseline prevalence and change, categorizing countries' adult overweight and obesity as "low

FIGURE 2.11 Wasting rates in 2005–2006 and 2013–2014 in 29 Indian states



Source: Authors, based on data from India, Ministry of Women and Child Development (2015).

FIGURE 2.12 Exclusive breastfeeding rates in 2005–2006 and 2013–2014 in 29 Indian states



Source: Authors, based on data from India, Ministry of Women and Child Development (2015).

and stable/decreasing," "low but increasing," "high but stable/decreasing," or "high and increasing" (Table 2.10).

Since there is no agreed-upon cut-off point at which the prevalence of overweight and obesity becomes a problem of public health significance, a level of 35 percent was used as a red line to divide countries into high and low baseline prevalence groups. This cut-off was selected because in 2008 the WHO assessed that 35 percent of adults age 20 and older globally were overweight or obese (BMI ≥ 25) (WHO 2015l).[12] This cut-off was also used in the *Global Nutrition Report 2014* to analyze the co-existence of different forms of malnutrition. For obesity (BMI ≥ 30) and diabetes prevalence "on course" is a decrease or no

TABLE 2.10 Rules for assessing country progress toward halting the rise in adult overweight and obesity

Change in prevalence	Progress category	
	Baseline prevalence of adult overweight and obesity < 35% (below mean)	Baseline prevalence of adult overweight and obesity ≥ 35% (above mean)
No change or decrease	Low and stable/decreasing	High but stable/decreasing
Increase	Low but increasing	High and increasing

Source: Authors.

TABLE 2.11 Country progress in controlling adult diabetes rates

Status of country	Both sexes	Male	Female
Rate increased (off course)	185	187	177
Rate decreased/stable (on course)	5 (Djibouti, Iceland, Malta, Nauru, and Venezuela)	3 (Djibouti, Malta, Nauru)	13
No data	3	3	3
Total	**193**	**193**	**193**

Source: Authors.

Note: The indicator is raised blood glucose.

rise and "off course" is a rise in prevalence rates between 2010 and 2014.[13]

Between 2010 and 2014, no country experienced a decline in adult overweight and obesity (BMI ≥ 25) (Figure 2.13). Countries vary in terms of baseline prevalence but not in the direction of change: 127 countries have "high and increasing" rates and 63 countries have "low but increasing" rates. Across countries, increases in prevalence range from 0.2 to 4.3 percent, with a mean increase of 2.3 percent between 2010 and 2014.

ADULT OBESITY

The prevalence of obesity (BMI ≥ 30) among adults of both sexes has increased in all countries between 2010 and 2014. The increases range from 0.2 to 4.2 percent, with a mean increase of 1.8 percent. Only one country, Nauru, has shown a slight decrease of 0.2 percentage points in male obesity prevalence, from 39.9 to 39.7 percent.

Gender differences in obesity in this dataset are marked (Figure 2.14). Mean population-weighted age-standardized global prevalence of obesity is 15 percent among women and 10 percent among men; the corresponding figures for overweight and obesity together (BMI ≥ 25) are 39 percent and 37 percent. While the WHA obesity target includes all adults age 18 years and older (which we report on here), the health risks associated with female obesity are particularly high for women age 20–49, in their reproductive years (Black et al. 2013). Maternal obesity is a risk factor for complications during pregnancy, delivery, and postpartum; obese mothers are also more likely to develop gestational diabetes mellitus than women with a normal BMI. Children born to obese mothers are at higher risk of becoming overweight in childhood, adolescence, and early adulthood (Black et al. 2013).[14]

ADULT DIABETES

The large majority of countries have rising rates of adult diabetes (Table 2.11). Just five countries (Djibouti, Iceland, Malta, Nauru, and Venezuela) have shown no change or a slight decrease in the prevalence of diabetes among both sexes; of these, Iceland and Venezuela have shown an increase among males. Thirteen countries have shown a halt in rates among women;[15] these include the three and five countries that have shown a halt in rates among men and both sexes, respectively. Eight of these 13 countries (Albania, Bosnia and Herzegovina, Japan, Latvia, Montenegro, Norway, Singapore, and Ukraine) have shown a halt in female rates only. However, the decreases are small—less than 0.5 percent. There are no countries for which the diabetes rate has halted for men but not for women.

SUMMARY OF PROGRESS ON GLOBAL TARGET 7

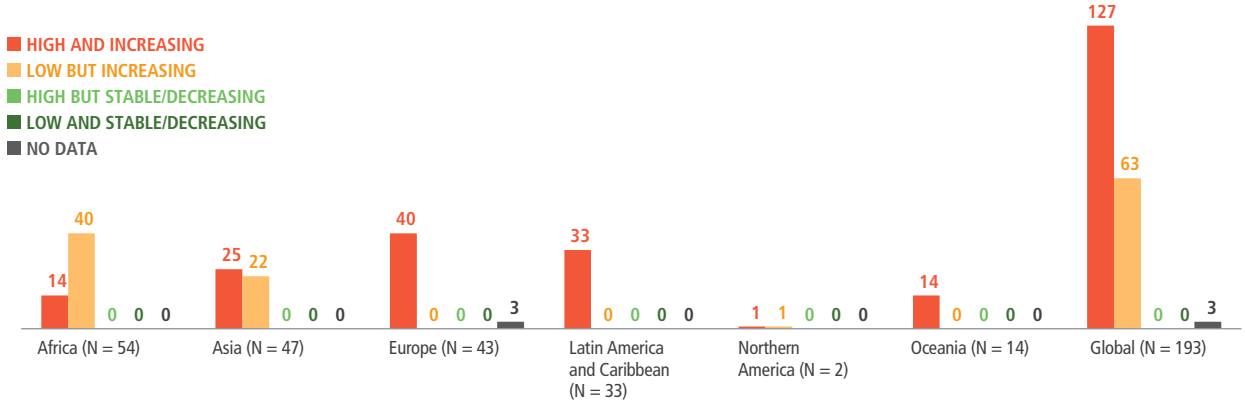
Overall, countries' performance related to controlling overweight and obesity together, obesity, and diabetes for both sexes is dismal. Out of 193 countries, 185 are "off course" on all three indicators. Five countries are on course for one indicator (Djibouti, Iceland, Malta, Nauru, and Venezuela are all on course for diabetes), but no countries are on course for more than one indicator. Three countries have no data on any of these three indicators (Liechtenstein, Monaco, and San Marino).

EXTENDING THE WHA GLOBAL NUTRITION TARGETS TO 2030

The WHA targets were established in 2011–2012, well in advance of the discussions relating to the Sustainable Development Goals. They have an end date of 2025, while the SDGs have an end date of 2030. Using the WHA as a credible scientific and legitimate political basis, what should the 2030 targets be? The 2014 *Global Nutrition Report* called for ambition on the 2030 targets, arguing that the basis for target formulation in 2015 is more optimistic than in 2010. There is more commitment (for example, the Scaling Up Nutrition Movement), more funding (for example, the Nutrition for Growth funding commitments), and more consensus on what to do (for example, the *Lancet* 2013 series of papers on maternal and child nutrition and the *Lancet* 2015 series of papers on obesity).

WHO's Department of Nutrition for Health and De-

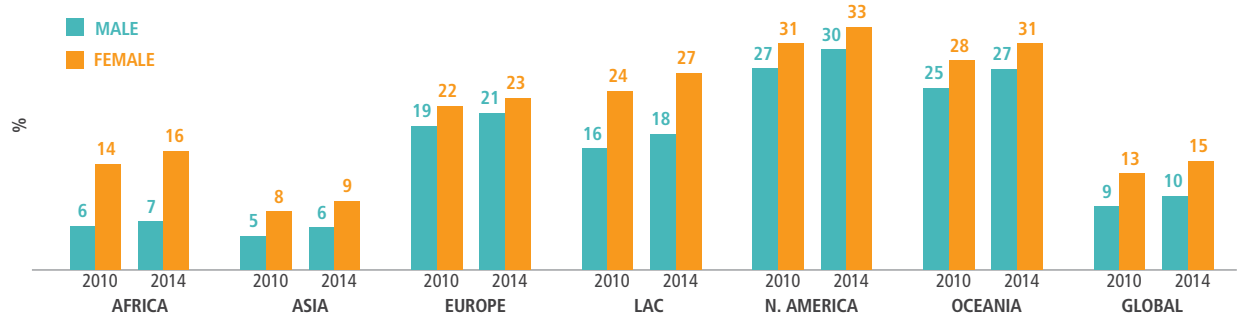
FIGURE 2.13 Country progress toward halting the rise in adult overweight and obesity (number of countries in each UN region)



Sources: Authors, based on WHO (2014b, 2015f).

Note: High overweight and obesity (BMI ≥ 25) prevalence is defined as ≥ 35 percent; low prevalence as < 35 percent. Assessments of "increasing," "decreasing," and "stable" are based on change in prevalence between 2010 and 2014.

FIGURE 2.14 Mean prevalence of obesity for adult males and females by UN region, 2010 and 2014



Source: WHO (2014b); population data are from United Nations (2013b).

Note: Obesity is defined as BMI ≥ 30. Data are population-weighted, age-standardized mean prevalences for men and women age 18 and older in 190 countries. Calculations in this report may differ slightly from those made by the WHO because of differences in regional classification. LAC = Latin America and the Caribbean.

velopment has produced a set of proposals for the 2030 target, published in *SCN News* (Branca et al. 2015) and summarized here in Table 2.12. Four of the 2030 targets (stunting and wasting among children under 5, exclusive breastfeeding, and low birth weight) are generated by a business-as-usual extension of the 2025 targets. That is, the 2030 targets do not change the assumed rate of progress needed to meet the 2025 targets. The 2030 target for overweight among children under 5 is more ambitious than the 2025 target. And the 2030 target for anemia is less ambitious than the 2025 target because of the lack of progress in that indicator.

These proposed 2030 targets are a useful starting point for discussion. From various inputs received by the report team, it is clear that a consensus has not yet emerged on what the 2030 targets should be. More discussion is needed to resolve key underlying issues and to incorporate important new data before the 2030 targets need to be in place by March 2016, when the SDG indicators and targets will be finalized.

India's 2013–2014 Rapid Survey of Children (RSOC) provides important new data, although the survey results are still preliminary. The preliminary data suggest that India has accelerated its progress on stunting, wasting, and exclusive breastfeeding compared with results from the previous two surveys. Given India's large share of the global undernutrition burden, the 2030 targets should be reviewed once the final RSOC data become available.

TABLE 2.12 Rationale for WHO's proposed nutrition global targets for 2030

WHA indicator	WHA 2025 target	2030 global target proposed by WHO	Rationale provided by WHO
Under-5 stunting	Reduce from 164 million in 2012 to 102 million in 2025 (40% reduction in numbers)	86 million	"With concerted global efforts to decrease stunting prevalence, such as through the Scaling Up Nutrition (SUN) Movement, combined with reduced rates of population growth (UN Department of Economic and Social Affairs 2013), it should be possible to maintain or accelerate this rate of improvement an additional 5 years. Projecting the same AARR of 3.9% until 2030, the estimated number of stunted children in 2030 should not exceed 86 million."
Anemia in women of reproductive age	Halve prevalence between 2012 (29.4%) and 2025 (14.7%)	14.7%	"No country is currently making progress at the rate required at a global level to meet the 2025 target."
Under-5 overweight	Maintain rate at 2012 baseline of 6.7%	< 5%	"The global prevalence of childhood overweight increased from 5.2% to 6.7% in a 12-year period from 2000 to 2012 (UNICEF, WHO, and World Bank 2013). With increased understanding of the causes of childhood obesity and application of proven strategies to prevent it, it should be possible to revert back to a similar rate of 5% in an 18-year period."
Under-5 wasting	Reduce from baseline of 6.7% in 2012 to below 5%	< 4%	"Although past improvements in rates of wasting have been quite moderate globally, increased investments in proven solutions can continue to reduce wasting rates through 2030. Continuing the annual decrease of 3.3% to 2030 would result in a global prevalence rate of around 4%."
Exclusive breastfeeding	Increase the rate from baseline of 37% in 2012 to ≥ 50% (AARR required to meet this target is 2.3%)	> 55%	"A number of countries have documented substantial improvements in exclusive breastfeeding within a relatively short period of time, when concerted political will and resources have been identified (UNICEF 2013). With increased resources devoted to the promotion, protection, and support of breastfeeding, sustained improvements globally should be feasible. Projecting the same annual percentage point increase until 2030, the target prevalence would be 55%."
Low birth weight	Reduce from 15% baseline in 2012 to 10% in 2025 (a 30% decline in rate)	9%	"With continued global commitment, a continuation of the 2.7% AARR for an additional five years would result in a reduction in the prevalence of low birth weight of 40% by 2030. This would lead to a low birth weight prevalence of 9%, a level already achieved in a majority of countries (WHO and UNICEF 2004)."

Source: Branca et al. (2015). For full references for citations in table, see Branca et al. (2015).

ESCAPING BOTH STUNTING AND WASTING: HOW MANY CHILDREN UNDER 5 MANAGE IT?

Typically, progress in reducing malnutrition is reported indicator by indicator. But does this understate the magnitude of the malnutrition problem? Panel 2.1 presents analysis of recent national surveys in five large countries with high burdens of undernutrition. In each country, children that are neither stunted nor wasted are in a minority: from 48.5 percent in Bangladesh to 42.5 percent in Pakistan.

Extreme poverty is forecast to become more concentrated in fragile states (Burt et al. 2014), and given the links between stunting and underweight prevalences and income, it is plausible to assume that undernutrition rates will also become more concentrated in these areas. If that happens, the incidence of concurrent stunting and wasting in the same children may rise. This coexistence may also have programmatic implications, as suggested by Panel 2.1, although more research is needed to assess their significance. Data on the share of children who are neither stunted nor wasted should be reported more frequently to provide an additional rationale for investing in nutrition, especially in fragile contexts where both types of child growth impairments are likely to be observed.

RECOMMENDED ACTIONS

1. The **offices of presidents and prime ministers** of countries that are off course to meet the World Health Assembly's global targets to improve maternal, infant, and young child nutrition should convene cross-ministry, cross-party, and multistakeholder consultations to discuss the challenges in meeting the global targets, what course corrections they can make, and what support they need. The findings should be reported at the 2016 Nutrition for Growth (N4G) Summit hosted by the government of Brazil in Rio de Janeiro and any equivalent global or regional reporting opportunity.
2. **Governments** should work with **WHO** and **UNICEF** to get more existing data into global databases (including any required reanalysis due to data quality concerns)

PANEL 2.1 EXTENT OF WASTING AND STUNTING IN THE SAME CHILDREN

CARMEL DOLAN, MARTHA MWANGOME, AND TANYA KHARA

Typically, the burden of child malnutrition is reported separately for wasting, stunting, underweight, and micronutrient deficiencies.[1] However, children can experience multiple deficits concurrently (Khara and Dolan 2014; McDonald et al. 2013). What is the extent of these concurrent deficits, and what are the implications for mortality and programming?

The table below describes the concurrent burden of stunting and wasting in children in five recent country Demographic and Health Survey (DHS) datasets for which undernutrition burdens are high (Black et al. 2013).[2]

In all five countries, children with a healthy growth pattern are in a minority. For example, in Pakistan only 42.5 percent of children have avoided stunting or wasting (column 1). In addition, concurrent wasting and stunting (the sum of columns 6–9) ranges from 2.9 percent of children in the Democratic Republic of the Congo to 7.5 percent in Bangladesh.

What are the implications of these figures? The risk of mortality associated with severe wasting (columns 5 + 8 + 9) is reported to be 11.63 (Olofin et al. 2013). In addition, a child with concurrent stunting, wasting, and underweight is reported to be at 12.30 times higher risk of mortality than a child with no nutritional deficit (McDonald et al. 2013). But estimates of the mortality consequences of concurrent wasting and stunting in the absence of severe wasting (columns 6 + 7) do not exist. This is an important omission because this population is significant in size (1.9 percent of the population of children under 5 in the Democratic Republic of the Congo to 6.0 percent in Bangladesh) and is missed by programs targeting severe wasting alone, despite the potentially high mortality risk of concurrent wasting and stunting.

To learn more about the extent and implications of this issue, we need

- further analysis of national cross-sectional datasets to quantify the magnitude of the global dual deficit of wasting and stunting;
- further analysis of existing mortality risk data to differentiate between children who have single or dual deficits in wasting and stunting; and
- investigation into whether current services that take measurements at community level (in particular mid-upper arm circumference and weight-for-age) identify children who are concurrently wasted and stunted.

DHS survey	Prevalence (%)								
	(1) No wasting, no stunting	(2) No wasting, moderate stunting	(3) No wasting, severe stunting	(4) Moderate wasting, no stunting	(5) Severe wasting, no stunting	(6) Moderate wasting, moderate stunting	(7) Moderate wasting, severe stunting	(8) Severe wasting, moderate stunting	(9) Severe wasting, severe stunting
Bangladesh (2011)	48.4	21.5	13.8	5.9	2.9	3.5	2.5	0.8	0.7
Democratic Republic of the Congo (2013–2014)	46.7	20.7	24.2	2.9	2.6	0.7	1.2	0.4	0.6
Ethiopia (2011)	46.5	21.1	20.6	4.6	2.1	1.6	2.2	0.6	0.8
Pakistan (2012–2013)	42.5	16.0	29.3	3.1	3.1	1.2	1.9	0.6	2.2
Nigeria (2013)	47.7	13.9	20.7	5.6	6.7	1.1	1.6	1.0	1.6

Source: Demographic and Health Surveys: NIPORT, Mitra and Associates, and ICF International (2013); MPSMRM, MSP, and ICF International (2014); Ethiopia Central Statistical Agency and ICF International (2012); NIPS and ICF International (2013); NPC and ICF International (2013).

and to align reporting structures to make the inclusion of data easier in the future. In 2016 donors should support WHO, UNICEF, and the governments of at least 20 low- and middle-income countries to bring country data into global databases. Data from at least 10 high-income countries for at least one of the WHA indicators should be added to the WHO/UNICEF databases in time for reporting in the 2016 *Global Nutrition Report*. Getting more data on exclusive breastfeeding into the databases—for countries of all income levels—is a priority.

3. **UNICEF** and **WHO** should complete their ongoing work on the reporting and analysis of low birth weight data so that country progress against the global targets can be assessed in the 2016 *Global Nutrition Report*. UNICEF and WHO should also finalize their rules for reporting on the progress of all WHA nutrition indicators, including exclusive breastfeeding, in time for use in the 2016 *Global Nutrition Report*.
4. By the end of 2015, **UN agencies** should have completed a structured consultation with the wider nutrition community to agree on a set of 2030 global targets for the WHA undernutrition indicators, ready for submission to the UN Statistical Commission working on the SDG indicators and targets.
5. **Obesity experts**, including those at WHO, need to explain the apparent disconnect between trends in overweight and obesity among adults and those among children under 5, for reporting in the 2016 *Global Nutrition Report*.
6. **Those reporting** on new country surveys should present nutrition survey statistics on the prevalence of children under 5 who are growing up healthy—that is, avoiding stunting, wasting, and overweight.
7. More research is needed to explain different country-level performance on meeting WHA indicator targets and to interpret and understand changes in wasting rates. **Research funders** should design calls for this kind of research in 2016.

3 PROGRESS AGAINST NUTRITION FOR GROWTH COMMITMENTS

THE ISSUE OF NUTRITION HAD AN IMPORTANT MOMENT IN THE SPOTLIGHT IN 2013. AT THE NUTRITION FOR GROWTH (N4G) SUMMIT IN LONDON THAT YEAR, governments, UN agencies, civil society organizations, businesses, donors, and other organizations gathered to consider how to improve nutrition worldwide. Ninety of these stakeholders signed the Global Nutrition for Growth Compact, in which they publicly committed to take concrete action against malnutrition. And the momentum spread further: an additional 20 stakeholders made commitments after the

KEY FINDINGS

1. In response to requests for updates on their progress on meeting Nutrition for Growth (N4G) commitments, 83 percent of signatories responded in 2015, compared with 92 percent in 2014.
2. Results of progress in 2015 are similar to those for 2014. Forty-four percent of N4G commitments are assessed as "on course" in 2015, compared with 42 percent in 2014. Ten percent are "off course" in 2015, compared with 9 percent in 2014.
3. It is easier to hold actors accountable for their commitments if those commitments are specific, measurable, and time bound. Only 30 percent of N4G commitments meet these criteria.
4. The majority of stunting targets set by N4G country signatories are less ambitious than those generated by applying the global World Health Assembly (WHA) targets at the country level.

TABLE 3.1 Response rates of N4G signatories, 2015

N4G signatory group	Number of progress requests issued beginning in January 2015	Number of responses received between January and June 2015	Response rate (%)
Countries	25	18	72
UN agencies	7	7	100
Civil society organizations	15	14	93
Companies – workforce	29	21	72
Donors – financial	10	10	100
Donors – nonfinancial	12	11	92
Other organizations	5	4	80
Total	**103**	**85**	**83**

Source: Authors.

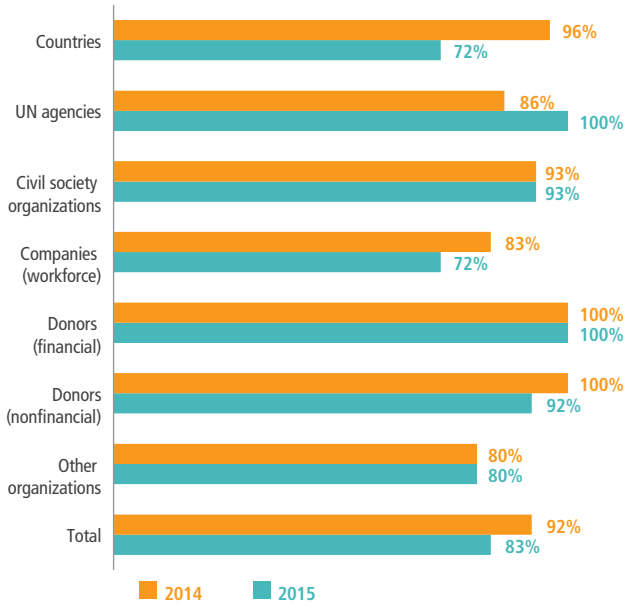
compact was formulated and published. In spring 2015, two years after the summit, we invited those stakeholders to report on their progress on meeting their commitments. This chapter reports on whether stakeholders responded to our invitation, how clearly they responded, and whether they are on track to achieve their stated N4G commitments.

Here is how we measured their progress. As we did for the 2014 *Global Nutrition Report*, we divided the 110 stakeholders into six groups: national governments, UN agencies, civil society organizations, businesses, donors, and a group of organizations that did not easily fit in the other five categories. Each signatory was asked to report on progress since the 2014 *Global Nutrition Report* using a template tailored to its group. We followed up with responders in cases where clarification was needed and entered final responses into a set of detailed online N4G commitment tracking tables.

To assess progress, a team of four people—Meghan Arakelian, Jessica Fanzo, Lawrence Haddad, and Corinna Hawkes—reviewed the detailed N4G tracking tables for each signatory, made an independent assessment, and then collectively reviewed and reconciled the four independent reviews. The assessments relied as much as possible on objective criteria—for instance, did the signatory report meet a tangible target?—but also inevitably involved subjective assessments. All signatories went through the same assessment scale and ranking process. If progress reported for 2014–2015 reached the 2020 commitment, we assigned a status of "reached commitment." If the report indicated sufficient progress was being made toward the commitment, we assigned a status of "on course"; if it was clear it did not, we assigned a status of "off course"; and if the extent of progress was unclear, we assigned "not clear."

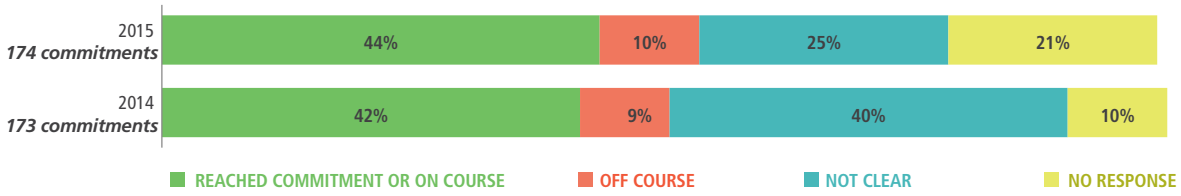
On this basis, we compiled a series of tables summarizing each signatory's progress. In these tables, we also make clear which signatories did not send us the requested data by the date requested and which signatories did not make commitments in certain areas. The evidence on which our assessment was made can be viewed in the detailed online

FIGURE 3.1 Response rates of N4G signatories



Source: Authors.

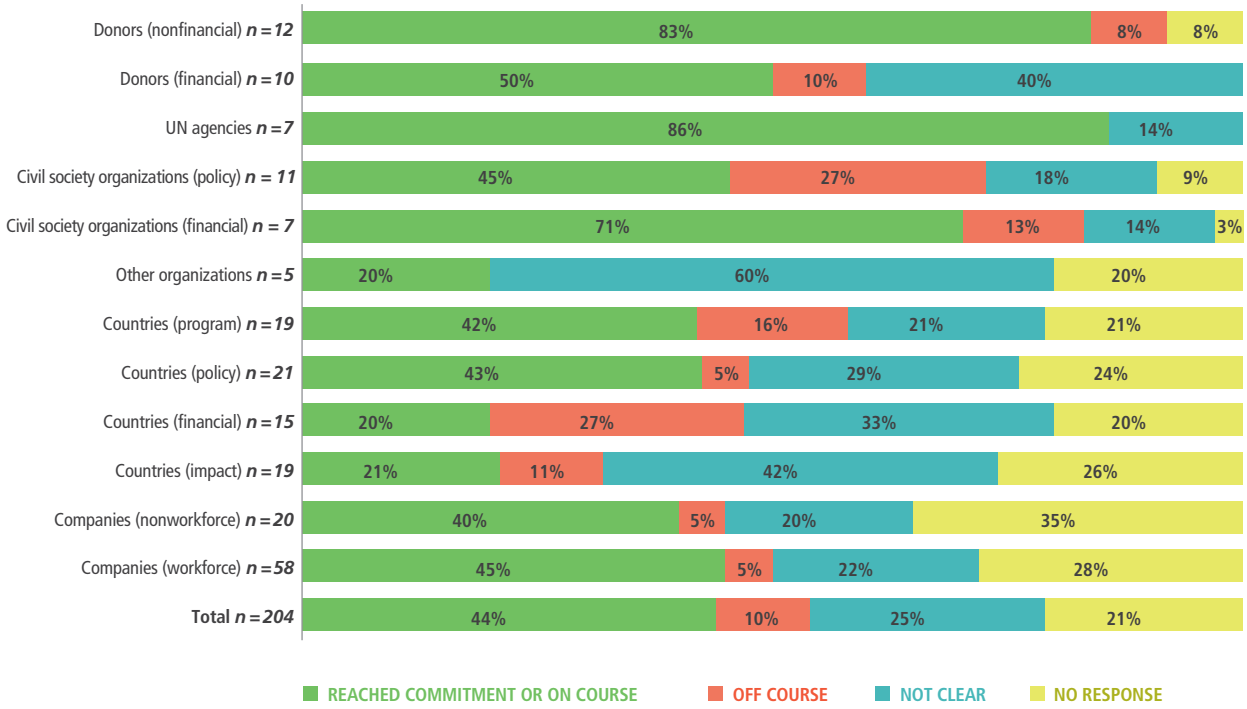
FIGURE 3.2 Overall progress against N4G commitments, 2014 and 2015



Source: Authors

Note: In 2013, 204 commitments were made, but the *Global Nutrition Report 2014* only included 173 of them because businesses were not ready to report on all of their commitments in 2014. Response rates in this figure are given only for commitments tracked in both 2014 and 2015. The number of commitments is 174 in 2015 and 173 in 2014 because Ethiopia did not separate out its N4G commitment into program and policy components in 2014, but in 2015 it did so and reported against them.

FIGURE 3.3 Progress against N4G commitments by signatory group, 2015



Source: Authors, based on information from N4G Compact signatories.

Note: n = the number of commitments by signatories in each category.

tracking tables (www.globalnutritionreport.org). For signatories of interest, we encourage the reader to review the online tracking table reports to get a sense of the progress reported by each and to make their own assessments of progress.

What is different in this year's assessment process compared with the 2014 *Global Nutrition Report*?

First, we assess major donors' financial commitments against their N4G commitments for the first time. The 2014 *Global Nutrition Report* could not do this because the available data were for 2012, prior to the N4G commitment period of 2013–2020. Second, for all signatories we compare 2014 progress (2012 data) with 2015 (2013 data) and so provide a fuller perspective on progress. Third, we added a progress category of "reached commitment" for those signatories that actually reached their 2020 N4G commitment at this early stage. Fourth, we report on their businesses' N4G nonworkforce commitments, whereas in 2014 we only reported on their workforce commitments.

TABLE 3.2 Assessment of countries' N4G commitments

Country	Impact commitments	Financial commitments	Policy commitments	Program commitments
Bangladesh	Not clear	On course	On course	On course
Benin	Not clear	None	Not clear	Off course
Burkina Faso	On course	None	Reached commitment	On course
Burundi	No response	None	No response	No response
Côte d'Ivoire	No response	No response	None	No response
Democratic Republic of the Congo	None	Not clear	On course	On course
Ethiopia	On course	On course	On course	On course
Gambia	No response	None	None	None
Guatemala	Off course	Off course	On course	Not clear
Indonesia	Off course	None	On course	On course
Liberia	None	Off course	Not clear	None
Malawi	None	Not clear	Not clear	On course
Mali	None	None	No response	None
Mauritania	No response	None	No response	None
Namibia	Not clear	None	None	Off course
Niger	No response	No response	No response	No response
Nigeria	On course	Not clear	On course	On course
Senegal	Not clear	On course	Not clear	On course
Sierra Leone	Not clear	Not clear	Off course	Off course
Sri Lanka	Not clear	Off course	None	None
Uganda	Not clear	None	Not clear	Not clear
United Rep. of Tanzania	On course	None	Reached commitment	None
Yemen	None	No response	No response	No response
Zambia	Not clear	Off course	On course	Not clear
Zimbabwe	None	Not clear	Not clear	Not clear

Source: Country SUN Focal Points provided the progress updates against commitments, and Arakelian, Fanzo, Haddad, and Hawkes made individual and collective assessments of progress against commitments.

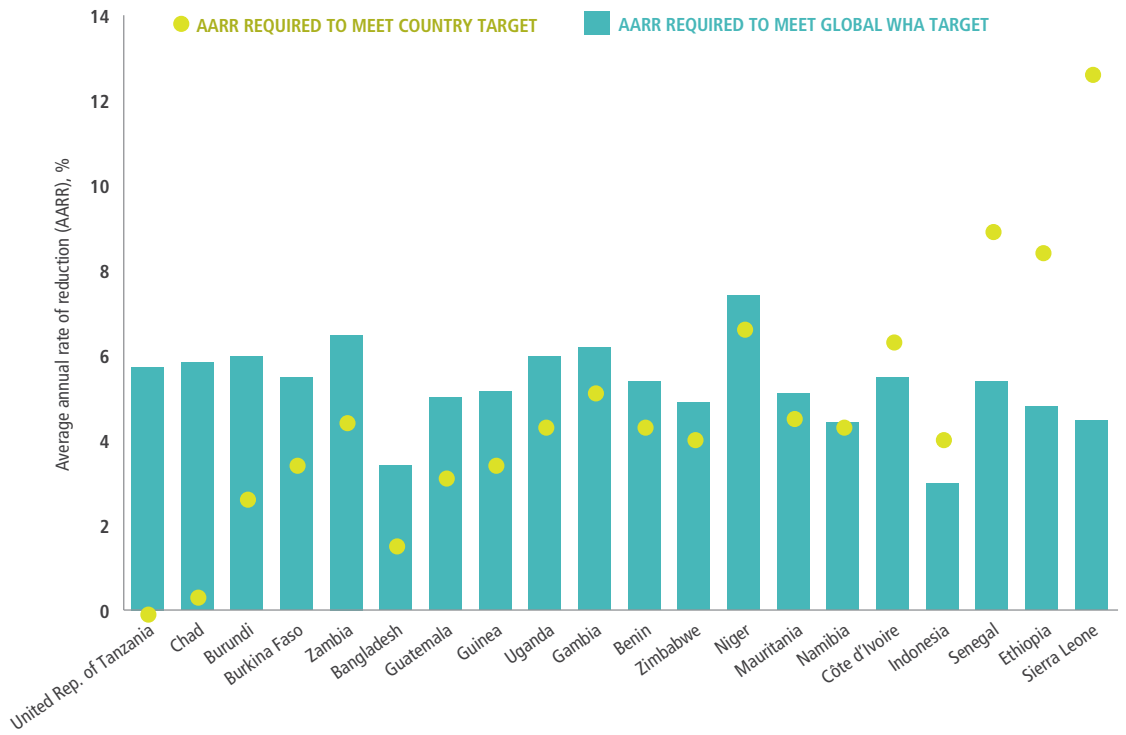
Note: Reached commitment = reached the 2020 N4G commitment. On course = progress made is on course for meeting the N4G commitment. Off course = not enough progress has been made toward the N4G commitment. None = no N4G commitment was made. Not clear = the commitment was too vague to assess whether the commitment was met, or the reported evidence on progress was too vague or only partially reported. No response = country did not respond to requests for information.

Finally, a number of new commitments—and progress against them—were submitted to us. These are either new commitments from N4G signatories or commitments from non-N4G signatories. We have included these commitments in the detailed online tracking tables, but because they were not solicited we have not made an assessment of them. We welcome the submission of new commitments and self-reported assessments against them, and for the 2016 *Global Nutrition Report* we will work out a process for an inclusive and systematic solicitation of new pledges.

ASSESSED PROGRESS AGAINST N4G COMMITMENTS

We issued requests for progress updates from signatories beginning in January 2015 and accepted them until June 9, 2015 (Table 3.1). Response rates were lower in 2015 (83 percent) than in 2014 (92 percent) (see Figure 3.1). This year required more frequent follow-ups with signatories to get responses. Some countries were unable to respond or had setbacks in progress this year owing to unforeseen crises including conflict (in the case of Yemen) and the Ebola outbreak (in the case of Liberia and Sierra Leone). Other reasons for the lower response rate might include the abbreviated timeline for reporting (the 2015 *Global*

FIGURE 3.4 Country stunting targets compared with global stunting targets applied at the country level



Source: Authors; required AARR for country targets is calculated by authors by comparing targets with the rates in the most recent survey in the WHO/UNICEF/World Bank database; required AARR to meet global target is calculated by WHO and UNICEF by comparing WHA targets applied at the country level with the baseline assumptions as specified in Chapter 2. Country targets are listed in N4G commitments (United Kingdom 2013).

Note: See Appendix Table A2.1 for complete data.

Nutrition Report reporting deadline was just 10 months after the 2014 report's deadline) or reporting fatigue resulting from too many commitments and pledges. Companies (workforce commitments) and donors (nonfinancial commitments) were unable to respond as well this year as in 2014.

Nonresponse equals unaccountability. We urge the N4G signatories to recommit to reporting on the pledges they made just over two years ago. The success of the 2016 Rio N4G conference will depend on comprehensive reporting on 2013 N4G commitments.

Actual progress made—that is, whether signatories were on or off course—was similar in 2014 and 2015. The percentage of assessments that were "not clear" or "no response" decreased modestly from 50 percent in 2014 to 46 percent in 2015 (Figure 3.2).

Of 204 N4G commitments made and tracked, 44 percent were assessed as on course, 10 percent were off course, 25 percent had unclear reporting against the commitment, and 21 percent were not reported on (Figure 3.3). Countries struggled to be on course for their impact and financial commitments, which are arguably more difficult to deliver on than the policy and program commitments. Civil society organizations were more likely to be assessed as on course for their financial commitments than for their policy commitments. Donors found it easier to report on their nonfinancial commitments than their financial commitments. Companies found it marginally easier to meet their workforce commitments than their nonworkforce ones. The UN agencies were assessed as being largely on course with their commitments, while the "other organization" category struggled to report clearly against their commitments.

COUNTRIES

In the N4G Compact 25 governments committed themselves to reducing undernutrition in their countries. Of the 25 countries, 18 responded by the deadline. N4G commitments were classified into the following categories: impact/outcome commitments (related to, for example, WHA targets such as exclusive breastfeeding or stunting rates), financial commitments, policy commitments, and program commitments. Table 3.2 shows whether the 18

countries are on or off course based on their reported progress against these targets.

One of the issues raised in the 2014 *Global Nutrition Report* was, how much of a stretch are some of the commitments made by stakeholders? Here we analyze the specific, time-bound commitments to reduce child stunting that a number of countries set for themselves at the N4G Summit. Are those commitments more or less ambitious than the global target set by the WHA?

Figure 3.4 shows how fast 20 countries would need to reduce stunting to reach their own targets compared with how fast they would need to do so to reach the WHA global target, if that target were applied at the country level. Out of the group of 20 countries, nearly three-quarters of the N4G stunting targets are less ambitious than those implied by applying the WHA global targets at the country level. Future N4G targets on stunting need to match the ambition of the global targets.

TABLE 3.3 Assessment of donors' N4G commitments

Donor	Financial commitment	Policy/program commitments
Australia	Not clear	On course
Bill & Melinda Gates Foundation	On course	On course
Brazil	None	No response
Canada, Foreign Affairs, Trade and Development Canada	None	None
Children's Investment Fund Foundation (CIFF)	On course	On course
Children's Investment Fund Foundation (CIFF) and Save the Children	—	On course
European Union	Not clear	None
Finland	None	None
France	None	On course
Germany	Not clear	None
Ireland	On course	On course
Japan	None	On course
Netherlands	Off course (but close)	None
United Kingdom	On course	On course
UK Food Standards Agency	None	Off course
United States	Off course (but close)	On course
World Bank	On course	On course

Source: Authors, based on information from donors.

Note: Reached commitment = reached the 2020 N4G commitment. On course = progress made is on course for meeting the N4G commitment. Off course = not enough progress has been made toward the N4G commitment. None = no nonfinancial N4G commitment was made. Not clear = the commitment was too vague to assess whether the commitment was met, or the reported evidence on progress was too vague or only partially reported. No response = donor did not respond to requests for progress. — indicates "not applicable."

DONORS

Sixteen donors signed the N4G Compact, of which 10 made financial commitments and 11 made nonfinancial commitments. Seven made both financial and policy/program commitments, 3 made only financial commitments, 4 made only policy/program commitments, and 2 signatories made no new commitments.

Chapter 5 reports on donor nutrition financial performance for 2013 in a broader context. This section assesses donors' performance against N4G financial commitments, summarized in Table 3.3 (donors' performance and the basis for assessment are detailed in Appendix Table A2.2).

All 10 N4G donors that made financial commitments reported against these. Of the 10, 5 were on course and 2 were off course (just). For 3 donors, the assessment of progress was unclear due to either an unclear commitment, an unclear progress report, or both. These assessments are broadly in line with the Action scorecards exercise undertaken earlier in 2015 (Action 2015), but there are some differences, primarily because Action did not have all the financial progress data at the time of its assessment. Donors should take more care to develop commitments that are SMART (specific, measurable, assignable, realistic, and time bound).

Twelve donors made policy and program commitments, 11 of these responded to requests for progress, and 10 of these were assessed to be on course (Table 3.3).

CIVIL SOCIETY ORGANIZATIONS

Civil society organizations (CSOs) made financial commitments as well as policy/program commitments, and the report tracked both. Of the 15 civil society organizations approached, 14 responded (Table 3.4).

As reported in 2014, many of the N4G commitments focus on nutrition-sensitive work and the linkages between nutrition; water, sanitation, and hygiene; agriculture; and health. In reviewing the progress, one gets a rich picture of the breadth of countries and populations that CSOs cover with their commitments.

COMPANIES

Twenty-nine companies committed to putting good nutrition into their own workplace settings. Specifically, they

TABLE 3.4 Assessment of CSOs' N4G commitments

Civil society organization	Financial commitments	Policy/program commitments
Action Contre La Faim (ACF)	On course	Reached commitment
Catholic Agency for Overseas Development (CAFOD)	None	Not clear
Comic Relief	Not clear	None
Concern Worldwide	On course	None
Helen Keller International	None	On course
InterAction	On course	None
Mercy Corps	None	Not clear
Micronutrient Initiative	On course	Reached commitment
One Campaign	None	Off course
Oxfam	None	No response
Save the Children International	Off course[a]	On course
Sun CSO Alliance Zambia	None	On course
UK Biotech and Biological Science Research Council	None	Off course
Vegan Society	None	Off course
World Vision	On course	None

Source: Authors, based on information from CSOs.

Note: Reached commitment = reached the 2020 N4G commitment. On course = progress made is on course for meeting the N4G commitment. Off course = not enough progress has been made toward the N4G commitment. None = no N4G commitment was made. Not clear = the commitment was too vague to assess whether the commitment was met, or the reported evidence on progress was too vague or only partially reported. No response = CSO did not respond to requests for information. CSO = civil society organization.

[a] Save the Children International reported significant progress against its very substantial nutrition-sensitive commitments but fell just short, hence the assessment.

TABLE 3.5 Summary of businesses' self-assessment of their N4G workforce commitments

	Number of companies with given responses on progress	
Responses	Introduce a nutrition policy for a productive and healthy workforce	Improve policies for maternal health including support for breastfeeding mothers
1 = little or no progress	1	2
2 = some progress	6	7
3 = good progress	7	6
4 = final developmental stage	5	4
5 = partial rollout	3	3
6 = fully implemented	0	0
Total responses	22	22
No response	7	7
Total number of businesses with workforce commitments	**29**	**29**

Source: Authors, based on information from businesses.

stated that by June 2016 they would (1) introduce a nutrition policy for a productive and healthy workforce and (2) improve policies for maternal health including support for breastfeeding mothers in their workforce. It was anticipated that these steps would deliver improved nutrition, and consequently better productivity and health, for more than 1.2 million workforce members in more than 80 countries.

As in 2014, we worked with the SUN Business Network to send out requests and receive reports on these business commitments. Companies were asked to assign themselves a rating of between 1 and 6 where 1 = little or no progress, 2 = some progress, 3 = good progress, 4 = final

TABLE 3.6 Assessment of businesses' N4G workforce commitments, by company

Company	Introduce a nutrition policy for a productive and healthy workforce	Size of affected workforce (healthy workforce)	Improve policies for maternal health including support for breastfeeding mothers	Size of affected workforce (breastfeeding)
Acciona	On course (5)	33,000	On course (5)	4,200
Ajinomoto	On course (3)	28,000	On course (3)	3,000
Anglo American	No response	No response	No response	No response
Aslan Group	No response	No response	No response	No response
Associated British Foods	Not clear (2)	106,000	Not clear (2)	Not applicable
Barclays	On course (3)	140,000	On course (3)	Not applicable
BASF	On course (4)	110,000	On course (5)	Not applicable
Bayer Crop Science	On course (4)	19,700	Not clear (2)	Not applicable
BP	Not clear (2)	80,000	Not clear (2)	Not applicable
Britannia Industries	No response	No response	No response	No response
Cargill	On course (3)	25,000	On course (3)	Not applicable
DSM	On course (3)	23,000	Not clear (2)	Not applicable
Gallup	On course (5)	2,400	On course (5)	100
GlaxoSmithKline	Not clear (2)	100,000	On course (4)	Not applicable
Gujarat Cooperative Milk Marketing Federation Ltd (Amul)	No response	No response	No response	No response
GUTS Agro Industry	On course (4)[a]	300	On course (4)	100
Indofood	Not clear (2)	2,700	On course (3)	Not applicable
Infosys	Off course (1)	150,000	Off course (1)	Not applicable
KPMG	On course (3)	12,000	Not clear (2)	Not applicable
Lozane Farms	No response	No response	No response	No response
Malawi Mangoes	No response	No response	No response	No response
Marks and Spencer	No response	No response	No response	No response
Netafim	No response	2,000	No response	Not applicable
Rab Processors	On course (4)	1,500	On course (4)	Not applicable
Shambani	Not clear (2)	27	On course (3)	15
Syngenta	On course (3)	27,000	On course (3)	Not applicable
Tanseed	Not clear (2)	12	Off course (1)	Not applicable
Unilever	On course (3)	50,000	Not clear (2)	Not applicable
Waitrose	On course (5)	47,000	Not clear (2)	Not applicable

Source: Authors, based on information from SUN Business Network and companies.

Note: Codes are as follows: 1 = little or no progress; 2 = some progress; 3 = good progress; 4 = final developmental stage; 5 = partial rollout; 6 = fully implemented. Not applicable = companies were not asked to respond about the size of affected workforce if they ranked themselves from 1 to 4. No response = company did not respond. The report authors classified response 1 as "off course," response 2 as "not clear," and responses 3 and higher as "on course."

[a] Response went from 5 in 2014 to 4 in 2015.

developmental stage, 5 = partial rollout, and 6 = full implementation. Of the 29 companies tracked, 22 companies reported on their workforce commitments (Table 3.5).

As in 2014 we bring the business assessments in line with other N4G stakeholders by classifying the companies' progress as "on course" (a rating of 3–6), "off course" (a rating of 1), or "not clear" (a rating of 2). Results are shown in Table 3.6.

Forty-five percent (26 out of 58) of workforce commitments are "on course"—a marked improvement over 2014, when the corresponding figure was 31 percent. This brings the business workforce "on course" percentage in line with progress by other groups of N4G signatories (Figure 3.6).

This year and moving forward, we, along with the SUN Business Network, are asking companies to also provide updates on progress on all the commitments they made at N4G: workforce and nonworkforce related (the latter are summarized in Table 3.7). Of the 20 businesses that made nonworkforce commitments in the N4G Compact, we

TABLE 3.7 Assessment of businesses' N4G nonworkforce commitments, by company

Company	Summary of nonworkforce commitment	Nonworkforce commitment
Ajinomoto	Improve nutrition of 200,000 weaning children, 100,000 pregnant and lactating mothers, and 250,000 school-age children through Koko Plus supplement (Ghana Nutrition Improvement Project).	On course
BASF	Reach 60 million people each year with fortified staples and nutrition; conduct research to develop new nutrition solutions.	On course
Britannia	Reach 50,000 children with iron-fortified biscuits through public-private partnership with East Delhi Municipal.	No response
Cargill	Reach 200 small and medium-size enterprises in Africa south of the Sahara through Partners in Food Solutions; implement Nutriendo el Futuro (Nourishing the Future) initiative in Central America; promote micronutrient fortification of flour (Flour Fortification Initiative).	On course
Clifford Chance	Provide £1 million of pro bono legal services to CIFF and partners, as well as governments, NGOs, and private-sector players, advising on specific legal matters related to implementing the N4G program.	No response
Del Agua	Reach 9 million people with access to clean water in Rwanda.	On course
DSM	Support improved nutrition for 50 million beneficiaries (with a focus on pregnant and lactating woman and children under two) per year by 2020; offer African and Africa-based private-sector N4G Compact partners and SUN Business Network signatories and their suppliers access to the products of DSM's Nutrition Improvement Program.	On course
Gallup	Reach 160,000 respondents for nutrition research in 150 countries (Voices of the Hungry) project.	No response
GlaxoSmithKline	Increase access to an affordable variant of Horlicks (the company's malted-milk drink containing 12 essential vitamins and minerals) by introducing and selling 300 million under-10-rupee sachets in Africa and India; donate up to 400 million albendazole treatments per year to WHO to treat school-age children for intestinal worms; continue to implement the Personal Hygiene and Sanitation Education (PHASE) program.	On course
GSMA	Provide mobile behavior-change messaging on nutrition and agriculture (mNutrition); secure partnerships with mobile network operators toward attainment of mNutrition objectives.	On course
Gujarat Cooperative Milk Marketing Federation Ltd (Amul)	Increase access to ready-to-use therapeutic foods and foods to treat undernutrition, and reduce cost of treatment.	Not clear
GUTS Agro Industry	Invest US$1.5 million to build manufacturing line with capacity of 3,000 metric tons for production of high-quality, low-cost, chickpea-based products in Ethiopia.	Off course
Mount Meru	Fortify all edible food oil in Rwanda, Tanzania, Uganda, and Zambia with vitamins A and D; support 500,000 farmers over seven years by promoting market creation and economic sustainability.	No response
Nirmal Seeds	Deliver biofortified crop varieties to millions of farmers.	No response
Rab Processors	Provide vitamin pre-mixes to fortify maize flour to national fortification alliance for all small millers in Malawi.	Not clear
SeedCo Zambia	Distribute fortified seed to 25,000 smallholder farmers.	No response
Sina Gerard	Double production and sales of Golden Power Biscuits, a product that replaces 45% of wheat flour with orange-fleshed sweet potato (OFSP), by the end of 2014; increase sales of other OFSP-based bakery products.	No response
Tanseed International	Develop biofortified products and improve livelihoods of 7,250 farm households; contract and train 1,813 smallholder farmers.	Not clear
UBS Optimus Foundation	With CIFF and DFID, raise up to 25 million Swiss francs by 2020 from UBS clients to be matched by the other founding partners, thus mobilizing CHF 50 million for children's nutrition. The Optimus Foundation will guarantee CHF 10 million of this fundraising target.	On course
Unilever	Implement Project Laser Beam to reach 500,000 children with improved nutrition, 1 million with hygiene training in schools, and 3,000 women with improved livelihoods; change the hygiene behavior of 1 billion consumers; reach 2.5 million people through neonatal hand-washing programs.	Not clear

Source: Authors, based on information from SUN Business Network and companies.

Note: Reached commitment = reached the 2020 N4G commitment. On course = progress made is on course for meeting the N4G commitment. Off course = not enough progress has been made toward the N4G commitment. None = no N4G commitment was made. Not clear = the commitment was too vague to assess whether the commitment was met, or the reported evidence on progress was too vague or only partially reported. No response = company did not respond to requests for information.

TABLE 3.8 Assessment of UN agencies' N4G commitments

UN agency	Policy/program commitments
Food and Agriculture Organization of the United Nations (FAO)	On course
International Fund for Agricultural Development (IFAD)	Not clear
Office of the Coordination of Humanitarian Affairs (OCHA)	On course
UNICEF	On course
UN Network	On course
World Food Programme (WFP)	On course
World Health Organization (WHO)	On course

Source: Authors, based on information from UN nutrition focal points.

Note: Reached commitment = reached the 2020 N4G commitment. On course = progress made is on course for meeting the N4G commitment. Off course = not enough progress has been made toward the N4G commitment. None = no N4G commitment was made. Not clear = the commitment was too vague to assess whether the commitment was met, or the reported evidence on progress was too vague or only partially reported. No response = UN organization did not respond to requests for information.

received 13 responses, 8 of which were on course (Table 3.7). Businesses have already had two years to prepare to report on nonworkforce commitments, and we expect a better reporting rate from them in 2016.

UN AGENCIES

Seven UN agencies made N4G program and policy commitments, and all seven responded to requests for updates (Table 3.8).

Most of the UN signatories committed to several pledges per agency. The commitments were diverse, and fairly detailed evidence has been provided to assess progress against them. Six of the seven agencies were assessed as on course, with one "not clear."

OTHER ORGANIZATIONS

We received responses from four of the five remaining organizations. The responses received are comprehensive, although they do not always correspond with the stated N4G commitments, making it difficult to tell if the organizations are on or off course. Those with "not clear" assessments need to take more care in responding to their stated commitments (Table 3.9).

COMPARING 2014 AND 2015 ASSESSMENTS

Between 2014 and 2015, countries improved their ability to report decisively on their commitments (Figure 3.5). In 2014, 40 percent of countries' commitments could be assessed as on or off course, whereas in 2015 that share rose to 46 percent. The same holds true of companies on their workforce commitments: in 2014, 40 percent of commitments were assessed as on or off course, and in 2015 the corresponding percentage was 50 percent. For civil society organizations this decisive percentage held firm at 78 percent, but the composition was different. In 2014 a greater share of that 78 percent consisted of on-course commitments than in 2015. Note that the 2015 data include donors' financial commitments and companies' nonworkforce commitments, whereas 2014 data do not.

LESSONS FOR THE RIO 2016 NUTRITION FOR GROWTH SUMMIT

The follow-up to the London 2013 Nutrition for Growth Summit will take place in Rio de Janeiro in 2016. The 2016 Rio N4G Summit is an important opportunity to lock in meaningful commitments for nutrition. How can we make the most of the opportunity? This section makes five recommendations for existing and potential signatories on how to strengthen the accountability of the commitments made, based on the two rounds of assessment of progress against the 2013 commitments.

1. **The Rio N4G pledges need to be SMART—that is, specific, measurable, assignable, realistic, and time-bound.** We conducted an analysis of all the London 2013 N4G commitments to determine which ones are specific (target a specific area for improvement), measurable (quantify or at least suggest an indicator of progress), assignable (specify who will

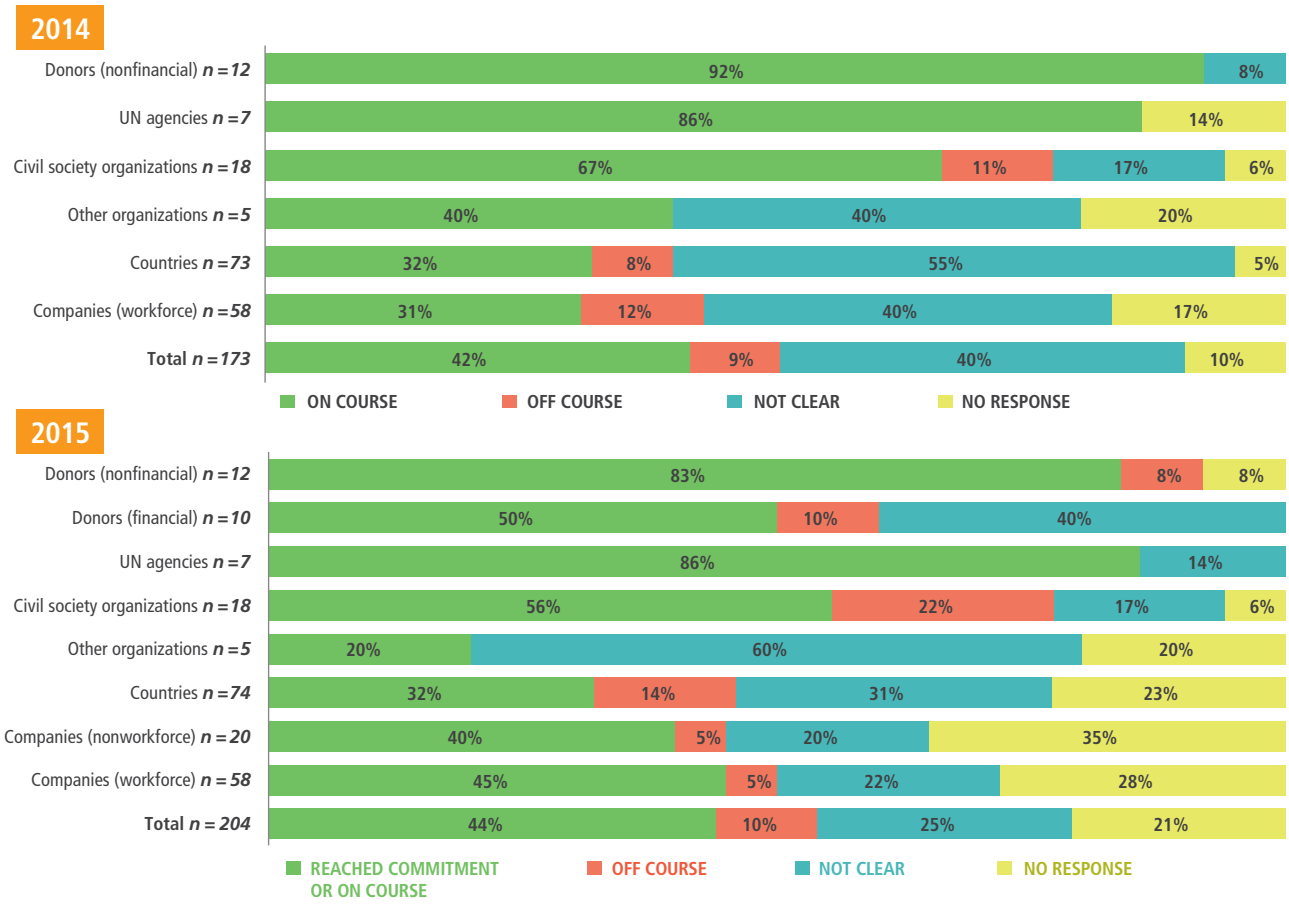
TABLE 3.9 Assessment of other organizations' N4G commitments

Organization	Policy/program commitments
CABI	Not clear
CGIAR	Not clear
Global Alliance for Improved Nutrition (GAIN)	On course
Grand Challenges Canada	Not clear
Naandi Foundation	No response

Source: Authors, based on information from "Other organizations."

Note: Reached commitment = reached the 2020 N4G commitment. On course = progress made is on course for meeting the N4G commitment. Not clear = the commitment was too vague to assess whether the commitment was met, or the reported evidence on progress was too vague or only partially reported. No response = Other organization did not respond to requests for progress.

FIGURE 3.5 Summary of progress against N4G commitments, 2014 and 2015



Source: Authors.

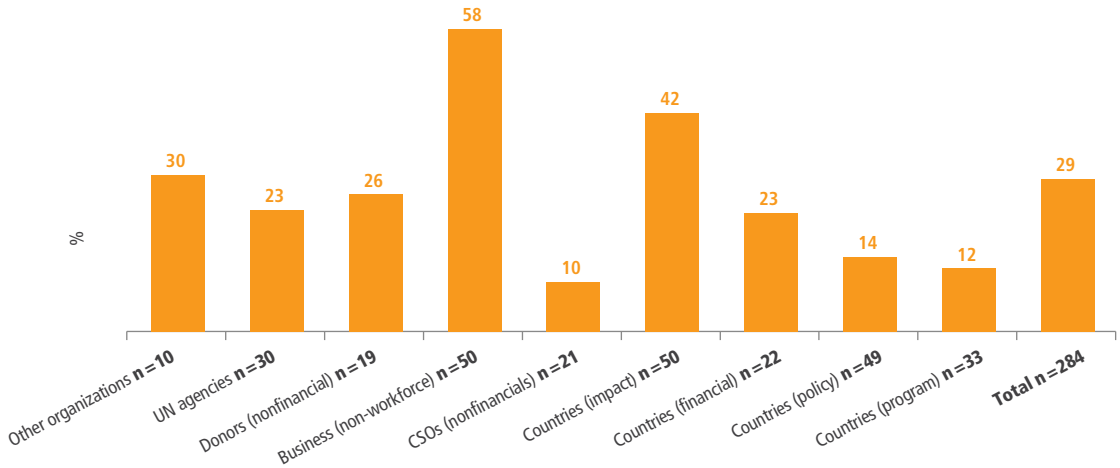
Note: n = the number of commitments by signatories in each category. Also, note that the number of country commitments is 74 in 2015 and 73 in 2014. This is because in 2014 Ethiopia did not separate out its N4G commitments into program and policy components. In 2015 it did so and reported against them.

do it), realistic (state what results can realistically be achieved given available resources), and time-bound (specify when the result can be achieved) (Doran 1981). We placed special emphasis on specific, measurable, and time-bound, given that assignability is fairly clear at the signatory level and that it is difficult to assess realism from an external perspective. The two authors of this chapter each undertook an independent assessment of each commitment based on these criteria and then reconciled any differences found. Too many of the London pledges, the results showed, are vague. Only 30 percent of the commitments made during the N4G can be described as specific, measurable, or time-bound (Figure 3.6).

For pledgers in Rio to be held accountable, it will not be sufficient to state that, for example, "Agency X will work toward reducing malnutrition" or that "Country Y commits to implement the Rome Declaration and its Framework." Rather, commitments will need to be framed in a SMART way—for example, "Country X will reduce overweight in children under 5 years by X percent by year XXXX."

2. **A commitment to act goes hand in hand with a commitment to report.** Failing to report on commitments undermines accountability. Compared with 2014, stakeholders' reporting on their N4G commitments in 2015 was down. This is disappointing to say the least. While we will reflect on whether the reporting process we set up discouraged reporting, it is important for N4G signatories to increase their willingness to report on their commitments.
3. **Reporting needs to be against the commitment.** The lack of clarity about progress reported represents a failure not only to formulate SMART commitments, but also to report clearly against the commitments as made. Too often, signatories reported general progress without any reference to the 2013 N4G commitment even though we had reminded them what they actually committed to.

FIGURE 3.6 Percentage of 2013 N4G commitments assessed as SMART



Source: Authors.

Note: n = number of commitments made in the London N4G Summit. SMART = specific, measurable, assignable, realistic, and time bound.

4. **Commitments need to be reasonably ambitious.** Many N4G commitments made in London were of limited ambition. Examples include statements that a signatory will spend "up to" a certain amount by a certain date or that a signatory will "stay engaged" with another signatory over a certain time period. Commitments need to be realistic, with a reasonable chance of being met, but not so small in scope as to be nearly pointless.
5. **Greater clarity is needed on the provenance of each N4G commitment.** A few signatories claimed not to know where the 2013 London N4G commitment originated within their country or organization. Obviously this undermines ownership of the commitment and hence accountability. The origin or provenance of the commitment must be clearly documented for the Rio N4G pledges.

RECOMMENDED ACTIONS

Signatories of the Nutrition for Growth Compact, adopted in 2013, should carry out their commitments and give full reports on their progress to the *Global Nutrition Report* team for publication in 2016. At the 2016 N4G Rio Summit, **more governments, international agencies, external funders, civil society organizations, and businesses** need to make ambitious N4G commitments, which should be specific, measurable, assignable, realistic, and time bound (SMART). These commitments from existing and new signatories should aim to achieve the WHA global nutrition targets by 2025 and, in line with the SDGs, end malnutrition by 2030.

1. **All signatories to the N4G Compact** should report on implementation of their commitments to the *Global Nutrition Report* team. In 2015, fewer signatories responded to requests to report on their commitments than in 2014. The share of signatories who are "on-course" for meeting their commitments remains below 50 percent.
2. **Existing N4G signatories** should seek to widen the N4G circle of commitment by inviting additional governments, international agencies, external funders, civil society organizations, and businesses to make SMART and ambitious pledges at the 2016 N4G Summit. At the moment, the N4G Compact has only 110 signatories, and nearly all of them are concerned with undernutrition rather than with malnutrition in all its forms.
3. **Civil society organizations** should take the lead on developing a "good pledge guide and template" in time for the 2016 N4G Summit. This would help **existing and new N4G signatories** to "SMART-en" their commitments. Only 30 percent of current commitments are SMART. The template would embed SMART principles and be used to evaluate draft commitments at the 2016 N4G Summit.
4. **The Global Nutrition Report Stakeholder Group** should commission an **independent body** to undertake a one-time evaluation of the process for assessing N4G commitments and make public recommendations for strengthening it. Current methods are limited since they rely on self-assessment by signatories and independent review by the *Global Nutrition Report* cochairs and Secretariat.

4 TRACKING ACTIONS TO ADDRESS MALNUTRITION IN ALL ITS FORMS

TO HOLD GOVERNMENTS AND OTHER NATIONAL STAKEHOLDERS ACCOUNTABLE FOR THEIR ACTIONS TO IMPROVE NUTRITION, IT IS CRITICAL TO TRACK THEIR PROGRESS in implementing interventions, programs, and policies. This chapter reviews the degree to which these stakeholders have implemented actions to reduce malnutrition in all its forms. It also reviews some of the tools available to track implementation.

KEY FINDINGS

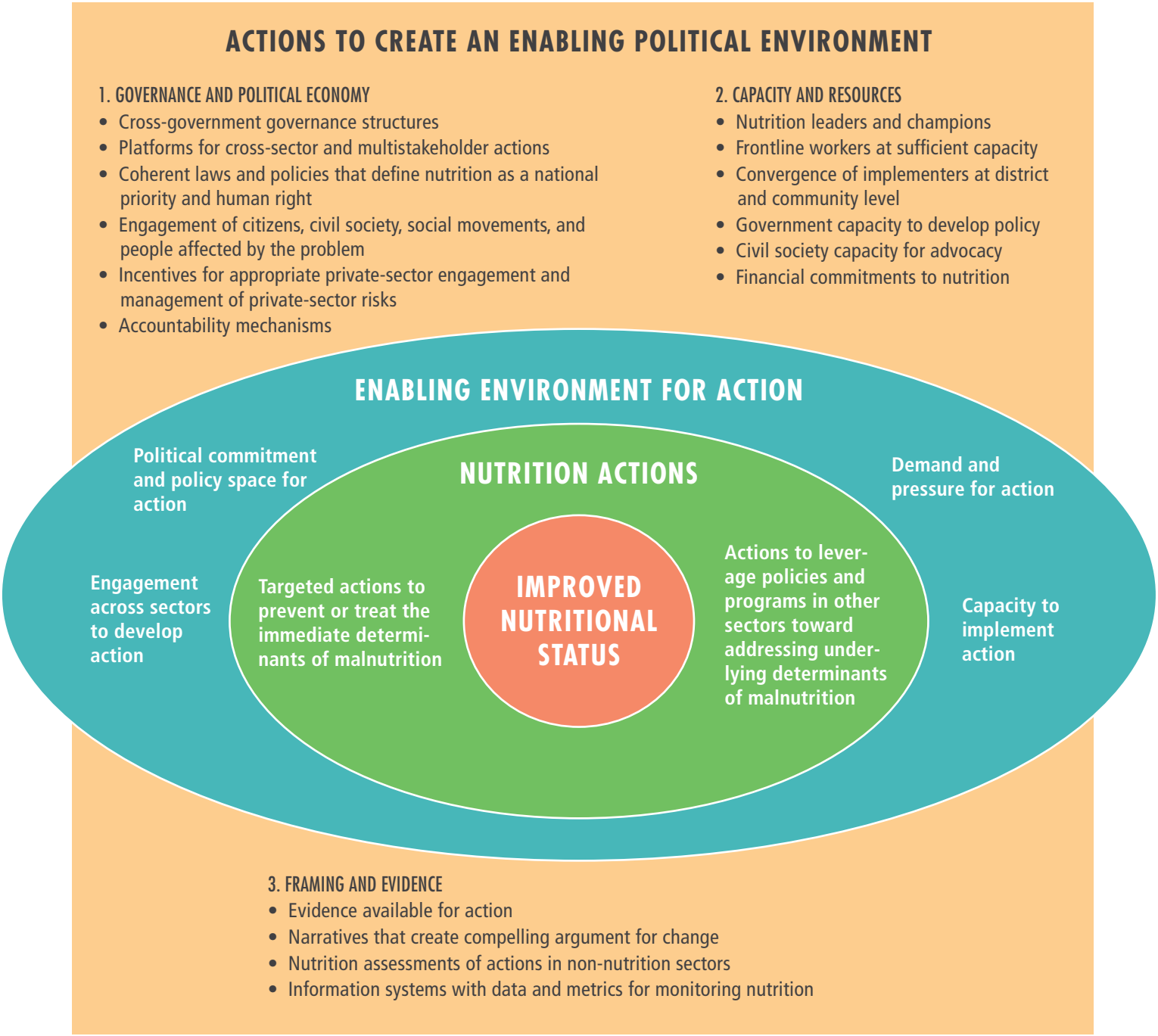
1. Tackling malnutrition in all its forms requires a country-specific blend of actions to create an enabling political environment for action, leverage other sectors to address the underlying determinants of nutrition, and target nutrition interventions to prevent or treat the direct determinants of malnutrition. Countries make progress when actions from multiple levels converge and reinforce each other in a virtuous circle.
2. Social protection has emerged as a key platform that can be leveraged to address the underlying determinants of undernutrition. One challenge is to ensure that redesigned social protection programs do not just promote consumption of more calories, but rather encourage people to eat healthier diets.
3. More countries are implementing population-wide policies to change the food environment as a way to promote healthier diets. Yet progress is patchy and dominated by a handful of policies in high-income countries.
4. Data to track the coverage of specific interventions that target the immediate determinants of undernutrition remain limited.
5. Although the ability to track nutrition actions is improving, the effort to do so remains a work in progress. Across the board, gaps in agreed-upon metrics, data, and monitoring tools are a major impediment to understanding what is being implemented, where, why, when, and for whom.
6. There are opportunities for "double-duty actions" that can help address both undernutriton and unhealthy diets by promoting healthier growth in children's first 1,000 days, healthier food environments, nutrition-friendly food systems, and more enabling political environments.

This chapter focuses on three levels of action for addressing malnutrition:

1. creating an enabling political environment to motivate and provide the space to take action,
2. leveraging policies and programs in other sectors to address the underlying determinants of malnutrition, and
3. providing targeted and concentrated interventions to prevent or treat the immediate causes of malnutrition among those most in need.

These categorizations were used in the *Global Nutrition Report 2014* to track the progress of interventions to address undernutrition. The 2015 report uses these categories to broaden the review of actions to include the dietary aspects of obesity and nutrition-related noncommunicable diseases.

FIGURE 4.1 Actions to create an enabling political environment for promoting nutrition



Source: Adapted from Gillespie et al. (2013) and Huang et al. (2015) by Lawrence Haddad, Boyd Swinburn, and Corinna Hawkes.

PANEL 4.1 WHAT CAN THE FIGHT AGAINST HIV/AIDS TEACH US ABOUT CREATING AN ENABLING POLITICAL ENVIRONMENT?

MAURICE A. BLOEM

Since 2001 the number of new HIV infections per year has dropped by 38 percent overall and by 58 percent among children (UNAIDS 2014). UNAIDS notes that many of the victories in the HIV response have been human rights victories, achieved through advocacy, activism, and litigation (UNAIDS 2010). What can the nutrition community learn from the fight against HIV/AIDS about creating an enabling environment for change?

First, use human rights in an active way. The principle of Greater Involvement of People Living with HIV, or GIPA, was important in helping the HIV/AIDS community establish the right to treatment after many years of lobbying, protests, and court battles (Novogrodsky 2009; UNAIDS 1999), and this principle resulted in policies and programs aimed at preventing the spread of HIV infections. No such right to treatment currently exists to, say, ensure that appropriate complementary foods are available and affordable for consumption by children at risk of undernutrition (Bloem and de Pee 2013).

Second, see vulnerable people as part of the solution, not simply as victims. Active engagement by people living with HIV and AIDS strengthens direct accountability and can help develop sustainable responses. The government of Bangladesh was an early leader in engaging people affected by HIV/AIDS, developing an AIDS policy and strategy through a multistakeholder process (Bangladesh, Ministry of Health and Family Welfare 2000). Lessons learned from successful sex work intervention programs (UNAIDS 2000), some involving sex workers in participatory research (Bloem et al. 1999), were incorporated into this process.

What can the nutrition community do to more fully engage those most at risk of malnutrition? Can we, for example, find better ways of working with adolescent girls in schools and community groups? Can we do more to unite the power of the undernutriton community with the obesity and nutrition-related noncommunicable disease communities to widen the scope of citizens' alliances? Social accountability approaches such as citizen juries, community score cards, and participatory budgeting can give those most vulnerable to malnutrition a platform to be heard, to change power dynamics, and to guide—and sometimes force—change. The intentional opening of a political space where the voices of those most affected by malnutrition—women—can be heard is important. The Commission on the Status of Women provides such a platform—the 2015 meetings were attended by a record number of civil society organizations—and the nutrition community could make a bigger effort to engage in this forum.

Finally, there is the need to stay focused at the national level. The AIDS community was successful in coming together around the "Three Ones": one national framework for action, one coordinating authority, and one agreed-upon monitoring and evaluation system (UNAIDS 2005). The 54 Scaling Up Nutrition country members are attempting to do this (SUN 2011), but other countries need to do this too, especially as the nature of malnutrition becomes more complex with the greater incidence of double burdens of undernutrition and overweight and obesity.

CREATING A MORE ENABLING ENVIRONMENT FOR EFFECTIVE ACTION

The WHO has described enabling environment actions as back-of-the-house systems on which the front-of-the-house nutrition policies, programs, and interventions depend (WHO 2012b). Research has shown that the actions needed to create enabling political environments are the same, whether the goal is to reduce undernutrition or obesity (Gillespie et al. 2013; Huang et al. 2015). They involve improving governance and political economy, enhancing capacity and resources, providing evidence, and framing the issues in a compelling way (Figure 4.1).

In November 2014, the Framework for Action of the Second International Conference on Nutrition provided some clear recommendations on creating an enabling environment for effective action. But knowing how to create an enabling political environment is one thing, and successfully creating it is another. One community that has managed to create an enabling political environment for change is the HIV/AIDS community, which asserted a human right to treatment and engaged people affected by the problem in finding solutions. Panel 4.1 provides insights from the HIV/AIDS experience that the nutrition community can learn from.

If the components of an enabling political environ-

TABLE 4.1 Examples of initiatives to monitor enabling political environments for nutrition

Initiative	Description	Examples of indicators used
Applicable to all forms of malnutrition		
Nutrition Landscape Information System (NLIS) Led by WHO (WHO 2010)	Collates publicly available nutrition-related data in a standardized form. Includes some indicators of enabling political environments. Data coverage varies by country and indicator but includes historical data (going back to 1960) where available and the most recent estimates.	Strength of nutrition in the United Nations Development Assistance Framework (completed UNDAFs, UN Development Group website) Strength of nutrition in poverty reduction strategy papers (GINA)
National Implementation of International Code of Marketing of Breast-Milk Substitutes Led by UNICEF (UNICEF 2011)	Scored 170 countries in 2014 on the regulations adopted on all provisions of the International Code of Marketing of Breast-Milk Substitutes and subsequent World Health Assembly resolutions.	National regulations adopted on all provisions of the International Code of Marketing of Breast-Milk Substitutes and subsequent World Health Assembly resolutions
Global Database on the Implementation of Nutrition Action (GINA) Led by WHO (WHO 2015e)	Standardized information on nutrition policies and action. Contains information on 1,419 policies from 184 countries and 2,561 actions in 137 countries.	Sectoral national policy document with nutrition component (e.g., health strategy, food security plan)
Primarily undernutrition		
SUN Institutional Transformation Scores Led by SUN Movement Secretariat on behalf of SUN member countries (SUN 2014)	Self-assessment. Tracks annual country progress in four processes: bringing people into a shared space for action; ensuring a coherent policy and legal framework; aligning actions around a common results framework; and financial tracking and resource mobilization.	Indicators listed in *Global Nutrition Report* Nutrition Country Profiles
Hunger and Nutrition Commitment Index (HANCI) Led by Institute for Development Studies (HANCI 2015)	5 developing countries, 22 indicators collated from secondary sources using most recent data from years between 2003 and 2013. Tracks financial commitments, laws that place hunger/nutrition as a national priority, and policies that create space for action. HANCI has been calculated twice (2012 and 2013).	National nutrition policy, plan, or strategy Multisectoral and multistakeholder coordination mechanism (data from SUN fiches/country documents and unpublished SUN country documents)
Primarily unhealthy diets, obesity, and noncommunicable diseases		
NCD Country Capacity Survey Led by WHO (WHO 2012a)	Survey of countries with questions about capacity for the prevention and control of noncommunicable diseases (NCDs). The survey was conducted in 2000, 2005, 2010, and 2013, with a planned survey in 2015.	Formal multisectoral mechanism to coordinate NCD policies (data from survey) Policy, strategy, or action plan for reducing unhealthy diets related to NCDs (data from survey)
Government Healthy Food Environment Policy Index (Food-EPI) Led by INFORMAS (Swinburn et al. 2014)	Approximately 40 indicators covering policy (largely nutrition-sensitive policies) and infrastructure domains. Relies on a mix of secondary data collection on implementation and a workshop phase when a range of stakeholders rate the quality of the evidence.	Strong visible political support (stakeholder ratings) Trade agreement impacts on unhealthy diets (secondary data collection)
NCD Countdown 2025 Led by Lancet NCD Action Group (Beaglehole et al. 2014)	Designed to track actions at the country level consistent with WHO Global Monitoring Framework indicators with a focus on outcomes.	Operational NCD unit or equivalent in the Ministry of Health Quantified national NCD targets for 2025

Sources: Shown in table.

Note: INFORMAS = International Network for Food and Obesity/Non-communicable Diseases Research, Monitoring, and Action Support.

ment—and the actions needed to create them—are fairly well established, what about efforts to monitor such actions? In recent years international agencies, research institutes, and NGOs have developed initiatives to do just this. Some examples are listed in Table 4.1. Even though the steps needed to create an enabling environment are similar whether the goal is to reduce undernutrition or to address unhealthy diets, obesity, and noncommunicable diseases, most monitoring initiatives focus on either undernutrition or overnutrition rather than on both. As Table 4.1 also shows, different initiatives use a range of different indicators to track enabling political environments; they are often similar, but there is potential for greater synergies. The indicators used in these initiatives, along with the relevant indicators in the new WHO "Proposed Set of Indicators for the Global Monitoring Framework for Maternal, Infant, and Young Child Nutrition" (WHO 2015), provide a useful base on which to build consensus on defining a clearer set of tracking indicators for the future.

What has the monitoring of these indicators shown so far? For undernutrition, the Hunger and Nutrition Commitment Index (HANCI) shows that countries' political com-

mitment varies widely (te Lintelo et al. 2014). Over time, some countries with very high levels of malnutrition have demonstrated increased commitment, whereas others have shown declines. The institutional transformation scores compiled by the Scaling Up Nutrition (SUN) Movement, based on self-assessment by 37 countries on a four-point scale of progress, showed that while there are significant ongoing efforts to coordinate multiple stakeholders and develop laws and policies, considerably more work is needed to translate this progress into properly managed and monitored action. For obesity, the one country for which Food-EPI (Government Healthy Food Environment Policy Index) has been completed (New Zealand) shows variation between indicators but low levels of visible political support and coordination (Swinburn et al. 2014). For noncommunicable diseases, a 2010 WHO survey showed that while 89 percent of countries reported having a unit, branch, or department in their Ministry of Health with responsibility for noncommunicable diseases, implementation of policy was weak (WHO 2012a). WHO's 2009–2010 Global Nutrition Policy Review reiterated these findings and further highlighted the lack of national capacity for implementation (WHO 2013c).

ACTIONS TO LEVERAGE PROGRAMS AND POLICIES IN OTHER SECTORS TOWARD MEETING NUTRITION GOALS

It is well established that nutrition outcomes are subject to the influence of many sectors beyond nutrition. The question then is, what actions are needed to leverage the influence of these sectors to address malnutrition? Here we focus separately on (1) actions to leverage development programs and policies for undernutrition and (2) policies that aim to improve food environments to address unhealthy diets.

UNDERNUTRITION

There are many ways for different sectors to become more sensitive to undernutrition concerns, and many of these are summarized in the *Global Nutrition Report 2014*. Agriculture and food systems can influence nutrition through, for example, farmers' crop choices. Social protection schemes can use conditional cash transfers to influence nutrition. Water, sanitation, and hygiene programs can create sanitation environments that are safer for women and infants. Health services can offer training in nutrition and care of infants and young children. And education can train girls and boys as caregivers.

Moreover, significant evidence supports the idea that these sectors can contribute to reducing undernutrition (Smith and Haddad 2015; Headey 2014). Colombia presents a useful country-level example. In 2010, Colombia was the only country on target for meeting four World Health Assembly (WHA) indicators (IFPRI 2014a). As described in Panel 4.2, this was the result of a convergence of strong poverty reduction, social protection programs that were leveraged effectively for nutrition, an extensive suite of nutrition policies, and specific interventions to target immediate determinants of undernutrition such as poor diet and infection. Now, however, Colombia faces a growing obesity problem, and its challenge is to adopt programs and policies that will work to reduce obesity while not losing the focus on undernutrition.

Colombia's experience shows that social protection, among other factors, plays a critical role. The *Global Nutrition Report 2014* found that social protection is the one area of government expenditure that seems to be expanding in much of the world (IFPRI 2014a, Figure 6.7). Accordingly, here we highlight two notable initiatives to make social protection more nutrition sensitive. The first comes from a recent review of social protection in Bangladesh (Save the Children 2015a). Important features are the recommendations to include men in behavior change communication about food consumption and prenatal care and to use social protection as a referral platform for health service use (Table 4.2).

The second example comes from actual changes to Ethiopia's Productive Safety Net Programme (PSNP), one of the largest such programs in Africa, which is undergoing a major transition to make it more nutrition-sensitive (Table 4.3). Panel 4.3 describes the policy journey to nutrition sensitivity. Implementation challenges will be many. The transition relies on stronger collaboration between health-system workers and program staff, stronger training of both groups in new procedures, and investments in the health system to allow it to respond effectively to new demand. The incentives needed to stimulate behavior change at the staff level are still being refined. An impact evaluation will be conducted to assess the effectiveness of PSNP's nutrition-sensitive measures.

Efforts to track the extent to which national policies and programs are sensitive to nutritional concerns are still in their relative infancy, and there are no agreed-upon metrics or data sources. The tracking of governments' and donors' nutrition-sensitive budget allocations and disbursements outlined in Chapter 5 begins to fill the gap. Chapter 7 contributes to ongoing efforts to establish metrics for food systems policies. Existing policy databases also provide a basis on which to build, including those listed in Table 4.1 and the FAO databases that monitor food

PANEL 4.2 COLOMBIA'S SUCCESS IN FIGHTING MALNUTRITION: AIDED BY ECONOMICS AND POLICY, THREATENED BY OBESITY

DIANA PARRA AND LAWRENCE HADDAD

By one measure, Colombia has been uniquely successful in improving nutrition in recent years. It is the only country to be on course for improving four indicators identified by the World Health Assembly: under-5 stunting, under-5 wasting, under-5 overweight, and anemia in women of reproductive age. These improvements occurred in an increasingly favorable context for nutrition, according to a recent in-depth economic analysis of Colombia by the World Bank (2014):

- Conflict, based on a number of measures, has declined in the past 10 years (although it remains high and children are especially vulnerable).
- Per capita GDP growth has been rapid and broad based for the past 10 years.
- Extreme poverty has halved in the past 10 years in both rural and urban areas. Three-quarters of the decline in poverty was driven by economic growth, and one-quarter by redistribution policies.
- Income inequality, though still high, has declined substantially, thanks largely to pro-poor targeted transfers.
- The Familias en Acción social protection program, which has been found to reduce stunting and wasting, has expanded.
- Universal health insurance has rapidly expanded people's access to health services in all areas.

In this context, it is not surprising to find progress in nutrition outcomes—even for the lowest wealth groups, whose stunting rates for 1990–2011 declined fastest of all (Bredenkamp et al. 2014). Colombia also has an extensive suite of nutrition policies and interventions, as outlined in the 2012–2019 National Plan of Food and Nutrition Security, that are intersectoral, have a holistic focus on well-being, and emphasize prevention (Sarmiento et al. 2014).

However, challenges remain: significant inequalities persist in access to water, sanitation, and education, related mainly to parental education and area of residence; the rural economy has been sluggish; and the social protection system remains fragmented with many bottlenecks and coverage gaps.

Furthermore, in-depth analysis (Parra et al. 2015) of Demographic Health Survey data shows other areas of concern:

- Although rates of under-5 overweight are below the threshold of 7 percent, they are increasing rapidly.
- There are large regional disparities in nutritional outcomes across Colombia. For example, the dual burden of malnutrition (that is, an overweight/obese mother of 18–49 years and under-5 stunting at the household level) affects 15.1 percent of households in the northern state of La Guajira—three times the national rate.
- Indigenous households have a higher likelihood of underweight, overweight, and dual burden, controlling for potential confounding factors.

Can Colombia's progress be sustained? On the economic side, much depends on the world prices of the commodities that Colombia exports: oil and coal. At the same time, there is potential for the rural economy to do more and for the social protection system to be made more pro-poor. On the nutrition policy side, a number of concerns have been raised (Sarmiento et al. 2014). Policies, especially on obesity, are inadequately implemented. Efforts to address under- and overnutrition are not well coordinated, raising the potential for unintended consequences, such as when cash transfers to poor women lead to more obesity (Forde et al. 2012). Too few interventions are subject to impact evaluations that would allow practitioners to learn and recalibrate efforts. And policies need to be made more inclusive so that they reach the most marginalized.

Colombia's performance in reducing malnutrition has been impressive, but to maintain this level of performance, the fruits of economic growth need to be further translated into broad-based poverty reduction and channeled into full implementation and evaluation of existing nutrition policies.

and agricultural policies (such as the legislative database FAOLEX; the Food and Agriculture Policy Decision Analysis [FAPDA] program; and the Monitoring and Analysing Food and Agriculture Policies [MAFAP] program). The data collected to track progress on the "implementation" indicators in the SDGs are also a potential source of information.

FOOD ENVIRONMENTS FOR HEALTHY DIETS

People's food environments—that is, the foods that are available, affordable, and acceptable to them in their households and communities—are an important underlying determinant of what people eat (Swinburn et al. 1999,

TABLE 4.2 How to make social protection more nutrition sensitive? An analysis from Bangladesh

Pathway to improved nutrition	Policy and design implications for Bangladesh social protection programs
General	Strengthen programs' nutrition objectives based on causal analysis. Design programs to target nutritionally vulnerable groups and periods (for example, children's first 1,000 days). Ensure that monitoring and evaluation systems measure impact on nutrition.
Assured access to enough food of adequate quality for living an active healthy life	Consider using cash transfers to enable households to purchase a nutritious diet. Make cash transfers large enough and adjust them to reflect regional and urban and rural price differences. To influence household consumption, target sensitization and behavior-change communication to men as well as women.
High-quality care and support during pregnancy and lactation	Integrate the 1,000 days approach—that is, a focus on pregnant and lactating women and children under two years—into programs. Strengthen behavior change and nutrition awareness-raising activities. Involve men alongside women and other influential household members, such as mothers-in-law. Target social protection programs to include adolescence, especially for girls, and to promote access to education.
Reduced exposure of children to pathogens and increased use of preventive and curative healthcare	Use social protection schemes to promote access to health services—through, for example, health insurance, referrals, and/or awareness raising—alongside increased investment in healthcare systems.

Source: Adapted from Save the Children (2015a, 78–79).

TABLE 4.3 Some nutrition-sensitive features of Ethiopia's latest Productive Safety Net Programme (PSNP)

New nutrition-sensitive feature	Nutrition determinant supported by feature	Added value
When a health post confirms that a woman is pregnant, she can transition from public works to direct support, which will continue for one year after birth. Co-responsibilities will link women with behavior-change communication services and additional health services available in their area. Women engaged in public works will have lighter workloads.	Maternal health	These features encourage closer collaboration between agriculture and health sectors, create demand for health services, and help reduce maternal mortality among the most vulnerable populations.
A co-responsibility option for behavior-change communication about infant and young-child feeding practices can take the place of participation in public works.	Infant and young child feeding practices	For better outcomes, behavior-change communication about infant and young-child feeding practices can include men as well as pregnant and lactating women.
Public works will be used to build homestead and school gardens. Participants will receive food baskets that include pulses and increased cereals, or a corresponding cash transfer increase. Livelihood support will help farmers diversify crops.	Dietary diversity	These features promote harmonization of nutrition-related activities by the ministries of education and agriculture. Building homestead gardens provides livelihood support for female-headed households with labor shortages.
Capacity development and income-generating activities will be targeted to women, including female-headed households. Activities will be developed to enhance women's control over the use of cash or food transfers.	Women's empowerment	Targeted inclusion of women works to increase awareness of and demand for related health services; nutritional outcomes in women and children tend to improve when women have greater control over household resources.
Participants will have co-responsibility for attending behavior-change communication on health, nutrition, sanitation, and family planning. Public works will be used to construct sanitary latrines and improved wells.	Water, sanitation, and hygiene	Allowing men and women with older children as well as pregnant and lactating women to attend behavior-change communication in place of public works participation may lead to change on a community level.

Source: Derived from Ethiopia, Ministry of Agriculture (2014b).

PANEL 4.3 THE TRANSITION OF ETHIOPIA'S PRODUCTIVE SAFETY NET PROGRAMME TO GREATER NUTRITION SENSITIVITY

ANDREA WARREN

Ethiopia's Productive Safety Net Programme (PSNP) is one of the largest safety net programs in Africa. As of 2012, it had reached more than 7.6 million people, with plans to expand to 8.3 million and support 1.7 million transitory clients in coming years (Ethiopia, Ministry of Agriculture 2014a). The PSNP, coordinated by the Ministry of Agriculture, began in 2005 to increase food security in vulnerable rural households and prevent households from depleting their assets during shocks. It has since completed three phases.

In its fourth phase, which began in 2015, the PSNP will transition from an independent program to one that is integrated with nutrition, social protection, disaster risk management, and climate-resilient green economy policies (Ethiopia, Ministry of Agriculture 2014b). The Government of Ethiopia and other stakeholders have thus redesigned the program to mainstream nutrition across its components and feature nutrition-sensitive programming. Among many new provisions, nutrition-related changes include the reformulation of targeting and transfers, introduction of community-based behavior-change communication and "co-responsibilities," stronger links between the PSNP and existing health services, enhanced livelihood support, and nutrition-sensitive public works (see Table 4.3).

The evolution of thinking around nutrition in Ethiopia was roughly concurrent with the global push to recognize undernutrition as a significant burden to all countries in the early 2000s. The Government of Ethiopia responded by developing the National Nutrition Strategy in 2005 and the National Nutrition Programme (NNP) in 2008, which was modified to become the current, multisectoral NNP (Ethiopia, Ministry of Health 2013).

The PSNP was not originally intended to address nutrition, but stakeholders recognized the potential for incorporating nutrition-sensitive approaches into its ongoing activities and using the PSNP as a platform to support other nutrition initiatives. The third phase of the PSNP (2011–2015) included some optional nutrition-sensitive features, though they were not widely implemented or scaled up (Berhane et al. 2013). With the fourth phase of the PSNP (PSNP4) going into effect in July 2015, the government has been proactive in exploring potential linkages between the NNP and PSNP and considering ways to make the PSNP explicitly nutrition-sensitive (Ethiopia, Ministry of Agriculture 2014b). Program donors, designers, and implementers have expressed the need to have strong accountability, monitoring, implementation capacity and modalities, communication and participation at multiple levels, and collaboration among sectors. Both the PSNP4 design document and the NNP recognize these issues and commit to addressing them.

Despite potential challenges, stakeholders overwhelmingly agree that nutrition-related changes to the PSNP are timely and critical, ambitious but doable. At inception, it was difficult to conceive of a program with the scale, scope, and success of the current iteration of the PSNP. Sustained momentum in Ethiopia over the past decade and demonstrable will to build capacities from the ground up provide grounds for optimism that this program will make a significant contribution to improving nutrition in the coming decade.

2011). Food environments have a direct impact on people's food choices by setting up the universe of possibilities from which people can choose. They also have a longer-term impact by affecting people's preferences and habits (Hawkes et al. 2015). Food preferences and habits start to form in the first 1,000 days of life in a process that continues during childhood and adolescence. Although they remain malleable, preferences and habits can persist into adulthood, and then into the next generation, as infants and children are exposed to the eating behaviors of their parents and caregivers and unhealthy food environments in their homes and communities.

As such, food environments are a critically important influence on the diets of individuals, households, and communities at risk of malnutrition in all its forms—undernutrition as well as obesity and nutrition-related noncommunicable diseases. So far, though, policies designed to affect food environments have focused largely on obesity and noncommunicable diseases.

Policies to improve food environments have typically been driven by nutrition entities in government with the aim of promoting healthier eating. Yet these policies face a considerable challenge when it comes to implementation: they typically have to be implemented by other government departments and other sectors that influence food environments.

Over the past decade, a consensus has emerged on the core domains in which policies are needed to create

TABLE 4.4 Examples and evidence of implemented policy actions around the world to improve food environments in the context of obesity, 2004–2015

Domain	Evidence on the effects from the published literature	Examples of policies adopted by countries	Examples of countries that have implemented policies	National examples
Nutrition labeling	Nutrient lists and interpretive and calorie labels are effective in improving dietary intake for population groups that want to make healthier choices and for which the label provides previously unknown or poorly understood information. Interpretive and calorie labels are more visible and understandable than nutrient lists. There is minimal evidence that labels have a significant effect on people who have little intention to eat healthily.	Mandatory nutrient lists on packaged foods or select groups of packaged foods	Australia and New Zealand, Canada, Chile, China, Central American countries (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua), EU-28 (implementation by December 2016), Hong Kong SAR, Israel, Malaysia, MERCOSUR countries (Argentina, Brazil, Paraguay, Uruguay, Venezuela), Mexico, Republic of Korea, United States	In Malaysia, the Guide to Nutrition Labelling and Claims mandates that a nutrient list be provided on select categories of packaged foods, including bread, dairy products, canned food, fruit juices, salad dressings, and soft drinks (implemented in 2010).
		Interpretive or warning labels (mandatory or government guidelines for voluntary implementation)	Australia, Ecuador, Finland, Nordic countries (Denmark, Iceland, Norway, Sweden), Republic of Korea, Singapore, Thailand, United Kingdom	In Ecuador, a regulation of the Ministry of Public Health requires packaged foods to carry a "traffic light" label in which the levels of fats, sugar, and salt are indicated by red (high), orange (medium), or green (low) (implemented in 2014).
		Calorie labels (mandatory or government guidelines for voluntary implementation)	Some Australian states and territories, Republic of Korea, United States	Legislation in several Australian states and territories requires restaurant chains to display the kilojoule content of food products on their menu boards (implementation dates are various).
Marketing	Evidence from both mandatory and voluntary approaches suggests that restrictions on food advertising to children reduce the amount of advertising on the restricted channel, but because restrictions implemented to date are not comprehensive, this does not necessarily lead to overall reductions of children's exposure to the whole marketing mix.	Mandatory restrictions on advertising to children of foods high in fats, sugar, and salt	Ireland, Mexico, Republic of Korea, United Kingdom	In the Republic of Korea, TV advertising to children under 18 is prohibited for specific categories of food before, during, and after programs shown between 5 and 7pm and during other children's programs. The restriction also applies to advertising on TV, radio, and Internet that includes "gratuitous" incentives to purchase, such as free toys (implemented in 2010).
		Mandatory restrictions on the use of specific communications channels and marketing techniques for foods high in fats, sugar, and salt	Mexico (restrictions during select films in cinemas); Republic of Korea (restrictions on Internet advertising with incentives to purchase); Ireland (restrictions on use of celebrities); United Kingdom (restrictions on product placement and sponsorship of TV programs)	
		Requirement that advertisements carry a health message	France	All television advertising (targeted at children or adults) for processed food and drinks, or food and drinks containing added fats, sweeteners, and/or salt, must be accompanied by a health message such as: "For your health, eat at least five fruits and vegetables a day" (implemented in 2007).
Economic tools	Taxes reduce consumption of the taxed product, whereas vouchers, financial incentives, and fruit and vegetable boxes raise consumption of the targeted foods among low-income families.	Health-related food taxes	Berkeley (USA), Chile, Finland, France, French Polynesia, Hungary, Mauritius, Mexico, Samoa, Tonga	In Mexico an excise duty of 1 peso ($0.80) per liter is applied on sugary drinks, and an ad valorem excise duty of 8 percent applies to foods with high caloric density, defined as equal to or more than 275 calories per 100 grams (implemented in 2014).
		Government subsidy schemes for healthy foods for lower-income groups	United Kingdom, United States	In the United States, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides food vouchers to low-income pregnant women, breastfeeding women, and infants and children under age 5. The package of foods that women are permitted to purchase with the vouchers was changed in 2009 to become more nutritious. Women also receive nutrition education (original program implemented in 1972; food package revised in 2009).
Agriculture and food systems	Evidence on the impact on healthy diets is still emerging, but there is moderate evidence from the US that initiatives involving local agricultural production can improve dietary knowledge, attitudes, and intake.	"Home-grown" school feeding programs (that is, schools purchase food for school meals direct from farmers)	Brazil[a]	Brazilian law requires 30 percent of the national budget for food served in the school meals program to be spent on foods from family farms, with priority given to foods produced using agroecological methods (implemented in 2010).

continued

Table 4.4 continued

Domain	Evidence on the effects from the published literature	Examples of policies adopted by countries	Examples of countries that have implemented policies	National examples
Food offered in specific settings	School food standards reduce calorie intake and increase healthy food intake in schools. School fruit and vegetable programs have a small but significant impact on increasing daily vegetable and especially fruit intake among schoolchildren, including children of low socioeconomic status.	Mandatory standards for food available in schools	Australia, Bermuda, Brazil, Bulgaria, Costa Rica, Estonia, Fiji, Finland, France, Hungary, Iran, Jordan, Kuwait, Latvia, Lithuania, Mauritius, Mexico, Romania, Slovenia, Sweden, United Arab Emirates, United Kingdom, United States, Uruguay, Vanuatu	In Costa Rica, Exec. Decree No. 36910-MEP-S permits schools to sell only food and drink that meet specific nutritional criteria (implemented in 2012). In 2008, the Iranian Ministries of Education and Health developed the Guidelines for Healthy Diet and School Buffets. In 2013 the nutrition part of the guidelines was updated. The guidelines list foods based on their sugar, salt, fat, and additive content.
		Mandatory restrictions specific to vending machines in schools	Bermuda, France, Slovenia, some US states	In 2010 Slovenia adopted a ban on vending machines on school premises (since incorporated into the 2013 School Nutrition Law). It was designed not only to reduce consumption of foods high in fat, sugar, and salt, but also to remove marketing space on the exterior of vending machines.
		Government schemes for providing fruits and vegetables in schools	Some Australian states, Canada, EU-28, Norway, United States	The EU School Fruit Scheme provides financing to 26 EU countries to distribute fruits and vegetables to children age 6–10 years in schools. To receive the financing, schools are also required to implement "accompanying measures," such as educational programs (implemented in 2009).
Nutritional quality of food produced by food processors	Evidence from voluntary approaches consistently shows that salt reduction strategies lead to lower sodium intakes (mandatory salt targets have not been implemented recently enough to be evaluated). Regulations on maximum limits lead to reductions in actual and reported trans fatty acids in food and encourage food producers to reformulate their products.	Government-led voluntary programs for reformulation	Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Costa Rica, Croatia, Czech Republic, Ecuador, France, Hungary, Ireland, Italy, Kuwait, Mexico, Netherlands, New Zealand, Republic of Korea, Spain, Switzerland, United Kingdom, United States, Uruguay	In 2011, the Chilean government and bakers agreed on a voluntary target for salt content in bread of 600mg/100g.
		Mandatory limits on salt levels in select foods	Argentina, Belgium, Bulgaria, Greece, Iran, Paraguay, Portugal, South Africa	In 2013, the South African Department of Health adopted mandatory targets for salt reduction in 13 food categories (rolling implementation required by 2016–2019).
		Mandatory removal of trans fats	Argentina, Austria, Denmark, Hungary, Iceland, Iran, Switzerland, United States	In 2010, the Argentine Food Code was amended to limit trans fat content to less than 2 percent of total vegetable fats in oils and margarines and 5 percent of total fat in all other foods (implemented in 2014).
Food retailing	The evidence base is still emerging.	Initiatives to increase the availability of healthier foods in stores and food service outlets and decrease the availability of less healthy foods	France, Mexico, Singapore, United Kingdom, United States	In Singapore, the Health Promotion Board established the Healthier Hawker program to encourage street food vendors to use healthier ingredients (such as reduced-fat oils, fiber-enriched noodles, brown rice, low-fat milk in place of coconut milk, reduced-sodium salt, and low-sugar drinks). The government absorbs some costs associated with the use of healthier ingredients, and participating vendors can display government-certified labels saying, for example, "I cook with healthier oil" (implemented in 2011).

Source: Policy domains are from WHO (2013); specific examples of policies implemented by countries and national examples are from www.wcrf.org/NOURISHING; evidence reviews are from de Sa and Lock (2008); Van Cauwenberghe et al. (2010); Chriqui et al. (2014); Driessen et al. (2014); Waters et al. (2011); Hoelscher et al. (2013); van Stralen et al. (2011); Eyles et al. (2012); Epstein et al. (2012); Thow et al. (2014); Verrotti et al. (2014); World Obesity Federation (2014); An (2013); Black et al. (2012); Campos et al. (2011); Grunert et al. (2010); Hersey et al. (2013); Kiszko et al. (2014); Mozaffarian et al. (2012); Hendry et al. (2015); Downs et al. (2013).

[a] Many more countries have home-grown school feeding programs, but it is not clear if they are national policies implemented to address unhealthy diets, obesity, and nutrition-related noncommunicable diseases.

TABLE 4.5 Availability of coverage data for recommended proven interventions to address maternal and child undernutrition

Time period	Intervention and target population	Availability of internationally comparable data on indicators of coverage of the interventions	Comments
Pre-conception	**1. Folic acid supplementation or fortification (such as folate in staple grain)[a]** Target population: All (key aim is to ensure women enter pregnancy with sufficient levels during the first 30 days to prevent neural tube defects)	No data are available on the percentage of population consuming folic acid or folate.	Data on a country's folate fortification status are available from the FFI and are included in the GNR country profiles. However, the data are not included in the coverage analysis in this chapter because they refer to the existence of a country's fortification efforts (planning, mandatory, no fortification) but do not show the population coverage.
	2. Universal salt iodization[a] Target population: All over 1 year of age (children under age 1 are assumed to receive sufficient iodine through breastmilk or formula); key aim is to ensure women enter pregnancy with adequate levels to prevent cretinism, poor cognitive development, stillbirth, and miscarriage	Data are available on the percentage of households consuming adequately iodized salt. The data are available from the UNICEF global database (data.unicef.org). This indicator is used in the coverage analysis in this chapter.	The poor quality of data for most estimates may mean that estimates are not comparable over time.
Pregnancy	**3. Balanced energy-protein supplementation** Target population: Pregnant women at risk, women living in extreme poverty	No data are available on the percentage of pregnant women at risk or women living in extreme poverty who receive balanced energy-protein supplementation.	Some countries have introduced programs providing cash or vouchers to at-risk women. Comparative data are not available because there is currently no standard consensus indicator for monitoring, and most countries have no programs at scale to allow for assessing national coverage.
	4. Calcium supplementation[b] Target population: Pregnant women (although fortification programs target the whole population, a key aim is to ensure women enter pregnancy with sufficient levels to protect against hypertension)	No data are available on the percentage of pregnant women or women of reproductive age who receive calcium supplementation.	Few national programs exist. Global guidance and a standard consensus indicator are not yet available.
	5. Multiple micronutrient supplementation Target population: Pregnant women	No data are available on the percentage of pregnant women receiving multiple micronutrient supplementation. The available data closest to this intervention is percentage of pregnant women who received iron-folic acid supplementation for 90+ days. The data are available from Demographic and Health Surveys since 2003. This indicator is used in the coverage analysis in this chapter.	There are currently no national programs although micronutrient supplementation is practiced in high-income countries and is available through private markets in many other countries. Some countries do implement the WHO-recommended iron-folic acid supplementation program. Standard global consensus indicators have not yet been developed to track implementation so comparative data are not available.
Postnatal and infancy	**6. Promotion of breastfeeding[a]** Target population: Mothers	Data are available on early initiation of breastfeeding (percentage of children who were put to the breast within 1 hour of birth), percentage of infants 0–5 months old who were exclusively breastfed, percentage of children 12–15 months old who are fed breast-milk, and percentage of children 20–23 months old who received breast milk. These data are proxy indicators of coverage—that is, the percentage of mothers that undertake breastfeeding practices that can be influenced by promotional activities. Data are available from the UNICEF global database (data.unicef.org). These indicators, except for indicator on children who are breastfed at 20–23 months, are used in the coverage analysis in this chapter.	In the context of tracking progress toward the World Health Assembly nutrition targets, an advisory group is being formed to develop standard indicators for monitoring breastfeeding support programs. Health facility surveys could include modules to collect data related to the Baby Friendly Hospital Initiative. More efforts are needed to integrate additional nutrition indicators into health facility assessments.

continued

Table 4.5 continued

Time period	Intervention and target population	Availability of internationally comparable data on indicators of coverage of the interventions	Comments
Childhood	**7. Promotion of complementary feeding for food-secure and food-insecure populations**[a] Target population: Children 6–23 months of age	No data are available on the percentage of children 6–23 months old who receive adequate complementary feeding interventions. As a proxy indicator of interventions to promote complementary feeding, data are available on minimum acceptable diet (MAD) for children 6–23 months old and minimum dietary diversity[c] (MDD) for children 6–23 months old. Data are available from the UNICEF global database (data.unicef.org). These indicators are used in the coverage analysis in this chapter.	More data collection efforts are needed on program coverage.
	8. Feeding for children with moderate acute malnutrition (MAM)[a] Target population: Children 6–59 months of age	Limited data are available on the percentage of children with MAM who receive feeding.	The World Food Programme has the mandate to address moderate acute malnutrition and has food distribution centers in 70 countries. The Coverage Monitoring Network also works to improve data availability in this area.
	9. Therapeutic feeding for severely wasted children[a] Target population: Severely wasted children 6–59 months of age	Limited data are available on the percentage of severely wasted children who receive therapeutic feeding.	Geographic coverage data are available, but they relate primarily to the existence—not the use—of clinics equipped to provide such services. UNICEF has a mandate to address severe acute malnutrition (SAM) in communities, and WHO has a mandate to address facility-based management of SAM.
	10. Vitamin A supplementation full coverage (2 doses in a calendar year)[a] Target population: Children 6–59 months of age	Data are available on the percentage of children 6–59 months of age who receive full coverage of vitamin A supplements. Data are available from the UNICEF global database (data.unicef.org). The indicator is used in the coverage analysis in this chapter.	Data are available from 2005 in the UNICEF global databases for countries considered high-priority countries for national-level high-dose vitamin A supplementation programs owing to high under-5 mortality and/or high levels of vitamin A deficiency.
	11. Preventive zinc supplementation Target population: Children 0–59 months of age	No data are available on the percentage of children 0–59 months who receive preventive zinc supplementation.	There are no national programs for preventative zinc supplementation. Zinc supplementation may be covered through home fortification and multinutrient programs, which are being scaled up in some countries.
	12. Zinc treatment for diarrhea[a] Target population: Children 0–59 months of age with diarrhea	Data are available from DHSs for 38 countries on the percentage of children 0–59 months with diarrhea who receive zinc treatment. Data are available from personal communication from L. Carvajal, UNICEF, September 9, 2014. The indicator is used in the coverage analysis in this chapter.	31 of the 38 DHS countries have coverage levels below 5 percent. Information on policies on low-osmolarity oral rehydration solution (ORS) and zinc for management of diarrhea is also available for many countries through the Global Maternal, Newborn, Child, and Adolescent Health Policy indicator survey conducted by the WHO on a biannual basis.

Source: Authors, based on Bhutta et al. (2013).

[a] Recommended by WHO's e-Library of Evidence for Nutrition Actions (eLENA) (http://www.who.int/elena).

[b] Recommended by WHO in populations where calcium intake is low (WHO 2013d).

[c] Minimum acceptable diet (MAD) is a composite indicator calculated from the proportion of breastfed children age 6–23 months who had at least the minimum dietary diversity and the minimum meal frequency during the previous day and the proportion of nonbreastfed children age 6–23 months who received at least two milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day. Minimum dietary diversity (MDD) is the proportion of children age 6–23 months who receive foods from four or more food groups. See Technical Note 1 for the *Global Nutrition Report 2014* at www.globalnutritionreport.org.

healthy food environments. As set out in the WHO Global Action Plan for the Prevention and Control of NCDs 2013–2020 (WHO 2013b), the Framework for Action of the ICN2 (FAO/WHO 2014), numerous national strategies and policy frameworks proposed by researchers and NGOs (WCRF 2015; INFORMAS 2015), these are (1) nutrition labeling, (2) marketing, (3) economic tools, (4) food offered in specific settings, (5) the nutritional quality of food produced by food processors, (6) food retailing, and (7) agriculture and food systems. Each of these domains includes a range of potential policy options (Table 4.4).

Policies in these domains can take the form of laws, mandatory regulations, official guidelines for voluntary

adoption, or structured incentives to encourage actions by stakeholders. They can be developed and implemented at the national level, the regional level (through groups of countries), or the local or subnational level.

Several initiatives are working to track policies that affect the food environment, including the WHO Global Database on the Implementation of Nutrition Action (GINA), the World Cancer Research Fund International's NOURISHING database, and INFORMAS. There are also regional tracking initiatives (such as the WHO Europe Database on Nutrition, Obesity, and Physical Activity), as well as initiatives focused on the United States (such as the University of Connecticut's Rudd Center for Food and Obesity Legislation Database) and Canada (such as the Prevention Policies Directory).

Table 4.4 gives a picture of the degree to which selected countries have implemented policies in the seven domains. It shows that while a considerable number of policy actions have been implemented, most countries lack implemented policies. For example, despite the existence of WHO's Set of Recommendations on the Marketing of Food and Non-Alcoholic Beverages to Children, few restrictions on food advertising and promotion to children have been carried out anywhere in the world. Few actions have been taken in agriculture and food systems to address obesity and nutrition-related noncommunicable diseases. The most frequently implemented actions are mandatory nutrition labeling and fruit and vegetable programs in schools—a reflection of their rollout in the EU-28. There are also a relatively large number of voluntary programs to reformulate processed foods, which reflect the development of salt-reduction initiatives in high- and upper-middle-income countries, as well as increasing action on trans fats.

The vast majority of policies have been developed and implemented in high-income countries. Of the 67 countries identified with the policies listed in Table 4.4, 63 percent are high-income countries, 27 percent are upper-middle-income countries, and 10 percent are lower-middle-income countries. None are low-income countries. Upper-middle-income countries have more mandatory salt limits and health-related food taxes than high-income countries.

This "patchy" progress highlights the challenges of implementing such policies (Roberto et al. 2015). Not only is there the challenge of engaging other government departments and sectors for implementation, but economic actors frequently push back against change (Roberto et al. 2015) and citizen demand for policy change is still nascent (Huang et al. 2015).

A growing base of evidence suggests, though, that these policies can work, through various mechanisms, to improve diets among specific groups (Hawkes et al. 2015). Table 4.4 summarizes the evidence to date. In addition to working directly by influencing consumer choices, policy actions can also indirectly influence decisions made by actors in the food system (for example, nutrition labeling requirements can lead food processors to reformulate foods), which in turn can positively reinforce improvements to food environments. These policies therefore have potential to create incentives for food systems to become more nutrition friendly, as described in Chapter 7 on food systems.

TARGETED INTERVENTIONS TO PREVENT OR TREAT THE IMMEDIATE CAUSES OF MALNUTRITION

UNDERNUTRITION-SPECIFIC INTERVENTIONS

Undernutrition-specific interventions are those that target the immediate determinants of undernutrition with the primary goal of improving people's nutritional status. In 2013 the WHO published a summary of guidance on nutrition interventions targeting the first 1,000 days of life, comprising 24 "essential nutrition actions" (WHO 2013a). In the same year, Bhutta et al. (2013) identified 12 interventions proven to prevent or treat undernutrition in the Lancet series on maternal and child nutrition.

Here we focus on tracking the 12 interventions identified by Bhutta et al. (2013), listed in Table 4.5. These interventions focus mainly on tackling poor dietary intake and disease, promoting breastfeeding, and treating acute malnutrition. Although most of the interventions are exclusive to undernutrition, interventions to promote breastfeeding and complementary feeding in the first 1,000 days are relevant to malnutrition in all its forms. It should be noted that the 12 interventions do not cover adolescence. Emerging research shows the importance of the nutrition of adolescent girls for birth outcomes and subsequent nutrition throughout the lifecycle (Dominguez-Salas et al. 2014), making it more urgent than ever to develop effective interventions for the adolescent preconception period in the future.

It is challenging to measure how well countries are implementing and scaling up these 12 interventions. Simply having a policy or program to deliver these interventions does not guarantee that people will use them if, for example, they cannot afford them, get access to them, or learn about their benefits. Given these factors, we use "coverage"—that is, the percentage of individuals who need a service or intervention that actually receive it—as an indicator of implementation. Coverage indicators are a

good measure of programmatic success or reach since they change rapidly in response to programmatic changes.

Data are not available to track coverage of all 12 of these proven interventions. Indicators of coverage are available for three interventions: salt iodization, vitamin A supplementation, and zinc treatment for diarrhea. Available coverage data on iron–folic acid supplementation during pregnancy can be used as a proxy for multiple micronutrient supplementation during pregnancy. Proxy indicators of coverage are also available for breastfeeding promotion (with three indicators) and promotion of complementary feeding (with two indicators). These nine indicators, covering six interventions, are analyzed below. Six interventions, however, have inadequate comparable data on coverage for a variety of reasons, listed in Table 4.5. They are preconception folic acid supplementation or fortification, balanced energy-protein supplementation, calcium supplementation, feeding for children with moderate acute malnutrition (MAM), therapeutic feeding for severely wasted children, and preventive zinc supplementation.

So what do these coverage indicators tell us about how well countries are delivering proven nutrition-specific interventions to people who need them? Based on results from countries that have data (Table 4.6), coverage for all nine indicators shown varies tremendously between countries. On average, though, continued breastfeeding has one of the highest levels of coverage, with median coverage of 80 percent. Still, there is a large range in performance: one country had a rate of just 12 percent and another of 97 percent. Coverage is considerably lower for exclusive breastfeeding for infants under 6 months and early initiation of breastfeeding.

Of the supplementation and fortification programs, countries are doing best at providing vitamin A supplementation, with median coverage of 87 percent, followed by universal salt iodization (57 percent). On the other hand, the median coverage of iron and folic acid supplementation for pregnant women is low, at 29 percent, with only 28 countries able to report on this indicator.

For complementary feeding interventions for children aged 6–23 months, two proxy indicators are used, and they reflect low rates of coverage. The median rate of children achieving a minimum diverse diet is 29 percent, and a minimum acceptable diet, 14 percent.

Finally, coverage is lowest for zinc treatment programs for diarrhea, which is notable given diarrhea is a leading cause of mortality for children under age 5.

For the management of severe acute malnutrition (SAM), the most recent data on the coverage of SAM treatment are presented in Appendix Table A10.1 (see globalnutritionreport.org/the-report/appendixes). These data, housed by the Coverage Monitoring Network (CMN), are based on collated measurements of treatment coverage using well-established methodologies from a wide variety of 19 countries. The *Global Nutrition Report 2014* reported on data from 22 countries provided by CMN. Fifteen of these countries are reported on in 2014

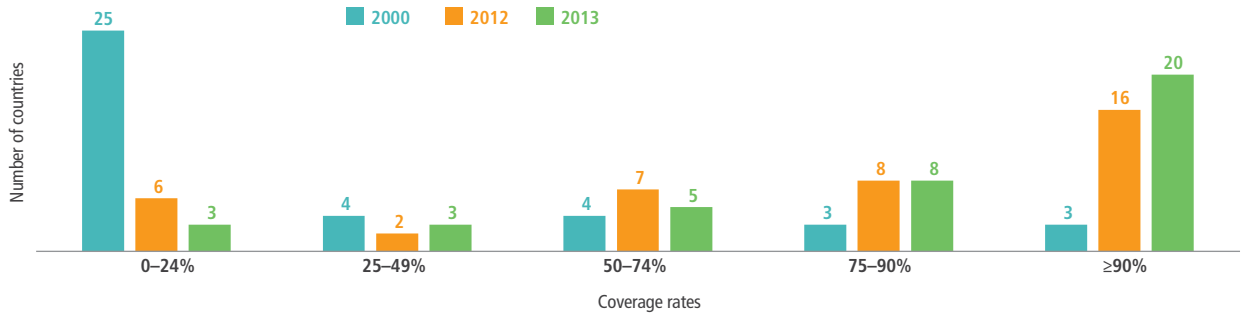
TABLE 4.6 Are people receiving nutrition-specific interventions?

Indicator of coverage of interventions	Number of countries with data	% of people in each country who need an intervention and receive it (coverage)		
		Median for countries with data	Lowest prevalence	Highest prevalence
Children 6–59 months who receive full coverage of vitamin A supplements	63	87.0	0.0	99.0
Children 12–15 months who are fed breast milk	76	80.2	12.4	97.1
Households consuming adequately iodized salt	40	56.7	7.3	96.8
Early initiation of breastfeeding (proportion of children who were put to the breast within 1 hour of birth)	86	51.2	14.4	94.5
Infants 0–5 months old who were exclusively breastfed	84	34.5	2.8	84.9
Proportion of pregnant women who received iron–folic acid supplementation for 90+ days	28	28.6	0.4	62.6
Children 6–23 months who receive minimum dietary diversity	41	29.0	5.0	90.0
Children 6–23 months who receive a minimum acceptable diet	39	14.0	3.0	72.0
Children 0–59 months with diarrhea who receive zinc treatment	27	1.1	0.1	49.1

Source: Vitamin A supplementation: UNICEF (2015c); indicators related to breastfeeding: UNICEF (2015a); iodized salt consumption: UNICEF (2015b); iron–folic acid supplementation: Demographic and Health Surveys since 2003; minimum dietary diversity and minimum acceptable diet: UNICEF (2015a); zinc treatment for diarrhea: personal communication from L. Carvajal, UNICEF, September 9, 2014.

Note: Data are from the most recent survey available in the period 2010–2014.

FIGURE 4.2 Coverage of vitamin A supplementation in 39 countries, 2000, 2012, and 2013



Source: Julia Krasevec, UNICEF, personal communication.

Note: Data are for children age 6–59 months.

and 2015. Four new countries enter the database in 2015 (Bangladesh, Central African Republic, Côte d'Ivoire, and Yemen), and 7 countries exit the database (Angola, Mauritania, Nepal, Philippines, Rwanda, Sierra Leone, and Somalia). Coverage assessments are not available for all countries as they are demand driven. In 2015, treatment coverage across sites ranges from 11 to 75 percent, with medians for multiple observations ranging from 27 to 51 percent. These direct coverage rates are similar to those reported in the 2014 report. In areas where the data do exist, coverage of SAM treatment remains low, and this is especially alarming given the high mortality risk associated with SAM (Black et al. 2013). In addition, out of 25 countries with SAM prevalence rates above or equal to 3 percent (UNICEF/WHO/World Bank 2015), CMN coverage data exist for only 8. SAM coverage thus continues to fall well short of needs, and data on SAM coverage continue to be sparse.

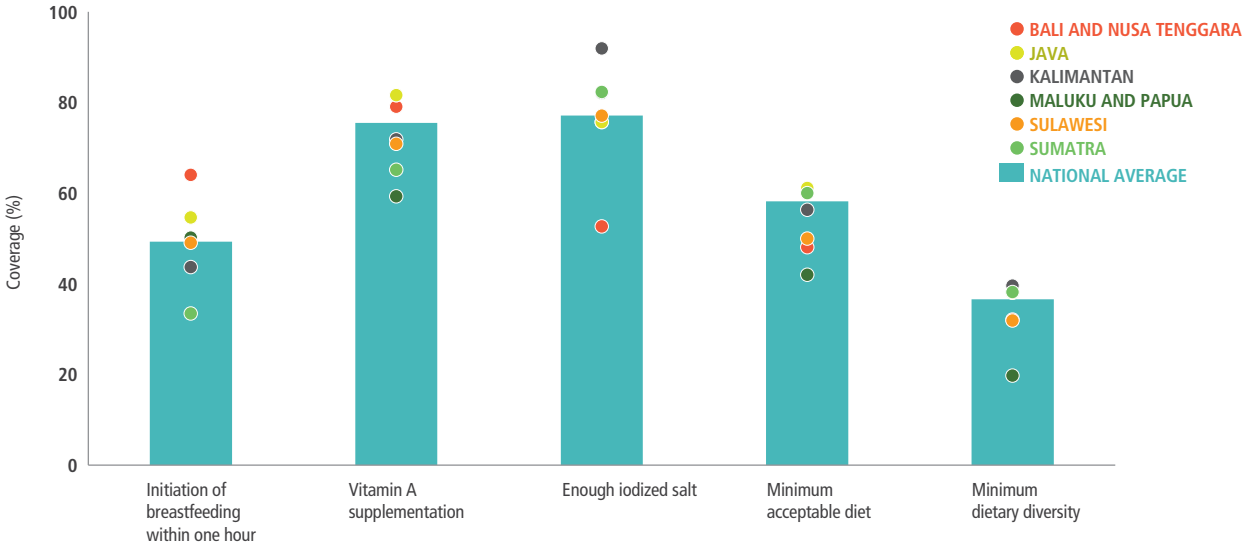
It is challenging to track trends in coverage of undernutrition-specific interventions at a global level because for many countries these data are not recorded over time. The only undernutrition-specific intervention for which a limited trend analysis can be undertaken is coverage for vitamin A supplementation for children 6–59 months. Coverage data for this intervention are available for 39 countries at three points in time—2000, 2012, and 2013—and show that coverage in these countries has improved over time (Figure 4.2). More such data points on coverage of nutrition-specific interventions would help us better assess the scale-up of nutrition actions.

National estimates of coverage mask large inequities in coverage within countries. To help identify and respond to coverage gaps, decisionmakers need subnational coverage data. For example, Figure 4.3 shows coverage data for five critical interventions to address maternal and child undernutrition in eight provinces of Indonesia. It reveals both wide variations in national coverage between the five interventions and variations in the coverage of these interventions between the eight provinces. At the national level, for instance, minimum diet diversity and the initiation of breastfeeding within one hour fall below 50 percent coverage, whereas coverage of vitamin A supplementation and iodization exceeds 70 percent.

These types of findings present useful pointers for policymakers. In this case they show that Indonesia must do more to increase the diversity of children's diets and to enable women to begin breastfeeding immediately after birth, while sustaining and increasing its successes in supplementation programs. The figure also shows that although the provinces of Maluku and Papua tend to perform least well, no province does well on all indicators. Sulawesi, Bali and Nusa Tenggara, Java, and Kalimantan all take turns as best performers.

The data on coverage raise two research questions. First, why does coverage of proven interventions vary so much within and between countries? To begin to address this question we determined rank correlation coefficients for the 13 countries with all nine coverage indicators for the period 1994–2010. Yet we found few significant correlations between country coverage rankings across different indicators. In other words, a high ranking in one indicator was not a predictor that a country would have a high rank in others. In addition, we looked at whether coverage rates varied in association with other indicators, including GNP per capita, female secondary enrollment rates, and some of the indicators that make up HANCI. Yet we likewise found no statistically significant covariates. Whether this is a reflection of small sample sizes or

FIGURE 4.3 Coverage of five interventions in Indonesia, national average and eight provinces



Source: Initiation of breastfeeding within one hour of birth, minimum acceptable diet, and minimum dietary diversity: Statistics Indonesia et al. (2013); vitamin A supplementation and enough iodized salt: Indonesia, Ministry of Health (2013).

Note: Enough iodized salt = iodine content of salt is ≥30 parts per million KIO3 (potassium iodate) based on recommendations from WHO, UNICEF, and ICCIDD (2007).

misspecified econometrics is not clear. More research is needed on these issues.

Second, why is there so little data on coverage? Of the 12 interventions in Table 4.5, only 3 have equivalent coverage data, while another 3 have proxy coverage data. Of these, as Table 4.6 shows, the data are available for only a fraction of the countries that need them. In addition, much of the coverage data for these 6 interventions is out of date—36 percent of the most recent coverage data points are from 2009 or earlier. Only 7 countries have data for all 9 indicators of the 6 interventions between 2010 and 2014. Four countries have data on only 1 indicator, and 83 have no data between 2010 and 2014. Of 193 countries, 52 have no data at all. As suggested in Table 4.5, the causes of this lack of data are different for each intervention: either the program itself has not been scaled up, or internationally comparable coverage indicators have not been developed, or current surveys do not include the indicators if they exist. The nature of the barriers to collecting more coverage data is an issue worthy of further investigation.

INTERVENTIONS DELIVERED TO INDIVIDUALS IN SPECIFIC SETTINGS TO PREVENT OR MANAGE OBESITY

Many kinds of interventions can be delivered to individuals in various settings to prevent or manage unhealthy diets, obesity, and nutrition-related noncommunicable diseases. These include social marketing campaigns in community settings, nutrition education in schools, counseling in primary care for children with mild obesity, and bariatric surgery.

Most of the evidence on preventing obesity in specific settings comes from schools. A recent meta-analysis of multiple studies shows moderately strong evidence of the effectiveness of school-based interventions to address childhood obesity (Wang et al. 2015). The most recent Cochrane review of interventions to address childhood obesity (Waters et al. 2011) likewise found evidence of effectiveness for school-based actions. These included professional development for teachers and other staff to train them in implementing health promotion strategies and activities, as well as support for parents in encouraging children to be more active, eat more nutritious foods, and spend less time in screen-based activities at home.

There is very little information available about implementation of programs to manage obesity around the world. In the United States, guidelines on managing obesity are available but are still not adequately applied. Experience with preventing and treating obesity in stunted children in low- and middle-income countries is scarce (Dietz et al. 2015).

A CONVERGENCE OF ACTIONS AT MULTIPLE LEVELS

This chapter provides insights into progress on three distinct sets of actions, but evidence and experience show that real progress comes from combining them. In the *Global Nutrition Report 2014,* case studies of efforts to

PANEL 4.4 WHAT'S BEHIND TANZANIA'S SHARP DECLINE IN CHILD STUNTING?

LAWRENCE HADDAD

Rates of child stunting in Tanzania, though still high, have fallen sharply in the past few years. Three national surveys in 2004, 2009, and 2010 showed a static rate of stunting at 44–43 percent, whereas two later national surveys—in 2011 and 2014—show rates of 35 percent (IFPRI 2014b). The average annual rate of reduction in stunting from 2010 to 2014 is approximately 5 percent—faster than the nearly 4 percent annual rate required to meet the World Health Assembly target (IFPRI 2014c). What is driving this decline? Unfortunately, there is no definitive, in-depth analysis of the factors behind the improvement in child growth, but we have several clues:

- A 2006 study from the Kagera region using four rounds of survey data from 1991–1994 showed that a combination of income gains and health program interventions was most effective at accelerating stunting rate declines in that part of Tanzania at that time (Alderman et al. 2006).
- The 2014 Tanzania National Nutrition Survey revealed some improvements in program coverage and nutrition outcomes, but these have been modest (Tanzania, Ministry of Health and Social Welfare 2014). From 2010 to 2014, thinness in women of reproductive age declined from 11 to 6 percent, vitamin A supplementation rates increased from 61 to 72 percent, and iron-folate supplementation during pregnancy increased from 3.5 to 8.3 percent. On the other hand, exclusive breastfeeding rates declined from 50 to 41 percent, rates of infants and young children with minimum acceptable diets are flat at 20 percent, and the percentage of households using iodized salt declined from 82 to 64 percent.
- Undernourishment rates declined modestly, from 41 percent in 2000 to 35 percent in 2014. Access to improved water and sanitation in 2012 remained low at 53 percent and 22 percent, respectively—not much changed from their rates in 2000 (54 percent and 15 percent, respectively) (IFPRI 2014b).
- Rates of $1.25-a-day poverty almost halved—from 85 to 43 percent—between 2000 and 2012 (World Bank 2015c).
- The Tanzanian government's spending on health increased substantially between 2008 (US$383 million) and 2014 (US$622 million) (West-Slevin and Dutta 2015).
- Government spending on nutrition is also increasing rapidly. The 2014 nutrition public expenditure review shows that between 2010 and 2012 the total budget for the nutrition sector, though small, almost doubled, and the government's share in that budget, although quite low at about 30 percent, held steady (Tanzania, Ministry of Finance 2014).

In conclusion, strong reductions in poverty, allied to modest changes in underlying determinants and program coverage, backed with strong commitments by government and external partners—manifest in increased funding—are potential explanations for the declines in stunting. Of course, more research is needed for a more definitive answer.

reduce undernutrition in Bangladesh, Brazil, and the Indian state of Maharashtra showed the potency of this mix of actions: the expansion of proven interventions to reduce malnutrition; good performance of the policy areas that are highly relevant for nutrition such as food, health, water and sanitation, education, women's empowerment, and poverty reduction; and a political environment in which powerful leaders commit to reducing malnutrition and are held accountable for their commitments. The importance of this combination can also be inferred from the recent performance of Colombia (Panel 4.2) and Tanzania (Panel 4.4).

In recent years it has likewise become increasingly evident that multiple actions are needed to enable effective and sustainable improvements in diets. Isolated actions are unlikely to work to reach all population groups (Butland et al. 2007; Cecchini et al. 2010; Hawkes et al. 2015). National obesity strategies increasingly aim to incorporate multiple strategies in multiple sectors and at both the national and local levels. The Brazilian government published the Intersectoral Strategy for Obesity Prevention and Control in 2014. In Mexico the National Agreement for Nutritional Health: A Strategy against Overweight and Obesity in Mexico (2010–2014) led to the adoption of a range of different actions. And the subnational level has provided fertile ground for testing more comprehensive approaches. New York City is often cited as having undertaken the most comprehensive

PANEL 4.5 HEALTHY TOGETHER VICTORIA: AN APPROACH TO TACKLING OBESITY IN AUSTRALIA

SHELLEY BOWEN

The state of Victoria in Australia, with a population of nearly 6 million people, has developed a multilevel, whole-of-system approach to tackling overweight and obesity.

The Department of Health and Human Services stewards a population-wide health policy effort called Healthy Together Victoria (HTV), which provides policy frameworks, a range of leadership and practice networks, quality benchmarks for healthy food culture change in various settings, social marketing and communications strategies, and events to mobilize action on nutrition and healthy eating. This effort also includes direct support to 14 local government municipalities, known as Healthy Together Communities. Healthy Together Communities reach 1.33 million Victorians.

HTV aims to inspire multiple levels of action through a comprehensive package of system-changing interventions. The systems approach applied across HTV recognizes that preventing obesity is complex, requiring action on the multiple interconnecting influences on the food system and on people's opportunities for healthy choice. This approach involves two critical interventions. The first is a workforce of more than 200 change agents, employed in state and local community roles across the state of Victoria, who think and act with a "systems" perspective. The second is a strategy of leadership for systems change, involving hundreds more people in leadership roles that connect communities and actions and build a movement for good health.

How does this translate into action to build a healthy food system? The Victorian Healthy Food Charter guides the system's policies and quality benchmarks for healthy eating for early childhood, schools, businesses, and hospitals. At the state level, more than 40 food-system actors form the Victorian Healthy Eating Enterprise and work to achieve collective impact through food service outlets, such as by placing healthy vending machines in train stations and hospitals and setting healthy catering and procurement policies for public sector outlets including parks and recreation areas and for catering and volunteer organizations. For example, the YMCA, an Enterprise member with 6,300 staff and 70,000 members, has initiated a catering policy of no sugar-sweetened beverages in all of its 150 outlets across Victoria, an Australian first.

The keys to a systems effort and effect are the principles of experimentation and capacity for scale of adoption and reach. This effort is about healthy food being embedded in the hearts and minds of communities and leaders. It is about healthy food as a social norm, not as an exception.

regulatory approach to improve the healthiness of food environments, from trans fat restrictions to mass media campaigns (Swinburn et al. 2015). Also at the subnational level, Healthy Together Victoria in Australia aims to inspire multiple layers of action (Panel 4.5).

A remaining gap is the development and implementation of comprehensive, multilevel approaches that cover all forms of malnutrition. Evidence compiled in WHO's Global Nutrition Policy Review showed that existing national nutrition policies tend not to adequately integrate all forms of malnutrition (WHO 2013c). At the international level, the Framework for Action of the ICN2 addresses this gap by incorporating actions that address different forms of malnutrition (FAO and WHO 2014).

Finally, we have an urgent need for a clear list of actions that can do double duty, combatting both undernutrition and obesity/noncommunicable diseases at once. Although the synergies in approaches have been debated for more than two decades (FAO and WHO 1992; UNSCN 2006b), more work is needed to bring together actions that address both undernutrition and unhealthy diets in an internationally agreed-upon package. The beginnings of such a list are already taking shape. The analysis in this chapter and in Chapter 7 on food systems points to four broad areas where shared actions could help address both concerns at the same time:

1. political actions and strategies to motivate and enable nutrition improvement;
2. development of food environments that support healthy growth by providing diverse diets throughout the life course;
3. actions in the first 1,000 days after conception as well as during mothers' preconception period; and
4. promotion of nutrition-friendly food systems.

Specific double-duty actions that could combat both undernutrition and obesity/nutrition-related noncommunicable diseases include counseling women during pre-

pregnancy and pregnancy about breastfeeding and healthy eating; providing nutritious foods, or targeted subsidies for such foods, to disadvantaged, vulnerable women; disseminating food-based dietary guidelines for infants, children, and adolescents; promoting breastfeeding and adequate complementary feeding; and screening children for overweight as well as underweight in growth assessments (WHO 2014a).

RECOMMENDED ACTIONS

Governments, international agencies, civil society organizations, and businesses should implement the ICN2 Framework for Action, which addresses malnutrition in all its forms. To encourage action, the **Food and Agriculture Organization of the United Nations (FAO) and WHO** should, by the end of 2016, develop objective and verifiable indicators for determining how well the Framework for Action is being implemented. The **Committee on Food Security** should identify opportunities for making nutrition actions across sectors more coherent. **Civil society** should raise awareness and mobilize support for implementing the framework and highlight areas where progress is lagging. To encourage a focus on malnutrition in all its forms, **researchers** should identify actions that address both undernutrition and obesity/nutrition-related noncommunicable diseases synergistically and clarify the factors that can create an enabling environment for improving nutrition.

1. **WHO and FAO** should develop objective and verifiable SMART indicators of progress in the implementation of the ICN2 Framework for Action by the end of 2016. SMART indicators will guide action more effectively, identify areas where capacity needs strengthening, and make the Framework for Action a more useful tool.
2. **Civil society organizations** concerned with undernutrition, as well as those concerned with obesity and nutrition-related noncommunicable diseases, should work together to mobilize support for implementing actions to address malnutrition in all its forms, including the Decade of Action on Nutrition proposed by the ICN2 Rome Declaration. Civil society organizations concerned with different aspects of nutrition have only recently begun to engage with each other. The Decade of Action on Nutrition is a key opportunity to come together to advocate a common cause and build momentum for action to reduce all forms of malnutrition.
3. **Researchers** who work on all forms of malnutrition should come together with the **international agencies** to identify "double-duty actions" that can address undernutrition as well as overweight, obesity, and nutrition-related noncommunicable diseases simultaneously. They should share their findings in a report at the 2016 N4G Rio Summit and other relevant forums. Steps to create more enabling political environments, healthier food environments, and nutrition-friendly food systems, as well as to promote nutrition in children's first 1,000 days, all offer opportunities for addressing both kinds of malnutrition synergistically.
4. **Researchers** should work with **national nutrition champions** to document, analyze, monitor, and evaluate efforts to create enabling environments for the implementation of nutrition actions. Combining lessons from undernutrition, obesity, and nutrition-related noncommunicable diseases, including from recent *Lancet* series on these issues, they should bring the results together into action-oriented lessons and present them in an international journal by 2018. To accomplish this, researchers will need to (1) identify which actions to track, (2) develop metrics, methods, and databases to track progress on those actions, (3) analyze the effectiveness of the actions and the factors in their success, and (4) draw lessons between countries.
5. At the World Humanitarian Summit in May 2016, **governments** should set coverage targets for interventions to address severe acute malnutrition (SAM). **Governments and donors** should then commit to monitoring progress against these targets.

5 SCALING UP FINANCIAL AND CAPACITY RESOURCES FOR NUTRITION

KEY FINDINGS

1. If improvements in nutrition status are to be accelerated, nutrition investments must increase and focus more on high-impact interventions.
2. Preliminary estimates of broad national budget allocations to nutrition are newly available from 30 countries. Fourteen countries have more precise estimates. For the 14, estimates of the percentage of government allocation to nutrition range from 0.06 percent of total government budget to 2.90 percent. The mean is 1.32 percent.
3. Donor disbursements on nutrition-specific interventions nearly doubled between 2012 and 2013—from US$0.56 billion to US$0.94 billion.
4. An ongoing analysis of how much 37 countries with a high burden of child stunting would need to invest in proven stunting interventions to achieve the WHA stunting target suggests that government domestic spending would need to more than double through 2025, and official development assistance (ODA) would need to more than quadruple over the same time period.
5. The new data reported by donors for nutrition-sensitive disbursements totalled nearly US$3 billion for 2013. The 2013 data from the EU and World Bank, however, are missing. The inclusion of these figures would likely put the total nutrition-sensitive disbursements closer to US$4 billion, or 3 percent of ODA. Total ODA nutrition spending (specific plus sensitive) would then be close to US$5 billion, or 4 percent of ODA.
6. Of 29 members of the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD), only 16 reported nutrition-specific spending greater than US$1 million in 2013. Six reported spending more than zero but less than US$1 million, and 7 reported no nutrition-specific spending.
7. Donor reporting for this report is patchy. Only 8 of 13 donors provided all of the requested data on ODA. Three major donors provided no disbursement data, and two major donors did not distinguish between nutrition-specific and nutrition-sensitive disbursements.
8. Capacity—including leadership at all levels—is vital for scaling up nutrition, but little is known about when lack of capacity is a bottleneck and what investments are most effective for addressing it.

PANEL 5.1 TANZANIA'S PUBLIC SPENDING ON NUTRITION

LAWRENCE HADDAD

In 2013–2014 Tanzania became one of the first countries to undertake a comprehensive review of public expenditures on nutrition (Tanzania, Ministry of Finance 2014).[1] The key findings were as follows:

- Nutrition allocations at the national level (excluding the resources allocated to the local councils, about 3 percent of the total) were TZS 17.8 billion (US$12.5 million), TZS 27.5 billion (US$17.6 million), and TZS 33.2 billion (US$21.3 million) in financial years 2010/2011, 2011/2012, and 2012/2013 respectively.[2] This amounts to 0.15, 0.20, and 0.22 percent of total government budgeted expenditures. This level was judged inadequate.
- Although implementing the National Nutrition Strategy was estimated to require TZS 118.9 billion in 2011/2012 and TZS 145 billion in 2012/2013, actual resources allocated at the national level covered only 23.1 percent and 22.9 percent respectively of the cost. This significant funding gap resulted in low levels of implementation.
- Public spending on nutrition interventions was not targeted to the most vulnerable groups such as children under two and pregnant women. For example, only 0.3 percent of nutrition resources were targeted to pregnant women.
- Data collection was challenging. Different data sources had different levels of accessibility, reporting procedures, and monitoring mechanisms.

Recommendations included the following:

- Establish a ring-fenced Nutrition Fund to implement the National Nutrition Strategy.
- Increase government funding of nutrition, and set a minimum amount of government investment in the nutrition sector. Ensure that nutrition interventions are included in local councils' annual budgets.
- Prepare a strategy for mobilizing other resources to fund the sector. To start with, the government should encourage donors to fund the National Nutrition Strategy implementation plan, mobilizing at least 80 percent of the needed resources by 2016.
- Develop capacity-building programs for nutrition. Ensure that local councils have the capacity to deliver nutrition services; recruit and empower district nutrition officers; and strengthen the Food and Nutrition Council's systems for planning, financial management, and monitoring and evaluation.
- Enhance coordination and partnerships. Implementation is still fragmented, and resource allocations are neither coordinated nor necessarily directed toward the most vulnerable areas and groups.
- Monitor nutrition sector interventions annually. In addition, conduct nutrition sector public expenditure reviews every two years to document progress in the sector.

SCALING UP ACTIONS AND INTERVENTIONS TO IMPROVE NUTRITION REQUIRES FINANCIAL RESOURCES BACKED UP BY INDIVIDUAL, ORGANIZATIONAL, AND SYSTEM CAPACITY TO plan for impact, refine interventions, and expand coverage while maintaining quality. This chapter focuses on these intertwined issues, with a strong emphasis on reducing undernutrition.[1]

How much money is needed to have a real impact on nutrition? In 2010 the World Bank estimated that it would cost an additional US$10.3 billion of public investment by countries and external funding agencies to scale up a set of proven undernutrition-specific interventions to 100 percent coverage in the 36 countries where most of the world's undernourished children under age 5 live (Horton et al. 2010). Such an investment, it was estimated, would save 1.1 million lives, avert 30 million cases of stunting, and save 30 million disability-adjusted life years (DALYS) annually. The magnitude of this financing estimate was verified by a similar subsequent analysis (Bhutta et al. 2013).[2] Closing this funding gap would reduce undernutrition significantly (Bhutta et al. 2013)—but far from completely. If the World Health Assembly (WHA) targets are to be met, more resources are needed for nutrition-sensitive programs and policies, and the extent of this second funding gap is currently unknown.

This chapter begins by asking how much governments currently spend on nutrition. At the time the 2014 *Global Nutrition Report* was being prepared, virtually no data existed in the public domain to track national governments' allocations to nutrition. Fortunately, that is changing. This chapter reviews the emerging and preliminary evidence from governments on their budget allocations to nutrition.

Next, we report on nutrition spending by external funding agencies, whenever possible breaking down these allocations into nutrition-specific and nutrition-sensitive spending. Whichever way one looks at the government and donor data, it is clear there is a funding gap.

We also review new financing mechanisms that should help raise funds for nutrition, and we report on new findings on the costs and benefits of scaling up nutrition actions for four African countries. These findings offer examples of how to maximize the impacts of existing and new nutrition investments.

Finally, increased funding is of limited value if the capacity to use it effectively is absent, and so the rest of the chapter focuses on capacity. It summarizes some of the key findings of a new review of scaling up, describes developments in performance-based incentives for scaling up nutrition actions, and reviews the role of leadership in scaling up nutrition action. Performance-based incentives for scale-up have been discussed widely in the broader global development community, but less so in nutrition. The issue of leadership has a long history of analysis in health, but only recently have empirical data been brought to bear on this issue in nutrition.

NATIONAL GOVERNMENT SPENDING FOR NUTRITION

In 2014, governments and their partners made efforts to develop estimates of nutrition spending in a small number of countries such as Guatemala, Malawi, Tanzania, and Zambia (Bulux et al. 2014; Picanyol et al. 2015; Zambia CSO-SUN Alliance 2014). Tanzania's effort was particularly thorough, encompassing a full review of public expenditures related to nutrition (see Panel 5.1).

In late 2014, 30 countries began new efforts to identify nutrition allocations within their government budgets.[3] Although the data are preliminary and may be subject to change upon further review, we report on these efforts here and include the preliminary data in order to acknowledge the governments' attempts to promote accountability and to generate debate about how the process can be improved.

The method adopted by the countries is as follows. First, they identify broad allocations within the government budget that may be of relevance to nutrition (step 1).[4] Second, they classify the broad allocations into nutrition-specific and nutrition-sensitive categories (step 2).[5] These are the "upper-bound" estimates—if all of the candidate line items turned out to be for nutrition, the upper bound would be fully realized. Third, they assign weights[6] to the upper-bound allocations in each category to arrive at estimates of actual nutrition-specific and nutrition-sensitive allocations (step 3).[7]

By June 2015, 30 countries had gone through steps 1 and 2, and 14 of those had made considerable progress on step 3.[8] The results are preliminary and are presented in Appendix Table A3.1 (step 2 for 30 countries) and Appendix Table A3.2 (step 3 for 14 countries). Results from the 30 countries shown in Appendix Table A3.1 show a variety of financing arrangements and spending levels:

- The number of ministries, departments, and agencies from which budget lines are drawn ranges from 2 in Vietnam to 15 in Guatemala. The median is 7.
- The number of budget lines that potentially contain nutrition items range from 11 in the Philippines to 117 in Togo.
- The upper-bound shares for combined nutrition-specific and nutrition-sensitive budget allocations range from less than 1 percent of the total government budget (Côte d'Ivoire, Uganda, Vietnam, Zambia) to more than 7 percent (Bangladesh, Comoros, Guatemala, Tajikistan, and Togo). The mean upper-bound share is 0.47 percent for nutrition-specific spending and 4.47 percent for nutrition-sensitive spending.

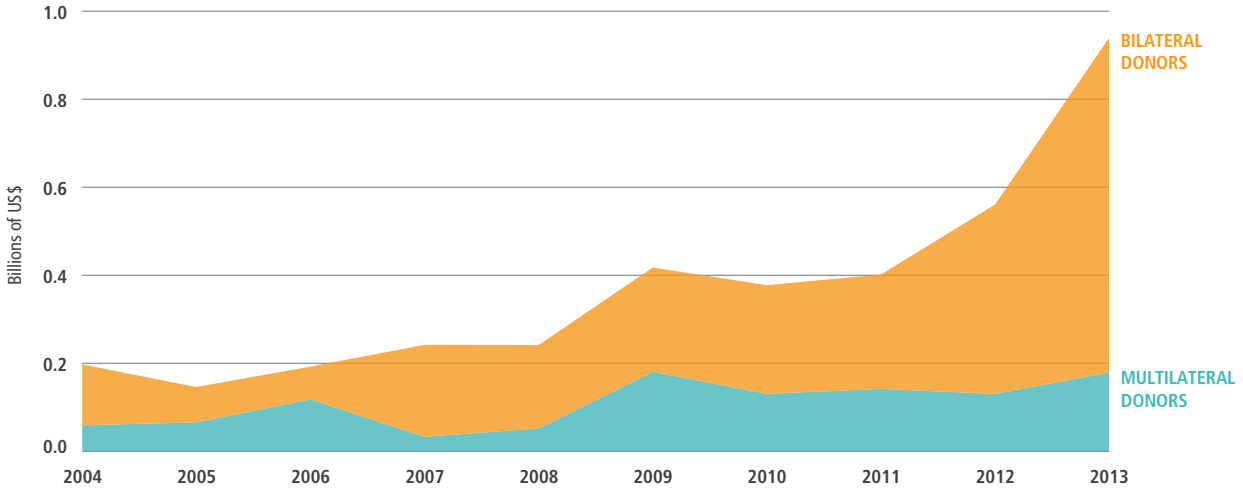
The many ministries, departments, and agencies and the associated budget line items that need to be reviewed underline the significant effort required to estimate budget allocations to nutrition.

Fourteen countries assigned a weight to the broad nutrition-specific and nutrition-sensitive allocations. Peru and Guatemala provided actual estimates for each category based on the detailed interventions included in their budgets. Overall, this exercise shows that it is feasible to track nutrition allocations.

Results from the 14 countries shown in Appendix Table A3.2 reveal some key points:

- The weighted nutrition-specific allocations are 94 percent of the upper-bound nutrition-specific allocations in total across all 14 countries. Most of the budget line items designated as candidate allocations for nutrition-specific programs turn out, upon further scrutiny,

FIGURE 5.1 Donor ODA spending on nutrition-specific interventions, 2004–2013



Source: Development Initiatives based on OECD (2014).

Note: The EU is a multilateral donor. Amounts are gross disbursements in constant 2013 prices. ODA = official development assistance.

to be realized as actual allocations.

- The weighted nutrition-sensitive allocations are 29 percent of the upper-bound nutrition-sensitive allocations. Less than a third of the candidate allocations for nutrition-sensitive programs are realized as actual allocations.
- The weighted allocations for nutrition-specific and nutrition-sensitive combined range from 0.06 percent of the total government budget to 2.90 percent. The mean is 1.32 percent, and the median is 1.31 percent.
- The weighted allocations to nutrition-specific line items are 38 percent of the weighted allocations to nutrition-sensitive line items. For 12 out of the 14 countries, the allocations to nutrition-specific line items are less than or equal to 0.20 percent of government budgets.

These numbers suggest that countries judged most (94 percent) of the upper-bound nutrition-specific allocations to be actual allocations, whereas only 29 percent of the upper-bound nutrition-sensitive allocations remained as actual allocations on weighting. This makes sense. The ratio of actual nutrition-specific to actual nutrition-sensitive allocations by government budgets (38 percent) is not too different from the ratio for donors, as estimated in the 2014 *Global Nutrition Report* (approximately 50 percent). The mean weighted allocation for total nutrition as a share of government budgets, at 1.32 percent, is similar to the share found for nutrition in relation to total official development assistance (ODA) (IFPRI 2014a). Overall, the results suggest that government nutrition allocations are small but in line with ODA allocations to nutrition.

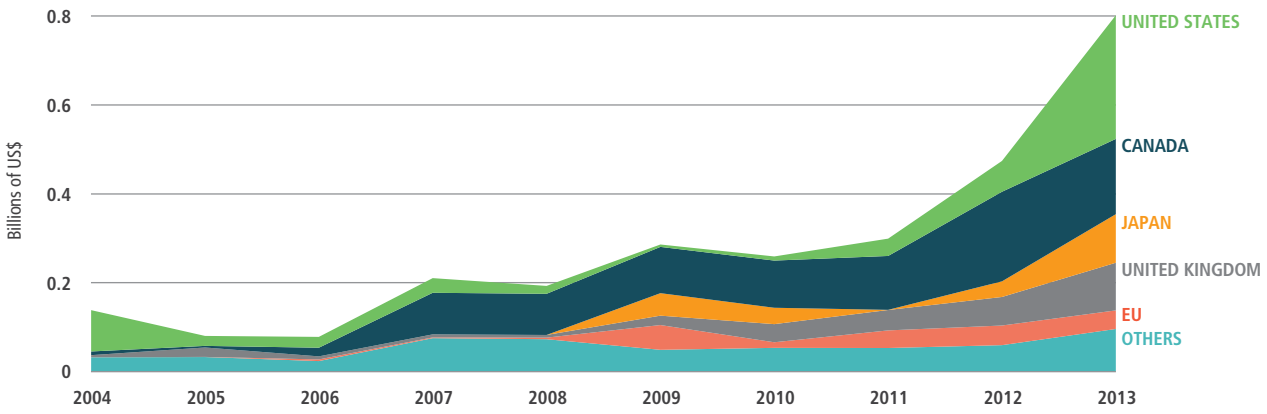
The numbers, however, are preliminary. The process, which has not been finalized, has limitations. First, countries have chosen between three weighting schemes in the move from step 2 to step 3. Second, there is a lot of judgment involved in selecting ministries, departments, agencies, and budget line items, and it is not clear if all countries are following the same criteria. Of course, this does not matter if the primary objective is for a country to track its own allocations over time. Sixteen of the participating countries already have figures for two or more years. Third, the definitions of nutrition-specific or nutrition-sensitive, at the margin, may well not be consistent between countries. Again, this does not matter for any given country as long as there is consistency over time in the definitions and assumptions used. The country-by-country caveats are important to note and are listed in Appendix Table A3.1.

Additional data available from the exercise include funding sources (10 countries) and actual expenditures (3 countries). Bangladesh is the only country able to provide information on trends, funding sources, and actual expenditures. Of the 8 countries with costed plans, only 4 show a clear link with their national budgets.

DONOR FUNDING FOR NUTRITION

This section reviews the latest nutrition-specific data for 2013 from all donors that report through the Development Assistance Committee (DAC) of the Organisation for

FIGURE 5.2 Donor ODA spending on nutrition-specific interventions, by DAC member



Source: Development Initiatives based on OECD (2014).

Note: Amounts are disbursements by DAC members in constant 2013 prices. ODA = official development assistance. DAC = Development Assistance Committee of the OECD.

Economic Co-operation and Development (OECD).[9] It then describes trends in nutrition-specific and nutrition-sensitive commitments and disbursements from the 13 N4G donors and analyzes country-specific allocations of 2010 and 2012 disbursements for six donors. The nutrition-specific and nutrition-sensitive breakdowns are provided by the SUN Donor Network, which defined the methodology (SUN Donor Network 2013a).

TRENDS IN NUTRITION-SPECIFIC DATA FOR ALL DONORS

Nutrition-specific[10] disbursements from all donors (not only N4G donors) increased sharply between 2012 and 2013 to nearly US$1 billion (Figure 5.1). This is good news. But the nutrition-specific increases have come largely from the DAC bilateral donors and gone directly to countries and to multilaterals, not from multilaterals' own core funds. Multilaterals should allocate more of their core non-earmarked funds to nutrition-specific interventions.

In addition, OECD DAC data from 2013 show that of 29 OECD DAC development members, 16 reported nutrition-specific spending greater than US$1 million, 6 reported spending greater than zero but less than US$1 million, and 7 reported no nutrition-specific spending. The number of OECD DAC members that are making significant disbursements to nutrition-specific programs could increase substantially.

Figure 5.2 breaks down the previous data by DAC member showing their nutrition-specific disbursements. The United States, Canada, Japan, the United Kingdom, and the EU, in this order, made the largest disbursements in 2013.

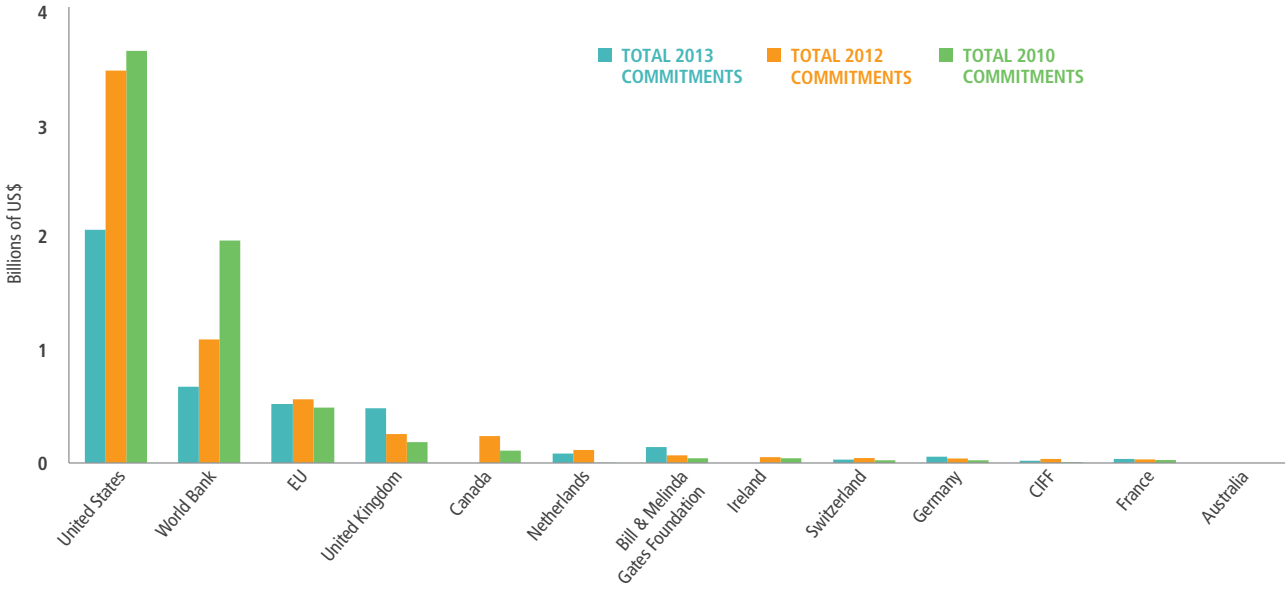
TRENDS IN N4G SIGNATORY COMMITMENTS AND DISBURSEMENTS, 2010–2013

Chapter 3 reported on whether the donors that made financial commitments at N4G are on course to meet them. Here we review broader trends reported by the N4G signatories.[11] The largest donors—the United States, the World Bank, and the EU—report declining nutrition commitments (nutrition-specific plus nutrition-sensitive) between 2010 and 2013, whereas the medium-sized donors, namely the United Kingdom and the Bill & Melinda Gates Foundation, report rapidly increasing commitments (Figure 5.3).[12]

Commitments are multiyear in nature but appear in the financial year they are made. They tend to be "lumpier," and larger, than disbursements. Figure 5.4 focuses on reported disbursements. Over the 2010–2013 period total disbursements increased for the Children's Investment Fund Foundation (CIFF), the UK Department for International Development (DFID), France, the Bill & Melinda Gates Foundation, Germany, Ireland, and the Netherlands. Total disbursement figures for three of the largest donors—Canada, the EU, and the World Bank—were not reported to us for 2013.

Only 7 of the 13 N4G signatories (CIFF, DFID, the Gates Foundation, Germany, the Netherlands, Switzerland, and the United States) reported on the full set of data expected (see Appendix Table A3.3 for all 2013 data received). In addition, only 8 donors (Australia, DFID, France, the Gates Foundation, Germany, Ireland, the Netherlands, and Switzerland) provided disbursement data for nutrition-sensitive programs in 2012 and 2013. Comparing the totals for these 8 donors (Appendix Table 4 in the *Global Nutrition*

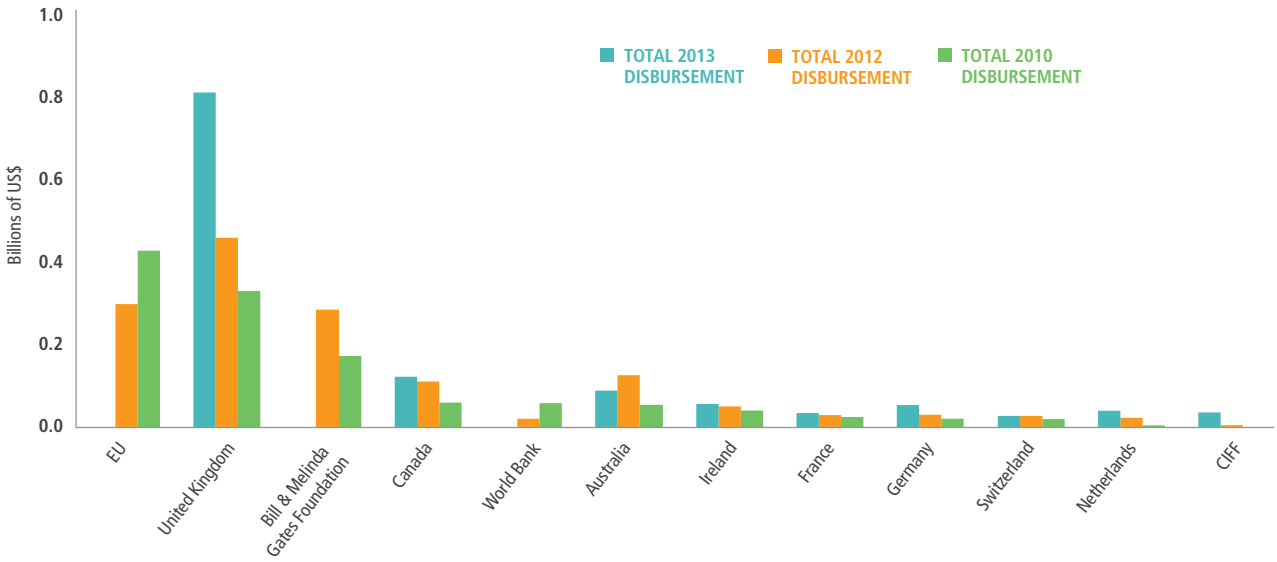
FIGURE 5.3 Trends in nutrition ODA commitments by N4G donors, 2010–2013



Source: Authors, based on data provided by each donor.

Note: ODA = official development assistance. Figures are for both nutrition-specific and nutrition-sensitive commitments. Switzerland is not an N4G signatory but nevertheless provided a breakdown of nutrition-specific and nutrition-sensitive financial data. Only country-years that report full nutrition-specific and nutrition-sensitive data are included in this figure. CIFF=Children's Investment Fund Foundation

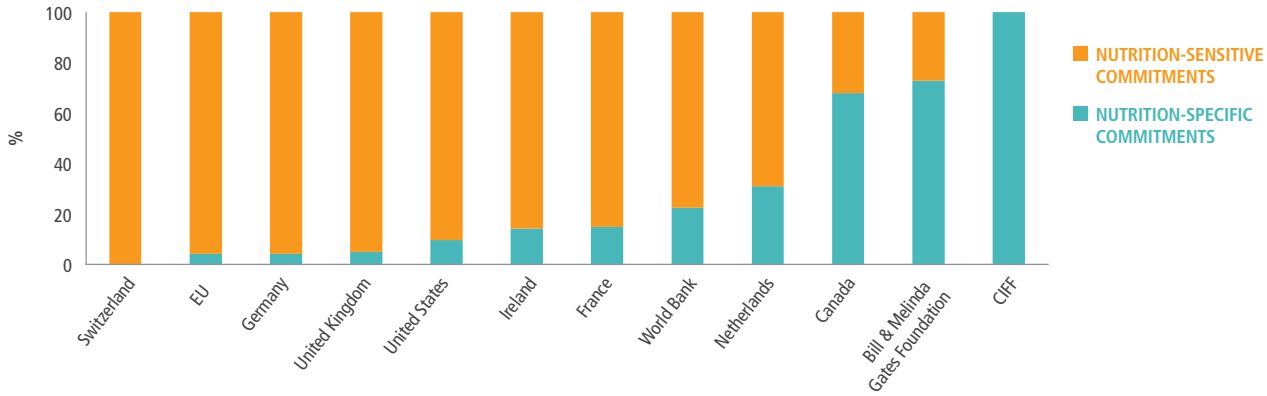
FIGURE 5.4 Trends in nutrition ODA disbursements by N4G donors, 2010–2013



Source: Authors, based on data provided by each donor.

Note: ODA = official development assistance. Figures are for both nutrition-specific and nutrition-sensitive disbursements. For Australia, the 2013 figures reported represent the 2014 calendar year. Switzerland is not an N4G signatory but nevertheless provided a breakdown of nutrition-specific and nutrition-sensitive financial data. Only country-years that report full specific and sensitive data are included in this figure. The United States did not report a full disbursement figure for 2010 and 2012 but has done so for 2013 (Appendix Table A3.1). This number is large, US$2.1 billion, and has not been included in this figure to improve its readability. CIFF = Children's Investment Fund Foundation.

FIGURE 5.5 Breakdown of N4G donors' nutrition-specific and nutrition-sensitive commitments, 2012



Source: Authors, based on data provided by each donor.

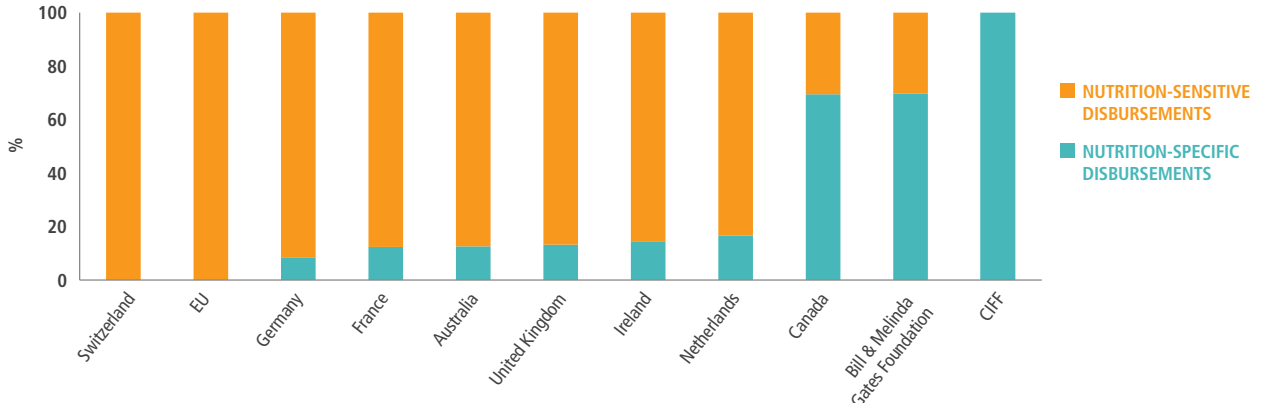
Note: Canada uses OECD DAC "multiple sector" coding, so some nutrition-sensitive spending may well be reported as nutrition-specific. Switzerland is not an N4G signatory but nevertheless provided a breakdown of nutrition-specific and nutrition-sensitive financial data.

Report 2014 and Appendix Table A3.3 in this report), nutrition-sensitive disbursements increased from US$740 million in 2012 to US$1,007 million in 2013, with DFID accounting for most of the increase. In 2013 the picture for total nutrition-sensitive disbursements—nearly US$3 billion—is more complete because of the inclusion of figures from the United States. The 2013 data from the EU and World Bank, however, are missing. Given current commitments (Appendix Table A3.3) and past disbursements (IFPRI 2014a), the inclusion of these figures would likely put the total nutrition-sensitive disbursements closer to US$4 billion or 3 percent of ODA.[13] Total nutrition ODA spending would be close to US$5 billion, or 4 percent of ODA.

The reporting from donors is patchy. If donors do not fully report on their nutrition spending they cannot be held fully accountable. They also risk losing credibility with partners they are encouraging to report on their own nutrition funding.

The breakdowns for commitments and disbursements between nutrition-specific and nutrition-sensitive are presented in Figures 5.5 and 5.6.[14] Across all 13 donors, nutrition-specific items account for 15 percent of total commitments and 30 percent of total disbursements. With regard to commitments, some donors are mostly focused on nutrition-specific activities (CIFF) and some almost exclusively on nutrition-sensitive activities (Switzerland and the EU). Most have larger nutrition-sensitive than nutrition-specific commitments. For disbursements, the pattern is largely the same.[15]

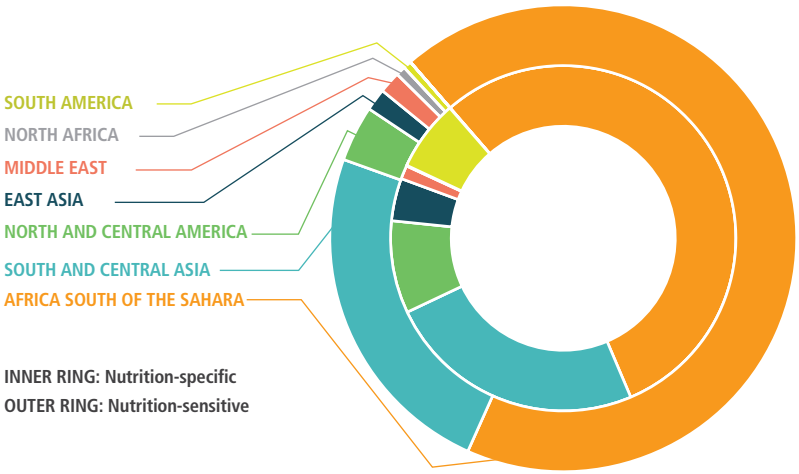
FIGURE 5.6 Breakdown of N4G donors' nutrition-specific and nutrition-sensitive disbursements, 2012



Source: Authors, based on data provided by each donor.

Note: Canada uses OECD DAC "multiple sector" coding, so some nutrition-sensitive spending may well be reported as nutrition-specific. CIFF=Children's Investment Fund Foundation

FIGURE 5.7 Allocation of nutrition-specific and nutrition-sensitive spending by region, six donors, 2012 (% of total)



Source: Authors, based on data provided by each donor.

ALLOCATION OF NUTRITION DISBURSEMENTS BY COUNTRY, AND STUNTING AND WASTING NUMBERS

How is nutrition funding allocated? Is it well matched with need? Data are available from 6 of the 13 donors (the Gates Foundation, Canada, the EU, Germany, Ireland, and the United Kingdom) that collectively account for 80 percent of the total 2012 disbursements of US$1.59 billion (minus the World Bank and United States). More than 50 percent of nutrition funding from these 6 donors went to Africa south of the Sahara (Figure 5.7). This proportion will likely increase as India transitions from low- to lower-middle-income status and graduates from grants and concessional loans. Figure 5.8 breaks down the 6 donors' spending by country.

The country analysis of the six donors reveals the following:

- 91 countries received funding from these six donors;
- of the 91, 58 received both nutrition-specific and nutrition-sensitive funding;
- of the 58, 43 received more nutrition-sensitive than nutrition-specific funding; and
- among top recipients, the Democratic Republic of the Congo, Somalia, and Sudan received the least nutrition-specific assistance (less than US$1 million each), although much of their ODA is categorized as food aid/food security programming (code 52010 in the OECD DAC's Creditor Reporting System.

How do these donor allocations relate to rates of stunting and wasting in children under age 5? It is difficult to come to a firm conclusion in the absence of resource flows from governments to nutrition. Nevertheless, Figure 5.9 plots the share of total nutrition disbursements from 11 donors[16] to each of the 91 countries against the share of the total number of stunted and wasted children under age 5 in each of the 91 countries. Broadly speaking, there is a positive correlation between the share of disbursements and the share of stunting and wasting. This result signals a relatively good targeting of donor funding at the country level, at least in terms of under-5 stunting and wasting, which are not the only nutrition outcomes of interest.

There are, however, notable outliers. Some countries have much lower shares of disbursements than shares of under-5 stunting and wasting:

- Indonesia (stunting: 5.25 percent, wasting: 5.99 percent, disbursements: less than 0.001 percent);
- Papua New Guinea (stunting: 0.29 percent, wasting: 0.25 percent, disbursements: less than 0.001 percent); and
- Thailand (stunting: 0.36 percent, wasting: 0.45 percent, disbursements: less than 0.001 percent).

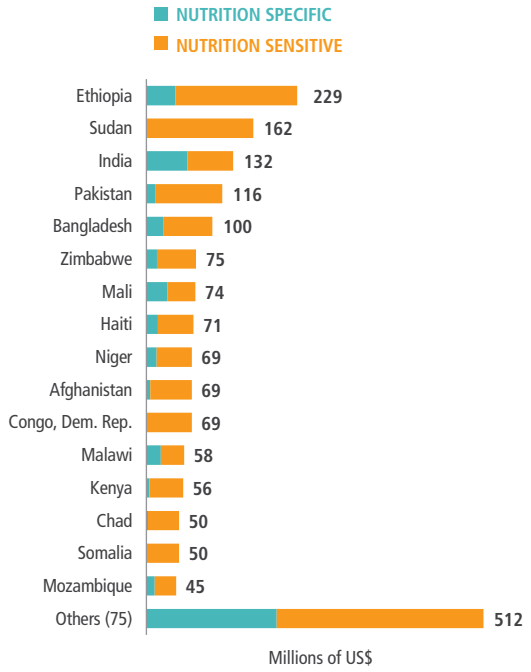
Others have a far greater share of disbursements than stunting and wasting:

- Ethiopia (stunting: 3.67 percent, wasting: 2.58 percent, disbursements: 11.8 percent);
- Haiti (stunting: 0.16 percent, wasting: 0.12 percent, disbursements: 3.7 percent); and
- Sudan (stunting: 1.17 percent, wasting: 1.66 percent, disbursements: 8.4 percent).

There may be many valid reasons for these outliers. For example, some countries are not heavily reliant on ODA, and some may have types of malnutrition that are not well tracked by under-5 stunting and wasting. However, as studies of broader donor allocations have shown, some donor country allocations are driven by donors' foreign policy interests (Hoeffler and Outram 2011).

For the 91 countries in receipt of disbursements and for which there are available data on stunting and wasting, the amount of ODA disbursed averages to US$11 per child under 5 affected by stunting and US$64 per child under 5 affected by wasting.

FIGURE 5.8 Allocation of nutrition-specific and nutrition-sensitive spending by country, six donors (US$ millions)



Source: Development Initiatives, based on data supplied by six donors.

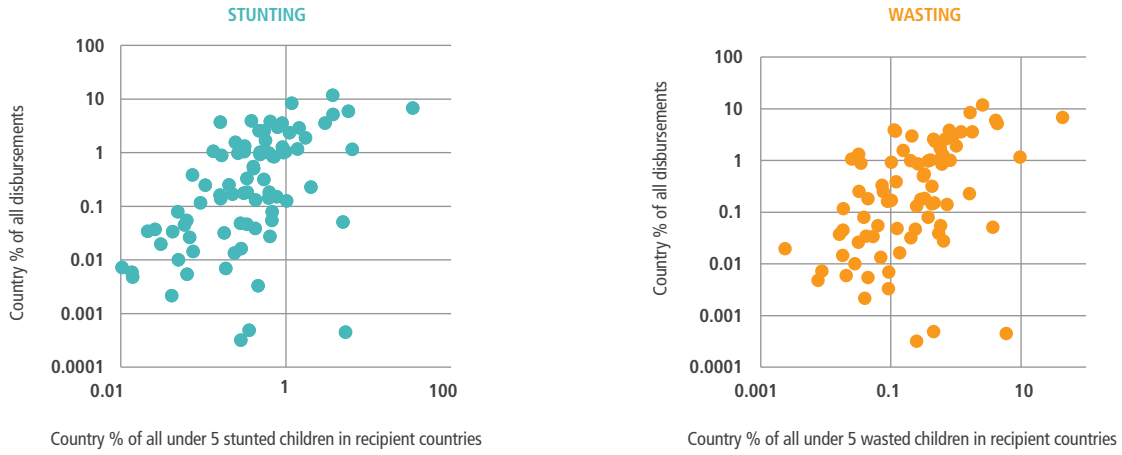
Note: For both figures, 2010 and 2012 disbursements are aggregated.

As a final note, it is important to recognize that the ODA data are all self-reported. For nutrition-specific allocations, if projects are not described accurately they will end up in the wrong Creditor Reporting System category. For nutrition-sensitive allocations, applying a common methodology means negotiating different levels of project documentation across donor agencies. Each project can require the analysis of multiple documents that do not always present consistent information. Documents can change over time to reflect changes in approach or activities, requiring choices to be made on how to treat projects that last multiple years. The application of criteria to define nutrition-sensitive projects and classify them as dominant or partial, or discard them, is not always straightforward. For all of these reasons, the nutrition-sensitive data must be handled with care. A few donors report that they find the current project-by-project methodology too problematic and demanding to report on. The *Global Nutrition Report* team will work with others to explore whether there are ways to streamline and improve the methodology in time for 2016 *Global Nutrition Report* reporting.

INNOVATIVE FINANCING: SOURCES AND LEVERAGING

Filling the gaps in nutrition financing will be challenging but not impossible.[17] According to available data, only 20–30 percent of the more than US$10 billion needed annually for nutrition-specific activities is being mobilized

FIGURE 5.9 Country share of nutrition disbursements by country share of under-5 stunted and wasted children



Source: Development Initiatives calculations for the *Global Nutrition Report* using the OECD DAC's Creditor Reporting System.

Note: Data are shown on a logarithmic scale. They represent both nutrition-specific and nutrition-sensitive disbursements.

each year (R4D 2015). The gap for nutrition-sensitive activities is not known but is likely to be at least as large. These gaps will need to be filled from domestic and international sources.

Domestically, as the 2014 *Global Nutrition Report* noted, 30–40 percent of government budgets are allocated to sectors that have a high degree of relevance for nutrition such as health, agriculture, social protection, water, sanitation and hygiene, and education. This does not mean spending in these areas necessarily has a large impact on nutrition, simply that it has the potential to do so. Innovation is needed to make these budgets more nutrition sensitive (IFPRI 2014a) and increase their potential impact on nutrition status (Ruel and Alderman 2013). Ethiopia provides an example of a large-scale safety net program that was made more nutrition-sensitive, as described in Chapter 4. Following this example, nutrition champions need to find large-scale development programs that can be made more nutrition-sensitive through innovative design and institutional partnerships.

Internationally, the amount of ODA has recently plateaued (OECD 2015b), so it is doubtful that traditional sources of aid alone will be sufficient to fill the gaps. Innovative financing mechanisms could help. Mechanisms can be "innovative" by (1) generating funds that are truly additional to what would have been raised anyway (more money for nutrition) or by (2) using these funds more efficiently and effectively to achieve greater impact (more nutrition for the money).

Nutrition can benefit from the experience of the health sector, where a wide range of innovative mechanisms have been tested over the past 15 years. Examples include the following:

International Financing Facility for Immunization (IFFIm). The IFFIm uses long-term donor pledges over 20 years to underwrite the sale of low-interest vaccine bonds in capital markets, channeling the extra money raised into programs to reduce the number of vaccine-preventable deaths in children. Between 2006 and 2013 IFFIm helped the GAVI Vaccine Alliance nearly double its spending on vaccines by providing an additional US$4.6 billion on top of traditional donor sources (IFFIm 2015).

Global Fund to Fight AIDS, Tuberculosis, and Malaria (GF). The GF is the largest international financier of tuberculosis and malaria funding and the second-largest external source for AIDS funding (Global Fund 2013). The GF is innovative in the way it pools and uses funds contributed by governments, foundations, and the private sector, investing strategically in programs with high impact while reducing transaction costs. The GF's performance-based model is also designed to raise the quality of spending.

UNITAID. This Geneva-based public-private partnership receives revenues from a solidarity levy on airline tickets and uses the revenues to shape markets and lower prices for commodities such as pediatric AIDS drugs and second-line tuberculosis drugs. Between 2006 and 2013 UNITAID raised US$2.2 billion. UNITAID is innovative both in its ability to generate additional resources and in its efforts to drive down prices through its influence on markets.

Research points to a need to substantially raise funding from governments and donors alike for proven interventions.

To bridge the gap between the billions needed each year to defeat maternal and child malnutrition and the currently available traditional funding from donors and governments, the nutrition community has started to look toward innovative financing. Several mechanisms have emerged:

The Global Financing Facility in Support of Every Woman Every Child (GFF). The GFF, announced in September 2014, aims to improve the health and quality of life of women, adolescents, and children and prevent up to 3.8 million maternal deaths, 101 million child deaths, and 21 million stillbirths in high-burden countries by 2030. To accomplish this, it aims to mobilize more than US$57 billion from 2015 to 2030 by incentivizing more domestic resources to be allocated to nutrition, attracting new external support, and improving the coordination of existing assistance. It is governed by an Investors Group with a secretariat based at the World Bank. The GFF recognizes the centrality of nutrition in the health and quality of life of women, adolescents, and children, and although it focuses on health systems, it has the flexibility to make targeted investments in sectors such as education, water and sanitation, and social protection to meet its overall goals (GFF 2015). This reiterates the point that the nutrition community needs to be innovative not just in working with a wider range of sectors to secure funding for nutrition, but

TABLE 5.1 Costs and benefits of investing in a package of 10 nutrition-specific interventions, globally and in four countries

Region/country (year)	Annual public investment required (US$)	Estimated annual benefits			Cost-effectiveness estimates (US$)		
		DALYs saved	Lives saved	Cases of stunting averted	Cost per DALY saved	Cost per life saved	Cost per case of stunting averted
Global (2010)	10.3 billion	30 million	1.1 million	30 million	n.a.	500–1,000	n.a.
Democratic Republic of the Congo (2015)	371 million	5.4 million	77,000	1 million	70[a]	4,929	226
Mali (2015)	64 million	480,000	14,000	260,000	188[a]	6,276	344
Nigeria (2014)	837 million	8.7 million	180,000	3 million	102[a]	4,865	292
Togo (2015)	13 million	160,000	3,000	60,000	92[a]	4,635	238

Source: Global results are from World Bank (2010). Country results are from Shekar et al. (2014, 2015a–c).

Note: DALY = disability-adjusted life year. n.a. = not available. The 10 interventions are listed in note 19. Estimates of lives saved and cases of stunting averted were made using the Lives Saved Tool (LiST), a computer model. Assessments of cost-effectiveness are based on WHO-CHOICE criteria found at WHO (2015). The cost per DALY saved is mainly driven by one intervention: public provision of complementary foods. The unit cost for this intervention, and hence the cost per DALY saved, is lower in the Democratic Republic of the Congo than in the other three countries.

[a] Very cost-effective according to WHO-CHOICE.

also in taking a seat at the table when innovative financing instruments are designed for health because many nutrition-specific interventions fall within the health sector.

The Power of Nutrition. The Power of Nutrition (www.powerofnutrition.org) is a new independent fund that will target US$1 billion in new private- and public-sector financing to children's nutrition by 2020. Launched in April 2015, the fund has arrangements in place to unlock the first US$200 million toward this target. It is backed by organizations from private philanthropy and international development, and so far includes CIFF, the UBS Optimus Foundation, the UK Department for International Development, UNICEF, and the World Bank. The fund first matches contributions from private and other nontraditional sources of financing (such as non-OECD donors), which are then matched again by major implementing agencies in the nutrition sector, including the World Bank and UNICEF. This results in guaranteed leverage of four (UNICEF) or six (World Bank) times for each dollar invested by private funders. These resources will be channeled through the World Bank and UNICEF to target countries with the highest burden of undernutrition, strong nutrition plans, and the ability to absorb new funding. A third match of funds will also be sought from the governments' own budgets, further multiplying the financial impact. It is important to note that the Power of Nutrition will be a success only if it generates funding for nutrition that would not be generated in its absence. The first programs supported by the Power of Nutrition were scheduled to be announced in the summer of 2015.

UNITLIFE. Announced in late 2014, UNITLIFE is built on the UNITAID model, tapping revenues generated from a micro levy on oil production—currently set at US$0.10 per barrel—in participating countries. At the time of writing, seven African countries have agreed to implement the levy, and one (Congo) has started to earmark it, collecting US$5 million in the first year. If all seven countries become active, it is estimated that UNITLIFE could receive up to US$115 million per year to invest in nutrition. If all oil-producing countries globally imposed the levy, the mechanism could generate US$1.64 billion annually (Innovative Finance Foundation 2014). The governance and operational structures of UNITLIFE are still being designed but may look similar to UNITAID, with a secretariat that calls for and evaluates proposals for funding.

These initiatives shows the potential for using innovative financing approaches to augment traditional funding for nutrition, reduce the financing gap, and improve nutrition outcomes. These mechanisms could offer ways of leveraging pledges made at the Rio 2016 Nutrition for Growth Summit.

NEW COST ESTIMATES FOR SCALING UP NUTRITION ACTIONS

Policymakers increasingly recognize that nutrition interventions are highly cost-effective and that investments in early childhood nutrition have a large potential to reduce poverty and boost prosperity. The key questions national policymakers face are "How much will it cost to scale up nutrition interventions in my country?" and "What results will we buy with those investments?" Answers to these

questions are necessary to leverage and guide new financing from both domestic budgets and overseas development aid.

The World Bank, with support from the Bill & Melinda Gates Foundation, has been working with several countries to address these questions. Cost and cost-effectiveness analyses have been completed for the Democratic Republic of the Congo, Mali, Nigeria, and Togo. The studies analyzed the cost of scaling up 10 nutrition-specific interventions that have been shown to be effective in reducing malnutrition,[18] and then linked these costs to expected impacts, including lives saved, cases of stunting averted, and disability-adjusted life years saved (for methods see Shekar et al. 2014, 2015a–c). Cost-effectiveness is measured by the cost per life saved, cost per stunting case averted, and cost per disability-adjusted life year (DALY) saved.[19]

The estimated costs and benefits are summarized in Table 5.1. Taken together, the package of 10 interventions is highly cost-effective. Most of the 10 interventions are also very cost-effective when considered individually, with the exception of the public provision of complementary food for the prevention of moderate acute malnutrition.[20] These investments also have enormous potential to increase economic productivity while also being sound economic investments with internal rates of return over 13 percent in each country (Shekar et al. 2014, 2015a–c). At this time it is not possible to compare the country cost estimates with actual spending, but this needs to be done to identify the funding gap.

Given that most, if not all, countries lack the resources to fully and immediately scale up all interventions, the analysis considers various more modest scale-up scenarios: (1) focusing on only the regions with the highest burden of malnutrition, (2) scaling up only a subset of interventions, and (3) scaling up a subset of interventions only in the regions with the highest burden of malnutrition.[21] It finds that the most cost-effective scenario is to scale up a subset of the 10 interventions in the highest-burden regions of the country. This scenario is between 1.5 and 3.3 times more cost-effective than scaling up all 10 interventions nationwide.[22]

Other research points to a need to substantially raise funding from governments and donors alike for proven interventions. An ongoing analysis from R4D and the World Bank estimates how much 37 countries with a high burden of child stunting would need to invest in proven stunting interventions to achieve the WHA stunting target. Although as of June 2015 this work is not yet finalized, it estimates that government domestic spending would need to more than double through 2025, and ODA to proven stunting interventions would need to more than quadruple over the same time period (Thousand Days 2015).

These results are designed to inform government priority setting and help governments leverage resources from domestic budgets, development partners, and, where appropriate and no conflict of interest exists, the private sector. Each country's spending plans for nutrition would be guided by its national nutrition plans and by cost estimates such as these. But what should countries do in the absence of such cost estimates? For agriculture and health, African countries have made spending commitments tied to overall government spending. Panel 5.2 discusses the lessons learned about target setting for spending categories from the Abuja and Maputo declarations on health and agriculture respectively.

Nutrition calls for special kinds of leadership at all levels.

Once countries have determined their budget allocations to nutrition and firmed up the numbers we recommend that countries with fully costed nutrition plans be invited to a workshop where they can compare plans and allocations and begin discussions on funding gaps and how to fill them. This step would help countries position themselves for the Rio 2016 N4G summit.

CAPACITY

Despite relative consensus on actions to improve nutrition globally, less is known on how to operationalize the right mix of actions—nutrition-specific and nutrition-sensitive—equitably, at scale, in different contexts. How does it all go together to scale up sustained impact? Panel 5.3 reports on a recent review of scaling up successes and draws out some common themes, such as beginning with the end in mind, the need for political scale-up, anticipating barriers to scale up, and the importance of champions to create the space and momentum for scale up.

PERFORMANCE INCENTIVES: CAN THEY WORK FOR NUTRITION?

In recent years, governments, donors, think tanks, and NGOs have tested different approaches to incentivize development program performance. Examples include results-based aid (DFID), results-based financing (World

PANEL 5.2 NATIONAL SPENDING TARGETS FOR NUTRITION: WHAT CAN WE LEARN FROM THE ABUJA AND MAPUTO DECLARATIONS?

FRANCIS ROBERTS AND MARIE RUMSBY

The *Global Nutrition Report 2014* recommended developing targets for nutrition spending in government and aid budgets. As the nutrition community considers this proposal, what can we learn from two similar experiences from Africa: the Abuja and Maputo Declarations on health and agriculture spending?

The Abuja Declaration (United Nations 2001) committed African Union member countries to allocate at least 15 percent of annual government expenditures to health care. It also called for donor countries to fulfill their existing target of allocating 0.7 percent of gross national income to official development assistance. The target remains one of the only health spending targets agreed to by heads of state (UNAIDS and AU 2013).

It is impossible to prove a causal relationship between the Abuja target and government spending, although the median level of real per capita government spending from domestic resources on health has increased from US$10 to US$14 over the decade (WHO 2011a). However, shortly after the signing of the declaration, civil society adopted the spending target as an advocacy tool, using it to pressure governments to increase health spending (Witter et al. 2013). It is now one of the most prominent sector-spending norms and an established benchmark of health performance, with many reports mapping government performance against the declaration (ActionAid International Africa 2005; Save the Children 2015a; UNAIDS and AU 2013; WHO 2011a).

In the Maputo Declaration of 2003, African heads of state committed themselves to allocate at least 10 percent of national budgets to agriculture and rural development (African Union Commission and NEPAD 2010). The target has become an indicator of government performance and is closely monitored by continental and regional governance structures, as well as civil society and donors (One 2013; Oxfam 2012). The target is widely credited for galvanizing advocacy; however, countries' performance against the spending target remains mixed (Benin and Yu 2013). The Malobo Declaration of 2014 reiterates the Maputo targets.

The two declarations offer lessons for nutrition:

- The targets can act as a rallying call for civil society, help assess performance across countries, and highlight mismatches of spending and need.
- Lack of guidelines on reporting in health will lead to a divergence in methods used, and as a result reporting will not be as transparent and comparable as it could be (Witter et al. 2013).
- Lack of a basis for the link between the target, needs, and costs can undermine a target's usefulness (Witter et al. 2013). For example, in agriculture, many analysts have concluded that the target is simply too low (Benin and Yu 2013).
- Targets tend to focus attention on quantity of spending at the expense of a focus on quality of spending (Oxfam 2012). This risk must be managed by keeping a focus on the types of spending and the outcomes from spending.

Bank), and cash on delivery (Center for Global Development),[23] in which institutions or actors are paid only if they achieve agreed-upon outcomes. The hypothesis is that greater progress should be possible where actors have explicit incentives to achieve those results. The verification of results is carried out by an external body. Alternatively, incentives can be provided to staff, usually at the district or facility level, based on service-delivery outcomes: this is the model of many World Bank projects supported in part by their Health Results Innovation Trust Fund. Cash incentives are provided as bonus payments to supplement staff wages, usually complemented by funds for facilities to support their priorities for local service-delivery improvements or health-outreach activities.

Much of this work has been developed in the areas of maternal and child health and social protection, but examples are also increasingly found in nutrition. Promising results have been reported in reductions in low-birth weight rates (Argentina), increases in attendance at growth-monitoring clinics (Panama), and increases in use of pre- and postnatal care (including in Rwanda, Zambia, and Zimbabwe) (World Bank 2011; Carpio 2014; HRITF 2014). BRAC in Bangladesh tested performance-based cash incentives for individual community health and nutrition volunteers related to levels of exclusive breastfeeding, complementary feeding, and hand washing.[24] The results were promising: the share of mothers regularly visited and counseled by volunteers rose from 18 to 65 percent, and

PANEL 5.3 FROM GLOBAL MANTRA TO LOCAL RESULTS: SCALING UP IMPACT ON NUTRITION

STUART GILLESPIE, PURNIMA MENON, AND ANDREW KENNEDY

The Transform Nutrition consortium recently reviewed approaches to scaling up impact on nutrition, and a number of elements repeatedly emerged as key factors.[1]

First, the starting point for most successful large-scale programs (such as Progresa-Opportunidades in Mexico and Alive & Thrive in Bangladesh) was not any one intervention per se, but rather a discussion and ultimately a shared vision of what large-scale impact actually looks like.

Second, successful scale-up usually requires that program designers match the characteristics of interventions with the dynamic context, explicitly recognizing the need for adaptation and flexibility over time and space. Such experiences usually involved an explicit focus on contexts—socioeconomic, institutional, political, cultural—at different levels from households up to districts and beyond. Program designers proactively pursued scaling up through defined strategies that went well beyond the quantitative (scaling out) aspects, to also consider functional, organizational, and even political scaling. These strategies recognized key drivers and catalysts, including nutrition champions (such as Santiago Levy, the main architect of the Progresa-Oportunidades anti-poverty program in Mexico). They also recognized and anticipated potential barriers and developed approaches to circumvent them. For example, the use of mass media in Alive and Thrive in Bangladesh was central to a supportive social environment for promoted behaviors. Most scaling strategies were premised on the need to develop operational and strategic capacities over time to support scale-up, and the need for adequate, stable, and flexible financing.

Governance was also a pivotal concern in many reviewed programs. Structures and processes are needed to ensure accountability and facilitate an open and transparent monitoring and learning culture. The review called for more and better research on scaling up impact on nutrition as many countries start to grapple with the nuts and bolts of implementing plans of action. More experiential learning (such as through "stories of change") and a better sharing of lessons across contexts and countries is needed.

Many successful large-scale nutrition programs of the past have had several of the key scaling elements described here. They have tended to focus mainly on nutrition-specific interventions, with good reason. But a new focus that also encompasses nutrition-sensitive development and the role of leadership and enabling policy environments is a new imperative for nutrition. This in turn will require a massive ramp-up in capacity. A growing cadre of nutrition champions is needed, supported by strengthened organizational capacity. Some countries have successfully established and funded strong national institutions to support the operationalization and scaling of nutrition—shining examples include the National Institute of Public Health in Mexico, the Institute of Nutrition in Mahidol University in Thailand, and the icddr,b in Bangladesh—but more are needed. "Scaling up" has become the mantra in international nutrition in recent years. To turn words to actions, talk to walk, a learning culture is needed in which lessons from the past are shared and used better.

early initiation of breastfeeding increased from 15 to 62 percent. Now the approach has been simplified to focus on five indicators and scaled up to 232 subdistricts across the country within BRAC's overall health program.[25]

CARE India in Bihar, meanwhile, has been testing a scheme of providing quarterly team-based, in-kind incentives (stoves, casseroles, or other household items) to all frontline volunteer health workers in facilities that collectively achieve five or more of seven quarterly targets. Interactions between frontline health workers and beneficiaries showed statistically significant differences between treatment and control areas (see Borkum et al. 2014). The incentives led to increased nutrition counseling and advice, improved complementary feeding practices, and increased exclusive breastfeeding in the preceding 24 hours.

Initial evaluations suggest that these kinds of incentives are leading to some improved results and outcomes, although more in maternal and child health than in nutrition. Still, more information is needed. While the evaluations for these incentive-based interventions include strong counterfactuals, the results have not yet been published in peer-reviewed journals, and the cost-effectiveness and sustainability of these approaches have not yet been compared with more traditional approaches. These are import-

PANEL 5.4 DEVELOPING FUTURE LEADERS IN NUTRITION

KATHLEEN M. RASMUSSEN, JOHANN JERLING, AND JEF L. LEROY

Leaders in nutrition are needed in all sectors of activity—academic, corporate, governmental, and nongovernmental—at junior, mid-career, and senior levels. The authors of this panel have developed, led, or participated in one or more of the three major formal nutrition leadership programs operating around the world: the European Nutrition Leadership Platform (ENLP), the Dannon Nutrition Leadership Institute (DNLI), and the African Nutrition Leadership Programme (ANLP).[1] Here we describe these programs and reflect on how well they are addressing the global need to develop leaders in nutrition.

The three leadership programs, targeted to early and mid-career professionals, do not focus on the technical aspects of nutrition. Among other things, their goals are to develop communications and interpersonal skills, build strategic influence, explore how teams and organizations function and can be influenced, develop professional networks, clarify leadership and managerial responsibilities, and share information on team building, advocacy, and transformational leadership in a broader context.

Do these programs add value? No formal metrics are available for comparing the individual and professional outcomes of program graduates with those of individuals not selected for these programs. It is challenging to tell if, and to what extent, these programs separately and together have changed nutrition. But from year-on-year contact, we know that program graduates use the alumni and other networks that they have developed for both personal support and professional advancement for many years afterward. They report that they are better able to manage their time and integrate their many personal and professional responsibilities.

Moreover if they did not initially see themselves as future leaders, graduates of these programs do afterward. Many graduates now hold positions of leadership in their specific professional disciplines within nutrition and in different types of nutrition-related organizations. Some have chosen to focus on discovery science while others are contributing to solving global problems in nutrition in other ways. The solution to nutrition problems lies in harnessing the talents of leaders with this wide range of skills.

With only 100 participants engaged with the three major programs every year, many of whom choose careers not necessarily geared to scaling up actions to reduce undernutrition, it is difficult to generate a critical mass of leaders within an organization, country, or region. Although we have no scientific evidence to back our conclusion, we suspect that current leadership development efforts represent a suboptimal level of investment in the leadership capacity needed to scale up nutrition action.

ant information gaps to fill if incentive-based approaches are to be scaled up more widely.

LEADERSHIP

Case studies show that strong leadership is critical in raising the profile of, and tackling, complex public health problems ranging from HIV and AIDS (Bor 2007; Campbell 2010) to maternal and neonatal mortality (Shiffman and Smith 2007; Shiffman 2010; Fernandez et al. 2014). Documented nutrition success stories are replete with individuals, groups, and organizations that have been a critical part of the process at every stage of turning policy into action—from setting the political agenda and formulating effective policy (Pelletier et al. 2011, 2013; Acosta and Haddad 2014) to developing systems and organizations for implementation and building frontline capacity (Pelletier et al. 2011; Haddad et al. 2014).

Nutrition's nature—multicausal, requiring a multisectoral response, often invisible, long neglected in policy—calls for special kinds of leadership at all levels. These leaders need to operate strategically at different levels (from the executive to the frontline) and to have the "capacity to broker agreements, resolve conflicts, build relationships, respond to recurring challenges and opportunities, and undertake strategic communications" (Pelletier et al. 2011, 11). A study of 89 leaders in four countries—Bangladesh, Ethiopia, India, and Kenya—considered the individual journeys and motivations, capabilities, and strategic skills of leaders identified at a national level (Nisbett et al. 2015). It concluded that although there was no one common source or trajectory of leadership, some of the strongest leaders were boundary spanners, able to translate between disciplines and sectors or between policy and practice, all the while adapting strategically to ever-changing political and bureaucratic realities. Leadership in this definition is not about who you are; charisma or authority may help but are not essential. It is about what you do—adapting, spanning boundaries, thinking politically no

matter where you are—that makes others follow. Many such leaders have emerged naturally by, for example, being exposed to the realities of malnutrition from related fields such as pediatrics or disaster relief. Others, though, have benefited from capacity building and training on courses such as those in Panel 5.4. There is a need for more investment in such courses to build a new generation of nutrition leaders armed not only with the latest evidence on what works, but also with a sense of how to convince others of its value and how to operationalize it.

Other means of investing in future leaders and champions in nutrition include

- supporting leader-to-leader networks and mentoring;
- highlighting the role of nutrition champions;
- storytelling around nutrition success stories and lessons;
- building forms of community leadership, accountability, and activism;
- persuading influential leaders from government, academia, media, business, and civil society to champion the cause of nutrition;
- enhancing curricula to include both nutrition knowledge and adult development and leadership capacities; and
- building better competency, reward, and incentive frameworks for particular parts of the nutrition workforce.

Nutrition success stories are replete with individuals, groups, and organizations that have been a critical part of the process at every stage.

RECOMMENDED ACTIONS

To justify calls for more funding, **governments** and **donors** should continue to invest in ways of delivering better nutrition outcomes with existing funding. They should also demonstrate how they are seeking to improve the quality and effectiveness of current spending. **Governments** should continue to document their nutrition spending and engage with **researchers** to determine costs of nutrition strategies. **Donors** should report their disbursements, and **civil society organizations** should continue to call for transparent budgets. **Governments and donors** should increase their work with **researchers** to estimate budget allocations to obesity and nutrition-related noncommunicable diseases.

1. **Governments and donors** should work more closely with **researchers** to estimate the impacts and costs of different strategies for implementing and scaling up nutrition actions. These country-specific estimates of impacts and costs will help governments refine their strategies and increase the likelihood that their investments will have a greater impact on nutrition status.
2. **Governments** should compare current estimates of their nutrition budget allocations with costed plans so that they can develop credible and transparent estimates of funding gaps in time for the Rio 2016 Compact. Doing this will help them better align resources and plans. The *Global Nutrition Report 2016* will aim to report on more than 30 country nutrition budget allocations.
3. Each year, **donors** should report their commitments and disbursements—both nutrition-specific and nutrition-sensitive—to the *Global Nutrition Report* team. The availability of these data will better guide their actions and the actions of their partners. A failure of donors to do so risks undermining their accountability and credibility.
4. **Civil society organizations** should continue to call for transparent budgets from governments and donors and use budget allocation data to lobby for more, and more effective, spending on nutrition. Civil society has the credibility that others do not to press governments and donors to take these steps and to monitor whether resources are actually disbursed.
5. Given the insufficient tracking of expenditure on obesity and nutrition-related noncommunicable diseases, **governments and donors** should work more closely with **researchers** to estimate costs and track spending on strategies to prevent and control these diseases. Such estimates are currently unavailable.

   Governments spend, on average, between 1 and 2 percent of their budgets on nutrition, and donors spend approximately 4 percent—far too little to meet global nutrition targets by 2025. Accordingly, **governments** should—at a minimum—double the share of their

budgets allocated to improving nutrition. **Donor** spending on nutrition will also need to more than double.

6. By the time of the 2020 N4G Summit in Japan, **governments and donors** should have doubled their share of spending on actions explicitly intended to have an impact on nutrition. Precise estimates of what is needed to meet the WHA targets are not available, but preliminary work on stunting by the World Bank suggests that by 2025 governments need to at least double their spending on proven nutrition interventions and donors need to more than quadruple funding for these interventions. In addition, the scope for increasing the share of **government and donor** nutrition-related spending in sectors such as agriculture, education, health, social protection, and water, sanitation, and hygiene is large because these budgets are large in magnitude and the opportunities for win-win solutions are plentiful.
7. More **donors** need to invest in nutrition. **The 13 bilateral donors** that are currently spending less than US$1 million a year on nutrition, as measured by the OECD Development Assistance Committee (DAC), should make substantial new commitments to nutrition. For donors seeking to maximize the human and economic impact of their funds, nutrition is a high-impact investment.

6 CLIMATE CHANGE AND NUTRITION

GIVEN THE WIDESPREAD EFFECTS THAT CLIMATE CHANGE IS PROJECTED TO HAVE ON THE WORLD'S MOST VULNERABLE PEOPLE—AND INDEED THE EFFECTS THAT are already underway—climate change features strongly in the Sustainable Development Goals (SDGs): specifically, SDG 13 calls for "urgent action to combat climate change and its impacts." Among the many concerns related to climate change, its potentially serious implications for agriculture and food security have long been recognized (see, for example, Bohle et al. 1994).

KEY FINDINGS

1. Climate change affects nutrition by influencing people's food security, disease levels and patterns, water and sanitation environments, and choices about how to allocate time to their livelihoods and to caregiving. In turn, people's nutrition status and diet choices affect their capacity to adapt to climate change and to mitigate climate change by reducing emissions of greenhouse gases.
2. For the poorest groups, the seasonal cycles of food availability, infection, and time use remain a significant challenge to nutrition security and provide a stark indicator of the vulnerability of populations to climate risk.
3. Different diets drive different production systems and have different emission and resource footprints. On average, meat-rich diets tend to have larger footprints. Dietary choices that are good for health can also be good for the planet.
4. Countries are beginning to incorporate climate thinking into national nutrition plans.
5. Climate change and nutrition have overlapping agendas. More collaboration between the two communities could generate a common agenda that could be more effectively pursued by both communities—separately and together.

Much less well understood, however, are the links between climate change and nutrition. A clearer picture of how climate change affects nutrition, and how nutrition in turn affects climate change, offers an opportunity to use policies and programs in ways that are mutually beneficial for climate adaptation and nutrition status.

This chapter assesses the impact of climate change as a risk for nutrition, but also the potential of nutrition choices to contribute to climate change mitigation. It begins by describing the nature of the linkages between climate change and nutrition, and then it looks at various aspects of these links. For example, many poor people in rural areas are vulnerable to seasonal variations in food supply, disease, and time use, and these seasonal changes point to the potential effects of climate change on nutrition. The chapter also highlights recent evidence on the different greenhouse gas emissions generated by different diet choices. It closes with recommendations on how to intertwine nutrition and climate analysis and actions more closely, both at the national and international levels.

THE LINKS BETWEEN CLIMATE AND NUTRITION

Much of the evidence on the links between climate change and health is summarized in a recent *Lancet* series by Watts et al. (2015). The evidence base on the interactions between climate and nutrition is much smaller and falls largely into two categories. The first, originating in the nutrition community, is conceptual, drawing out the links between climate change and food security (for example, Lake et al. 2012) and between climate change and undernutrition (examples include Tirado et al. 2010a, b, 2013; Crahay et al. 2010). Much of this literature explores pathways from climate change to nutrition status, and from nutrition status to adaptive capacity. The second category concerns how food production and diet choices affect greenhouse gas emissions (examples include Tilman and Clark 2014 and McMichael et al. 2007). In this chapter we draw on both of these strands: how does climate change affect malnutrition in all its forms, and how do diet choices affect the mitigation of climate change?

To answer these questions, we incorporate climate change into UNICEF's conceptual model of undernutrition, in two ways: First, we apply the model to malnutrition in all forms, not only undernutrition. Second, we build in the impacts of climate on the drivers of nutrition through feedback loops from climate adaptation and climate mitigation (Figure 6.1).

To begin with, climate change affects the enabling environment for malnutrition reduction. Shifting and sometimes less predictable rainfall and temperature patterns affect political priorities, economic growth, and inequality because the poorest people are most vulnerable to the changes. A less favorable enabling environment for malnutrition reduction makes the underlying determinants of improved nutrition less effective. For example, unexpected and sometimes more severe weather changes disrupt the intermediate environments that are so important for good nutrition.

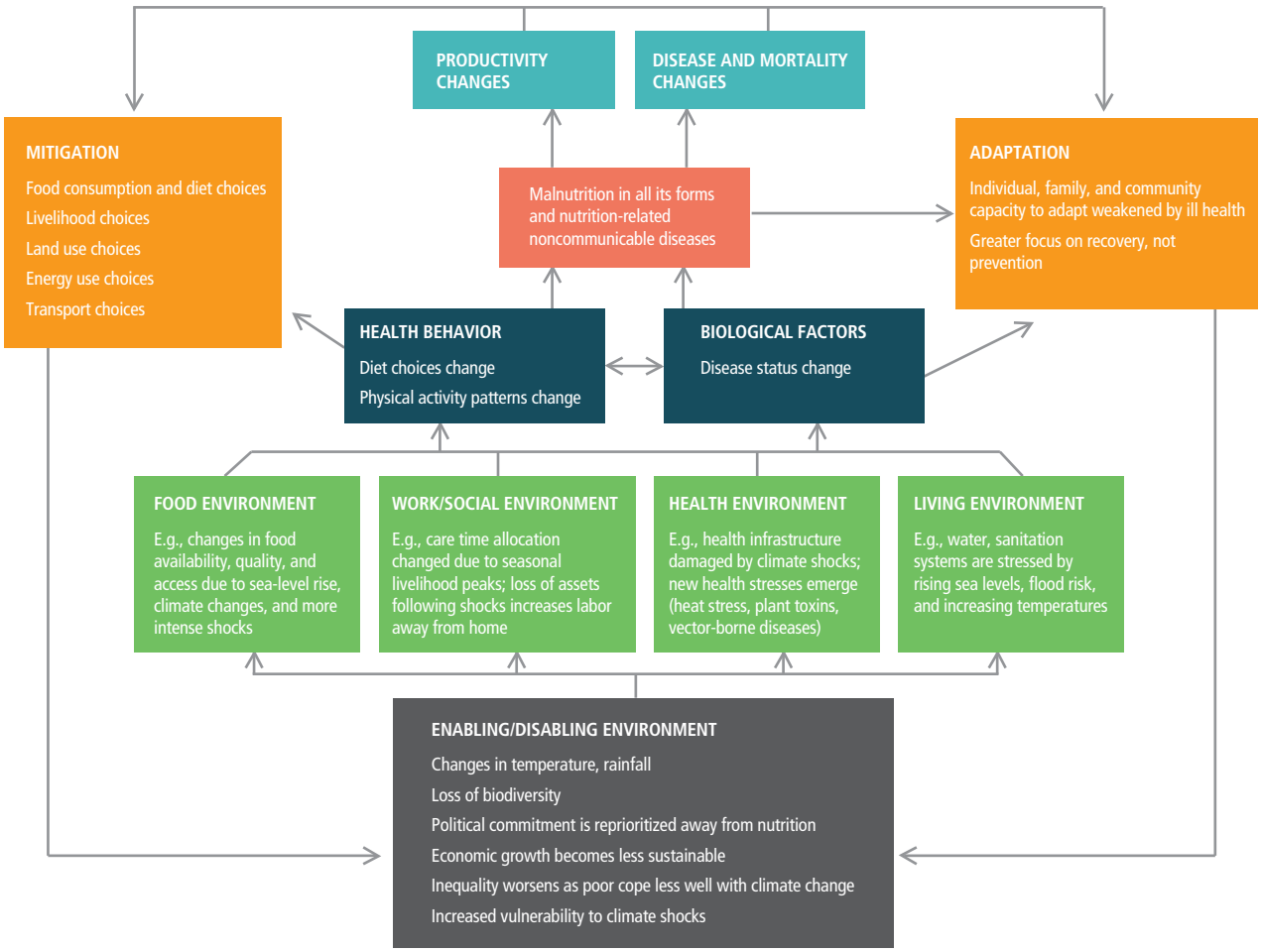
In the food environment, climate influences people's food consumption by influencing local and global food availability (production, storage), quality (nutritional value and food safety), access (market policies and prices), and how the body utilizes food. Seasonal food scarcity (see Panel 6.1) and climate shocks (such as droughts) have long been shown to drive short-term malnutrition, morbidity, and, in Africa, mortality in vulnerable populations, especially women and girls.

Global climate models suggest that by 2050 climate change will result in additional price increases of 5–25 percent for the most important agricultural crops—rice, wheat, maize, and soybeans—and that higher feed prices will result in higher meat prices (Nelson et al. 2009). This is because overall warming temperatures are expected to have a negative effect on global crop production, although this effect might be counteracted in part by the effects of CO_2 (Lobell et al. 2012). Without real efforts to adapt, people's production capacity and livelihoods are under serious threat. According to the Intergovernmental Panel on Climate Change (IPCC), climate change without adaptation will depress production of wheat, rice, and maize even under local temperature increases of 2° C. (high confidence).

It is also estimated that food quality will be affected. For example, elevated CO_2 emissions representing likely levels in 2050 are associated with substantial declines in the zinc, iron, and protein content of wheat, rice, field peas, and soybeans (Myers et al. 2014). In addition, food safety may be compromised by a changing climate. High temperatures and extreme weather events create a more favorable environment for food-borne pathogens such as campylobacter and salmonella (Tirado et al. 2010a), which reduce sufferers' ability to absorb nutrients.

In the health environment, climate plays an important role in the transmission of many human parasitic, viral, and bacterial diseases (such as malaria, dengue, and cholera, respectively). Rainfall and temperature determine the spatial and seasonal distributions of these diseases, influence year-to-year variability, including epidemics, and

FIGURE 6.1 Conceptual links between climate change and nutrition



Source: Authors.

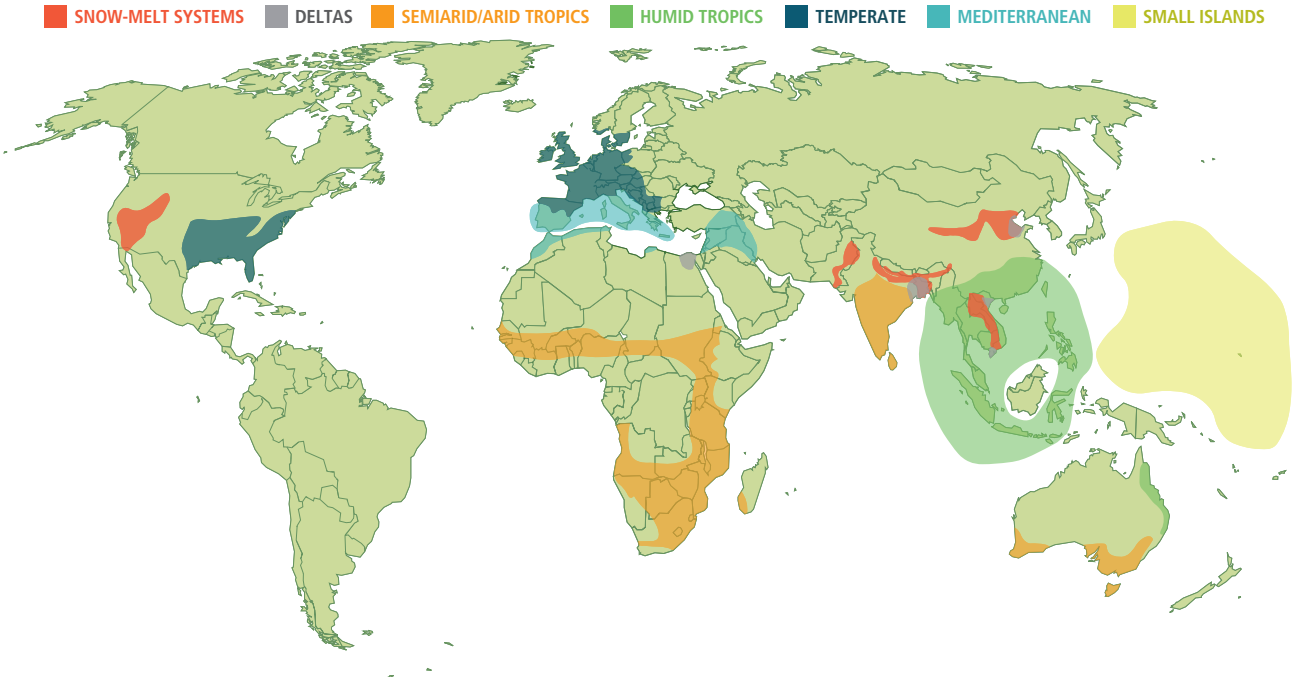
affect long-term trends (Kelly-Hope and Thomson 2008). Observed warming in the East African highlands, which is clearly associated with global climate processes, may already be changing local malaria transmission dynamics (Omumbo et al. 2011). The range of livestock and plant diseases is also expected to shift in association with changes in climate patterns. Climate shocks such as cyclones and floods can directly affect the delivery of health care services and people's access to such services by damaging care facilities and transport infrastructure.

In the work/social environment, economic models suggest that climate change will significantly alter how people engaged in climate-exposed livelihoods such as agriculture allocate their time (Zivin and Neidell 2014; Ulrich et al. 2015). Moreover, we know that agricultural cropping patterns affect the time available for child care, which in turn can affect the nutrition status of children under 5 years of age (Paolisso et al. 2002).

With regard to the living environment, there is compelling evidence that climate change is resulting in long-term drying in some regions, including parts of the fertile crescent of North Africa, with major social and political ramifications (Kelleya et al. 2015). Drying threatens the quantity and quality of water available for irrigation (food production), energy production (food processing), and human consumption (washing, cooking, and drinking). Figure 6.2 shows the main agricultural water systems on which climate change is expected to have an impact (Turral et al. 2011). We should also expect additional challenges to water availability for human use and consumption, including increasing salinity of coastal drinking water sources, which affects maternal health.

How do all these pathways add up to change nutrition status? These changes lead to disrupted health behaviors and biological status and to disease, diminished productivity, and mortality. This situation undermines the ability

FIGURE 6.2 Main agricultural water management systems that climate change is expected to impact



Source: Turral et al. (2011).

of individuals and communities to adapt to the changing climate and forces them into making short-term choices on food consumption, livelihoods, land use, water, energy use, and transport, which hinder effective climate mitigation. In a feedback loop, diminished climate adaptation and mitigation capacities further undermine the enabling environment for malnutrition reduction.

Indeed, the potential rise in child stunting predicted by long-term changes in climate is substantial. In all regions where stunting is already severe, Lloyd et al. (2011) estimated that climate change will increase stunting by 30–50 percent by 2050—specifically as a function of reduced crop production—compared with a scenario of no further climate change. High temperatures also increase the risk of morbidity and mortality from cardiovascular disease, respiratory disease, and other noncommunicable diseases (Friel et al. 2011), especially in older, overweight populations (Kenny et al. 2010).

SEASONALITY AND UNDERNUTRITION

Seasonality is an important factor mediating climate change and nutrition status. In general, people's vulnerability to seasonality provides a good indicator of their extreme vulnerability to climate risk. This is because climate patterns play a fundamental role in shaping natural ecosystems, including the seasons. But seasonality is also a determinant of undernutrition especially among the poorest rural communities, where seasonal patterns of food consumption, micronutrient availability (Jiang et al. 2005), infectious disease (Kelly-Hope and Thomson 2008), and human behavior (Devereux et al. 2011) are most strongly observed. This vulnerability is particularly acute in regions where the rains are highly seasonal and rain rather than irrigation is the main source of water for agriculture. Here the period between planting and harvesting is widely known as the "hungry season." Panel 6.1 summarizes more findings on how seasonality affects nutrition determinants and outcomes and draws out some of the programmatic implications.

Seasonality can have substantial effects on people's nutrition status. The height of young children in India, for example, varies significantly by the month of their birth (Figure 6.3). Compared with children born in December, those born in the summer and monsoon months (April–September) have significantly lower height for their age.

In Bangladesh, extreme flooding, driven in part by changes in global sea surface temperatures (such as El Niño), affects rice production, rice prices, and child nutrition. *Aman* rice production increases with the size of the annual flood until an optimum point, after which excessive flooding damages the crop (Figure 6.4). Extreme flooding

PANEL 6.1 TIME TO TAKE SEASONALITY MORE SERIOUSLY

EMILY BIELECKI AND JERE HAAS

Despite the progress in global development over the past 30 years, the nutritional status of mothers, infants, and young children still varies widely by season.

There is some evidence on the effects of seasonality on nutrition. For adult women, seasonal swings of 0.7 to 3.8 kilograms of average body weight, and associated increases in the share of women with a lower body mass index during the rainy season, have been reported in both Africa and Asia (Ferro-Luzzi and Branca 1993). During the rainy season relative to the dry, postharvest period, women of reproductive age, including pregnant and lactating women, have reduced intakes of both macro- and micronutrients, increased morbidity, and increased agricultural labor demands (Prentice and Cole 1994). In the Gambia, the share of newborns who are small for their gestational age reached its peak at the end of the hunger season (30.6 percent) and progressively fell to 12.9 percent through the harvest period. The period with the highest rates of infants born small for their gestational age also coincided with the highest percentage of pregnant women with malaria, a known risk factor for low birth weight (Rayco-Solon et al. 2005). Studies from Africa and Asia have reported differences of more than 100 grams in average birth weights and approximately 1 centimeter in birth lengths in favor of the dry, postharvest season; these effects are greater than those reported in many maternal nutrition programs (Chodick et al. 2009; Rao et al. 2009).

Despite the substantial nutritional impacts of seasonality, policymakers and program implementers may be relatively unaware of these effects owing to inadequate data. Urban elites that formulate much development policy may also be desensitized to seasonality, having the means to insulate themselves from it in their own lives (see the foreword by Robert Chambers in Devereux et al. 2011). The current focus on increasing the availability of repeated nationally representative surveys might also inadvertently hide seasonal disparities. Whatever the reasons, the absence of focus looks misguided. Furthermore, climate change is likely to make seasonal patterns more unpredictable and possibly more accentuated, making it even more important that we are alert to programmatic responses that can reduce any such variations.

The persistent impact of seasonability on nutrition has important implications for policies and programs. In particular, it requires the following:

- **A greater emphasis on nutritional surveillance.** New technologies have created opportunities to understand seasonality in a more meaningful way (see Panel 9.6 in Chapter 9), and they may allow researchers to gather and analyze spatial and temporal data more cost-effectively.
- **A greater focus on the nutritional status of infants during the first 1,000 days of life and adolescent girls.** Adolescent girls are potential conduits of intergenerational nutritional status. Well-nourished girls will be in a better position to withstand seasonal shocks when they eventually become pregnant, so a life-course approach to interventions is vital.
- **A higher priority given to interventions that help households manage seasonal variations in consumption, income, and illness.** Social protection programs are designed to protect households from undermining human capital in the face of shocks and are thus a sensible mechanism for delivering additional nutrition-specific components.

In general, all nutrition policies and programs must carefully consider the potential trade-offs between maternal nutritional status, maternal work, and time available for adequate childcare—trade-offs that will be exacerbated by seasonality and, possibly, by poorly thought-through attempts to address it.

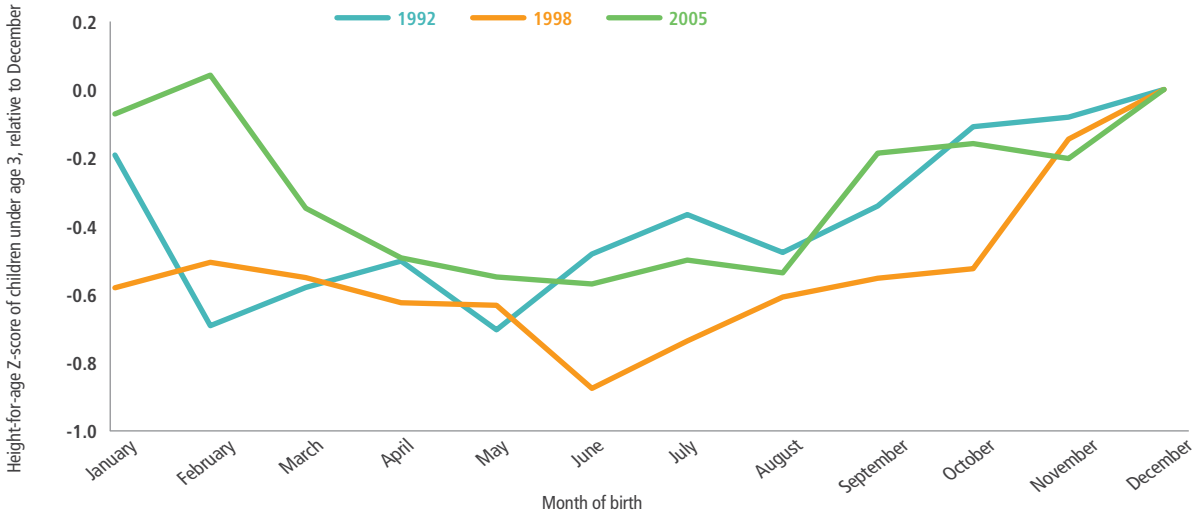
also raises rice prices, leading to significant increases in underweight among children under age 5 (Figure 6.5 and Panel 6.2).

Given the influence of children's month of birth on their nutrition outcomes, a greater focus on seasonality in nutrition assessment, programming, and policy would be warranted—even in the absence of climate change. The uncertainties introduced by climate change make such a focus even more important. Unless nutrition status and programming are more effectively season-proofed, they will not become more effectively climate-proofed.

MEAT-RICH DIETS AND CLIMATE CHANGE

Foods from animals ("animal-source foods") such as meat, fish, poultry, milk, and eggs provide protein and a variety of essential micronutrients (such as iron, zinc, vitamin A,

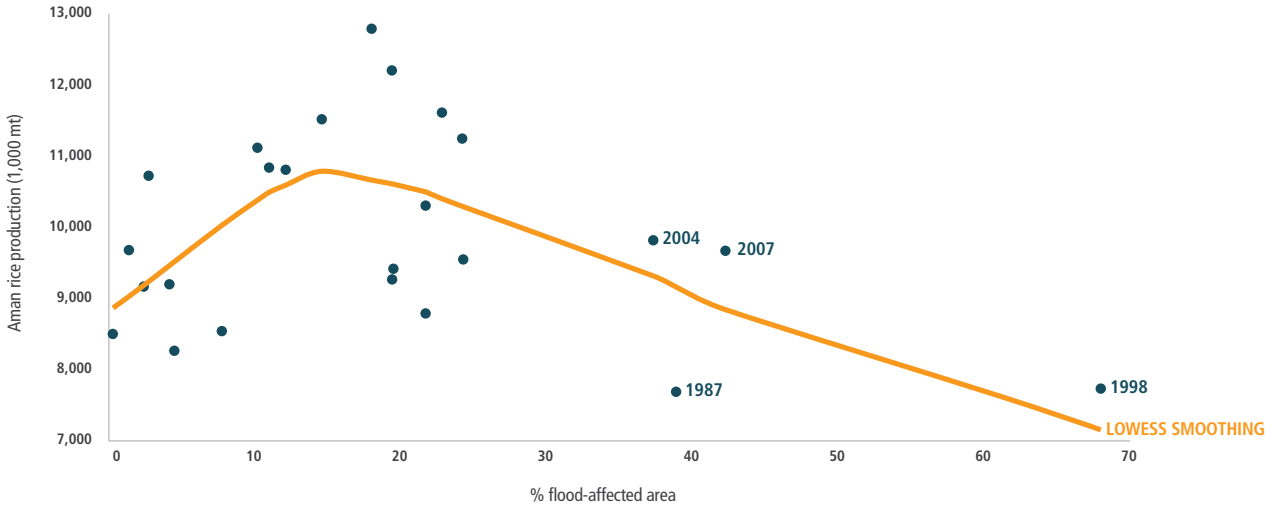
FIGURE 6.3 How stunting varies by month of birth for Indian children under age 3



Source: Adapted from results in Lokshin and Radyakin (2012).

Note: Data come from three rounds of the National Family Health Survey and are for households with two or more children under age 3. Winter = December–March; summer = April–June; monsoon = July–September; autumn = October–November.

FIGURE 6.4 Rice production and the extent of flooding in Bangladesh



Source: Authors, based on data from the Bangladesh Flood Forecasting and Water Centre, http://www.ffwc.gov.bd/.

Note: Lowess smoothing is local regression smoothing. Each smoothed value is determined by neighboring points within a defined span. Between 1984 and 2012 the four high-flood years marked in the figure all follow El Niño periods, making flood risk potentially predictable.

riboflavin, and vitamins B-6 and B-12) that, for some age groups in some environments, are difficult to obtain in adequate quantities from plant-source foods alone (Allen 2014; Dewey and Adu-Afarwal 2008; Murphy and Allen 2003). Small quantities of meat thus contribute to nutritious diets, especially for infants at risk of undernutrition (Dror and Allen 2011). Raising livestock is also an important part of the livelihood of many smallholder farmers; it can provide them with income for investing in education and healthcare and in this way can raise nutrition status indirectly (Smith et al. 2014).

PANEL 6.2 BANGLADESH AND RICE: AT THE INTERSECTION OF CLIMATE AND NUTRITION

MADELEINE THOMSON

Rice is central to the food security and nutrition of more than half of the world's population. As a "strategic" commodity in many Asian countries, it is subject to a wide range of government controls and interventions. In addition, rice production is highly sensitive to climate. Higher-than-optimal minimum and maximum temperatures have been shown to push down rice yields in both the laboratory and the field, making this crop highly vulnerable to the increased temperatures predicted to occur as a result of climate change (Welch et al. 2010). Rice production is also sensitive to drought and to extreme flooding, as data from Bangladesh show (Figure 6.4).

Bangladesh is a rice-growing country, and more than 70 percent of the calories consumed by rural Bangladeshis come from rice (Torlesse et al. 2003). While seasonal river flooding is essential to the rice farming system, major floods cause substantial losses. When the rice crop fails because of excessive flooding in the Aman season or regional drought in Boro season, Bangladesh responds by importing from neighboring countries and increasing production in the following season. However, such transitions are not smooth, they interact with regional and global shocks, and they can lead to rapid increases in rice prices that may affect consumers (Golam Rabbani Mondal et al. 2010). In turn, rice prices have a direct impact on child nutrition. High rice prices following production shocks have been shown to be strongly associated with a decline in spending on nonrice foods (which tend to contain higher densities of micronutrients) and an associated increase in underweight children (Torlesse et al. 2003). Figure 6.5 shows a strong association between price of rice at the local level in Bangladesh and underweight in children under 5 years old after long-term trends have been removed.

For Bangladesh the very real intersection of climate and nutrition is the subject of much analysis and action. One useful step would be to develop a better understanding of how global sea surface temperatures relate to local river flooding. This would allow Bangladesh to develop early warning systems to alert the health community to potential nutritional challenges before they occur, as has been done for malaria (Thomson et al. 2006). Such systems are best embedded in a comprehensive effort to (1) invest in interventions to bring down current disease burdens; (2) promote a comprehensive approach to climate risk management; and (3) support applied global and regional research agendas as well as targeted research on high-priority diseases and population groups (Campbell-Lendrum et al. 2015).

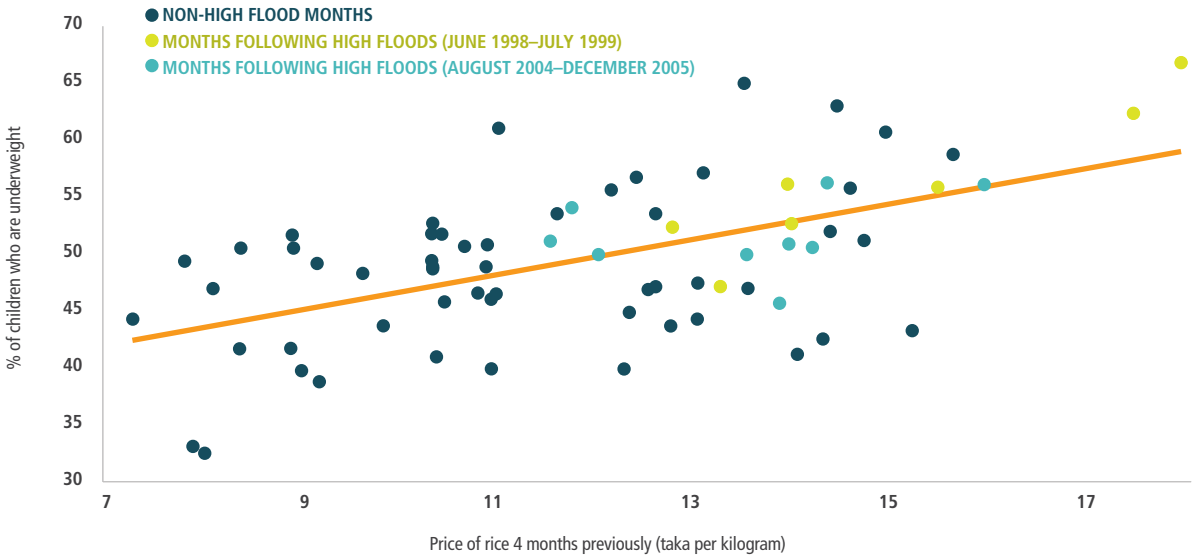
During the nutrition transition (Popkin 2011), however, diets around the world have evolved to include large quantities of meat. Between 1961 and 2009, the global supply of animal-source food available rose from 118 to 164 kilograms per person. Meat—mainly poultry, pork, and beef—was responsible for most of the increase, and meat consumption soared by 82 percent, from 23 to 42 kilograms per person per year, in that period (Keats and Wiggins 2014). Diets rich in red meats such as beef and lamb have been established as a risk factor for nutrition-related noncommunicable diseases (Woodcock et al. 2007; WCRF 2007; Pan et al. 2012).

This shift to diets very high in meat is also associated with high environmental costs. Diets higher in meat are associated with higher greenhouse gas emissions. Figure 6.6 shows that, compared with the global average diet for 2009, diets lower in meat generate lower emissions.

Although livestock of all types contributes directly and indirectly to climate-changing greenhouse gas emissions, the impacts are greatest from ruminants, which include cows and sheep. Dung and urine deposits from animals emit methane and nitrous oxide, and ruminants generate significant additional methane emissions through enteric fermentation. The production of animal feed also leads to nitrous oxide emissions, and deforestation and other forms of land clearance for pasture or cultivation of animal feed lead to CO_2 release. Per unit of edible animal product, industrialized systems tend to generate fewer greenhouse gas emissions than extensive systems, but they give rise to other environmental and societal concerns including higher water use, higher point-source pollution, greater use of antibiotics (with associated antibiotic resistance concerns), and potentially greater associations with epidemic zoonotic disease outbreaks (Garnett 2011).

Reducing livestock production of all kinds, and particularly reducing ruminant production, could help significantly reduce greenhouse gas emissions, but such a step would need to be accompanied by actions to reduce consumer

FIGURE 6.5 Rice prices and rates of underweight in children in Bangladesh



Source: Authors, based on data from Helen Keller International, Bangladesh, for 1990–2006.

Note: Percentage of underweight children and rice prices are detrended. Prices following 1998 and 2004 years of excessive flooding are indicated. R2 = 0.555; n = 70; p value = 0.

demand. People with very low levels of income increase their demand for animal-source protein and fats when their income increases even marginally (Kearney 2010). Efforts to control production are thus unlikely to be effective unless the regulatory, fiscal, contextual, and sociocultural determinants of demand are also addressed.

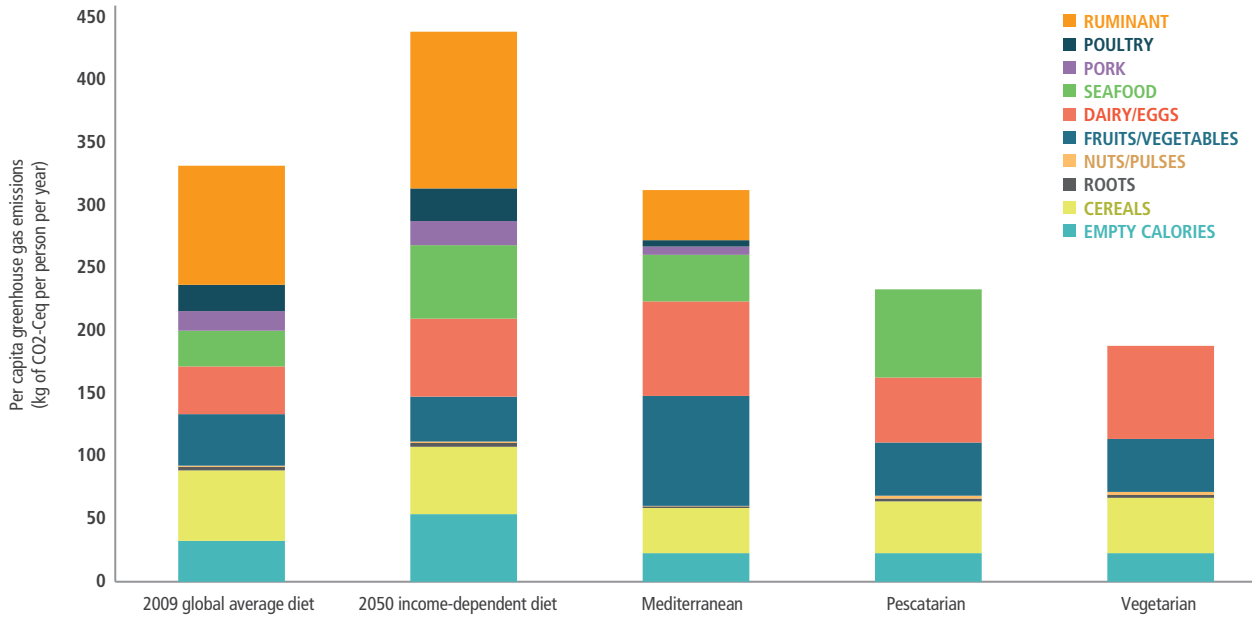
An important step in shaping consumption habits is for national dietary guidelines to recommend lower red meat consumption among high-consuming groups. The Health Council of the Netherlands and Sweden's National Food Agency, for example, are taking a lead in this respect (HCN 2011; Sweden, National Food Agency 2015). The Brazilian dietary guidelines also include some discussion of environmental issues and recommend moderating meat consumption to achieve both environmental and health benefits (Brazil, Ministry of Health 2014). For the development of the 2015 United States Dietary Guidelines, an advisory committee produced a report that makes recommendations for diets that are not only healthful, but also generate fewer environmental impacts; included in this is the recommendation to eat fewer animal products (US Office of Disease Prevention and Health Promotion 2015).

What is the optimal amount of meat to produce and consume to maximize nutrition status while minimizing greenhouse gas emissions? Clearly there is no one-size-fits-all position; the answer will be country- and group-specific. But whenever nutrition and climate groups can come together on messaging with regard to meat consumption, the potential for moving their common agenda forward increases significantly. Nutrition and climate groups should develop country typologies stratified, for example, on current meat consumption levels, dependence on ruminants for livelihoods, and the intensity of greenhouse gas emissions of livestock systems to begin exploring the potential for these common agendas for action to be developed and pursued.

CLIMATE WITHIN NATIONAL NUTRITION PLANS

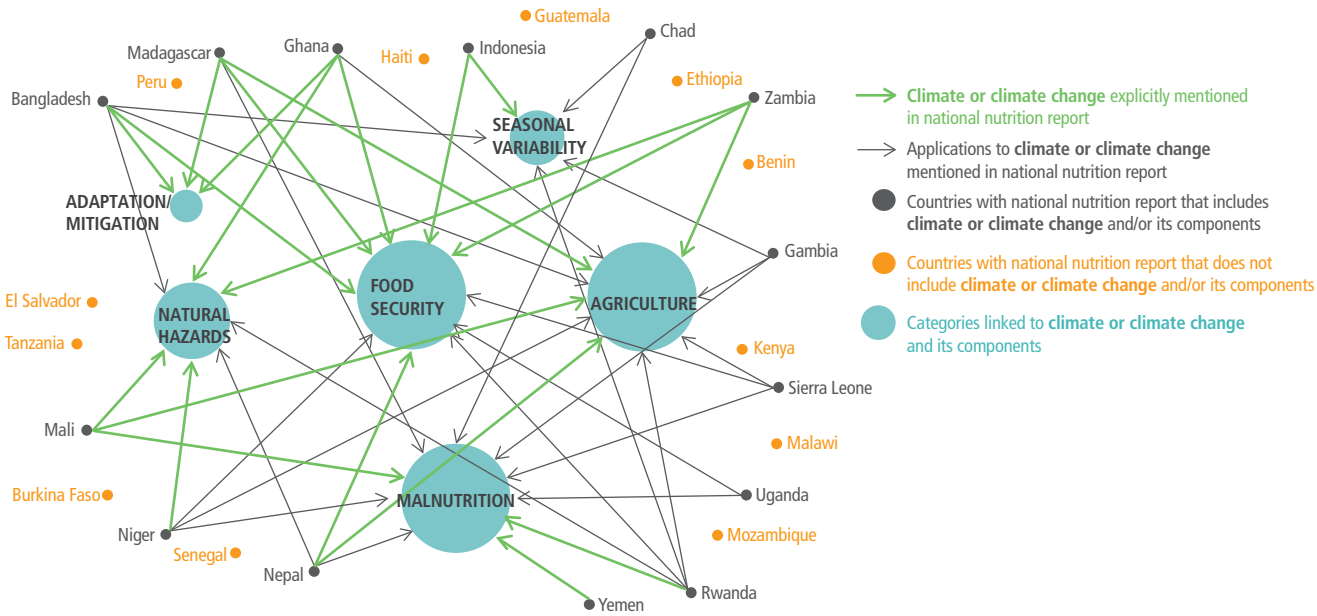
To what extent do countries' nutrition plans include climate variability and change? At the time of this writing (March 2015), of the 26 member countries of the Scaling Up Nutrition (SUN) Movement with complete national nutrition strategy documents available in English, 10 explicitly mention "climate" or "climate change." In the strategies climate change is linked with six directly affected categories: agriculture, food security, malnutrition, natural hazards (such as floods and droughts), seasonal variability, and adaptation/mitigation (Figure 6.7). An additional four countries allude to climate through references to its components (such as rainfall, temperature, and season-

FIGURE 6.6 Effects of diet type on greenhouse gas emissions



Source: Tilman and Clark (2014, Figure 4.1). Reproduced with permission.

FIGURE 6.7 Which countries include climate or climate change in their national nutrition plans and how?



Source: Authors, based on data from Scaling Up Nutrition (SUN).

ality). Twelve countries do neither. In addition, a series of eight country case studies on the nutrition sensitivity of agriculture and food policies, commissioned by the UN Standing Committee on Nutrition, found that five of the eight surveyed countries referred to climate change in some of their food, agriculture, or nutrition policies (Fanzo et al. 2013). This inclusion rate is encouraging, and it would be worthwhile for other countries—both SUN members and nonmembers—to include climate adaptation and mitigation factors in their nutrition plans.

RECOMMENDED ACTIONS

By the time of the United Nations Conference on Climate Change (COP21) in November 2016, t**he climate change and nutrition communities** should form alliances to meet common goals. The **Intergovernmental Panel on Climate Change (IPCC)** should form a group comprising nutrition and climate-health experts to assess the climate-nutrition literature and define new research and policy agendas. **Governments** should build climate change explicitly into their national nutrition and health strategies. And **civil society** should use existing networks to build climate change–nutrition alliances to advocate for nutrition at the COP21 and other leading climate change events and processes.

1. **Governments** should build climate change more explicitly into existing and new national nutrition strategies. Reviews of nutrition policies show that many countries do not yet incorporate climate change into their nutrition policies.
2. The **Intergovernmental Panel on Climate Change** should develop a nutrition subgroup to ensure that climate policymakers take advantage of climate-nutrition interactions and community adaptation. The four major UN nutrition agencies—FAO, UNICEF, World Food Programme (WFP), and WHO—should work with the IPCC to add nutrition experts to IPCC Working Groups 2 (vulnerability to climate change) and 3 (options for mitigation) in time for them to make a meaningful contribution to the next IPCC assessment report, anticipated to be published in four to five years' time.
3. **Civil society** should lead the formation of climate-nutrition alliances to identify new opportunities for action on both fronts. Civil society groups should then present these new opportunities at side meetings at the 2016 COP in Marrakesh. Civil society groups concerned with nutrition should build climate change into their own activities.

7 INDICATORS FOR NUTRITION-FRIENDLY AND SUSTAINABLE FOOD SYSTEMS

AS DESCRIBED IN THE PRECEDING CHAPTER, FOOD SYSTEMS LINK AGRICULTURE, ENVIRONMENTAL SUSTAINABILITY, AND NUTRITION. INTEREST IN HOW FOOD systems can do more to reduce malnutrition in all its forms has increased substantially since the *Global Nutrition Report 2014* was issued. The Second International Conference on Nutrition (ICN2) in November 2014, for example, focused extensively on food systems, as did a number of recent reports.[1]

KEY FINDINGS

1. The rise of obesity and nutrition-related noncommunicable diseases in the context of persistent undernutrition places a greater emphasis than ever on the centrality of food systems as a driver of nutrition outcomes.
2. Food system indicators can be used to characterize country food systems into types.
3. Developing outcome indicators for food systems can help guide policymakers toward better decisions for nutrition-friendly and sustainable food systems while also helping citizens hold their governments accountable for their policy choices. Here we propose a dashboard of 10 indicators as an example.
4. Missing and poor data present a significant challenge to accountability of food systems for nutrition and sustainability.
5. Decisions about improving food systems depend not only on technical considerations, but also on the political economy of food systems.

PANEL 7.1 BUILDING A TYPOLOGY OF FOOD SYSTEMS

RACHEL NUGENT, CAROL LEVIN, AND DANIEL GRAFTON

To define the food system typology, we first identified candidate indicators from the literature that correspond to the inputs and processes identified in the logic model. To avoid circularity, we did not use outcome indicators to define food systems. Second, we identified the indicators that the literature suggests are the best measures of the specified inputs and processes. Third, we eliminated the indicators that are highly correlated with one another in favor of those with the most country observations. Fourth, we defined quartiles for each indicator and assigned quartile values to each of the indicators for each country. Fifth, using these quartile values, we sorted 215 countries from ascending or descending order, depending on the value of the indicator, using as few indicators as possible for simplicity's sake. Lastly, we removed those countries that lack two of the three indicators[1] that proved most influential in sorting countries, for a final sample of 150 countries with relatively complete data. We specified that at least one indicator must come from each of five domains that the literature suggests characterize food systems: productivity, diversity of food supply, food affordability, extent of natural resource use, and the composition of the population they support. Five clusters of countries emerged, defined by the seven indicators in Table 7.1.

The question addressed here is how governments and other actors can be held accountable for the impacts that their decisions about food systems have on nutrition and sustainability. This means governments need to know how to measure the impacts of food system policies, and they need to track those impacts. The right indicators can inform countries whether they are on or off track in meeting their nutrition and sustainability goals, and even suggest course corrections by highlighting what works in other countries.

The complexity of food systems makes this a challenging process. Food systems involve people at every stage making choices about how to convert natural resources into food to sustain human life. These stages—from "farm to flush"—include growing, harvesting, processing, packaging, distributing, marketing, trading, consuming, and disposing of waste.[2] The food system incorporates the dynamics of both supply (involving both complex, sophisticated supply chains and shorter, simpler chains) and demand (what people can afford to buy and the choices they make).

Different stakeholders have different perspectives on what a healthy and sustainable food system looks like. To people concerned about food security, a healthy and sustainable food system is one that eliminates hunger. To nutrition and public health advocates, a healthy and sustainable food system supports proper nutrition and low disease risks. To people interested in the long-term viability of natural resources, a healthy and sustainable food system does not deplete water and land resources or reduce air quality. To agricultural producers, a healthy and sustainable food system fairly rewards their efforts and provides them with clear market signals for production and investment decisions. To people worried about the power of "Big Food," a healthy and sustainable food system regulates and monitors the types of products that reach consumers, especially children.

Clearly, there is no single model of a healthy and sustainable food system, but there are some essential features on which all stakeholders can agree: a low level of malnutrition in the population and efficient use of land and water resources. To some, these goals are achieved by what has been termed "sustainable diets" (Burlingame and Dernini 2012). Recognizing that there is enormous variation in countries' ability to meet those goals, but also believing that healthy and sustainable outcomes are reasonable goals for any food system, we here use a food system typology to discuss what a nutrition-friendly food system should produce, based on generally agreed-upon ideas of "healthiness" and sustainability, and some of the trade-offs that impede those goals. Agreement on what constitutes healthy food system outcomes will go far to raise the priority of nutrition, even for stakeholders with very different perspectives.

This chapter draws on a wealth of literature and data to identify and describe five types of food systems around the world.[3] It then proposes a common set of indicators that countries can use to monitor the outcomes of their food systems. The aim is to help guide actors in the food system toward improvements in nutrition, health, and sustainability outcomes and help make them more accountable to their citizens.

TABLE 7.1 Indicators used to define food system typology

Food system feature	Description of food system feature	Indicator of food system feature
Agricultural productivity	Agricultural productivity measures the quantity of food and other farm products produced by each agricultural worker. It reflects sectoral efficiency, as well as the quantity of other resources available for each farm worker.	Agricultural value added per worker, constant 2005 US$, 2011 (World Bank 2015c)
Food supply diversity	The diversity of food supply indicates the breadth of consumption choice and nutrients available to the population.	Share of dietary energy supply derived from cereals, roots, and tubers, %, 3-year average, 2011 (FAO 2015b)
Economic accessibility of food	Economic accessibility signifies the ability of the food system to provide affordable food.	Food budget share (Euromonitor 2014) Domestic food price index, 2011 (FAO 2015b)
Natural resource use	Natural resource use indicates the sustainability of resource use by the food system.	Annual % change in agricultural area, 2011 (FAO 2015b) Average carbon content in the topsoil as a % in weight, 2008 (FAO 2015b)
Demographics	Demographic composition of a population reflects underlying elements of the nature of food demand, nutrition requirements, physical activity, and resource use.	Urban share of population, 2011 (World Bank 2015c)

Source: Authors.

DEFINING FOOD SYSTEM TYPES

Food systems have undergone major structural transformations in past decades (World Bank 2008; Nugent 2011; Reardon et al. 2012). There has been, for example, a broad trend toward capital-intensive food production, less diversity in the crops farmers grow, and longer supply chains from farms to consumers in which basic ingredients undergo multiple transformations on their way to becoming final food products (Hawkes et al. 2012). Alongside these changes in food systems have arisen the multiple burdens of obesity, undernutrition, and micronutrient deficiencies. Countries, and localities within countries, have experienced these changes to differing degrees.

To better understand food systems and how they work, we developed a model of food systems made up of inputs, outcomes, and processes.[4] Inputs are, for example, natural resources, human capital, physical capital, and agriculture and food technology. Outcomes consist of, among other things, people's food purchasing patterns, diet, health, and environmental status. The gap between inputs and outcomes is mediated by the processes related to primary food production, postharvest supply chains, and the food environment (in other words, the availability, acceptability, and affordability of food). The connections between inputs, outcomes, and processes are affected by factors outside the food policy domain, such as the governance of markets and trade, developments in nonfood science and technology, and changes in political regimes (for a detailed representation of this logic model, see Appendix Figure A7.1 at globalnutritionreport.org/the-report/appendixes). Our typology, created through the process described in Panel 7.1, consists of five types of food systems, defined by the five features and seven indicators in Table 7.1.

TABLE 7.2 Proposed food system typology

	Industrial food systems	Mixed food systems	Transitioning food systems	Emerging food systems	Rural food systems
Characteristics of food systems	Broad range of agricultural productivity and soil quality, highly urbanized, low dependence on staples, low food budget share	Moderate agricultural productivity, moderately urban, low dependence on staples, low to moderate food budget share, highest average soil quality	Urbanization same as System 2 but lower productivity, more reliance on staples, higher food budget share	Lower urbanization and agricultural productivity than Systems 1-3, more reliance on staples, moderate to high food budget share, low average soil quality	Lowest urbanization and productivity, lowest average soil quality, most reliance on staples and highest food budget shares
Examples of countries in each food system type	Australia, Canada, Denmark, Lebanon, Republic of Korea, Sweden, United States	Barbados, Bulgaria, Estonia, Germany, Hungary, Italy, Switzerland	Brazil, Ecuador, Guyana, Malaysia, Mauritius, Russia, Suriname, Ukraine	Cameroon, China, Honduras, Namibia, Pakistan, Philippines, Thailand	Bangladesh, Ethiopia, Indonesia, Nepal, Senegal, Zimbabwe

Source: Authors.

PANEL 7.2 NUTRITION IN THE REPUBLIC OF KOREA: THE NEED TO BUILD ON HEALTHY TRADITIONAL DIETS

HEE YOUNG PAIK

Korea became known to the Western world predominantly as a country of war following the outbreak of the Korean War in 1950. Inevitably, the country experienced severe food shortages for a period of time. In 1961, however, FAO food balance sheets indicated a per capita daily energy supply in the Republic of Korea (ROK) of 2,141 kilocalories, similar to the worldwide average of 2,193 kilocalories, and significantly higher than the average of 1,806 kilocalories for Asia as a whole (FAO 2015b). International food aid during and immediately after the Korean War helped prevent severe nutritional deficiencies.

The traditional Korean diet consists mainly of plant foods—grains, vegetables, and beans—supplemented by a small amount of animal-source foods. Despite rapid socioeconomic changes in recent decades, Koreans have retained traditional dietary patterns to a remarkable degree (Lee et al. 2012). In a recent analysis of national dietary survey data, 80 percent of foods consumed by respondents were classified as "Han-sik," that is, traditional Korean dishes. Although this proportion varied by age group, approximately 70 percent of all foods consumed by teenagers and young adults were classified as Han-sik (Kang et al. 2014).

Until the late 1970s, low consumption of animal-source foods—less than 10 percent of total food intake—actually represented a cause for concern with respect to iron intake and availability. In recent years, however, animal-source food consumption has increased steadily, reaching about 20 percent of total food consumption. In particular, meat intake has increased approximately 15-fold during the past 40 years. Although ensuring sufficient iron intake remains an important issue, the iron status of the population has benefited from this rapid increase in meat consumption.

Preventing obesity and diet-related chronic diseases is a major health concern in the ROK. The proportion of the population that is overweight in the ROK is much lower than in other countries with similar levels of GDP per capita. In 2011 the overweight rate was 31.9 percent in adults older than 19 and more than 40 percent among men between 30 and 49 years of age and women in their 60s. Studies demonstrate that adhering to a traditional Korean diet and Korean dietary guidance helps to prevent obesity and nutrition-related noncommunicable diseases (Lee et al. 2002; Jung et al. 2011; Jung et al. 2014; Yu et al. 2014).

Clearly the ROK traditional plant-based diet is healthy provided enough animal-source foods are consumed. Why has the ROK adhered so strongly to traditional diets? It is not clear. Several explanations are possible. Perhaps the change in all other aspects of ROK lifestyles has been so rapid that changes in diet, luckily, cannot keep up. Or perhaps the traditional diets of other Asian countries have also persisted, but the ROK's national individual intake surveys—a signal of high government commitment to good diet and nutrition—have allowed tradition to be better tracked, linked to health, and thereby reinforced (Song and Song 2014). However, there is no room for complacency: dietary changes and decreased physical activity are inevitable, particularly among the younger generation. Therefore, continuous efforts should be made to retain healthful dietary habits to prevent increases in obesity and nutrition-related noncommunicable disease rates in the ROK.

We assign labels to each of these food system types: industrial, mixed, transitioning, emerging, and rural. The five food system types are described in Table 7.2.[5]

Each food system is not sharply differentiated from the next, because food systems are complex, heterogeneous, and evolving. For instance, Brazil has a transitioning food system and Denmark has an industrial food system. Both are similarly urban, and Brazil has higher CO_2 emissions from agriculture on a per capita basis than Denmark. But Brazil's dramatically lower agricultural productivity places it in a different category from Denmark. The typology highlights important differences across countries in social values, access to and use of resources, agricultural and industrial policy, and culture.

This typology, based on underlying features of food systems, serves a number of purposes. First, it helps link differences in food systems to observed variation in nutrition, health, and sustainability outcomes and suggests areas where differences may warrant closer attention. Second, it allows national-level policy recommendations to be based on food system characteristics in that country, such as highlighting the need for more diverse food supplies in emerging and rural food systems. Third, the typology makes it easier to identify and learn from countries that are outliers with better nutrition and health outcomes than others. For example, the Republic of Korea's nutrition

TABLE 7.3 Proposed dashboard indicators for food system outcomes

Food system outcome	Dashboard indicator	Connection to related or parallel indicator and process
Food affordability	Depth of the food deficit (kilocalories/capita/day, 3-year average) (FAO 2015b)	ILSI/CIMSANS (2015) Nesheim et al. (2015) Global Food Security Index (EIU 2015)
	Domestic food price volatility index (FAO 2015b)	Nesheim et al. (2015) SDG target 2.C
	% share of food budget spent on fruits and vegetables (Euromonitor 2014)	
Food consumption diversity	Packaged food retail (volume per capita) (Euromonitor 2014)	
	Fresh food retail volume (kilograms per capita) (Euromonitor 2014)	Nesheim et al. (2015) FAO (2013)
	% of protein supply derived from animal origin (grams/capita/day, 3-year average) (FAO 2015b)	ILSI/CIMSANS (2015) Global Food Security Index (EIU 2015)
Health and nutrition status	% of children < age 5 who are overweight (UNICEF, WHO, and World Bank 2013)	WHA nutrition indicator SDG Target 2.2
	Anemia in women of reproductive age (WRA) (World Bank 2015c)	WHA nutrition indicator
	Prevalence of diabetes (IDF 2013)	WHA noncommunicable disease indicator SDG Target 3.4
	% of children < age 5 who are stunted (UNICEF, WHO, and World Bank 2013)	WHA nutrition indicator SDG Target 2.2
Environmental sustainability	Shannon Index (diversity of crop and livestock species in production systems on a scale of 0 to 1) (Remans et al. 2014)	SDG Target 2.5
	CO_2-equivalent emissions from agriculture (kg/per capita) (agricultural emissions are from FAO 2015b; population is from World Bank 2015c)	
	% population with access to improved water (FAO 2015b)	Similar to SDG Target 7b

Source: Authors

Note: Appendix Table A7.3 provides a full list of indicator definitions and sources (see globalnutritionreport.org/the-report/appendixes).

outcomes are better than those of many other countries with similarly industrial food systems. This difference may be related to that country's far lower consumption of packaged food compared with other countries with industrial food systems (Panel 7.2).

FOOD SYSTEM OUTCOMES

Do different types of food systems generate different outcomes? To answer this question, it is important to clarify what outcomes are of the most interest. This analysis looks at four broad outcome groups:

- food affordability (representing food quantity),
- food consumption diversity (representing food quality),
- nutrition and health outcomes, and
- environmental sustainability.

These outcomes were chosen because they are widely accepted as high-priority outcomes for countries (FAO 2013) and are central to several of the Sustainable Development Goals—in particular, Goals 2, 3, and 12 (United Nations 2015). The next question is how to measure these outcomes. Out of the many potential indicators available, we selected 13, which are shown in Table 7.3 (our selection process is described in Panel 7.3).

Table 7.4 applies the dashboard to 10 countries—2 in each of the 5 food systems. This application reveals the following:

PANEL 7.3 SELECTING INDICATORS TO MEASURE FOOD SYSTEM OUTCOMES

RACHEL NUGENT, CAROL LEVIN, AND DANIEL GRAFTON

To help understand why outcomes differ between food systems, we selected 13 indicators that correspond to the four outcome areas, based on the following criteria:

1. the indicators are widely acknowledged as being a sufficiently good proxy for the outcome they are assessing,
2. they are widely available for countries at all income levels and well aligned with existing data collection processes,
3. they are the same as or similar to indicators proposed for collection under the SDGs (although these are not finalized at the time of writing) and other well-established frameworks listed in Table 7.3, and
4. they vary widely across the five food systems, thus clearly reflecting different country conditions.

For food affordability, we use three indicators. First, we use FAO's measure of the average per capita calorie deficit of people who are "undernourished." Instead of signaling the percentage of the population below a calorie threshold, this indicator estimates the average depth of those below the threshold and is thus a more nuanced measure of food affordability. Second, we use food price volatility instead of domestic food price levels because we used the latter as a structural feature in the food system definition. Compared with price levels, which depend on world prices and the transaction costs of moving food within a country, food price volatility is arguably a less structural feature of food systems, although we acknowledge the distinction is not clear. Finally, we include the share of the food budget spent on fruits and vegetables because the affordability of this type of food is so important for all forms of malnutrition.

For food consumption diversity, we use the volume of retail sales of packaged goods and fresh foods—two categories that exclude grains—as well as the percentage of protein derived from animal sources. These indicators paint only a partial picture of diversity, especially at different levels of country income, but no internationally comparable individual or household food consumption diversity indicators exist for a wide range of countries. Countries that have a good set of consumption data can construct a diversity index that makes sense for their context.

For nutrition and health outcomes, we use three WHA nutrition indicators—under-5 stunting, under-5 overweight, and anemia for women of reproductive age—and an indicator for a diet- and nutrition-related noncommunicable disease: diabetes. Diabetes accounts for more of the global burden of disease than any diet- and nutrition-related noncommunicable disease apart from ischemic heart disease (Murray et al. 2012).

For environmental sustainability, we choose CO_2 emissions from agriculture as an available and direct measure of part of the food system's impact on the environment. We also use access to improved water for drinking purposes, which is obviously important for nutrition and health and which can be compromised by different food system choices (Reytar et al. 2014; Johnson et al. 2014). Finally, we use the Shannon diversity index for crop and livestock species in production, which is associated with improved nutrition outcomes and the health of ecosystems (Remans et al. 2014).

1. Even though we selected the dashboard indicators based in part on the availability of internationally comparable data, there are many data gaps.
2. Outcome indicators vary substantially between food systems. For example, consumers purchase five times more packaged food in the two industrial food-system countries than in Indonesia.
3. The variations in indicators do not just run evenly up or down from system 1 to 5. For example, Brazil, with a transitional food system, has the highest level of fresh food purchases, and Barbados, with a mixed food system, has the highest prevalence of diabetes.
4. There are significant variations within food systems too. For example, while Denmark and Australia are similar on nearly every metric within the industrial system, Australia's per capita CO_2 emissions from agriculture are five times higher than Denmark's. By providing checks and balances, these variations provide the rationale for multiple indicators in each domain.

FOOD SYSTEM OUTCOMES BY FOOD SYSTEM TYPE

The dashboard of indicators makes it possible to track each country's progress over time and helps explain why outcomes differ between countries.

TABLE 7.4 Dashboard indicators applied to 10 country examples

Food system outcomes	Indicators	Industrial		Market		Transitional		Emerging		Rural	
		Denmark	Australia	Bulgaria	Barbados	Brazil	Russia	Pakistan	Philippines	Indonesia	Senegal
Food affordability	Depth of food deficit (kcal/capita/day)				16	71	42	78	248	78	190
	% share of food budget spent on fruits and vegetables	15	21	18		12	18	17	11	26	
	Domestic food price volatility index	5.4		9.2		6.1	5.2	16	57	10.9	10.7
Food consumption diversity	Packaged food retail volume, kg per capita	240	240	186		145		15	28	54	
	Fresh food, retail volume, kg per capita	334	226	332		364	296	205	250	225	
	% of protein supply derived from animal origin (g/cap/day)	63	66	48	57	53	53	41	41	28	28
Health and nutrition status	% of children < age 5 who are overweight		8	14		7		5	5	12	2
	% of children < age 5 who are stunted			9		7		45	30	36	19
	% of individuals with diabetes	8	5	7	15	9	6	7	6	6	4
	% anemia in WRA	18	17	24	23	19	21	51	25	22	57
Environmental sustainability	Total emissions (CO2 eqivalent) from agriculture, kg per capita	1,691	8,513	741	134	2,219	652	797	532	649	846
	Shannon production diversity, scaled	0.74	0.8	0.8	0.32	0.73	0.83	0.85	0.84	0.88	0.94
	% population with access to improved water	100	100	99.5		97.5	97	91.4	91.8	84.9	74.1

Source: Authors

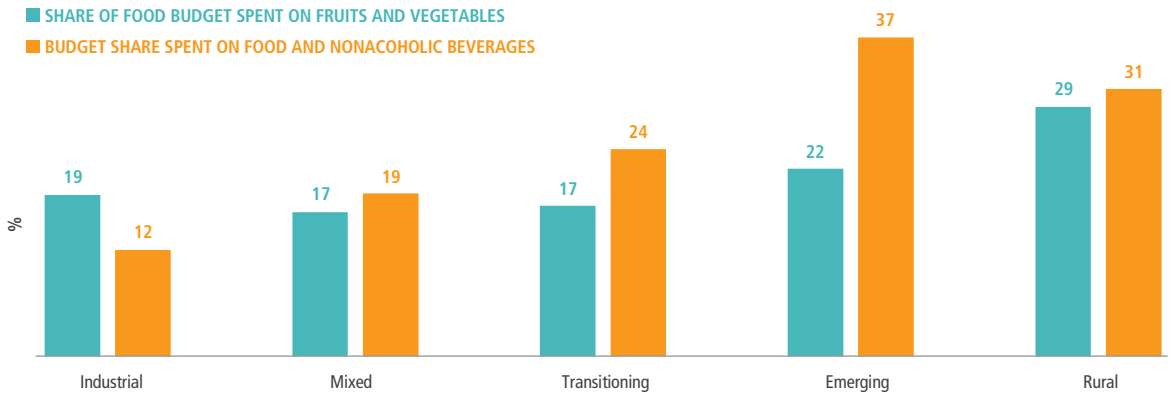
Note: Blank cell means data are not available; Appendix A7.3 provides a full list of indicator definitions and sources (see globalnutritionreport.org/the-report/appendixes).

FOOD AFFORDABILITY

Figure 7.1 shows the budget share that households in different food systems spend on food and nonalcoholic beverages as well as on fruits and vegetables—both categories are important indicators of the affordability of a healthy diet. The emerging and rural food system countries turn out to be less affordable.

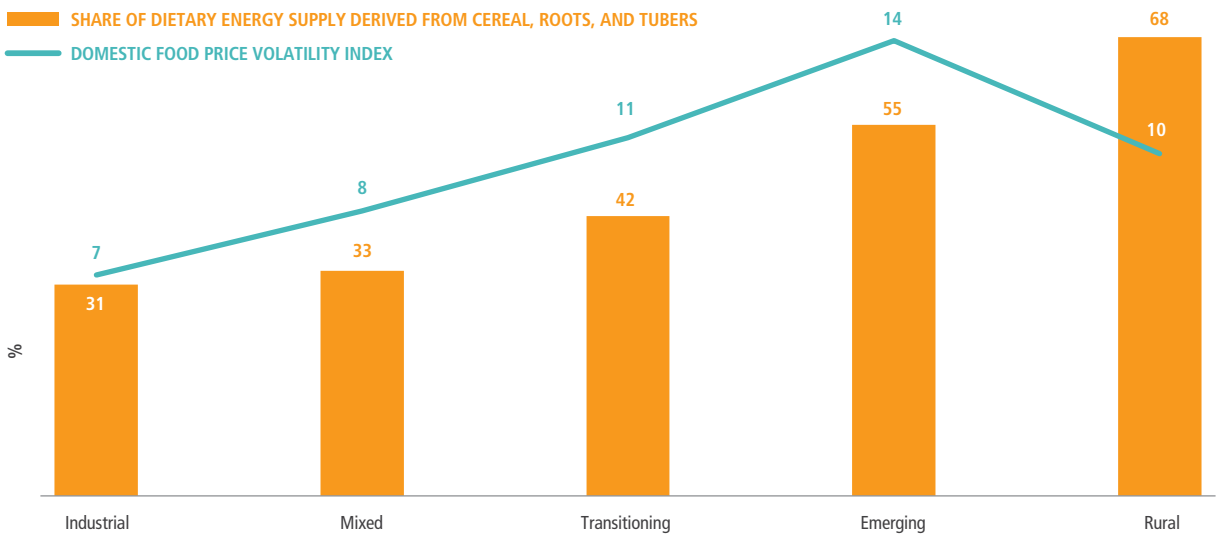
A key issue for promoting more diverse healthy diets while improving food security is food-price volatility. The prices of staple foods are typically more volatile than the prices of nonstaples. People in transitional, emerging, and rural food systems eat diets that depend more heavily on staple foods than do people in industrial and mixed food systems, and food prices are consequently more volatile in those countries (Figure 7.2) (Brinkman et al. 2009).

FIGURE 7.1 Households' spending on food and on fruits and vegetables by food system type



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

FIGURE 7.2 Food price volatility and reliance on staple foods, by food system type



Source: Authors, based on data from FAO (2015d).

FOOD CONSUMPTION DIVERSITY

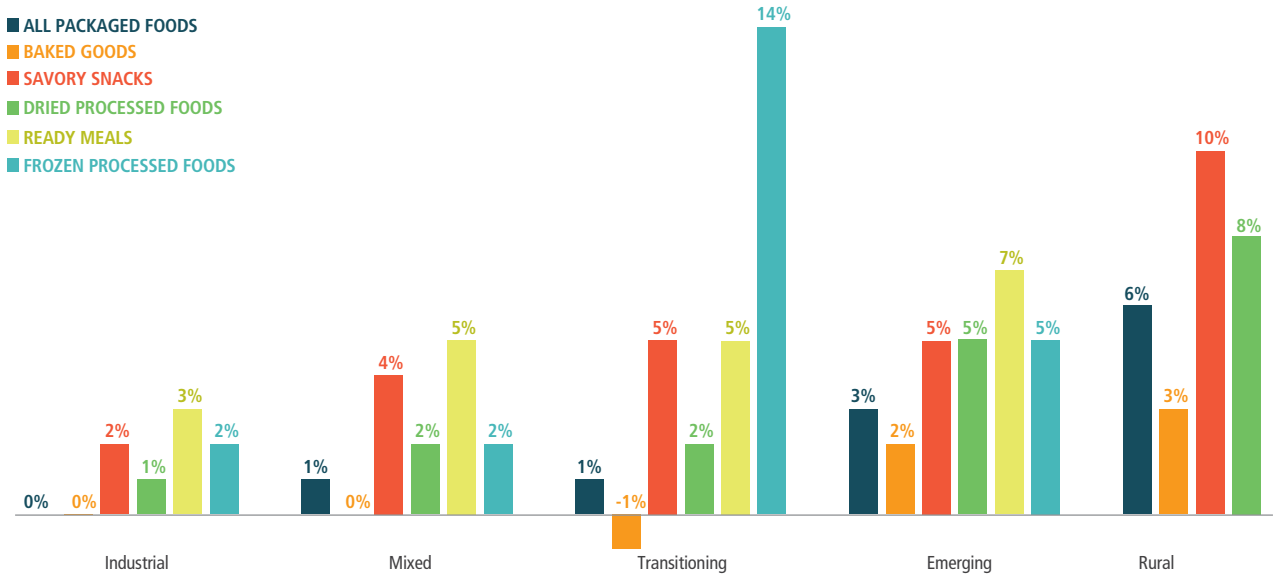
Industrial and mixed food systems provide people with abundant, affordable, and diverse food of varying quality—but they also contribute to increasingly unhealthy diets (Imamura et al. 2015; Popkin and Nielsen 2003; Mozaffarian et al. 2014).[6] People in industrial and mixed food system countries consume 80–90 kilograms per person per year of energy-dense, ultraprocessed foods, with added salt, refined sugars, and low amounts of essential micronutrients. People in emerging and rural food systems consume 20–30 kilograms of ultraprocessed foods per person each year. Nonetheless, consumption of packaged food is growing fastest in transitioning, emerging, and rural food systems (Figure 7.3).[7]

Industrial, mixed, and transitioning food systems depend less on staples and consume a far greater share of protein from animal sources than emerging and rural food systems (Figure 7.4). Populations in countries with industrial and mixed food systems consume large quantities of processed meats as well as unprocessed red meats. As described in Chapter 6, this dietary pattern has negative consequences for both health and the environment. Meanwhile, populations in emerging and rural food systems eat a very low share of protein from animals.

NUTRITION AND HEALTH STATUS

All food system types exist in the context of multiple burdens of malnutrition, but adult overweight and diabetes prevalence is substantially lower in emerging and rural

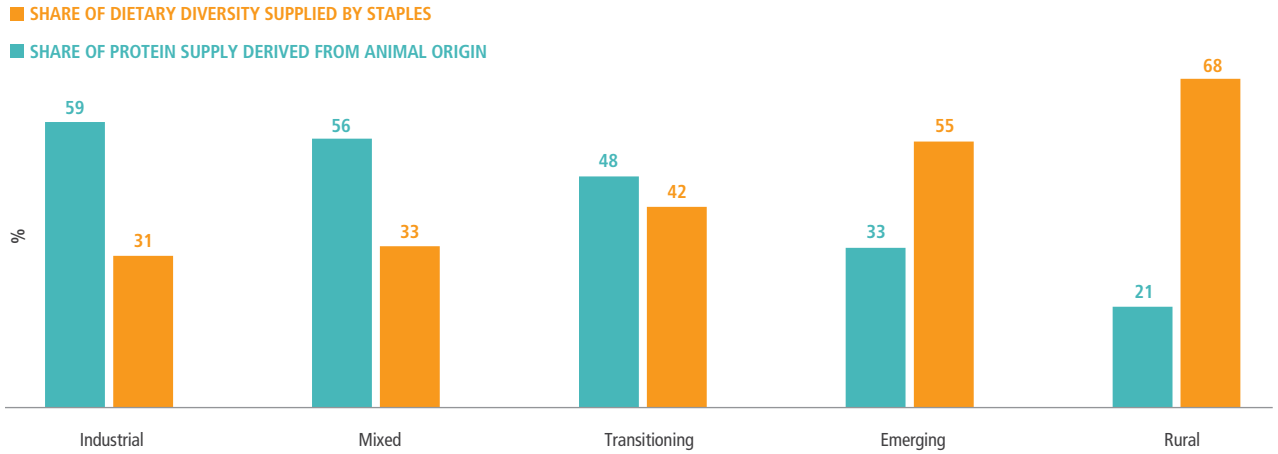
FIGURE 7.3 Change in processed food retail sales by food system type, 2000–2014



Source: Authors, based on food retail volume data (kilograms per capita per year) from Euromonitor (2014).

Note: Annual growth rates were derived for 46 out of 137 typology countries. Data are available for only two rural food system countries, India and Indonesia.

FIGURE 7.4 Per capita consumption of staples and animal-source protein by food system type



Source: Authors, based on data from FAO (2015d).

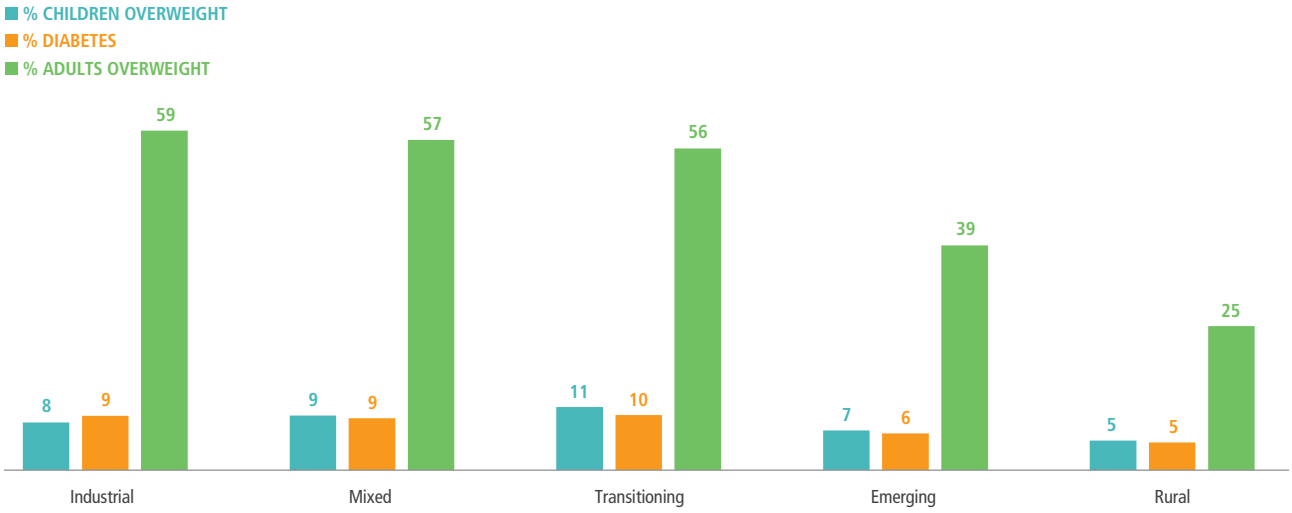
food system countries (Figure 7.5) while measures of undernutrition are high (Figure 7.6). In the first three types of food systems—industrial, mixed, and transitioning—adult overweight rises while child overweight falls slightly in moving from transitioning to industrial. The prevalence of diabetes is about the same.

ENVIRONMENTAL SUSTAINABILITY

There does not have to be a trade-off between environmental outcomes and other food-system outcomes, such as affordability and consumption diversity. Figure 7.7 shows that countries with mixed food systems manage to achieve good results on a number of environmental indicators. But they also have a diverse and affordable food supply. In contrast, emerging, transitional, and industrial food systems have poor environmental outcomes and uneven nutrition and health outcomes. These indicators reflect political choices about the importance of natural resource sustainability, as well as technology and economic constraints in some instances.

For all food systems, it is a challenge to find a balance between increasing agricultural productivity and environmental sustainability. The production of animal-source

FIGURE 7.5 Prevalence of overweight and diabetes by food system type



Source: Authors.

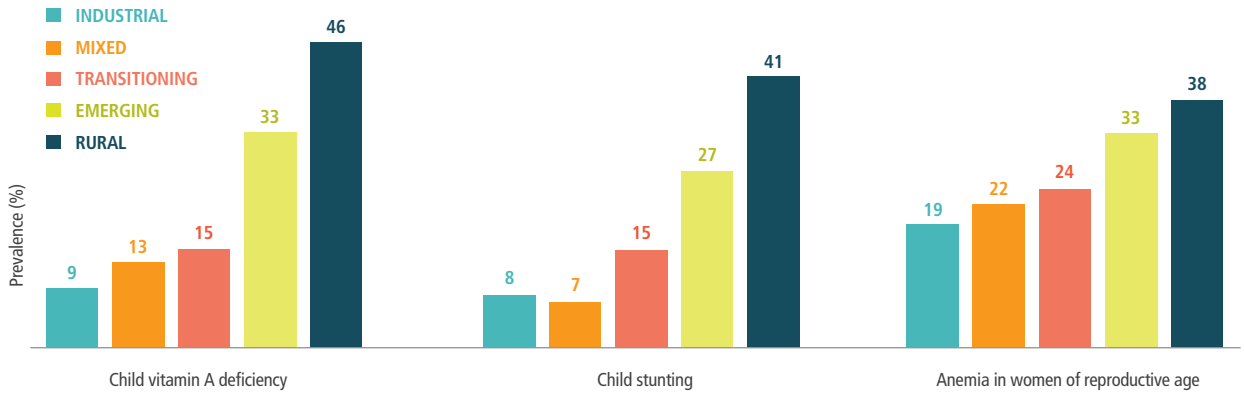
foods is a significant trigger for greenhouse gas emissions because it intensifies methane production. Ruminant animals have a bigger impact than animals lower on the food chain (such as fish and chicken) (Steinfeld et al. 2006). This disparity is apparent in the range of animal protein per capita available across food-system types (Figure 7.4). In view of the high levels of greenhouse gas emissions generated during the production of animal-source foods, countries should monitor and implement policies to ensure environmentally sustainable and healthy levels of available protein.

National-level data and relevant indicators on environmental sustainability are becoming more available (Hsu et al. 2014), but they are still limited, particularly as related to the food system. In the future, data on food losses and waste will also be important indicators of the environmental sustainability of food systems.

POLICY IMPLICATIONS

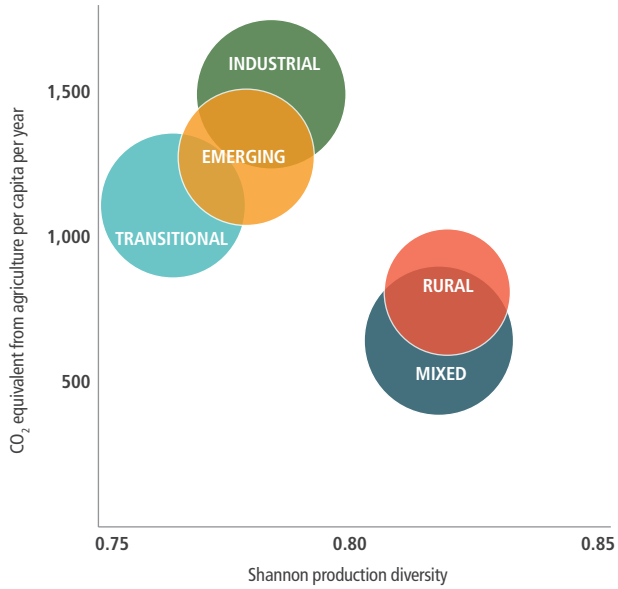
Food systems are complex and highly differentiated. There is no single definition of a healthy and sustainable food system, but these are desirable qualities for every food system. Over years, agriculture has transformed dramatically in almost every country, and food systems have changed alongside. Some countries have implemented policies to ensure that farmers have predictable incomes. Some countries have taxed agriculture while guaranteeing affordable food for consumers. Still other countries have pursued pro-poor food policies, or worked to maintain food self-

FIGURE 7.6 Prevalence of child vitamin A deficiency, child stunting, and anemia in women of reproductive age by food system type



Source: Authors.

FIGURE 7.7 Three indicators of environmental sustainability by food system type



Source: Authors.

Note: The Shannon production diversity index is a mathematical measure of species diversity (in this case, food item diversity) in a community (in this case, national food production or supply). The size of the bubbles represents the percentage of the population with access to improved drinking water.

sufficiency, or prioritized local farming and environmental quality. Many countries have strived to achieve a balance of those important goals.

The analysis in this chapter makes clear that different types of food systems have different core needs if they are to become nutrition friendly and sustainable:

- Industrial food system countries must increase fresh food consumption and rebalance protein sources away from certain animal sources in order to reduce greenhouse gas emissions, land and water degradation, and chronic disease risk.
- Mixed food system countries must reduce packaged food consumption.
- Transitioning food system countries must improve agricultural productivity while improving production diversity.
- Emerging food system countries must employ policies to reduce the double burden of malnutrition through more affordable healthy food in a manner that does not further threaten the environment.
- Rural food system countries must focus on improving agricultural productivity and food security.

Decisions about whether and how to make food systems more nutrition friendly will depend on technical considerations (including the strength of the evidence base), trade-offs with other food-system objectives, and a government's capacity to implement and enforce its decisions (see Chapter 8). Ultimately, though, reforming food systems extends beyond these technical considerations to political ones. As stressed in Panel 7.4, food systems are defined by political decisions, and the differential power of actors to influence those decisions.

RECOMMENDED ACTIONS

Building on the food systems focus of the ICN2 in 2014, **global food systems initiatives** should, by the end of 2016, propose indicators of the impact of food systems on nutrition and health outcomes.

1. **Global food systems initiatives**, such as the Global Panel on Agriculture, Food Systems, and Nutrition (GLOPAN), the International Panel of Experts on Sustainable Food Systems (IPES-Food), and the EAT Initiative, should engage with the nutrition community to develop indicators and metrics for nutrition-friendly food systems. The process would include collecting nationally representative integrated data across agriculture, food systems, nutrition, and health. Support is needed to improve the data since it is currently difficult to link food systems with nutrition and health outcomes owing to disconnects between agricultural, food systems, and nutrition surveys.
2. Drawing on expertise from **global food systems initiatives, governments** should develop a set of indicators to measure the inputs, processes, and outcomes that define their national food systems. This would enable countries to understand better how their food systems behave and how they might be moved toward improved nutrition and sustainability. Measurement also allows citizens to hold governments to account for the impact of their food system policies on health and sustainability.
3. **Governments** should develop, implement, and monitor plans and policies for making their food systems more nutrition friendly. The number of policy options for doing so is potentially overwhelming. Governments at all income levels therefore need a careful and comprehensive process for identifying high-impact policy options to make their food systems more nutrition friendly. Low-income countries should be offered external support to undertake this task.

PANEL 7.4 THE POLITICAL ECONOMY OF FOOD SYSTEMS

OLIVIER DE SCHUTTER

In one of his key insights into food systems, Amartya Sen told us that famine does not occur in democracies (Sen 1999). This insight was crucial in highlighting the fact that access to food depends on political arrangements and power relations—not just markets and net food availability. It transforms the question of access to food from a purely technical question, to be addressed with the tools of economics or agronomical science, into a political question, in which social justice, accountability, and nondiscrimination take center stage.

However, it is not only the extreme situation of famine that requires this attention to power and politics. Around the world, food systems are defined by political decisions, and the differential power of actors to influence those decisions (IPES Food 2015). While democracy may protect many countries against extreme injustices such as famine, it is no guarantee that food systems will be shaped with the interests of the majority of citizens at heart, or that food systems will be built or designed in any coherent way. Indeed, different types of food systems have emerged according to the different power structures and political arrangements that have taken root—in other words, according to the political economy of these systems.

For example, the bulk production of tradable commodities that characterizes industrial food systems often reflects an underlying power structure wherein key actors have exerted an influence and locked in a particular pathway (IPES Food 2015). In such systems, in which the primary objective of governments is to ensure that cheap food is made widely available to consumers, economic power lies with large agribusiness firms achieving economies of scale, whose efficiency is maximized by various network effects and by their control of logistics. The firms that thrive in this system may turn their increasing economic power into political power—for example, lobbying policymakers to pursue trade policies that bring them further economic benefits. These power relations can be consolidated by actions on multiple levels, such as political campaign donations or research, teaching, and public outreach programs that encourage particular research and development pathways.

Reorienting food systems toward different priorities, such as healthy diets and a small ecological footprint, may require a change in power structures, allowing for the engagement of nutritional or environmental constituencies in political processes. Such change may occur when these constituencies form alliances with small-scale food producers or when ordinary people are mobilized—such as parents and school officials seeking to improve the quality of school meals or concerned consumers trying to rebuild a culinary culture. It can also have its source in the political system itself, as when politicians realize the costs of not acting more swiftly to reform how food is produced and consumed. For instance, a major driver behind Mexico's 2014 introduction of a tax on sugar-sweetened beverages was the skyrocketing cost of treating obesity-related diseases, especially type 2 diabetes, in the country. The tax—one peso (US$0.7) per liter, representing a price increase of about 10 percent—reduced purchases by low-income families by 9 percent on average in 2014, and by 17 percent at the end of the year (Mexico, Secretaría de Salud 2015).

However, in many countries and regions around the world, there has been a failure to move in these directions, despite the increasingly visible externalities of poor nutritional and environmental outcomes. Existing power relations are self-reinforcing—those who thrive economically in given circumstances are able to ensure a friendly policy environment and set the terms of public debate. Over time, different components of modern food systems have co-evolved to become mutually reinforcing. Each component is difficult to reform alone, and collectively, they represent an increasingly powerful roadblock to reform.

What most clearly distinguishes food systems from one another is the extent to which these power structures have taken root, and the strength of the forces looking to unseat them. While some food systems are highly immune to reform, others create spaces and opportunities for change. They can, for instance, establish inclusive forums at various levels, from local food policy councils to national-level consultative bodies, or they can favor social innovations in food systems, such as collective gardens, short food chains, or responsible institutional purchasing that can help unlock the system. In Brazil, for example, concerted efforts have been made over the past decade to challenge power structures and to bring voices from civil society into a reformed set of institutions for food policymaking: CONSEA, the Brazilian Food Security and Nutrition Council, has been a source of inspiration across the Latin American continent (Paes-Sousa and Vaitsman 2014). Looking at food systems through a political economy lens does not allow them to be neatly categorized, but does allow for nuanced analysis of how they have taken on their current shape, and where the leverage points might be for change to be possible.

8 STRENGTHENING ACCOUNTABILITY FOR BUSINESS IN NUTRITION

THE ACTIONS AND ACTIVITIES OF BUSINESSES HAVE A PROFOUND EFFECT ON NUTRITION OUTCOMES. BUSINESSES—LARGE, MEDIUM, AND SMALL ENTERPRISES that employ people for wages—produce goods and services that are critical determinants of nutrition, including food and beverages, drugs, water, and sanitation. Businesses employ the vast majority of people in the workforce, and their working conditions are important determinants of people's overall health. Business actions also affect the environment, which can in turn shape nutrition outcomes.

KEY FINDINGS

1. Businesses profoundly affect nutrition by shaping decisions people make about the goods they buy. Businesses also affect the services people receive, the workplace conditions they experience, and the environmental impacts they face, and they contribute to the tax revenues available for public service delivery.
2. Business actions can have both positive and negative outcomes for nutrition. Greater accountability could help increase the former and minimize the latter.
3. There are many opportunities for business to engage positively in nutrition outside the usual sectors: mobile phone networks are one example.
4. Analysis helps identify areas of weak accountability. For example, the world's 25 largest food corporations do especially poorly on disclosing information about their use of health and nutrition claims and on disclosing lobbying positions and activities.
5. A multitude of potential mechanisms exist to strengthen accountability—from legislative to voluntary to informal—but, given the relative capacities of some governments and large corporations, enforcement is likely to be weak.
6. Concrete actions can be taken to strengthen accountability of businesses for their impacts on nutrition.

Ultimately, businesses exist to create value for their investors and shareholders. When this imperative is not aligned with the imperative to improve public health, conflicts of interest arise. Hence the range of goals and activities pursued by businesses can have both positive and negative outcomes for nutrition (Stuckler et al. 2012; Gomes and Lobstein 2011).

The goal of this chapter is to contribute to improving businesses' accountability for nutrition outcomes and ultimately to multiply businesses' positive impacts and decrease their negative impacts on nutrition. The chapter explores this issue by providing a brief introduction to the landscape of business involvement in nutrition activities, identifying a range of sectors in which business activities

TABLE 8.1 Examples of business activities that affect nutrition status, by sector and area of activity

Area of activity	Sector				
	Food production and processing	Food distribution and retail	Health environment	Mobile technology	Media
Public policy priority setting	Probably much informal lobbying Some formal forums				
Workplace policies			General working conditions Maternity leave protection Clean and safe toilet facilities Environmental consequences of actions		
Research and development	New crops, fertilizer, farming methods New ways of processing and fortifying food	New business models for distribution, such as microfranchising	New drugs, procedures, medical infrastructure, and training New water, sanitation, and hygiene products (such as purification tablets, filters, jugs, low-cost hand sanitizer, hygienic and affordable latrines, tests to detect worm infection)	Research on how people like to receive health messages	
Consultation on the workability of proposed policies	On fortification standards and regulations On food safety standards	On food labeling for safety and nutrition content On obesogenic environment	On standards for safety and licensing	On granting of licenses, privacy, accuracy of messages	On press freedoms, on accuracy of reporting
Delivery	Of nutrients via fortification or supplementation or natural food	Via retail outlets Via government facilities (schools, hospitals, prisons)	In schools and other public service arenas Of services via government contracts or via social impact bonds Many private providers	Of information and health diagnostics of varying quality	Of information of varying quality
Over-the-counter purchases		An increasing share of food is purchased An increasing share of purchased food is processed	Many drugs and treatments are purchased over the counter and privately		
Behavior change	Advertising and marketing of products and services	Advertising and marketing of products and services	Advertising and marketing of medical and water, sanitation and hygiene products and services	Use of mobile health and agriculture initiatives to deliver government-sanctioned messages, promotion of mobile operator services to consumers	Advertising in media outlets that raises public awareness and creates demand
Accountability of all actors in system					Reporting on results of accountability exercises

Source: Authors.

Note: Orange cells denote relatively high levels of controversy. Blank cells do not necessarily denote domains where business activity is absent.

PANEL 8.1 TWO HOT-BUTTON ISSUES: THE MARKETING OF BREAST-MILK SUBSTITUTES AND CONFLICT OF INTEREST

ELLEN PIWOZ

Nothing has been more contentious in the nutrition realm than private-sector initiatives involving children under two for whom breastfeeding is recommended. Companies that produce and market breast-milk substitutes and baby foods compete fiercely in a weakly regulated marketplace valued at US$58 billion in 2013 and growing annually (Euromonitor 2013). As of 2014, only 39 countries had incorporated all key provisions of the International Code of Marketing of Breast-Milk Substitutes into national law (UNICEF 2014). The law was first established more than 34 years ago to stop damaging promotion of breast-milk substitutes, to ensure consumers had accurate information, and to protect breastfeeding (WHO 1981).

The strained relationship with milk formula companies is due to multiple factors. Aggressive marketing of breast-milk substitutes undermines breastfeeding norms and practices, particularly when it involves provision of free samples in hospitals and promotion by trusted health providers (Piwoz and Huffman forthcoming). New product promotion strategies, such as the proliferation of milk formulas for children younger than 6 months, promotion via social media, and e-commerce are viewed by many as corporate efforts to skirt the code. Trust is further harmed when milk formula companies and industry associations lobby governments to weaken marketing regulations or to influence other nutrition policies. As we have learned elsewhere, trust in industry can only be restored when companies end damaging practices. This has yet to occur with respect to marketing of breast-milk substitutes, and companies continue to violate the code in a variety of ways even where national legislation exists (see, for example, Kean 2014). The marketing of complementary foods and of foods high in fat, sugar, and salt to children are similarly contentious.

This and other business hot-button issues revolve around money, influence, and conflict of interest. When corporate bottom lines are determined by sales of products that potentially undercut public health, and when these same companies seek to work with governments, NGOs, and others entrusted with promoting and protecting citizens' well-being, a conflict of interest is created. While many believe that businesses should be consulted in nutrition policy discussions, the line is drawn when it comes to negotiating policy decisions because company interests can compromise, interfere with, or take precedence over the interests of governments and consumers. However, the line between consultation and negotiation is easily blurred, particularly in situations with power asymmetries. Greater transparency in these matters—including who met whom, when, and what was said—is essential, and principles of accountability should be applied to all stakeholders (Swinburn et al. 2015).

may affect nutrition outcomes. It summarizes examples of behaviors perceived as positive or negative for nutrition outcomes. The main focus is on strengthening accountability mechanisms—regulatory, political, market, and feedback-based—that can lead to more positive and fewer negative outcomes for nutrition as a result of businesses' practices.

It is clear that questions around business and nutrition have no easy answers and do not yield to simplistic analyses (Johnston and Finegood 2015). For example, the WHO Framework of Engagement of Non-State Actors, which concerns the relationship between the WHO and civil society groups and businesses, has been under negotiation for several years with further negotiation scheduled for the 69th World Health Assembly in 2016.

THE LANDSCAPE OF BUSINESS INVOLVEMENT IN NUTRITION ACTIVITIES

If it is clear that businesses are already engaged in activities that influence nutrition status, what should they do differently?

Table 8.1 provides an overview of the landscape across which businesses can affect nutrition actions and status. In addition to food production, processing, distribution, marketing, and retailing, other sectors are relevant to nutrition. The health sector supplies drugs as well as water, sanitation, and hygiene (WASH) products and helps set health norms. The mobile phone sector is increasingly involved in mobile health and nutrition initiatives to provide nutrition information to pregnant women and child carers. The media, often overlooked as a business sector, can have a strong influence on setting norms in nutrition through advertising, the stories they choose to cover, and the

TABLE 8.2 Examples of the types of actions through which businesses influence nutrition status

	Direct	Indirect
Likely positive for nutrition status	Expanding access to fortified foods in strict accordance with national policy and plans Making it easier for people to choose healthier options, such as through front-of-pack labeling, product placement, and affordable prices Reformulating products for an improved nutrient profile Providing valuable information on product labels such as nutritional information Strengthening health and labor practices such as maternity leave policies Following evidence-based practice when considering nutrition and health claims Supporting research and development of possible new technologies that support nutrition Supporting government-sanctioned nutrition education and awareness initiatives Marketing and promoting products responsibly (for example, restricted promotion to vulnerable groups such as children) Complying with global health standards and best practices Compliance with good manufacturing practices, food safety and quality standards, and all applicable legislation and standards	Generating employment Paying taxes Making pricing decisions
Likely negative for nutrition status	Using economic power to undermine public nutrition policy when against their interests Wielding inappropriate levels of influence over policymakers Providing misleading or hard-to-interpret information Marketing increasing brand loyalty of unhealthy and unsustainable products Marketing inappropriately to vulnerable groups Breaking the law, such as by failing to add mandated micronutrients to products Communicating messages that do not support or that contradict national nutrition policies and messages Failing to support best practice standards and policies (such as the International Code of Marketing of Breast-Milk Substitutes) Creating products that are unhealthy Failing to comply with their own self-regulatory codes and standards	Providing nutrition information that is hard to interpret Using mobile phones to deliver public nutrition messages that are not necessarily in tune with a country's priorities

Source: Authors.

way they frame them. The areas in which businesses are engaged vary widely and cover research and development, delivery, consultation on implementation, behavior change, over-the-counter services, and, potentially, accountability strengthening (such as through media initiatives).

Table 8.2 gives examples of the types of actions through which businesses can influence nutrition. These actions can have positive and negative implications for nutrition. For example, peer-reviewed case studies show that small- and medium-scale local businesses help widen access to locally fortified foods[1] (Nwuneli et al. 2014; Piccoli et al. 2012; Yiannakis et al. 2014), although there are many issues to overcome to assure market sustainability (Humphrey and Robinson 2015). Other business activities are negative. Two frequent areas of contention are the role of business (1) in influencing public policy and (2) in marketing and promoting products that potentially interfere with a healthy diet, such as breast-milk substitutes (Panel 8.1) or foods high in fat, sugars, and sodium including sugar-sweetened beverages.

These areas of contention are not the only ones, but they do highlight two things. First, there are benefits and risks to how nutrition and public service professionals engage with business, and these need to be assessed. At present, the evidence base for making such an assessment is weak (see the following section). Second, there is—as Table 8.1 shows—an extensive landscape over which the shift from negative to more positive outcomes can be attempted, even if the evidence is not yet available to identify the areas of greatest impact. The potential for positive engagement in some of these areas is often overlooked as a consequence of the attention that negative outcomes rightly attract.

ACCOUNTABILITY MECHANISMS TO INCENTIVIZE BUSINESSES TO IMPROVE NUTRITION OUTCOMES

Accountability mechanisms are vital for improving the effectiveness of all stakeholders in improving nutrition. They are needed to help increase businesses' positive actions for nutrition and decrease their negative actions. The cycle of assessing evidence on commitments and policies, adopting arrangements with other actors to leverage or build on those commitments, sharing information on commitments and policies, applying incentives to advance nutrition-promoting practices, and monitoring any subsequent change in practices and policies is important for all nutrition actors—public or private. These steps can build productive relationships and end unproductive ones, and they can engender transparency and trust. All of these features underpin multistakeholder action on nutrition.

Holding businesses accountable has special challenges. First, disclosing information can have commercial consequences, so transparency is not as straightforward as in the public sector. Second, large corporations have significant economic and political power. This gives them the capacity to comply with accountability mechanisms, but also to contest and evade them if they choose to do so. This section briefly reviews options, initiatives, and tools for promoting accountability of businesses. It adapts the frameworks used in Swinburn et al. (2015) and the 2014 *Global Nutrition Report* to emphasize the importance of (1) identifying commitments and how they are leveraged through relationships, (2) making commitments transparent to a wide audience, (3) incentivizing and enforcing the delivery of commitments, and (4) assessing whether any improvements in outcomes and behavior have taken place as a result.

IDENTIFYING AND LEVERAGING COMMITMENTS

The first stage in strengthening accountability for nutrition is to track nutrition and health goals and the actions put in place to achieve them: legislative, policy, and voluntary. Overall, far more needs to be done to track business actions. The International Network for Obesity/Non-communicable Diseases Research, Monitoring, and Action Support (INFORMAS) tracks a range of business actions, though only for a few countries at present. The University of Connecticut's Rudd Center for Food Policy and Obesity has tracked business commitments on food marketing to children. Nutrition for Growth and the SUN Business Network also track a small set of business commitments (Chapter 3). Together with UNICEF, the International Baby Food Action Network (IBFAN), Helen Keller International (HKI), and the Scientific Committee for Food (SCF), WHO is establishing a global network to strengthen monitoring of the International Code of Marketing of Breast-Milk Substitutes. Among other things, the network, called NetCode, will assess businesses' compliance.

Some business commitments to nutrition are generated solely because they are able to build on or leverage public-sector commitments, which in turn claim to leverage business commitments. A number of public-private relationships have developed to leverage public and private efforts in nutrition. These can involve relationships between any combination of public entities, publicly or privately funded nonprofit entities, and for-profit companies, and they can range from transactional engagements to integrative partnerships (Johnston and Finegood 2015). A review by Hoddinott et al. (forthcoming) describes a wide array of arrangements under the banner of nutrition public-private partnerships (PPPs) (Panel 8.2).

There is little rigorous evidence on whether these PPPs add value (Hoddinott et al. forthcoming; Swinburn et al. 2015). Even for public-private relationships that are clearly valued by partners, such as the relationship between the World Food Programme and the life-science multinational Royal DSM, we could find no evaluation of the overall impact on nutrition outcomes (Bahl et al. 2015). The downside risks of PPPs also need to be managed. For example, Hawkes and Buse (2011) note that the blanket use of the term "partnership" has "muddied the discourse" around when, how, and with whom to engage in business. Brady and Rundall (2011) call for any public-private relationship to be defined more clearly, with conflicts of interest managed more transparently, and they advocate avoiding the term "partnership" altogether.

The need for greater clarity is highlighted by the work of Kraak et al. (2011). They analyze the partnerships, alliances, and interactions of 15 transnational food, beverage, and fast-food or quick-serve restaurant companies with UN organizations, government agencies, and NGOs to address global nutrition challenges. Their analysis concludes that all partners should adopt systematic and transparent accountability processes to balance private commercial interests with public health interests. For existing PPPs it would be helpful to disclose publicly the basis for engagement decisions. More research is needed to understand which contexts and features of PPPs tend to generate positive nutrition outcomes.

SHARING INFORMATION ON THE NATURE OF COMMITMENTS

Many citizens sometimes distrust business to act in the public interest and consequently distrust government when it engages with business. Transparency is a first step

PANEL 8.2 PUBLIC-PRIVATE PARTNERSHIPS FOR REDUCING UNDERNUTRITION

JOHN HODDINOTT, STUART GILLESPIE, AND SIVAN YOSEF

Discussions surrounding public-private partnerships (PPPs) in undernutrition are characterized by optimism by some, mistrust by many, and confusion by all. Optimism, because the private sector is seen as a potential source of expertise, technical resources, and new funding for nutrition. Mistrust because many civil society and government actors have experienced private-sector behavior that undermines public policy. Confusion, because the terms "nutrition" and "PPPs" are rarely precisely defined in debates over the role of PPPs, leading to discussions that are vacuous or overcharged but rarely informative, and because there is little independent evidence of the success of any such venture.

PPPs have potential for mobilizing resources, tapping into the development and delivery capacity of the private sector, and scaling up interventions quickly and efficiently, along with many other benefits. The spectrum of actions to reduce undernutrition and the spectrum of actions in which the private sector is actively involved are both wide, and they overlap significantly. From a nutrition perspective, PPPs are best placed to operate where the benefits (in terms of the reduction of malnutrition) are highest, where public-sector solutions are not readily available, effective, or sustainable, and where there is least risk of adverse outcomes. Where are these spaces, and what are these activities?

In our review (Hoddinott et al. forthcoming), we bring structure to the discussion by clarifying different models of private-sector engagement (such as contractual/noncontractual, input-based/results-based) and different roles of actors (financiers, implementers, beneficiaries). The literature is awash with case studies that are little more than company publicity. Filtering these out, to focus only on examples with documented impact, we found little in the way of independently generated high-quality evidence of the impact of PPPs on reducing child undernutrition. Caution is therefore required going forward. In the case studies we examined it was also clear that there are successful PPPs, but often these take considerable time to get off the ground. Clear, enforceable contracts and devices for securing and sustaining commitment to avoid hold-up problems are required. Our work has also highlighted the resistance of private-sector firms to working together unless there is a competitive advantage to doing so.

Even where there is solid evidence that an individual PPP appears to be "win-win" in terms of meeting the goals of both partners (for example, reducing undernutrition and making a profit), this is not enough. We need to consider the ethics of engagement—for example, have partners' interests been conveyed and discussed to reveal actual or potential conflicts? Should PPPs be developed and sustained with companies that have been found to engage in practices that damage nutrition elsewhere? Should PPPs be avoided because participants are so worried about the adverse publicity that they will forgo opportunities to reduce undernutrition? Ethical and effective PPPs require a transparent rule-based administrative process by which projects are developed and procured, with fair incentives for all stakeholders and fair returns to all partners, taking into account their level of involvement and assumption of risk. Private commercial interests need to be assessed alongside public health and nutrition interests, conflicts of interest acknowledged and managed, legislation and ethical codes of conduct adhered to, and the full range of partnership outcomes evaluated. There is a need for both a "stick" of strong, well-enforced government regulation and "carrots" that incentivize pro-nutrition roles.

in increasing accountability in this situation. What can the nutrition community learn about sharing information on the nature of commitments from initiatives in other sectors? One sector where there is a great deal of mistrust of business and government, and mistrust between those two groups, is the extractive industries. In 2007 a coalition of governments, companies, and civil society groups developed the Extractive Industries Transparency Initiative (EITI) to build trust and promote more open and accountable management of natural resources. The most recent evaluation of EITI concludes that transparency has improved at the country level, but accountability has not, because the necessary political, legal, and institutional improvements have not been put in place (Scanteam 2011). Locke and Henley (2013) cite several other initiatives designed to make government transactions with businesses more transparent to citizens. There may be potential for a Nutrition Industry Transparency Initiative to develop a global standard of behavior to strengthen the transparency of government and company reporting systems to inform

TABLE 8.3 Accountability relationships between business, government, and civil society

Type of incentive mechanism	Governments holding private-sector companies accountable	Civil society holding private-sector companies accountable
Legal	Direct regulation through laws, regulations, decrees specifying required conduct Regulation through institutions that have a mandate to monitor compliance, investigate complaints Requirements that foods supplied through government procurement contracts and grants (such as for schools and hospitals) meet nutrition standards Litigation for breaches of the law	Consumer protection through consumer watchdog agencies, which have a mandate to protect consumer health and welfare, against harmful practices and deceptive claims by companies Litigation for injuries caused by harmful products in order to vindicate constitutionally protected rights (such as the right to health or the right to food)
Quasi-regulatory	Legislative and regulatory support to make private-sector initiatives more accountable and credible and better able to achieve public interests and objectives Creation of a credible expectation that, unless measurable improvements in voluntary performance are achieved, more direct forms of regulation will be introduced	Assessment of companies' adherence to codes of conduct and ethics guidelines (such as for marketers and researchers working for or within the industry) Assessment of companies' adherence to unilateral or multilateral voluntary pledges or commitments
Political	Clear communication of government policy directions and expectations of industry stakeholders Promotion of civil society access to policymaking processes, restriction of business access if potential conflicts of interest exist	Shareholder activism, such as proposing resolutions at companies' annual general meetings Changes in business practices in response to the political influence of civil society organizations to avoid legal and regulatory changes promoted by civil society organizations
Market-based	Taxes, subsidies, and concessions to influence market behavior through impact on price and changes in the cost of corporate and individual behavior Government procurement to stimulate market dynamics for healthier products	Investment or disinvestment behaviors to alter company share prices Actions to strengthen or weaken consumer demand for a company's products and services (such as through a boycott)
Public feedback	Praise or criticism of companies' performance by politicians through the media	Praise or criticism of companies' performance by civil society (through the media, advocacy campaigns, opinion polls, social media, public forums, watchdog organizations, petitions, league tables, and demonstrations)
Private feedback	Private feedback on performance to key people within companies or industry bodies from politicians or civil servants	Private feedback on performance to key people within companies or industry bodies from civil society organizations or individuals

Source: Adapted from Swinburn et al. (2015).

public debate and enhance trust. This deserves further discussion.

WAYS TO ADVANCE NUTRITION-PROMOTING PRACTICES

Accountability mechanisms can be regulatory, political, market, and feedback-based. Table 8.3 presents a framework of accountability relationships developed in a recent *Lancet* series on obesity (Swinburn et al. 2015). The table outlines an extensive list of positive and negative incentive mechanisms. Evidence from the food-safety field has demonstrated that enforcement and the threat of enforcement are essential if relationships are to incentivize behavior change by industry (Yapp and Fairman 2006). The Human Rights Due Diligence initiative highlights that states could make far more use of existing laws—environmental, consumer, and labor laws, for example—to ensure that businesses respect human rights (De Schutter et al. 2012). But enforcement requires resources. A recently announced Anti-Tobacco Trade Litigation Fund—at present very modestly funded—has been established by the Bill & Melinda Gates Foundation and the Bloomberg Foundation to help countries enforce their own tobacco control measures in the face of threats of costly legal challenges by large tobacco companies. A similar fund could be useful to help governments enforce nutrition-related regulations.

MANAGING CONFLICTS OF INTEREST

Mechanisms are also needed to manage conflicts of interest (Panel 8.1). The WHO is in process of developing a Framework for Engagement with Non-State Actors (FENSA), in part to manage such conflicts. FENSA is being developed to describe standards for managing risks in engagement between WHO and nonstate actors. It would be applied at all levels of WHO. FENSA was specifically requested by the World Health Assembly and is part of the WHO reform process started in 2011. Negotiations on the exact content of the document are in progress, and no specific decisions have been made yet (WHO 2015d).

MONITORING CHANGES IN PRACTICE AND POLICY

There is a dearth of independent research on the impacts of business on nutrition, on the value added of different types of institutional arrangements, and on best business practices for nutrition (Gillespie et al. 2013). In fact, there is no major research program on business and nutrition save for the Rudd Center at the University of Connecticut, and that focuses mainly on obesity in the United States. A major independent research program or network in this area would add significantly to transparency and accountability in the business-nutrition space.

Given the need to build trust through openness, transparency, and learning, the absence of a major independent research program or network in this space is difficult to defend. Independence is vital because conflicts of interest can influence research findings. For example, one systematic review finds that studies whose researchers disclosed financial conflicts of interest were five times as likely to conclude that there is no positive association between the consumption of sugar-sweetened beverages and obesity than were those without such conflicts of interest (Bes-Rastrollo et al. 2013).

Other research mechanisms could be adapted to promote assessment and transparency. For example, the establishment of a voluntary database for evaluating public-private partnerships could be established, including a declaration of potential competing or conflicting interests embedded within them.

TOWARD IMPROVED METRICS OF BUSINESS BEHAVIOR

One set of norms against which to assess businesses' efforts to improve nutrition is the Access to Nutrition Index (ATNI). In 2013, for the first time, ATNI rated and benchmarked 25 of the largest food and beverage manufacturers on the basis of their commitments, performance, and disclosure practices related to tackling obesity and undernutrition worldwide (ATNI 2013). MSCI, a specialist research company, constructed the ATNI by assessing the corporations against 178 indicators of nutrition commitment, practice, and public disclosure, using information in the public domain and undisclosed information provided by companies under nondisclosure agreements. The indicators assess companies' actions to address malnutrition in all its forms and include an additional set of questions that delve more deeply into undernutrition. The data are analyzed to help identify areas where improved metrics might be most needed.

All companies generally achieved low scores on the index. In other words, across the board, the world's largest food and beverage manufacturers could do substantially more to improve their nutrition commitments, practices, and public disclosure. Only three companies had an overall summary score above 5 on a 10-point scale and the majority of companies scored below 3. The highest score achieved by any company on the separate undernutrition ranking was 5.3 out of 10, with the majority of companies scoring less than 2.0. And it should be noted that a high rank on ATNI does not necessarily correspond to good absolute performance.

Figure 8.1 shows the mean scores for the 2013 Global Index in each of the 7 ATNI categories. Each category is rated on a 0–100 scale. (The second assessment is ongoing and will be published in November 2015). The mean score for each category was well below the maximum of 100 percent. Companies scored lowest on labeling (information display, claims made, complaints against it) and on accessibility (pricing, affordability, and distribution). Details are provided in Appendix Table A8.1 (see globalnutritionreport.org/the-report/appendixes).

For 24 of the 178 indicators in the ATNI, all companies scored zero (Table 8.4). As a group, companies performed poorest of all in the areas of "health and nutrition claims (labeling)" and "lobbying and influencing governments and policymakers (engagement)" (shaded in the table). These are clearly areas where the entire sector can improve, and governments should consider legislation forcing them to do so.

These kinds of data deserve more analysis than we can present here, and as the database grows over time, the possibilities for analysis, insight, and greater methodological rigor will expand. In addition, much of the thinking about identifying the commitments that businesses should be accountable for could be applied to nutrition-related businesses outside the food sector.

RECOMMENDED ACTIONS

Once the WHO Framework of Engagement with Non-State Actors is finalized, the **four large UN agencies most concerned with nutrition—FAO, UNICEF, World Food Programme (WFP), and WHO—together with other relevant international bodies**, should establish an inclusive, time-bound commission to clarify the roles and responsibilities of **business** in nutrition.

The commission should consult widely with all interested parties to generate a shared understanding of the roles and responsibilities of business in nutrition. In addition, the commission should assess the nutrition impacts of different

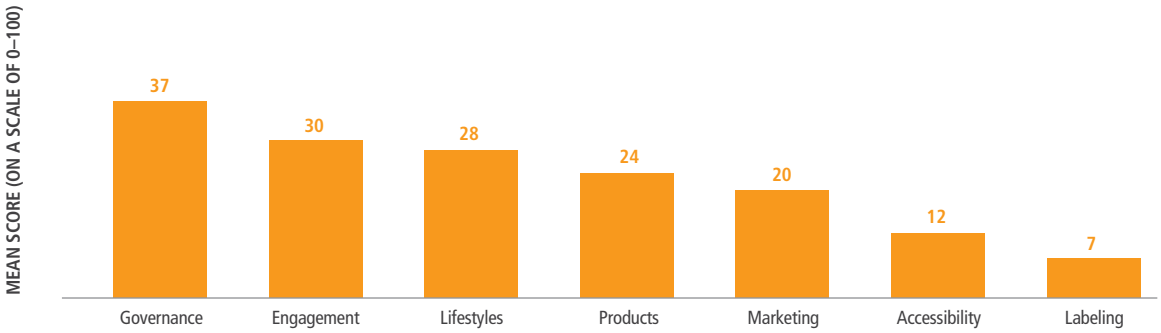
TABLE 8.4 2013 Access to Nutrition Index indicators for which all 25 companies scored zero

Category	Criterion	Indicators for which all companies scored zero
Governance	Nutrition governance and management systems (1 out of 19 indicators in this criterion)	Undernutrition: Commitments: The company's (undernutrition) programs are directed to children under the age of 2 and/or women of childbearing age.
Products	Product formulation (2 out of 24 indicators in this criterion)	General: Disclosure: The company publishes a commentary about the impact on its business of the addition of new healthy products to its portfolio.
		Undernutrition: Commitments: The company has set targets with respect to increasing its R&D spending on developing fortified products OR with respect to the number of fortified products it intends to introduce.
Accessibility	Product pricing (2 out of 9 indicators in this criterion)	General: Commitments: The company sets targets to address the affordability of its healthy products.
		Undernutrition: Commitments: The company sets targets for improving the affordability of its fortified products.
	Product distribution (3 out of 9 indictors in this criterion)	General: Commitments: The company sets objectives to address the accessibility of its healthy products.
		General: Commitments: The company sets targets to address the accessibility of its healthy products.
		Undernutrition: Commitments: The company has set targets to improve the accessibility of its fortified products
Marketing	Auditing and compliance with policy: all consumers (1 out of 4 indicators in this criterion)	General: Disclosure: The company discloses details about the nature of its audit (of compliance with its policy on responsible marketing).
	Spending on advertising of healthy products: all consumers (3 out of 9 indicators in this criterion)	General: Commitments: The company has set targets to prioritize marketing of healthy products to all consumers.
		Undernutrition: Performance: The company can provide evidence of placing substantial emphasis on marketing its fortified foods to consumers.
		Undernutrition: Disclosure: The company has published a commentary on its efforts to market fortified products.
	Spending on advertising healthy products: children (1 out of 5 indicators in this criterion)	General: Commitments: The company has set targets to prioritize the marketing of its healthy products to children.
Lifestyles	Supporting consumer-oriented healthy diets and active lifestyle programs (2 out of 9 indicators in this criterion)	General: Commitments: The impacts of the program(s) (directed at consumers to promote healthy eating and active lifestyles) are evaluated.
		General: Disclosure: The company publishes the impact evaluations carried out for the healthy eating and active lifestyles programs it supports.
Labeling	Nutrition labeling (2 out of 10 indicators in this criterion)	General: Disclosure: The company publishes a detailed policy/commitments on nutrition labeling.
		Undernutrition: Disclosure: The company discloses its policy on labeling micronutrients in products that are targeted at consumers at risk of undernutrition.
	Health and nutrition claims (4 out of 7 indicators in this criterion)	General: Disclosure: The company discloses its commitments on its use of nutrition and health claims.
		General: Disclosure: The company discloses whether any complaints have been upheld against it about the misuse of health or nutrition claims.
		Undernutrition: Commitments: The company commits to using nutrition or health claims on fortified products that have been fortified ONLY when it they meet Codex standards.
		Undernutrition: Disclosure: The company discloses its policy on labeling fortified products.
Engagement	Lobbying and influencing governments and policymakers (3 out of 6 indicators in this criterion)	General: Performance: The company provides examples of taking a position counter to that of an industry association when that organization advocates a position the company considers detrimental to improving legislation, regulation, or control of nutrition (e.g., writing an open letter setting out its stance).
		General: Disclosure: The company discloses its lobbying position on the following in its home market: health and nutrition claims' regulatory development; front-of-pack labeling; fiscal instruments related to nutrition; marketing to children
		Undernutrition: Disclosure: The company provides a narrative about its lobbying activities related to undernutrition.

Source: Authors, based on data provided by ATNI.

Note: "General" includes malnutrition in all its forms, including obesity; "Undernutrition" represents questions that focus more deeply on undernutrition. The orange cells are areas where all companies scored zero in half or more of the indicators. The indicators listed here, for which all companies scored zero, constitute 24 out of 178 indicators in the Access to Nutrition Index.

FIGURE 8.1 Mean scores by category for the 25 companies on their commitment, performance, and public disclosure on the 2013 Access to Nutrition Index



Source: Authors, based on data provided by ATNI.

businesses in different activities. It should identify what incentives and regulations are needed to generate more business actions that are positive for nutrition and fewer than are negative. And it should prioritize the accountability mechanisms to invest in. Currently, there is no broadly accepted mechanism to support this dialogue, and the absence of dialogue is hindering businesses' accountability and opportunities for positive action.

Whether or not a commission is established, the following additional actions should be undertaken:

1. **Research funders** should finance long-term research programs to generate evidence on what works and what does not in terms of business involvement in nutrition. At present there is too little evidence to guide improved accountability. Research is needed to (1) develop metrics to guide action and promote accountability, and (2) independently and transparently evaluate the actions businesses take to improve nutrition.
2. All **food businesses** should improve their performance in areas where the Access to Nutrition Index (ATNI) indicators suggest they are weak. The ATNI 2016 scores should compare the performance of the 25 companies on the 24 indicators for which they all scored zero in 2013.
3. **Governments** should strengthen regulatory frameworks for business to reduce negative nutrition outcomes. By the end of 2016 **donors** should explore setting up a fund to support the capacity of public bodies to develop, strengthen, and enforce regulations on business conduct. Regulation should take into account the international nature of many businesses and the potential for regulation to create incentives for positive action and to level the playing field for all businesses.
4. **Governments** should promote transparency by establishing a register of formal public-private partnerships and other mechanisms of engagement. This would enable all to see the terms under which public-private collaborations are established.
5. **Governments** should explore potential engagement with businesses beyond the food sector. For example, engagement with mobile phone network operators on nutrition might prove important for behavior change and could improve accountability of a wide range of nutrition actors.

9 STRENGTHENING ACCOUNTABILITY: LESSONS FROM INSIDE AND OUTSIDE NUTRITION

ACCOUNTABILITY IS THE GLUE THAT CONNECTS COMMITMENT TO ACTION, AND SO STRENGTHENING IT IS A PRIORITY. EXERCISING ACCOUNTABILITY IN nutrition is challenging because improving nutrition requires many different sectors to come together without an obvious institutional home. The six global nutrition targets for 2025 adopted by the World Health Assembly (WHA) are a key accountability mechanism, and we report on progress against them in Chapter 2. Here we identify and review other mechanisms—some from within nutrition, some outside—that

KEY FINDINGS

1. Nutrition commitments need to be SMART—specific, measurable, assignable, relevant, and time-bound—and, when relevant, country-owned.
2. Africa and Asia are similar in the share of indicators available (75 percent) in the nutrition country profiles. Data on the diets of infants and young children have the most gaps of all indicators—only 14 percent of countries have them, reflecting the newness of their collection.
3. More data does not always generate greater clarity to guide action. Data also need to be consistently collected over time, as shown by case studies of India and Mali.
4. A range of approaches is needed to fill key data gaps. Two examples are presented—post-event coverage surveys and the use of mobile phones for surveillance—but how much value an approach adds depends on the context.
5. Social accountability mechanisms are a citizen-oriented way of assessing commitments and stimulating action. There is little experimentation with these mechanisms in the nutrition field.

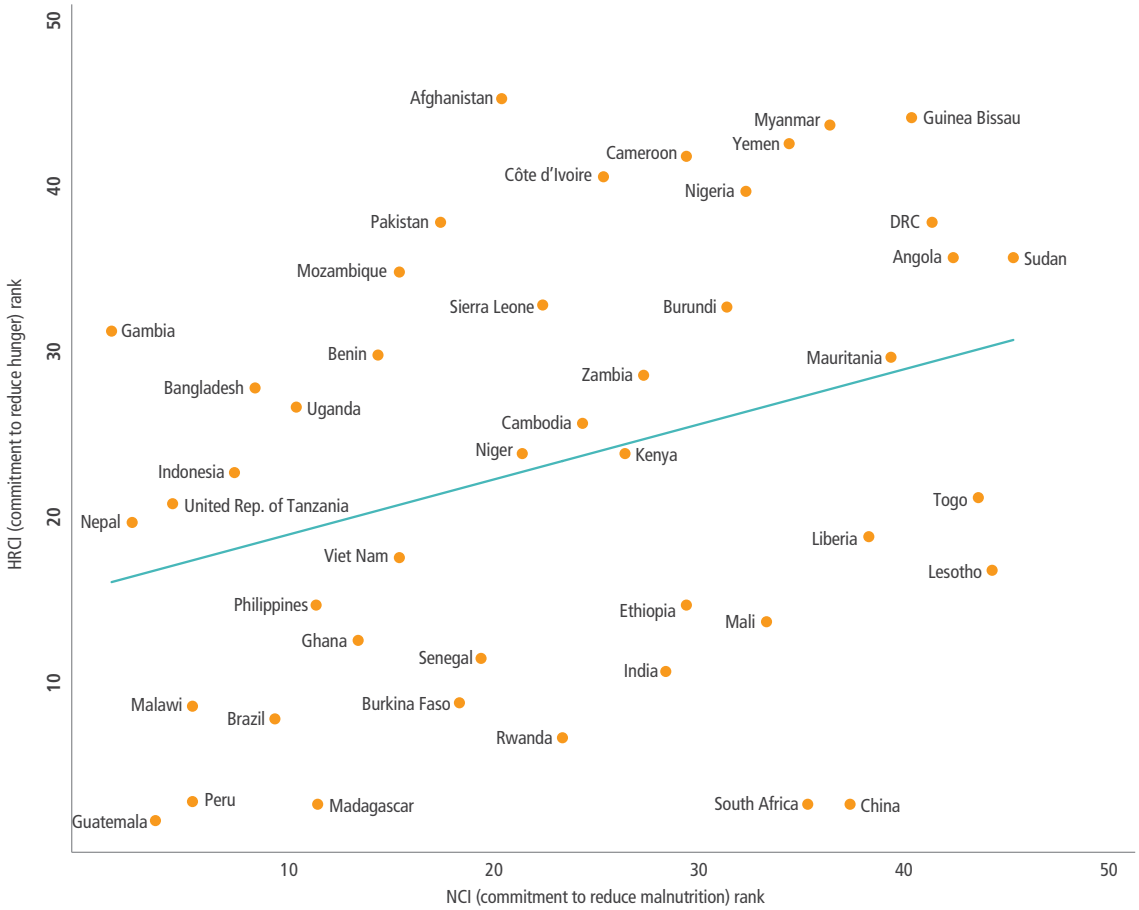
can potentially be used to make nutrition actors more accountable to citizens, including those who are malnourished.

To organize this chapter we use a simple four-step commitment model. First, identify the commitments. For example, what lessons do commitment scorecards outside of nutrition offer? Second, track the commitments. This entails data collection. What are the gaps, and what are some innovations for filling them? Third, assess whether the commitment has been met. Such assessments need to combine top-down and bottom-up approaches, not only to allow for cross-checking of information but also to empower the potential beneficiaries of those commitments. We look outside the nutrition literature to briefly review what works in social accountability. Fourth, once an assessment is made, how can incentives and disincentives advance a positive response? To illustrate some of the issues, we examine experiences from outside nutrition (the Access to Medicine Index) and from within (humanitarian responses to emergencies). We end with a call for an analysis of whether and how existing nutrition governance mechanisms can do more to strengthen accountability to citizens on actions to improve nutrition.

IDENTIFYING COMMITMENTS

Identifying a commitment to improve nutrition is not straightforward. For example, Chapter 3 noted the low percentage of commitments in the N4G Compact that are SMART—that is, specific, measurable, assignable, realistic, and time-bound. In addition, Chapter 5 highlighted the careful sifting of financial allocations that needs to be undertaken before something can be classified correctly as a nutrition commitment. Classifying a target as a nutrition commitment when it is intended to advance something else will undermine accountability. The lack of necessary convergence of commitments is well illustrated by the Hunger and Nutrition Commitment Index (HANCI) (te Lintelo et al. 2014). HANCI can be decomposed into two

FIGURE 9.1 Countries' ranks for commitment to reduce hunger and commitment to improve nutrition



Source: Authors, based on data in te Lintelo et al. (2014).

Note: 1 is the best ranking. $y = 0.327x + 15.47$ $R^2 = 10.9$ percent.

components: commitment to reduce hunger and commitment to improve nutrition. Although the two components share 9 of 22 indicators, for the 50 or so countries that HANCI ranks, the commitment to improve nutrition is not the same as the commitment to reduce hunger (Figure 9.1). The two are linked, as shown from the upward-sloping line of best fit, but only loosely. Committing to reduce hunger is important for nutrition, but it is not the same as committing to improve nutrition.

It also matters who identifies commitments. The experience from the African Leaders Malaria Alliance, launched in 2011 to track countries' progress in combating malaria, supports the conclusion that commitments must be specific and country-owned (Panel 9.1). When countries initiate an accountability process, they are more invested in defining what is and is not an acceptable commitment.

TRACKING COMMITMENTS

Tracking commitments requires collecting data. As is often noted, "What gets measured gets done" For maternal, infant, and young child nutrition, WHO member states recently adopted a new Global Monitoring Framework that recommends 14 indicators related to intermediate outcomes; process; and policy, environment, and capacity. Countries would collect data on these indicators in addition to data on the six WHA nutrition targets (WHO 2015i). This new framework will serve as an important spur to improved data collection.

Before exploring some of the new approaches to filling data gaps and improving quality, it is important to have a grasp of some of the data gaps by region.

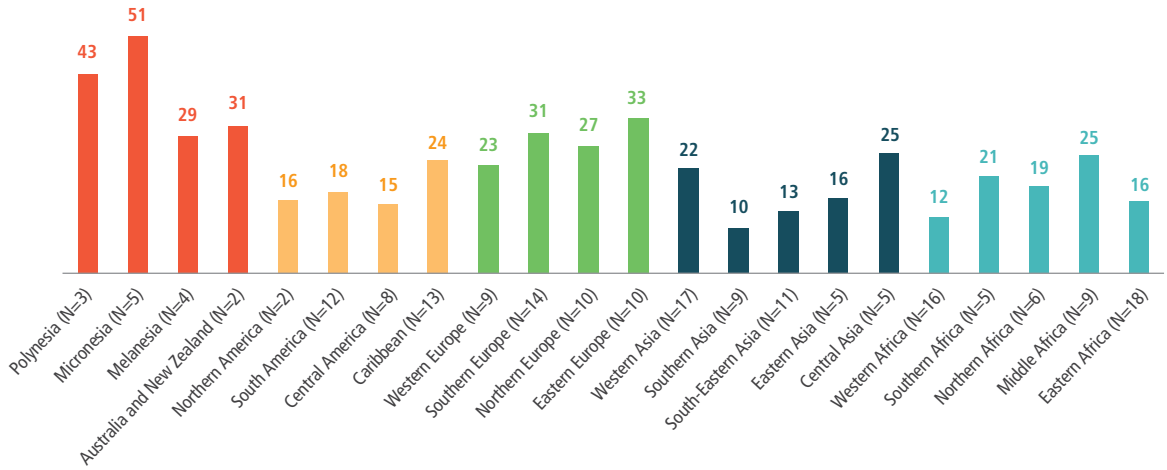
WHERE ARE THE DATA GAPS?

To identify where there are gaps in nutrition data, we analyzed the data compiled in the 193 *Global Nutrition Report* nutrition country profiles. Figure 9.2 presents the results.

Asia, Africa, and Latin America are all missing between 10 and 25 percent of the data points. Europe (23–33 percent missing) and Oceania (29–51 percent missing) have the highest percentage of data points not in international databases. Analysis to understand whether data gaps exist because of an absence of data or an absence of comparability needs to be undertaken on a country-by-country basis. Panel 9.2 presents some analysis for the Netherlands and the United Kingdom.

For several indicators in particular, data are in strikingly short supply across countries (Table 9.1). Few countries have data on the diets of infant and young children (that is, minimum dietary diversity and minimum acceptable

FIGURE 9.2 Percentage of data points in nutrition country profiles that are missing for countries in UN subregions (population weighted and adjusted for country income group)



Source: Authors.

Note: N = number of countries in each UN subregion. The profiles include 82 indicators and a maximum of 140 data points because trend data are counted as individual data points. We judged that 15 of the indicators are not relevant for the high-income countries (as defined by the World Bank), so those countries have a maximum of 122 data points in their profiles. On this basis, we calculated the percentage of data points that are available for each country and then calculated population-weighted means for each UN subregion. For the indicators that are not relevant for high-income countries, the percentage has been calculated with a different denominator than for the indicators relevant for all countries. Indicators relating to SUN member institutional transformations have been excluded from the analysis as they apply to only 53 countries. The denominator for vitamin A supplementation was the 82 countries advised by UNICEF. The Gini coefficient was excluded from the analysis..

PANEL 9.1 LESSONS FROM A SCORECARD OF COUNTRIES' PROGRESS AGAINST MALARIA

MELANIE RENSHAW AND JOY PHUMAPHI

The African Leaders Malaria Alliance (ALMA) comprises 49 African heads of state and government working together to end malaria-related deaths. Through the Scorecard for Accountability and Action, members track progress in malaria control and in selected maternal, newborn, and child health interventions (ALMA 2015b). It was developed in response to a request from heads of state and government for a progress-tracking and action mechanism to increase transparency and accountability around national action.

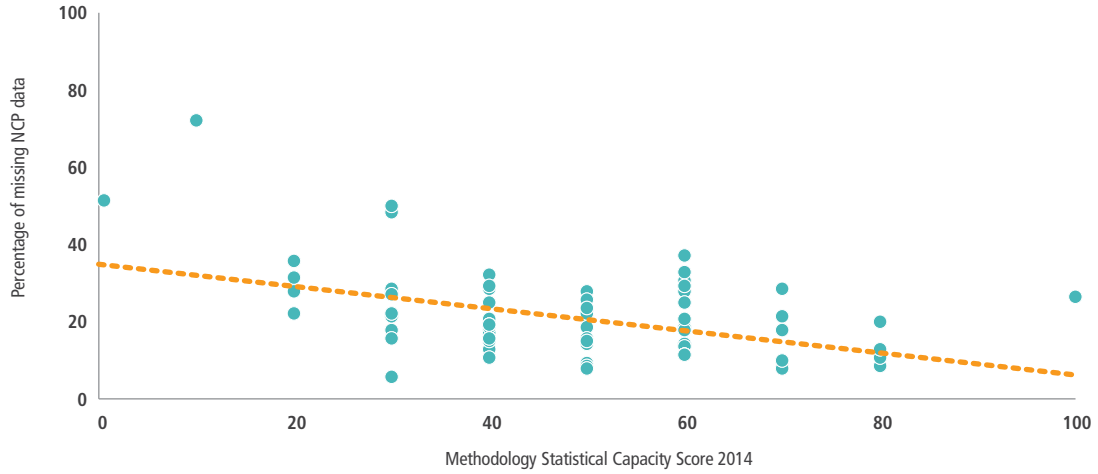
Since the scorecard was launched in 2011, countries have achieved significant progress in all 14 malaria indicators in the scorecard, through documented policy changes, funding increases, and extensions in intervention coverage (ALMA 2015a). Directly sparked by the scorecard, countries took actions to address underperformance, such as analysis of implementation bottlenecks. When countries were encouraged to ban oral artemisinin-based monotherapies (to prevent development of resistance), the number of countries that did so rose by more than 25 percent. The scorecards also stimulated an increase in community case management: in two years, the percentage of countries that had not introduced the policy fell from 50 to 20 percent. One country increased its domestic funding commitment for malaria from less than US$1 million to US$8 million annually once malaria commodity gaps were highlighted in the scorecard. And increased funding, such as for long-lasting insecticidal nets, has led to significant improvements in scorecard indicators.

ALMA's experiences offer key lessons:

- The development and management of the scorecard and action tracker must be country-owned and country-led. It is critical that countries initiate the process and drive it.
- All stakeholders need to understand that scorecards are management tools for improving effectiveness by tracking progress, rewarding success, identifying bottlenecks, and designing and following up on actions to address areas in which progress is suboptimal.
- Accountability tools should build on existing processes to make them more effective. For example, the scorecard should be reviewed at existing—not new—management meetings.
- Outcome data are vital, but it is important to spend at least as much time tracking accountability and action components.
- Scorecard tools should use real-time data to allow actions to be identified based on the current situation and to track progress resulting from these actions.

Members believe the ALMA scorecard tools have enhanced data transparency, accountability, and action to control malaria. Combined with strong country ownership, it is the scorecard's effective stimulation of decisions and actions that makes it useful and accepted.

FIGURE 9.3 National statistical capacity and data gaps



Source: Authors, based on data from *Global Nutrition Report 2014* nutrition country profiles and World Bank (2015b).

Note: Data are only for countries with a stunting prevalence of greater than 20 percent. NCP = nutrition country profile.

PANEL 9.2 WHY ARE THERE SO MANY NUTRITION DATA GAPS IN EUROPEAN COUNTRIES?

LAWRENCE HADDAD

European regions have high rates of missing data in the *Global Nutrition Report* nutrition country profiles (24 percent for Western Europe to 34 percent for Eastern Europe, Figure 9.2).[1] These rates are higher than all other regions except Micronesia. Given that most of the countries are high income, why are these gaps so large? Part of the answer is that comparable donor-supported surveys have allowed those countries to be well represented in global databases. But is this the only reason?

We posed this question to NGO colleagues from the Netherlands Working Group on Global Nutrition and to UK government officials from Public Health England, an executive agency sponsored by the UK Department of Health.

The answers fall into several categories:

1. Some indicators—such as vitamin A supplementation for children under 5 and the use of oral rehydration salts for children under 5 with diarrhea—are not relevant for high-income countries. These indicators have already been excluded from the gap analysis reported in Figure 9.2.
2. Some indicators that are relevant for high-income countries, such as child anthropometry and antenatal visits, are collected but not centrally registered. In the Netherlands, for instance, data from community-based public health centers show that about 95 percent of all Dutch children between 0 and 19 years of age attend regular growth-monitoring sessions. At these sessions growth data (including height and weight) are collected and monitored and information on feeding practices is collected and discussed with parents (Netherlands Ministry of Health, Welfare, and Sport 2014). These data are kept in personal files for the early detection of growth or development problems but are not centrally reported.
3. Some indicators are collected but are not compatible with international databases because they use different age ranges or standards. For example, in England (a part of the United Kingdom) child growth measurements are surveyed in two different instruments from years 2–10 and 4–5, but not from 1–23 months. In the Netherlands, a national set of standards is used to assess growth faltering in very young children because of doubts within the country that the WHO Child Growth Standards can detect growth faltering in a very tall population.
4. Some indicators are available but not in the same format or from one body. For example, in the United Kingdom and perhaps some other countries with strong devolved powers, data on low birth weight and obesity from different regions are not held in one place and do not necessarily use the same survey instrument.
5. Some indicators are recorded only in Dutch, adding another step to overcome before they can be included in international databases.

As the Sustainable Development Goals move the world toward one set of indicators for all countries, high-income countries will increasingly come under pressure to make their data more compatible with international databases. Apart from the solidarity arguments, the incentives for increasing compatibility may not always be obvious, but for comparative diagnostics and lesson learning, the benefits are likely to be significant. Bringing these countries into the global data fold will require investing in building relationships between those who host the global databases and those whom we are trying to include. And that requires resources.

diet), but this is primarily because these are new indicators and many countries are just now starting data collection. The paucity of data on adolescent overweight and obesity status and on weight and height of women of reproductive age is also notable. Data on government expenditures, even for the broad categories related to nutrition, are available for less than half of the countries.[1]

Not all data gaps need filling. In fact, if there are too many data that are incompatible, then the guidance to action, and accountability for delivering on action, quickly become confusing. India, for example, undertook 14 major nutrition surveys between 1992 and 2014, but taken together these surveys provide few opportunities for consistent tracking over time at the national level (Panel 9.3 and Appendix Table A9.1 [see globalnutritionreport.org/the-report/appendixes]).

A case study from Mali makes a similar point (Panel 9.4). The panel shows how two separate narratives can be constructed from publicly available and seemingly high-quality data sets. The case study highlights the need

TABLE 9.1 Indicators available in less than half of the nutrition country profiles

Indicator	Percentage of countries with data available
Minimum dietary diversity	14
Minimum acceptable diet	14
Adolescent overweight	31
Adolescent obesity	31
Severe acute malnutrition interventions, geographical coverage	34
Women of reproductive age, thinness	35
Women of reproductive age, short stature	35
Government expenditure on agriculture	38
Government expenditure on social protection	41
Government expenditure on education	42
Government expenditure on health[a]	42
Population density of community health workers	42

Source: Authors.

Note: For the indicators that are not relevant for high-income countries, the percentage has been calculated with a different denominator than for the indicators relevant for all countries. In addition, the SUN institutional transformation indicators and indicators on "undernutrition mentions in policy documents" have been excluded from this analysis. The denominator for vitamin A supplementation was the 82 countries as advised by UNICEF.

[a] Data on health expenditures for the nutrition country profiles come from IFPRI's SPEED data set, which covers all government expenditure sectors. However, WHO has a data set for health expenditures (http://apps.who.int/gho/data/node.resources) that is available for 190 countries, so the nutrition country profiles understate the availability of health expenditure data.

for governments to invest in collecting comparable data over time.

WHAT CAN BE DONE TO HELP FILL THE DATA GAPS?

A number of innovations have been piloted and are being used to reduce the costs of data collection while improving the coverage, frequency, and quality. We do not advocate any of these in particular; rather we highlight them as potentially useful innovations to stimulate thinking and action on how key gaps may be filled. Here we describe two methods: surveys following Child Health Days immunization events have been used to improve data on program coverage and implementation (Panel 9.5), and mobile phone technology may have potential for improving nutrition surveillance (Panel 9.6).

Filling data gaps also means investing in national-level data systems. The World Bank's database on country-level statistical capacity includes an indicator that measures "a country's ability to adhere to internationally recommended standards and methods" (World Bank 2015b).[2] Figure 9.3 compares this indicator with the percentage of nutrition country profile data gaps for a set of countries with available data and with stunting levels above 20 percent. As expected, it shows a negative correlation between countries' statistical capacity and their gaps in nutrition data.

Investors interested in "quick wins" might choose to

TABLE 9.2 The landscape of social and community accountability mechanisms

Type of mechanism	Examples
Community-led mechanisms	Community activism
	Public hearings and rallies
	Social audits
Checklists and scorecards (mostly community led)	Maternal and child death audits
	Facility checklist-based audits carried out by civil society organizations
	Community scorecards
User governance and user-led delivery	Community and user committees
	Community delivery of services
Capacity building for community participation	Social capital building
	Capacity building for participation in management and committees (particularly where targeted at excluded groups)
Social mechanisms	Nutrition champions engagement with media to keep neglected issues alive
Wider governance reform	Cross-sectoral and vertically integrated governance
	Decentralized service planning and implementation
	Right-to-food legislation
	Right-to-information legislation
	Judiciary monitoring of other actors

Source: Adapted from Ahmed and Nisbet (forthcoming).

PANEL 9.3 INDIA: TOO MUCH DATA OR TOO LITTLE?

APARNA JOHN AND PURNIMA MENON

Since 1992, 14 major nutrition surveys have been conducted in India. As part of Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India (POSHAN)—an initiative designed to increase access to nutrition knowledge, data, and evidence in India—we undertook a review of national data on nutrition and its determinants. We reviewed four series and two one-time surveys:

- Three National Family Health Surveys (NFHS), 1992–1993, 1998–1999, 2005–2006
- Four District-Level Health Surveys (DLHS), 1998–1999, 2002–2004, 2007–2008, 2012–2013
- Three Annual Health Surveys (AHS), 2011, 2012, 2013
- Two India Human Development Surveys (IHDS), 2004, 2012
- Two one-time surveys: HUNGaMA in 2011 and the Rapid Survey on Children (RSOC) in 2013

The review examined six components of these surveys: geographic coverage, content, comparability, frequency/temporality, ownership and financing, and availability. Detailed findings appear in Appendix Table A9.1 (see globalnutritionreport.org/the-report/appendixes). Our review revealed a number of issues that limit the usefulness of these surveys for efforts to improve accountability:

- The surveys had poor geographic coverage, undermining geographic comparability.
- They varied widely in their thematic content, limiting inferences about trends in nutritional outcomes and their determinants.
- They used different definitions and targeted different populations, limiting the comparability of data.
- Some surveys were nationally representative, whereas others were representative at the state or district level.

From this review, we conclude that it is crucial to home in on a set of core nutrition outcome indicators and establish a mechanism for reasonably frequent data collection—say, every two to three years—to ensure that comparable data on these indicators are available for strategic nutrition-focused decisionmaking at the national, state, and district levels.

INDIA'S 14 MAJOR NATIONAL SURVEYS, 1992–2014

Number that are nationally representative	9
Number that are national in scope and representative below the state level	3
Number that contain four WHA indicators (stunting, wasting, and overweight in children under 5; anemia in women of reproductive age)	4
Number that collected any child anthropometry	10
Number that are national in scope, are representative below the state level, and collect height data for children under 5	0
Out of four survey series, number that used a consistent definition of target respondent group	2

Source: Authors of this panel.

AVERAGE GAP BETWEEN SURVEYS

NFHS	7 years
DLHS	4–5 years
IHDS	7 years

Source: Authors of this panel.

put resources into countries with high levels of stunting, large data gaps, and reasonable capacity, such as Cambodia, Laos, and Myanmar. Or if they are interested in longer-term capacity development, investors might target their assistance to countries with high levels of malnutrition and big data gaps but lower capacity. These tend to be fragile and conflict-affected states such as Equatorial Guinea, Libya, Somalia, and South Sudan.

One major example of a longer-term data capacity investment is the National Information Platforms for Nutrition (NIPNs) initiative being led by the European Union (EU) and implemented in collaboration with the Scaling Up Nutrition (SUN) Movement. Inspired by the National Evaluation Platform approach (Bryce et al. 2014), an NIPN will be country-owned and country-led. It aims to be an evidence-focused instrument for coordinating nutrition stakeholders, facilitating multisectoral dialogue, and strengthening mutual accountability across sectors and partners. In its initial four-year phase, the NIPN initiative aims to ensure that information on resources, actions, and outcomes linked to nutrition-specific and nutrition-sensitive programs can be effectively monitored to improve policy, strategy, and planning, and ensure a significant scaling up of nutrition activities and results.

PANEL 9.4 NEW NUTRITION DATA NEED TO ADD CLARITY, NOT CONFUSION: THE CASE OF MALI

YVES MARTIN-PRÉVEL AND PATRICK EOZÉNOU

Has Mali made any progress in reducing stunting rates in the past seven years? The 2012/2013 Demographic and Health Survey (DHS) reported the stunting rate among children under 5 at 38.3 percent, compared with 38.5 percent in the 2006 DHS. This is worrying, especially given that the latest DHS could not cover the more vulnerable northern regions. Lack of progress in reducing stunting is consistent with economic downturns due to a drought and a fall in international cotton prices in 2011, the coup in 2012 (Nossiter 2012), and the subsequent war, which generated half a million internally displaced people and refugees at the peak of the crisis (OCHA 2015).

But the picture is not so clear, and perhaps not so bleak. Other surveys followed the 2006 DHS: a Multiple Indicator Cluster Survey (MICS) in 2010 and two Standardized Monitoring and Assessment of Relief and Transitions (SMART) surveys in 2011 and 2012, with a third SMART survey in 2013 after the 2012/2013 DHS. They describe a very different picture and tend to show a steady decrease of the stunting prevalence from 2001 onward (see figure below). This scenario is consistent with a declining trend in poverty headcount between 1994 and 2010 (World Bank 2013).

The SMART surveys in 2012 and 2013 and the DHS in 2012/13 are not nationally representative and so are not strictly comparable.[1] Further, the MICS 2010 and SMART 2011 surveys are not yet internationally validated and so are excluded from the UNICEF/WHO/World Bank Joint Malnutrition Program estimates (hence the dashed lines in the figure). Nevertheless, all of these estimates are publicly available and depict two inconsistent views of progress. In light of this discrepancy, how do the government of Mali and its development partners plan for improved nutrition?

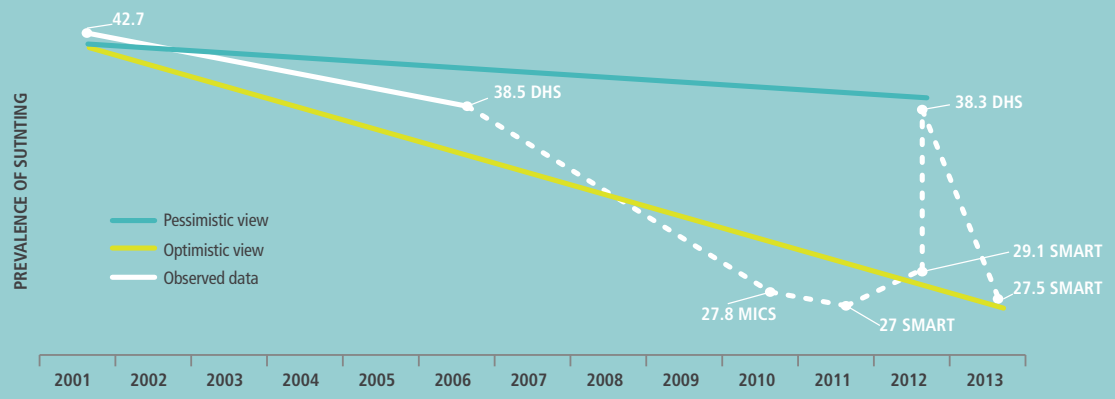
The confused situation in Mali is not an isolated case—see, for example, Panel 9.3 on India. Mali's experience suggests that undertaking a data revolution does not always mean gathering more data. Rather, in this case it means focusing on collecting one comparable time series every two to three years. In the short run and on an ad hoc basis, different surveys could be made more comparable. This effort would require access to the raw data and transparency about methods. It would take time and resources, and there is no guarantee that the effort will make the data sufficiently comparable.

In the medium to long term, there are at least three nonexclusive ways to reinforce the credibility of data collection and to generate more comparable time series:

- Support countries' own strategic planning on data collection and nutrition surveillance. Donors should align their own reporting requirements with government aims.
- Engage the interagency team producing the Joint Child Malnutrition Estimates to validate survey results. Such an expert group would need to be reinforced and financially supported to do this.
- Define an internationally agreed-upon checklist of technical criteria that need to be fulfilled in order to guarantee the quality of nutrition survey data and against which all surveys need to report. The STROBE checklist offers one model (Vandenbroucke et al. 2007).

A nutrition data revolution is definitely needed, but such a revolution should focus on comparable data over time to illuminate the pathways to improved nutrition, not enshroud them.

PREVALENCE OF STUNTING IN VARIOUS NUTRITION SURVEYS IN MALI



Source: Authors of this panel.

PANEL 9.5 USING POST-EVENT COVERAGE SURVEYS TO INFORM NUTRITION PROGRAM COVERAGE AND QUALITY

JESSICA BLANKENSHIP

Program managers commonly lack reliable and timely data to tell them whether nutrition programs are reaching potential beneficiaries and how well they are being implemented. To help address this, Helen Keller International (HKI) has worked with ministries of health in 13 countries since 2010 to implement routine post-event coverage surveys (PECSs). PECSs are implemented six to eight weeks after biannual Child Health Days to assess the delivery and coverage of vitamin A supplementation and deworming. The PECS methodology (HKI 2012) includes a minimum of 30 clusters of households selected for a sampling frame and an average of 900 households interviewed per survey.[1] The methodology can be applied to any nutrition or health program, with multiple indicators collected through the same household survey. The PECS is implemented at the scale required for programmatic decisionmaking, and clusters are selected to be representative of the national, regional, or subregional level.

HKI recommends that PECSs be implemented every year to provide routine and valid monitoring data for program managers. The costs of PECSs vary by country, with average costs falling between US$8,000 and US$40,000 for a 30-cluster sample (HKI 2012). The cost of a PECS is significantly lower than for a Demographic and Health Survey (DHS) or a Multiple Indicator Cluster Survey (MICS) because the PECS collects a smaller sample of 30 clusters and is not scaled to provide regional breakdown for data analysis. PECSs also cost less than larger national surveys because they use existing program staff to lead and supervise the surveys as well as to clean and analyze data.

Do PECSs provide a valid estimate of coverage compared with tally sheets, which compare records of services delivered to estimates of the target population based on census data? Tally sheets are simple, fast, and widely accepted, but they are prone to error owing to miscalculations in aggregating data; delayed, inaccurate, or incomplete reports; and outdated census estimates (Hodges et al. 2013). PECSs are obtained from a representative sample of the population in which the denominator is established and designed to provide a +/- 5 percent margin of error for coverage. Additionally, PECS enumerators receive more supervision and training on managing data than do the health workers who collect tally sheets (Nyhus Dhillon et al. 2013).

For example, in Tanzania, for the June 2010 round of Child Health Days, coverage of vitamin A supplementation was 99 percent as measured by tally sheets and 63 percent as measured by PECS (Nyhus Dhillon et al. 2013). The PECS result is similar to that in the 2010 DHS, in which the coverage of both rounds of the Child Health Days using a six-month recall was 60 percent.

PECSs also provide timely data on the quality of program delivery. Mobile data collection is not necessary to implement PECS, but it can provide program managers with quick access to high-quality data that can be rapidly turned around to inform program design (Katcher et al. 2014).

Governments have actively used PECS data to inform Child Health Day programming strategy. Cameroon, for example, used PECS data to modify its social mobilization and delivery strategies and boosted coverage of vitamin A supplementation from 53 percent in 2011 to 80 percent in 2013 (Blankenship 2014).

ASSESSING WHETHER THE COMMITMENT HAS BEEN MET

When assessing commitments, it is easy to neglect the people most affected by malnutrition and most vulnerable to poor-quality services. Might their assessments be the best catalyst for improvements in service delivery? The *Global Nutrition Report 2014* called for more innovation with social accountability mechanisms such as citizen report cards and participatory budgeting in nutrition. What are some of the options, and what does the evidence say? Table 9.2 gives a sense of the wide range of accountability mechanisms available to communities and civil society groups.

There are still few studies that present rigorous quantitative data on how social accountability mechanisms affect the quality of service delivery, particularly in the fields of health and nutrition. One notable study demonstrates significant health impacts, including a reduction in child deaths (Björkman and Svensson 2009). There are mixed results in related fields such as education, but enough positive evidence to suggest that it is worth investing more to consider what works, why it works, and in what contexts (Joshi 2013; Mansuri and Rao 2013). On obesity, Swinburn and Wood (2013) note the important role of citizen assessments of efforts to prevent obesity in Australia and New Zealand over the past 20 years. They note, however,

PANEL 9.6 MOBILE PHONES FOR NUTRITION SURVEILLANCE: STRONG POTENTIAL, LITTLE EVIDENCE

INKA BARNETT

Nutrition surveillance—the ongoing collection of information on nutrition outcomes and actions—is vital for governments and agencies to be able to respond promptly to changes in the nutritional status of populations, to monitor the progress toward reducing undernutrition, and to promote accountability. The use of mobile-phone technology is one innovation in the effort to make nutrition surveillance more efficient and cost-effective than traditional paper-based systems. Increasingly, agencies have started to integrate mobile phones in their nutrition surveillance. For example, UNICEF recently employed mobile phones in nutrition surveillance in Kenya and Malawi (Berg et al. 2009; Blaschke et al. 2009), and World Vision together with the Institute of Development Studies is piloting a mobile-phone application for community-level surveillance in Indonesia (Barnett et al. 2014).

To find out whether the current enthusiasm about mobile phones is supported by evidence, a critical review on the impact of using mobile phones for nutrition and other kinds of surveillance was conducted in 2013 (an update is in progress) (Barnett and Gallegos 2013). The search identified more than 30 mobile phone–based surveillance studies, of which only 9 assessed the impact of using mobile-phone technology for nutrition or nutrition-related surveillance. All of the studies were methodologically weak in terms of constructing a counterfactual.

Despite the general lack of quality, the available evidence suggests that mobile phones have the potential to make surveillance more timely and efficient, for example by speeding up data entry and transfer and reducing data entry errors. It is still unclear, however, whether, how, and under what conditions mobile phone–based surveillance can be used most effectively to trigger rapid responses to nutrition crises and inform better decisionmaking for nutrition.

Another shortcoming was that the studies were all based on small pilots that were either poorly integrated into national nutrition strategies or not integrated at all. Mobile phone–based surveillance systems were usually created in parallel with existing paper-based approaches and therefore duplicated existing efforts. Consequently, most mobile phone–based systems ceased to exist once the funds for the initial pilot ran out. To improve sustainability and opportunities for scale-up, mobile phone–based systems need to be aligned with local surveillance needs and supported by strategic partnerships with mobile-phone operators.

In conclusion, mobile phones seem to have the potential to improve nutrition surveillance, but more evaluation is needed to assess what it will take for the potential to be realized.

that despite the creation of several advocacy organizations, active whole-of-community projects, and strong mass media, many key regulatory policies remain unimplemented, "largely due to the private sector interests dominating public policy development" (Swinburn and Wood 2013, 60).

GENERATING A POSITIVE RESPONSE TO THE ASSESSMENT

Assessments can produce responses that are positive or negative for nutrition, or they can produce no response at all. How well have existing commitment assessment mechanisms elicited positive responses?

In Chapter 8 we discussed mechanisms that can strengthen enforcement in the nutrition and business domain. In the medical domain, the Access to Medicine Index, the inspiration behind the newer Access to Nutrition Index (see Chapter 8), has been operational since 2007 and may offer lessons on how to generate "virtuous circles" (Panel 9.7).

The humanitarian community also offers insights. At the core of the humanitarian community's ethos is a commitment to the human right to be taken care of when disaster strikes. Responding to this commitment is challenging in chaotic and fast-moving complex emergencies. Panel 9.8 outlines how charters and legal standards can improve the quality of response to commitments made. It makes suggestions on common reporting standards and on giving those affected by crisis a greater voice in eliciting a stronger response to the commitments made. The 2016 World Humanitarian Summit will develop a new agenda for humanitarian action (World Humanitarian Summit 2015). The capacity and obligation of agencies to respond to their humanitarian commitments in a high-quality manner needs to be at the forefront of this landmark event.

PANEL 9.7 ACCESS TO MEDICINE INDEX: ACCOUNTABILITY AND LEVERAGING

DAMIANO DE FELICE

Two billion people in the world still have no access to medicine. This problem is multifaceted, and responsibility for tackling it lies with many different actors, including governments, NGOs, academia, finance institutions, and multilateral organizations. As the manufacturers and developers of life-saving products, pharmaceutical companies clearly have a crucial role to play too.

The Access to Medicine Index (Hogerzeil 2013) is an independent ranking of the top 20 research-based pharmaceutical companies, based on their efforts to improve access to medicine for people living in developing countries. Funded by the Bill & Melinda Gates Foundation and the UK and Dutch governments, the Index has been published every two years since 2008.

The Index uses a weighted analytical framework of 95 indicators to consistently capture and compare company data across 106 countries, 47 diseases, and 6 product types (not only medicines, but also vaccines, diagnostics, and other products). The framework has seven areas of focus: governance, public policy, R&D, pricing, intellectual property rights, capability advancement, and product donations.

The Access to Medicine Index is widely perceived as a strong accountability mechanism. In 2013, the Millennium Development Goals Gap Task Force reported the results of the 2012 Index because it recognized that "it is important to monitor and evaluate what pharmaceutical companies themselves, as the producers and suppliers of medicines, are doing to increase access to their products" (United Nations 2013a, 63).

The Access to Medicine Index is more than a mechanism for facilitating accountability—it also has the potential to catalyze a series of mutually reinforcing virtuous circles:

- It may introduce a positive competitive environment that encourages a corporate race to the top. The results of the Index are covered by top news outlets (such as the *Financial Times* and the *New York Times*). This influences the global reputation of the pharmaceutical companies.
- It can improve the functioning of pharmaceutical markets by reducing information asymmetries between buyers and sellers by triggering information disclosure. For example, the Index produces aggregate information on R&D pipelines and pricing strategies.
- It fosters practical discussion on the appropriate role of the private sector in achieving poverty reduction objectives. For each successive Index, representatives of investors, NGOs, international organizations, business associations, and other stakeholders are consulted to refine the Index methodology.
- It helps companies' internal specialists engage with senior managers and other departments. After the publication of each Index, the Access to Medicine Foundation engages with pharmaceutical companies to explain the scores and recommendations in the report. During these conversations, companies confirm that the Index helps raise awareness of access-to-medicine issues companywide.
- It enables external groups with a stake in the behavior of pharmaceutical companies—such as investors and civil society—to engage with those companies on the basis of evidence. More than 50 institutional investors in pharmaceutical companies have pledged their support for the Index by signing its Investor Statement. Together, these institutional investors manage assets worth around US$5 trillion.

MAKING THE MOST OF EXISTING ACCOUNTABILITY MECHANISMS IN NUTRITION

The 2014 *Global Nutrition Report*, which highlighted the challenges to nutrition accountability, is itself one contribution aimed at strengthening accountability. Another new and important mechanism for holding governments accountable for their WHA undernutrition commitments is the WHO Global Nutrition Monitoring Framework, approved by member states at the 68th World Health Assembly in 2015. Many other existing mechanisms can also help strengthen accountability in nutrition, including the WHA targets themselves, the ICN2 Declaration and Framework for Action, the Committee on World Food Security (CFS), the Scaling Up Nutrition (SUN) Movement, the UN Standing Committee on Nutrition (UNSCN), and Renewed Efforts against Child Hunger and Undernutrition (REACH).[3]

PANEL 9.8 IMPROVING ACCOUNTABILITY FOR NUTRITION ACTIONS DURING EMERGENCIES

CARMEL DOLAN, JEREMY SHOHAM, LOLA GOSTELOW, AND DAYNA BROWN

The Ethiopian famine in the 1980s, micronutrient malnutrition outbreaks among refugees in the 1990s (CDC 1991), the genocide in Rwanda in 1994 (Adelman and Suhrke 1996), the tsunami of 2004 (Telford et al. 2006), and more recent crises such as Somalia in 2011 (Bailey 2012) have highlighted the need for the aid system to do better at protecting the nutritional status of crisis-affected populations. These episodes, and others, have spurred genuine reflection on how to strengthen the international humanitarian response system.

A key response was that the entire sector launched the Core Humanitarian Standard (CHS) in late 2014 to identify a minimum set of commitments that humanitarian organizations should voluntarily meet to improve the quality and effectiveness of their assistance (Groupe URD et al. 2014). The new standards emphasize accountability in terms of budget transparency and highlight the need to consult with communities.

For the humanitarian nutrition community, charters and standards such as the CHS offer an overarching accountability framework. Coordination is provided by, for example, the Global Nutrition Cluster partnership (Global Nutrition Cluster 2014). The Sphere Project, for example, provides technical standards to guide action on nutrition assessment, infant and young child feeding, management of severe acute malnutrition, micronutrient deficiencies, and food insecurity (Sphere Project 2015).[1] Nonetheless, these nutrition standards are also voluntary. While the IASC Cluster evaluation frameworks provide scrutiny, there is no single body responsible for overseeing the attainment of standards in a nutrition emergency.

The CHS offers a significant opportunity to improve accountability for nutrition. What will it take to seize this opening?

1. Implementing agencies should be encouraged to report in a standardized manner against technical standards. An example is the Minimum Reporting Package for emergency supplementary feeding programs, in which agencies report cure rates, duration of recovery, and child mortality to a centralized database in a standardized form against Sphere standards. (Emergency Nutrition Network 2011). The performance of nutrition-related programming in all large-scale (Level 3) emergency responses should be assessed each year and included in the *Global Nutrition Report*.
2. One agency needs to be given the mandate to conduct more independent evaluations to assess whether the coverage of nutrition-specific and nutrition-sensitive programming has been appropriate in large-scale complex emergencies.
3. Donors should do more to join up nutrition programming in emergency contexts with that in development contexts. This integration would allow practitioners and donors to address all forms of undernutrition and to continue nutrition programs even when emergencies are over. Donors could be asked to report on any such financing activity in future editions of the *Global Nutrition Report*.

People affected by crisis need to have a greater say in the design and type of nutrition interventions and resources they receive. The high default rates reported for supplementary and therapeutic nutrition programs and riots over shortages of key commodities, such as breast-milk substitutes for nonbreastfeeding populations among Syrian refugees, suggest that their priorities and views need to be heard more clearly. Reporting on community consultations and their consequences for action should be included in agency reports and shared with communities. A synthesis of this learning could be highlighted in the *Global Nutrition Report*.

Because there are so many existing mechanisms (and some such as the UNSCN and REACH are undergoing transition), it is important to ask, what are the opportunities for them to strengthen their contributions to nutrition accountability? The complexity of the international nutrition governance system requires an in-depth analysis. The *Global Nutrition Report* team will work with others to explore the possibility of undertaking some analysis of this question in the 2016 report.

RECOMMENDED ACTIONS

Countries, donors, and agencies should work with the technical nutrition community to identify and prioritize the data gaps that are holding back action and then invest in the capacity to fill the gaps. **All countries, including high-income countries**, should reach out to **UN agencies** to facilitate the conversion of their own data into international databases convened by the UN agencies.

1. **High-income country governments** should step up their efforts to enter nutrition data into international databases. At least 10 high-income countries should enter data for at least one of the WHA indicators to the WHO/UNICEF databases in time to appear in the 2016 *Global Nutrition Report*. Even though high-income countries have greater capacity to produce these data than other countries, they are responsible for major gaps in international databases. Their failure to provide internationally comparable data risks their credibility as nutrition partners and accountability champions.
2. **Donors** should fund an inclusive process—involving **governments, the World Bank, UN agencies, civil society organizations, and donors**—to identify remaining data gaps and invest in the international and national capacity to fill them. Data are needed to guide action, support advocacy, monitor progress toward the WHA and SDG targets, and strengthen accountability. Data gaps are holding back action, and yet there is currently inadequate information on the most critical gaps. The development of a long-term multidonor plan to invest in data should be well underway by the 2016 N4G Summit in Rio.
3. **National governments, international agencies, and program implementers** should place a special focus on collecting credible coverage data for interventions to prevent and treat undernutrition. **Donors** should increase support for (1) the development of global indicators of program coverage for interventions that need it and (2) research to identify factors associated with increases in coverage. Currently, internationally comparable data are available on the coverage of only 4 of 12 key interventions.

10 TEN CALLS TO ACTION TO INCREASE ACCOUNTABILITY FOR NUTRITION ACTIONS

AS WE MOVE INTO THE ERA OF THE SUSTAINABLE DEVELOPMENT GOALS (SDGS), THE WORLD FACES MANY SEEMINGLY INTRACTABLE PROBLEMS. Malnutrition should not be one of them. Countries that are determined to make rapid advances in malnutrition reduction can do so. If governments want to achieve the SDG target of ending all forms of malnutrition by 2030, they have clear pathways to follow. There are many levers to pull, and this report provides abundant examples of countries that have done so.

The forces that combine to create malnutrition are powerful, so the forces to turn the tide must be equally powerful—but more coordinated and determined. Powerful sectors driving sustainable development need to be engaged, guided toward high-impact, nutrition-improving actions within their sector, and held accountable for the impact their actions have on nutrition status.

This *Global Nutrition Report 2015* presents 10 calls to action that focus on how we can accelerate actions to address malnutrition in all its forms and make the relevant actors more accountable for doing so. These calls to action are needed if, in 2030, we are to celebrate precipitous declines in malnutrition rates and associated morbidities. They are designed not only to help nutrition better drive sustainable development, but also to help sustainable development better drive improvements in nutrition outcomes. Each call includes a set of actions that are as specific, measurable, assignable, realistic, and time bound (SMART) as possible.

CALL TO ACTION 1: Elevate the Role of Nutrition Across the Sustainable Development Goals

In recognition of the critical role of nutrition in achieving several of the Sustainable Development Goals, leaders of the **international finance institutions and the United Nations, other members of Scaling Up Nutrition Lead Group, and other national nutrition champions** should advocate strongly for the set of SDG Nutrition Indicators proposed by the UN Standing Committee on Nutrition, and supported by a broad group of civil society organizations, to be included in the indicator set put forward to the UN Statistical Commission by the end of 2015.

1.1 Leaders of **the international finance institutions, the UN, other members of the Scaling Up Nutrition Lead Group, and other national nutrition champions** should advocate for the inclusion of nutrition indicators in the set of indicators used to monitor the SDGs. Specifically, they should engage with the UN Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) to advocate for the six World Health Assembly (WHA) indicators and women's dietary diversity indicator. These indicators can be applied to the SDGs related to, for example, poverty, health, gender equality, and sustainable food systems.

1.2 Representatives of **international agencies, nonmember governments, academia, and civil society organizations** should participate as observers in meetings of the IAEG-SDGs to raise awareness of the proposed nutrition indicators.

CALL TO ACTION 2: Strengthen National Accountability on Nutrition Targets

Presidential and prime ministerial offices of countries that are off course to meet the World Health Assembly's global targets to improve maternal, infant, and young child nutrition should convene cross-government, cross-party, and multistakeholder consultations to discuss the challenges of meeting the global targets, course corrections they can make, and the support they need. The findings should be reported at the 2016 Nutrition for Growth (N4G) Summit hosted by the Government of Brazil in Rio de Janeiro and at any equivalent global or regional reporting opportunity.

2.1 To improve accountability, **all countries** should establish national nutrition targets, based on the World Health Assembly's global targets to improve maternal, infant, and young child nutrition and on the nutrition-related targets of the World Health Organization's (WHO's) global monitoring framework for noncommunicable diseases. Countries should follow up these target commitments with stronger monitoring.

2.2 **International organizations** such as the World Bank, the UN, and CGIAR should, in the lead-up to the 2016 N4G Summit in Rio, reiterate their willingness to provide support to countries that want to develop country-level nutrition targets. The strongest accountability targets are the ones that countries set for themselves.

2.3 **Technical expert groups, innovation hubs, and research funders**—including the World Bank's Research Department, the WHO/UNICEF Technical Expert Advisory Group on Nutrition Monitoring (TEAM), 3ie, and Innovative Methods and Metrics for Agriculture and Nutrition Actions (IMMANA)—should look for ways to strengthen accountability within nutrition. These groups should issue calls for accountability tools, methods, metrics, and evaluations.

CALL TO ACTION 3: Strengthen the Nutrition for Growth Process

Signatories of the Nutrition for Growth (N4G) Compact, adopted in 2013, should carry out their commitments and give full reports on their progress to the *Global Nutrition Report* team for publication in 2016. At the 2016 N4G Rio Summit, **more governments, international agencies, external funders, civil society organizations, and businesses** need to make ambitious N4G commitments, which should be specific, measurable, assignable, realistic, and time-bound (SMART). These commitments from existing and new signatories should aim to achieve the WHA global nutrition targets by 2025 and, in line with the SDGs, end malnutrition by 2030.

3.1 **All signatories to the N4G Compact** should report on implementation of their commitments to the *Global Nutrition Report* team. In 2015 fewer signatories responded to requests to report on their commitments than in 2014. The share of signatories who are "on-course" for meeting their commitments remains below 50 percent.

3.2 **Existing N4G signatories** should seek to widen the N4G circle of commitment by inviting additional governments, international agencies, external funders, civil society organizations, and businesses to make SMART and ambitious pledges at the 2016 N4G Summit. At the moment, the N4G Compact has only 110 signatories, and nearly all of them are concerned with undernutrition rather than with malnutrition in all its forms.

3.3 **Civil society organizations** should take the lead on developing a "good pledge guide and template"

in time for the 2016 N4G Summit. This would help **existing and new N4G signatories** to "SMARTen" their commitments. Only 30 percent of current commitments are SMART. The template would embed SMART principles and be used to evaluate draft commitments at the 2016 N4G Summit.

3.4 The **Global Nutrition Report Stakeholder Group** should commission an **independent body** to undertake a one-time evaluation of the process for assessing N4G commitments and make public recommendations for strengthening it. Current methods are limited since they rely on self-assessment by signatories and independent review by the *Global Nutrition Report* cochairs and Secretariat.

CALL TO ACTION 4: Deliver Better Nutrition Outcomes with Existing Funding

To justify calls for more funding, **governments and donors** should continue to invest in ways of delivering better nutrition outcomes with existing funding. They should also demonstrate how they are seeking to improve the quality and effectiveness of current spending. **Governments** should continue to document their nutrition spending and engage with **researchers** to determine costs of nutrition strategies**.** **Donors** should report their disbursements, and **civil society organizations** should continue to call for transparent budgets. **Governments and donors** should increase their work with **researchers** to estimate budget allocations to obesity and nutrition-related noncommunicable diseases.

4.1 **Governments and donors** should work more closely with **researchers** to estimate the impacts and costs of different strategies for implementing and scaling up nutrition actions. These country-specific estimates of impacts and costs will help governments refine their strategies and increase the likelihood that their investments will have a greater impact on nutrition status.

4.2 **Governments** should compare current estimates of their nutrition budget allocations with costed plans so that they can develop credible and transparent estimates of funding gaps in time for the Rio 2016 Compact. Doing this will help them better align resources and plans. The *Global Nutrition Report 2016* will aim to report on more than 30 country nutrition budget allocations.

4.3 Each year, **donors** should report their commitments and disbursements—both nutrition-specific and nutrition-sensitive—to the *Global Nutrition Report* team. The availability of these data will better guide their actions and the actions of their partners. A failure of donors to do so risks undermining their accountability and credibility.

4.4 **Civil society organizations** should continue to call for transparent budgets from governments and donors and use budget allocation data to lobby for more, and more effective, spending on nutrition. Civil society has the credibility that others do not to press governments and donors to take these steps and to monitor whether resources are actually disbursed.

4.5 Given the insufficient tracking of expenditure on obesity and nutrition-related noncommunicable diseases, **governments and donors** should work more closely with **researchers** to estimate costs and track spending on strategies to prevent and control these diseases. Such estimates are currently unavailable.

CALL TO ACTION 5: Increase Funding for Nutrition Action

Governments spend, on average, between 1 and 2 percent of their budgets on nutrition, and donors spend approximately 4 percent—far too little to meet global nutrition targets by 2025. Accordingly, **governments** should—at a minimum—double the share of their budgets allocated to improving nutrition. **Donor** spending on nutrition will also need to more than double.

5.1 By the time of the 2020 N4G Summit in Japan, **governments and donors** should have doubled their share of spending on actions explicitly intended to have an impact on nutrition. Precise estimates of what is needed to meet the WHA targets are not available, but preliminary work on stunting by the World Bank (see Chapter 5) suggests that by 2025 governments need to at least double their spending on proven nutrition interventions and donors need to more than quadruple funding for these interventions. In addition, the scope for increasing the share of **government and donor** nutrition-related spending in sectors such as agriculture, education, health, social protection, and water, sanitation, and hygiene is large because these budgets are large in magnitude and the opportunities for win-win solutions are plentiful.

5.2 More **donors** need to invest in nutrition. The **13 bilateral donors** that are currently spending less than US$1 million a year on nutrition, as measured by the OECD Development Assistance Committee (DAC), should

make substantial new commitments to nutrition. For donors seeking to maximize the human and economic impact of their funds, nutrition is a high-impact investment.

CALL TO ACTION 6: Implement Actions to Address Malnutrition in All Its Forms

Governments, international agencies, civil society organizations, and businesses should implement the ICN2 Framework for Action, which addresses malnutrition in all its forms. To encourage action, the **Food and Agriculture Organization of the United Nations (FAO) and WHO** should, by the end of 2016, develop objective and verifiable indicators for determining how well the Framework for Action is being implemented. The **Committee on Food Security** should identify opportunities for making nutrition actions across sectors more coherent. **Civil society** should raise awareness and mobilize support for implementing the framework and highlight areas where progress is lagging. To encourage a focus on malnutrition in ***all*** its forms, **researchers** should identify actions that address both undernutrition and obesity/nutrition-related noncommunicable diseases synergistically and clarify the factors that can create an enabling environment for improving nutrition.

6.1 **WHO and FAO** should develop objective and verifiable SMART indicators of progress in the implementation of the ICN2 Framework for Action by the end of 2016. SMART indicators will guide action more effectively, identify areas where capacity needs strengthening, and make the Framework for Action a more useful tool.

6.2 **Civil society organizations** concerned with undernutrition, as well as those concerned with obesity and nutrition-related noncommunicable diseases, should work together to mobilize support for implementing actions to address malnutrition in all its forms, including the Decade of Action on Nutrition proposed by the ICN2 Rome Declaration. Civil society organizations concerned with different aspects of nutrition have only recently begun to engage with each other. The Decade of Action on Nutrition is a key opportunity to come together to advocate a common cause and build momentum for action to reduce all forms of malnutrition.

6.3 **Researchers** who work on all forms of malnutrition should come together with the **international agencies** to identify nutrition actions that can address undernutrition as well as overweight, obesity, and nutrition-related noncommunicable diseases simultaneously. They should share their findings in a report at the 2016 N4G Rio Summit and other relevant forums. Although the synergies in approaches have been debated for more than two decades, there is no agreed-upon set of shared actions for addressing both undernutrition and obesity/nutrition-related noncommunicable diseases. Steps to create more enabling political environments, healthier food environments, and nutrition-friendly food systems, as well as to promote nutrition in children's first 1,000 days, all offer opportunities for addressing both kinds of malnutrition synergistically.

6.4 **Researchers** should work with **national nutrition champions** to document, analyze, monitor, and evaluate efforts to create enabling environments for the implementation of nutrition actions. Combining lessons from undernutrition, obesity, and nutrition-related noncommunicable diseases, including from recent *Lancet* series on these issues, they should bring the results together into action-oriented lessons and present them in an international journal by 2018. To accomplish this, researchers will need to (1) identify which actions to track, (2) develop metrics, methods, and databases to track progress on those actions, (3) analyze the effectiveness of the actions and the factors in their success, and (4) draw lessons between countries.

6.5 At the World Humanitarian Summit in May 2016, **governments** should set coverage targets for interventions to address severe acute malnutrition (SAM). **Governments and donors** should then commit to monitoring progress against these targets.

CALL TO ACTION 7: Actively Build Alliances between Nutrition and Climate Change Communities around Common Goals

By the time of the United Nations Conference on Climate Change (COP21) in November 2016, **the climate change and nutrition communities** should form alliances to meet common goals. The **Intergovernmental Panel on Climate Change (IPCC)** should form a group comprising nutrition and climate-health experts to assess the climate-nutrition literature and define new research and policy agendas. **Governments** should build climate change explicitly into their national nutrition and health strategies. And **civil society** should use existing networks to build climate change–nutrition alliances to advocate for nutrition at the COP21 and other leading climate change events and processes.

7.1 **Governments** should build climate change more explicitly into existing and new national nutrition strategies. Reviews of nutrition policies show that many countries do not yet incorporate climate change into their nutrition policies.

7.2 The **Intergovernmental Panel on Climate Change** should develop a nutrition subgroup to ensure that climate policymakers take advantage of climate-nutrition interactions and community adaptation. The four major UN nutrition agencies—**FAO, UNICEF, World Food Programme (WFP), and WHO**—should work with the IPCC to add nutrition experts to IPCC Working Groups 2 (vulnerability to climate change) and 3 (options for mitigation) in time for them to make a meaningful contribution to the next IPCC assessment report, anticipated to be published in four to five years' time.

7.3 **Civil society** should lead the formation of climate-nutrition alliances to identify new opportunities for action on both fronts. Civil society groups should then present these new opportunities at side meetings at the 2016 COP in Marrakesh. Civil society groups concerned with nutrition should build climate change into their own activities.

CALL TO ACTION 8: Develop Indicators of the Impact of Food Systems on Nutrition and Health Outcomes

Building on the food systems focus of the ICN2 in 2014, **global food systems initiatives** should, by the end of 2016, propose indicators of the impact of food systems on nutrition and health outcomes.

8.1 **Global food systems initiatives, such as the Global Panel on Agriculture, Food Systems, and Nutrition (GLOPAN), the International Panel of Experts on Sustainable Food Systems (IPES-Food), and the EAT Initiative,** should engage with the nutrition community to develop indicators and metrics for nutrition-friendly food systems. The process would include collecting nationally representative integrated data across agriculture, food systems, nutrition, and health. Support is needed to improve the data since it is currently difficult to link food systems with nutrition and health outcomes owing to disconnects between agricultural, food systems, and nutrition surveys.

8.2 Drawing on expertise from **global food systems initiatives, governments** should develop a set of indicators to measure the inputs, processes, and outcomes that define their national food systems. This would enable countries to understand better how their food systems behave and how they might be moved toward improved nutrition and sustainability. Measurement also allows citizens to hold governments to account for the impact of their food system policies on health and sustainability.

8.3 **Governments** should develop, implement, and monitor plans and policies for making their food systems more nutrition friendly. The number of policy options for doing so is potentially overwhelming. Governments at all income levels therefore need a careful and comprehensive process for identifying high-impact policy options to make their food systems more nutrition friendly. Low-income countries should be offered external support to undertake this task.

CALL TO ACTION 9: Build a Greater Shared Understanding of the Roles and Responsibilities of Business in Nutrition

Once the WHO Framework of Engagement with Non-State Actors is finalized, the **four large UN agencies most concerned with nutrition—FAO, UNICEF, World Food Programme (WFP), and WHO—together with other relevant international bodies,** should establish an inclusive, time-bound commission to clarify the roles and responsibilities of **business** in nutrition.

9.1 The commission should consult widely with all interested parties to generate a shared understanding of the roles and responsibilities of business in nutrition. In addition, the commission should assess the nutrition impacts of different businesses in different activities. It should identify what incentives and regulations are needed to generate more business actions that are positive for nutrition and fewer that are negative. And it should prioritize the accountability mechanisms to invest in. Currently, there is no broadly accepted mechanism to support this dialogue, and the absence of dialogue is hindering businesses' accountability and opportunities for positive action.

Whether or not a commission is established, the following additional actions should be undertaken:

9.2 **Research funders** should finance long-term research programs to generate evidence on what works and what does not in terms of business involvement in nutrition. At present there is too little evidence to guide improved accountability. Research is needed to (1) develop metrics to guide action and promote accountability, and (2) independently and transparently evaluate the actions businesses take to improve nutrition.

9.3 All **food businesses** should improve their performance in areas where the Access to Nutrition Index (ATNI) indicators suggest they are weak. The ATNI 2016 scores should compare the performance of the 25 companies on the 22 indicators for which they all scored zero in 2013.

9.4 **Governments** should strengthen regulatory frameworks for business to reduce negative nutrition outcomes. By the end of 2016 **donors** should explore setting up a fund to support the capacity of public bodies to develop, strengthen, and enforce regulations on business conduct. Regulation should take into account the international nature of many businesses and the potential for regulation to create incentives for positive action and to level the playing field for all businesses.

9.5 **Governments** should promote transparency by establishing a register of formal public-private partnerships and other mechanisms of engagement. This would enable all to see the terms under which public-private collaborations are established.

9.6 **Governments** should explore potential engagement with businesses beyond the food sector. For example, engagement with mobile phone network operators on nutrition might prove important for behavior change and could improve accountability of a wide range of nutrition actors.

CALL TO ACTION 10: Identify the Data Gaps that Hinder Effective Action — and Fill Them

Countries, donors, and agencies should work with the technical nutrition community to identify and prioritize the data gaps that are holding back action and then invest in the capacity to fill the gaps. **All countries, including high-income countries,** should reach out to UN agencies to facilitate the conversion of their own data into international databases convened by the UN agencies.

10.1 **High-income country governments** should step up their efforts to enter nutrition data into international databases. At least 10 high-income countries should enter data for at least one of the WHA indicators to the WHO/UNICEF databases in time to appear in the 2016 *Global Nutrition Report*. Even though high-income countries have greater capacity to produce these data than other countries, they are responsible for major gaps in international databases. Their failure to provide internationally comparable data risks their credibility as nutrition partners and accountability champions.

10.2 **Donors** should fund an inclusive process—involving **governments, the World Bank, UN agencies, civil society organizations, and donors**—to identify remaining data gaps and invest in the international and national capacity to fill them. Data are needed to guide action, support advocacy, monitor progress toward the WHA and SDG targets, and strengthen accountability. Data gaps are holding back action, and yet there is currently inadequate information on the most critical gaps. The development of a long-term multidonor plan to invest in data should be well underway by the 2016 N4G Summit in Rio.

10.3 **National governments, international agencies, and program implementers** should place a special focus on collecting credible coverage data for interventions to prevent and treat undernutrition. **Donors** should increase support for (1) the development of global indicators of program coverage for interventions that need it and (2) research to identify factors associated with increases in coverage. Currently, internationally comparable data are available on the coverage of only 4 of 12 key interventions.

APPENDIX 1 PROGRESS IN MEETING NUTRITION STATUS TARGETS

TABLE A1.1 Most current values for the six World Health Assembly (WHA) indicators for all countries

Country	Year of stunting data	Stunting (%)	Year of over-weight data	Over-weight (%)	Year of wast-ing data	Wasting (%)	Year of exclu-sive breast-feeding data	Exclu-sive breast-feeding (%)	Year of anemia data	Anemia (%)	Year of low birth weight data	Low birth weight (%)
Afghanistan	2013	40.9	2013	5.4	2013	9.5			2011	33.0		
Albania	2009	23.1	2009	23.4	2009	9.4	2008–09	38.6	2011	21.5		
Algeria	2012	11.7	2012	12.4	2012	4.1	2012–13	25.7	2011	32.7	2006	6.0
Andorra									2011	17.0		
Angola	2007	29.2			2007	8.2			2011	44.8	2000	12.0
Antigua and Barbuda									2011	24.9	2011	6.0
Argentina	2005	8.2	2005	9.9	2005	1.2	2011–12	32.7	2011	15.6	2011	7.2
Armenia	2010	20.8	2010	16.8	2010	4.2	2010	34.6	2011	25.9	2010	8.0
Australia	2007	2.0	2007	7.7	2007	0.0			2011	17.5	2010	6.2
Austria									2011	18.5	2011	6.9
Azerbaijan	2013	18.0	2013	13.0	2013	3.1	2013	12.1	2011	32.7	2006	10.0
Bahamas									2011	23.1	2011	11.6
Bahrain							1995	33.8	2011	37.6	2012	9.9
Bangladesh	2014	36.1	2014	1.4	2014	14.3	2014	55.3	2011	43.5	2006	22.0
Barbados	2012	7.7	2012	12.2	2012	6.8	2012	19.7	2011	23.1	2011	11.5
Belarus	2005	4.5	2005	9.7	2005	2.2	2012	19.0	2011	22.4	2011	5.1
Belgium									2011	18.0	2009	7.0
Belize	2011	19.3	2011	7.9	2011	3.3	2011	14.7	2011	21.7	2011	11.1
Benin	2014	34.0	2014	1.7	2014	4.5	2014	41.4	2011	49.6	2006	15.0
Bhutan	2010	33.6	2010	7.6	2010	5.9	2010	48.7	2011	43.7	2010	9.9
Bolivia	2012	18.1	2008	8.7	2012	1.6	2012	64.3	2011	32.4	2008	6.0
Bosnia and Herzegovina	2012	8.9	2012	17.4	2012	2.3	2011–12	18.5	2011	24.3	2012	4.5
Botswana	2007	31.4	2007	11.2	2007	7.2	2007	20.3	2011	28.5	2007	13.0
Brazil	2007	7.1	2007	7.3	2007	1.6	2006	38.6	2011	19.6	2011	8.5
Brunei Darussalam	2009	19.7	2009	8.3	2009	2.9			2011	20.4	2011	11.9
Bulgaria									2011	23.9	2011	8.8
Burkina Faso	2012	32.9	2010	2.8	2012	10.9	2014	50.1	2011	49.5	2010	14.1
Burundi	2010	57.5	2010	2.9	2010	6.1	2010	69.3	2011	20.9	2010	12.9
Cabo Verde							2005	59.6	2011	37.9	2005	6.0
Cambodia	2014	32.4	2014	2.0	2014	9.6	2014	65.0	2011	43.8	2010	11.3
Cameroon	2011	32.6	2011	6.5	2011	5.8	2011	20.4	2011	41.5	2006	11.0
Canada									2011	16.5	2011	6.1
Central African Republic	2010	40.7	2010	1.8	2010	7.4	2010	34.3	2011	46.0	2010	13.7
Chad	2010	38.7	2010	2.8	2010	15.7	2010	3.4	2011	46.6	2010	19.9

Table A1.1 continued

Country	Year of stunting data	Stunting (%)	Year of over-weight data	Over-weight (%)	Year of wast-ing data	Wasting (%)	Year of exclu-sive breast-feeding data	Exclu-sive breast-feeding (%)	Year of anemia data	Anemia (%)	Year of low birth weight data	Low birth weight (%)
Chile	2014	1.8	2014	9.3	2014	0.3			2011	12.1	2011	5.9
China	2010	9.4	2010	6.6	2010	2.3	2008	27.6	2011	19.6	.	
Colombia	2010	12.7	2010	4.8	2010	0.9	2010	42.8	2011	19.5	2012	9.5
Comoros	2012	32.1	2012	10.9	2012	11.1	2012	12.1	2011	30.8	2000	25.0
Congo	2011	25.0	2011	3.6	2011	5.9	2011–12	20.5	2011	50.7	2005	13.0
Costa Rica	2008	5.6	2008	8.1	2008	1.0	2011	32.5	2011	19.0	2012	7.3
Côte d'Ivoire	2012	29.6	2012	3.2	2012	7.6	2011–12	12.1	2011	48.8	2006	17.0
Croatia							1996	23.3	2011	24.5	2011	5.0
Cuba							2012–13	33.2	2011	23.4	2012	5.2
Cyprus									2011	27.7	2007	11.5
Czech Republic									2011	22.5	2012	8.0
Democratic People's Republic of Korea	2012	27.9	2009	0.0	2012	4.0	2012	68.9	2011	25.0	2009	5.7
Democratic Republic of the Congo	2013	42.6	2013	4.4	2013	8.1	2013–14	47.6	2011	49.0	2010	9.5
Denmark									2011	18.0	2012	5.4
Djibouti	2012	33.5	2012	8.1	2012	21.5	2006	1.3	2011	27.1	2006	10.0
Dominica									2011	25.5	2011	10.8
Dominican Republic	2013	7.1	2013	7.6	2013	2.4	2014	4.7	2011	26.0	2007	11.0
Ecuador	2012	25.2	2012	7.5	2012	2.3	2004	39.6	2011	24.3	2012	8.6
Egypt	2014	22.3	2014	15.7	2014	9.5	2014	39.7	2011	34.5	2008	13.0
El Salvador	2008	20.6	2008	5.7	2008	1.6	2014	47.0	2011	23.5	2011	8.7
Equatorial Guinea	2010	26.2	2010	9.7	2010	3.1	2011	7.4	2011	45.4	2000	13.0
Eritrea	2010	50.3	2010	1.9	2010	15.3	2010	68.7	2011	32.8	2002	14.0
Estonia									2011	24.0	2012	4.6
Ethiopia	2014	40.4	2014	2.6	2014	8.7	2011	52.0	2011	19.2	2005	20.0
Fiji							2004	39.8	2011	26.8	2004	10.2
Finland									2011	17.7	2012	4.2
France									2011	18.9	2011	6.6
Gabon	2012	17.5	2012	7.7	2012	3.4	2012	6.0	2011	50.8	2000	14.0
Gambia	2013	24.5	2013	2.7	2013	11.5	2013	46.8	2011	45.3	2010	10.2
Georgia	2009	11.3	2009	19.9	2009	1.6	2009	54.8	2011	27.5	2012	6.5
Germany	2005	1.3	2005	3.5	2005	1.0			2011	17.9	2012	6.9
Ghana	2014	18.8	2014	2.6	2014	4.7	2014	52.3	2011	56.4	2011	10.7
Greece									2011	20.4	2012	9.8
Grenada							1998	39.0	2011	25.8	2011	8.8
Guatemala	2009	48.0	2009	4.9	2009	1.1	2008–09	49.6	2011	25.7	2008–09	11.4
Guinea	2012	31.3	2012	3.8	2012	9.9	2012	20.5	2011	48.4	2005	12.0
Guinea-Bissau	2014	27.6	2014	2.3	2014	6.0	2014	52.5	2011	44.6	2010	11.0

Continued

Table A1.1 continued

Country	Year of stunting data	Stunting (%)	Year of over-weight data	Over-weight (%)	Year of wast-ing data	Wasting (%)	Year of exclu-sive breast-feeding data	Exclu-sive breast-feeding (%)	Year of anemia data	Anemia (%)	Year of low birth weight data	Low birth weight (%)
Guyana	2014	12.0	2014	5.3	2014	6.4	2014	23.3	2011	33.7	2009	14.3
Haiti	2012	21.9	2012	3.6	2012	5.2	2012	39.7	2011	37.1	2012	23.0
Honduras	2012	22.7	2012	5.2	2012	1.4	2011–12	31.2	2011	18.0	2011–12	9.9
Hungary									2011	23.5	2012	8.6
Iceland									2011	17.0	2012	4.2
India	2006	47.9	2006	1.9	2006	20.0	2005–06	46.4	2011	48.1	2005–06	28.0
Indonesia	2013	36.4	2013	11.5	2013	13.5	2012	41.5	2011	22.5	2007	9.0
Iran	2011	6.8			2011	4.0	2010–11	53.1	2011	28.1	2011	7.7
Iraq	2011	22.6	2011	11.8	2011	7.4	2011	19.6	2011	31.3	2011	13.4
Ireland									2011	17.2	2011	5.2
Israel									2011	17.1	2012	8.0
Italy									2011	19.4	2010	7.3
Jamaica	2012	5.7	2012	7.8	2012	3.0	2011	23.8	2011	24.4	2011	11.3
Japan	2010	7.1	2010	1.5	2010	2.3			2011	22.1	2012	9.6
Jordan	2012	7.8	2012	4.7	2012	2.4	2012	22.7	2011	28.4	2007	13.0
Kazakhstan	2010	13.1	2010	13.3	2010	4.1	2010–11	31.8	2011	29.8	2012	6.1
Kenya	2014	26.0	2014	4.1	2014	4.0	2014	61.4	2011	25.0	2008–09	8.0
Kiribati							2009	69.0	2011	20.9	2011	8.3
Kuwait	2014	5.8	2014	8.7	2014	2.4	1996	11.9	2011	22.4	2011	8.3
Kyrgyzstan	2014	12.9	2014	7.0	2014	2.8	2014	41.1	2011	32.5	2012	6.3
Lao People's Democratic Republic	2011	43.8	2011	2.0	2011	6.4	2011	40.4	2011	31.0	2011–12	14.8
Latvia									2011	23.5	2012	4.6
Lebanon							2000	26.6	2011	27.5	2009	11.5
Lesotho	2014	33.2	2014	7.4	2014	2.8	2014	66.9	2011	26.8	2009	10.7
Liberia	2013	32.1	2013	3.2	2013	5.6	2013	55.2	2011	49.3	2007	14.0
Libya	2007	21	2007	22.4	2007	6.5			2011	27.9		
Liechtenstein									2011			
Lithuania									2011	23.0	2012	4.8
Luxembourg									2011	17.6	2011	7.1
Madagascar	2009	49.2					2012–13	41.9	2011	31.8	2008–09	16.0
Malawi	2014	42.4	2014	5.1	2014	3.8	2014	70.2	2011	28.8	2010	13.5
Malaysia	2006	17.2					1996	29.0	2011	20.7	2012	11.1
Maldives	2009	20.3	2009	6.5	2009	10.2	2009	47.8	2011	36.6	2009	11.0
Mali	2006	38.5	2006	4.7	2006	15.3	2006	37.8	2011	56.2	2010	18.0
Malta									2011	17.1	2011	7.0
Marshall Islands							2007	31.3	2011	20.0	2007	18.0
Mauritania	2012	22.0	2012	1.2	2012	11.6	2011	26.9	2011	39.0	2011	34.7
Mauritius							2002	21.0	2011	23.4	2003	14.0
Mexico	2012	13.6	2012	9.0	2012	1.6	2012	14.4	2011	14.4	2012	9.15
Micronesia							1999	60.0	2011	18.3	2009	11.1
Monaco									2011		2012	6.0
Mongolia	2013	10.8	2013	10.5	2013	1.0	2013–14	47.1	2011	20.2	2010	4.7

Table A1.1 continued

Country	Year of stunting data	Stunting (%)	Year of over-weight data	Over-weight (%)	Year of wast-ing data	Wasting (%)	Year of exclu-sive breast-feeding data	Exclu-sive breast-feeding (%)	Year of anemia data	Anemia (%)	Year of low birth weight data	Low birth weight (%)
Montenegro	2013	9.4	2013	22.3	2013	2.8	2013	16.8	2011	24.1	2012	5.1
Morocco	2011	14.9	2011	10.7	2011	2.3	2010–11	27.8	2011	33.1	2003–04	15
Mozambique	2011	43.1	2011	7.9	2011	6.1	2013	41.0	2011	44.2	2011	16.9
Myanmar	2009	35.1	2009	2.6	2009	7.9	2009–10	23.6	2011	30.3	2009–10	8.6
Namibia	2013	23.1	2013	4.1	2013	7.1	2013	48.5	2011	32.7	2006–07	16
Nauru	2007	24.0	2007	2.8	2007	1.0	2007	67.2	2011		2007	27
Nepal	2011	40.5	2011	1.5	2011	11.2	2014	56.9	2011	36.1	2011	17.8
Netherlands									2011	18.1	2010	6.3
New Zealand									2011	14.8	2012	5.7
Nicaragua	2006	23.0	2006	6.2	2006	1.5	2011–12	31.7	2011	12.9	2011	7.6
Niger	2012	43.0	2012	3.0	2012	18.7	2012	23.3	2011	46.7	2006	27
Nigeria	2014	32.9	2014	1.8	2014	7.9	2013	17.4	2011	48.5	2011	15.2
Norway									2011	17.3	2009	5.2
Oman	2009	9.8	2009	1.7	2009	7.1			2011	35.1	2012	10
Pakistan	2012	45.0	2012	4.8	2012	10.5	2013	37.7	2011	51.1	2006–07	32
Palau									2011		2010	6.9
Panama	2008	19.1			2008	1.2	2014	21.5	2011	24.8	2011	8.3
Papua New Guinea	2010	49.5	2010	13.8	2010	14.3	2006	56.1	2011	29.8	2005	11
Paraguay	2012	10.9	2012	11.7	2012	2.6	2008	24.4	2011	19.3	2009	6.3
Peru	2013	17.5	2012	7.2	2013	0.4	2014	68.4	2011	18.5	2011	6.9
Philippines	2013	30.3	2013	5.0	2013	7.9	2008	34.0	2011	25.4	2008	21
Poland									2011	23.3	2012	5.7
Portugal									2011	18.9	2012	8.5
Qatar							2012	29.3	2011	27.9	2010	7.6
Republic of Korea	2010	2.5	2010	7.3	2010	1.2			2011	19.4	2006	4.4
Republic of Moldova	2012	6.4	2012	4.9	2012	1.9	2012	36.4	2011	26.0	2012	5.8
Romania							2004	15.8	2011	24.3	2012	8.4
Russian Federation									2011	21.4	2012	6.1
Rwanda	2015	37.9	2015	7.7	2015	2.2	2014-15	87.3	2011	17.4	2010	7.1
Saint Kitts and Nevis									2011		2011	10.4
Saint Lucia	2012	2.5	2012	6.3	2012	3.7			2011	26.4	2011	10.1
Saint Vin-cent and the Grenadines									2011	25.3	2011	10.6
Samoa							2009	51.3	2011	17.7	2009	10.2
San Marino									2011		2011	10
Sao Tome and Principe	2008	31.6	2008	11.6	2008	11.2	2008–09	51.4	2011	42.7	2008–09	9.9
Saudi Arabia	2005	9.3	2005	6.1	2005	11.8			2011	40.3	2012	8.8
Senegal	2014	19.4	2014	1.3	2014	5.8	2014	33.0	2011	57.5	2010–11	18.6

Continued

Table A1.1 continued

Country	Year of stunting data	Stunting (%)	Year of over-weight data	Over-weight (%)	Year of wast-ing data	Wasting (%)	Year of exclu-sive breast-feeding data	Exclu-sive breast-feeding (%)	Year of anemia data	Anemia (%)	Year of low birth weight data	Low birth weight (%)
Serbia	2014	6.0	2014	13.9	2014	3.9	2014	12.8	2011	24.9	2011	6.1
Seychelles	2012	7.9	2012	10.2	2012	4.3			2011	21.2	.	
Sierra Leone	2013	37.9	2013	8.9	2013	9.4	2013	32.0	2011	45.2	2010	10.5
Singapore									2011	22.0	2011	9.5
Slovakia									2011	23.3	2012	7.9
Slovenia									2011	23.6	2012	6.0
Solomon Islands	2007	32.8	2007	2.5	2007	4.3	2007	73.7	2011	25.3	2007	12.5
Somalia	2009	25.9	2009	2.9	2009	14.9	2009	5.3	2011	42.6	.	
South Africa	2008	23.9			2008	4.7	2003	8.3	2011	27.6	.	
South Sudan	2010	31.1	2010	6.0	2010	22.7	2010	45.1	2011		.	
Spain									2011	18.1	2012	8.2
Sri Lanka	2012	14.7	2012	0.6	2012	21.4	2006–07	75.8	2011	25.7	2006–07	17.0
Sudan	2014	38.2	2014	3.0	2014	16.3	2014	55.4	2011	31.5	.	
Suriname	2010	8.8	2010	4.0	2010	5.0	2010	2.8	2011	24.9	2010	13.9
Swaziland	2014	25.5	2014	9.0	2014	2.0	2014	63.8	2011	27.8	2010	8.7
Sweden									2011	17.8	2011	4.5
Switzerland									2011	19.1	2012	6.7
Syrian Arab Republic	2009	27.5	2009	17.9	2009	11.5	2009	42.6	2011	30.9	2009	10.3
Tajikistan	2012	26.8	2012	6.6	2012	9.9	2012	34.3	2011	24.6	2005	10.0
Thailand	2012	16.3	2012	10.9	2012	6.7	2012	12.3	2011	23.8	2010	11.3
The former Yugoslav Republic of Macedonia	2011	4.9	2011	12.4	2011	1.8	2011	23.0	2011	19.3	2011	5.5
Timor-Leste	2009	57.7	2009	5.8	2009	18.9	2009–10	51.5	2011	22.5	2003	12.0
Togo	2014	27.5	2014	2.0	2014	6.7	2013-14	57.5	2011	52.7	2010	11.1
Tonga	2012	8.1	2012	17.3	2012	5.2	2012	52.2	2011	18.6	.	
Trinidad and Tobago							2006	12.8	2011	25.3	2011	11.9
Tunisia	2012	10.1	2012	14.3	2012	2.8	2011–12	8.5	2011	28.0	2011–12	6.9
Turkey	2013	9.5	2013	10.9	2013	1.7	2013	30.1	2011	28.8	2008	11.0
Turkmeni-stan							2000	12.7	2011	32.1	2011	4.8
Tuvalu	2007	10.0	2007	6.3	2007	3.3	2007	34.7	2011		2007	6.1
Uganda	2012	34.2	2012	5.8	2012	4.3	2011	63.2	2011	26.7	2011	11.8
Ukraine							2012	19.7	2011	22.8	2011	5.3
United Arab Emirates							1995	34.0	2011	26.2	2009	6.1
United Kingdom									2011	14.7	2011	7.0
United Republic of Tanzania	2014	34.7	2013	5.2	2014	3.8	2014	41.1	2011	39.6	2010	8.4
United States	2012	2.1	2012	6.0	2012	0.5			2011	12.0	2010	8.1
Uruguay	2011	10.7	2011	7.2	2011	1.3			2011	17.4	2012	8.1

Table A1.1 continued

Country	Year of stunting data	Stunting (%)	Year of over-weight data	Over-weight (%)	Year of wast-ing data	Wasting (%)	Year of exclu-sive breast-feeding data	Exclu-sive breast-feeding (%)	Year of anemia data	Anemia (%)	Year of low birth weight data	Low birth weight (%)
Uzbekistan	2006	19.6	2006	12.8	2006	4.5	2006	26.4	2011	51.7	2006	5.0
Vanuatu	2013	28.5	2013	4.6	2013	4.4	2013	72.6	2011	21.7	2007	10.0
Venezuela	2009	13.4	2009	6.4	2009	4.1	1998	7.1	2011	22.5	2011	8.6
Viet Nam	2013	19.4	2013	4.6	2013	5.7	2014	24.3	2011	14.1	2010–11	5.1
Yemen	2011	46.6	2011	1.5	2011	13.3	2013	10.3	2011	37.5	2010	32.0
Zambia	2013	40.0	2013	6.2	2013	6.3	2013-14	72.5	2011	29.2	2007	11.0
Zimbabwe	2014	27.6	2014	3.6	2014	3.3	2014	41.0	2011	28.4	2010–11	11.0

Source: Stunting, overweight, and wasting: UNICEF, WHO, and World Bank (2015), July update; exclusive breastfeeding: UNICEF (2015a), June update; anemia: WHO (2015g); low birth weight: UNICEF (2015a).

TABLE A1.2 Latest on-/off-course status for five of six WHA indicators for all countries

Country	Year of stunting data	Stunting target progress	Year of overweight data	Over-weight target progress	Year of wasting data	Wasting target progress	Year of exclusive breast-feeding data	Exclusive breast-feeding target progress	Year of anemia data	Anemia target progress
Afghanistan	2013	On course: Good progress	2013	On course: At risk	2013	Off course			2011	Off course
Albania	2009	On course: Good progress	2009	Off course: Some progress	2009	Off course	2009	On course	2011	Off course
Algeria	2012	On course: Good progress	2012	Off course: Some progress	2012	On course	2013	On course	2011	Off course
Andorra									2011	Off course
Angola					2007	Off course			2011	Off course
Antigua and Barbuda									2011	Off course
Argentina					2005	On course			2011	Off course
Armenia	2010	Off course: No progress	2010	Off course: No progress	2010	On course	2010	Off course: Some progress	2011	Off course
Australia					2007	On course			2011	Off course
Austria									2011	Off course
Azerbaijan	2013	On course: Good progress	2013	Off course: Some progress	2013	On course	2013	Off course: No progress	2011	Off course
Bahamas									2011	Off course
Bahrain									2011	Off course
Bangladesh	2014	On course: Good progress	2014	On course: Good progress	2014	Off course	2014	Off course: No progress	2011	Off course
Barbados					2012	Off course	2012		2011	Off course
Belarus					2005	On course	2012	Off course: Some progress	2011	Off course
Belgium									2011	Off course
Belize	2011	Off course: Some progress	2011	Off course: Some progress	2011	On course	2011	Off course: Some progress	2011	Off course

Continued

Table A1.2 continued

Country	Year of stunting data	Stunting target progress	Year of overweight data	Over-weight target progress	Year of wasting data	Wasting target progress	Year of exclusive breast-feeding data	Exclusive breast-feeding target progress	Year of anemia data	Anemia target progress
Benin	2014	Off course: Some progress	2014	On course: Good progress	2014	On course	2014	On course	2011	Off course
Bhutan	2010	Off course: Some progress	2010	Off course: No progress	2010	Off course			2011	Off course
Bolivia	2012	On course: Good progress	2008	Off course: Some progress	2012	On course	2012	On course	2011	Off course
Bosnia and Herzegovina	2012	Off course: Some progress	2012	Off course: No progress	2012	On course	2012	Off course: No progress	2011	Off course
Botswana	2007	Off course: No progress	2007	Off course: No progress	2007	Off course			2011	Off course
Brazil					2007	On course			2011	Off course
Brunei Darus-salam					2009	On course			2011	Off course
Bulgaria									2011	Off course
Burkina Faso	2012	Off course: Some progress	2010	On course: At risk	2012	Off course	2014	On course	2011	Off course
Burundi	2010	Off course: Some progress	2010	On course: At risk	2010	Off course	2010	On course	2011	On course
Cabo Verde									2011	Off course
Cambodia	2014	On course: Good progress	2014	On course: At risk	2014	Off course	2014	Off course: No progress	2011	Off course
Cameroon	2011	Off course: Some progress	2011	On course: Good progress	2011	Off course	2011	Off course: No progress	2011	Off course
Canada									2011	Off course
Central Afri-can Republic	2010	Off course: Some progress	2010	On course: Good progress	2010	Off course	2010	On course	2011	Off course
Chad	2010	Off course: Some progress	2010	On course: Good progress	2010	Off course			2011	Off course
Chile	2014	On course: Good progress	2014	Off course: Some progress	2014	On course			2011	Off course
China	2010	On course: Good progress	2010	On course: At risk	2010	On course			2011	Off course
Colombia	2010	On course: Good progress	2010	On course: Good progress	2010	On course	2010	Off course: No progress	2011	On course
Comoros	2012	Off course: Some progress	2012	Off course: Some progress	2012	Off course			2011	Off course
Congo	2011	Off course: Some progress	2011	On course: Good progress	2011	Off course	2012	Off course: No progress	2011	Off course
Costa Rica					2008	On course			2011	Off course
Cote d'Ivoire	2012	Off course: Some progress	2012	On course: Good progress	2012	Off course	1996	Off course: Some progress	2011	Off course
Croatia									2011	Off course

Table A1.2 continued

Country	Year of stunting data	Stunting target progress	Year of overweight data	Over-weight target progress	Year of wasting data	Wasting target progress	Year of exclusive breast-feeding data	Exclusive breast-feeding target progress	Year of anemia data	Anemia target progress
Cuba							2014	Off course: Reversal	2011	Off course
Cyprus									2011	Off course
Czech Republic									2011	Off course
Democratic People's Republic of Korea	2012	On course: Good progress	2009	On course: Good progress	2012	On course			2011	Off course
Democratic Republic of the Congo	2013	Off course: Some progress	2013	On course: Good progress	2013	Off course	2014	On course	2011	Off course
Denmark									2011	Off course
Djibouti	2012	Off course: No progress	2012	Off course: Some progress	2012	Off course			2011	Off course
Dominica									2011	Off course
Dominican Republic	2013	On course: Good progress	2013	Off course: Some progress	2013	On course	2014	Off course: No progress	2011	Off course
Ecuador	2012	Off course: Some progress	2012	Off course: No progress	2012	On course			2011	Off course
Egypt	2014	On course: Good progress	2014	Off course: Some progress	2014	Off course	2014	Off course: Reversal	2011	Off course
El Salvador	2008	Off course: Some progress	2008	On course: Good progress	2008	On course	2014	On course	2011	Off course
Equatorial Guinea	2010	Off course: Some progress	2010	Off course: Some progress	2010	On course			2011	Off course
Eritrea	2010	Off course: No progress	2010	On course: At risk	2010	Off course			2011	Off course
Estonia									2011	Off course
Ethiopia	2014	Off course: Some progress	2014	On course: At risk	2014	Off course	2011	Off course: Some progress	2011	Off course
Fiji									2011	Off course
Finland									2011	Off course
France									2011	Off course
Gabon	2012	Off course: Some progress	2012	Off course: No progress	2012	On course			2011	Off course
Gambia	2013	Off course: No progress	2013	On course: At risk	2013	Off course	2013	On course	2011	Off course
Georgia	2009	On course: Good progress	2009	Off course: No progress	2009	On course	2009	On course	2011	Off course
Germany					2005	On course			2011	Off course
Ghana	2014	On course: Good progress	2014	On course: Good progress	2014	On course	2014	On course	2011	Off course
Greece									2011	Off course
Grenada									2011	Off course

Continued

Table A1.2 continued

Country	Year of stunting data	Stunting target progress	Year of overweight data	Over-weight target progress	Year of wasting data	Wasting target progress	Year of exclusive breast-feeding data	Exclusive breast-feeding target progress	Year of anemia data	Anemia target progress
Guatemala	2009	Off course: Some progress	2009	On course: Good progress	2009	On course			2011	Off course
Guinea	2012	Off course: Some progress	2012	On course: Good progress	2012	Off course	2012	Off course: No progress	2011	Off course
Guinea-Bissau	2014	Off course: Some progress	2014	On course: Good progress	2014	Off course	2014	On course	2011	Off course
Guyana	2014	On course: Good progress	2014	On course: Good progress	2014	Off course	2014	Off course: No progress	2011	Off course
Haiti	2012	Off course: Some progress	2012	On course: At risk	2012	Off course	2012	Off course: No progress	2011	Off course
Honduras	2012	Off course: Some progress	2012	On course: At risk	2012	On course	2012	Off course: No progress	2011	Off course
Hungary									2011	Off course
Iceland									2011	Off course
India	2006	Off course: Some progress	2006	On course: Good progress	2006	Off course			2011	Off course
Indonesia	2013	Off course: Some progress	2013	Off course: Some progress	2013	Off course	2012	On course	2011	Off course
Iran	2011	Off course: Some progress			2011	On course			2011	Off course
Iraq	2011	Off course: Some progress	2011	Off course: No progress	2011	Off course	2011	Off course: No progress	2011	Off course
Ireland									2011	Off course
Israel									2011	Off course
Italy									2011	Off course
Jamaica	2012	Off course: Some progress	2012	Off course: Some progress	2012	On course	2011	Off course: Some progress	2011	Off course
Japan					2010	On course			2011	Off course
Jordan	2012	On course: Good progress	2012	On course: At risk	2012	On course	2012	Off course: No progress	2011	Off course
Kazakhstan	2010	Off course: Some progress	2010	Off course: No progress	2010	On course	2011	On course	2011	Off course
Kenya	2014	On course: Good progress	2014	On course: Good progress	2014	On course	2014	On course	2011	On course
Kiribati									2011	Off course
Kuwait	2014	Off course: No progress	2014	Off course: Some progress	2014	On course			2011	Off course
Kyrgyzstan	2014	On course: Good progress	2014	Off course: Some progress	2014	On course	2014	Off course: Reversal	2011	Off course
Lao People's Democratic Republic	2011	Off course: Some progress	2011	On course: Good progress	2011	Off course	2011	On course	2011	Off course
Latvia									2011	Off course

Table A1.2 continued

Country	Year of stunting data	Stunting target progress	Year of overweight data	Over-weight target progress	Year of wasting data	Wasting target progress	Year of exclusive breast-feeding data	Exclusive breast-feeding target progress	Year of anemia data	Anemia target progress
Lebanon									2011	Off course
Lesotho	2014	Off course: Some progress	2014	Off course: No progress	2014	On course	2014	On course	2011	Off course
Liberia	2013	On course: Good progress	2013	On course: Good progress	2013	Off course	2013	On course	2011	Off course
Libya					2007	Off course			2011	Off course
Liechtenstein									2011	
Lithuania									2011	Off course
Luxembourg									2011	Off course
Madagascar	2009	Off course: Some progress					2013	Off course: No progress	2011	Off course
Malawi	2014	Off course: Some progress	2014	On course: Good progress	2014	On course	2014	Off course: No progress	2011	Off course
Malaysia	2006	Off course: Some progress							2011	Off course
Maldives	2009	On course: Good progress	2009	On course: At risk	2009	Off course			2011	Off course
Mali	2006	Off course: Some progress	2006	On course: At risk	2006	Off course			2011	Off course
Malta									2011	Off course
Marshall Islands									2011	Off course
Mauritania	2012	Off course: Some progress	2012	On course: Good progress	2012	Off course	2011	On course	2011	Off course
Mauritius									2011	Off course
Mexico	2012	Off course: Some progress	2012	Off course: No progress	2012	On course			2011	Off course
Micronesia									2011	Off course
Monaco										
Mongolia	2013	On course: Good progress	2013	Off course: No progress	2013	On course	2013	Off course: Reversal	2011	Off course
Montenegro	2013	Off course: No progress	2013	Off course: No progress	2013	On course	2013	Off course: No progress	2011	Off course
Morocco	2011	On course: Good progress	2011	Off course: Some progress	2011	On course			2011	Off course
Mozambique	2011	Off course: Some progress	2011	Off course: No progress	2011	Off course	2013	Off course: No progress	2011	Off course
Myanmar	2009	Off course: Some progress	2009	On course: At risk	2009	Off course			2011	Off course
Namibia	2013	Off course: Some progress	2013	On course: Good progress	2013	Off course	2013	On course	2011	Off course
Nauru					2007	On course				
Nepal	2011	On course: Good progress	2011	On course: At risk	2011	Off course	2014	Off course: Reversal	2011	Off course
Netherlands									2011	Off course
New Zealand									2011	Off course

Continued

Table A1.2 continued

Country	Year of stunting data	Stunting target progress	Year of overweight data	Over-weight target progress	Year of wasting data	Wasting target progress	Year of exclusive breast-feeding data	Exclusive breast-feeding target progress	Year of anemia data	Anemia target progress
Nicaragua	2006	Off course: Some progress	2006	On course: Good progress	2006	On course	2012	Off course: No progress	2011	Off course
Niger	2012	Off course: Some progress	2012	On course: At risk	2012	Off course	2012	On course	2011	Off course
Nigeria	2014	Off course: Some progress	2014	On course: Good progress	2014	Off course	2013	Off course: Some progress	2011	Off course
Norway									2011	Off course
Oman	2009	Off course: Some progress	2009	On course: At risk	2009	Off course			2011	Off course
Pakistan	2012	Off course: No progress	2012	On course: At risk	2012	Off course	2013	Off course: No progress	2011	Off course
Palau										
Panama	2008	Off course: Some progress			2008	On course			2011	Off course
Papua New Guinea	2010	Off course: No progress	2010	Off course: No progress	2010	Off course			2011	Off course
Paraguay	2012	On course: Good progress	2012	Off course: No progress	2012	On course			2011	Off course
Peru	2013	On course: Good progress	2012	Off course: Some progress	2013	On course	2014	Off course: Some progress	2011	Off course
Philippines	2013	On course: Good progress	2013	On course: At risk	2013	Off course			2011	Off course
Poland									2011	Off course
Portugal									2011	Off course
Qatar									2011	Off course
Republic of Korea	2010	On course: Good progress	2010	Off course: No progress	2010	On course			2011	Off course
Republic of Moldova	2012	On course: Good progress	2012	On course: Good progress	2012	On course	2012	Off course: No progress	2011	Off course
Romania									2011	Off course
Russian Federation									2011	Off course
Rwanda	2015	Off course: Some progress	2015	Off course: No progress	2015	On course	2015	On course	2011	Off course
Saint Kitts and Nevis										
Saint Lucia					2012	On course			2011	Off course
Saint Vincent and the Grenadines									2011	Off course
Samoa									2011	Off course
San Marino										
Sao Tome and Principe	2008	Off course: Some progress	2008	Off course: No progress	2008	Off course	2009	Off course: No progress	2011	Off course
Saudi Arabia					2005	Off course			2011	Off course
Senegal	2014	Off course: No progress	2014	On course: At risk	2014	Off course	2014	Off course: No progress	2011	Off course

Table A1.2 continued

Country	Year of stunting data	Stunting target progress	Year of overweight data	Over-weight target progress	Year of wasting data	Wasting target progress	Year of exclusive breast-feeding data	Exclusive breast-feeding target progress	Year of anemia data	Anemia target progress
Serbia	2014	On course: Good progress	2014	Off course: Some progress	2014	On course	2014	Off course: No progress	2011	Off course
Seychelles					2012	On course			2011	Off course
Sierra Leone	2013	On course: Good progress	2013	Off course: Some progress	2013	Off course	2013	Off course: No progress	2011	Off course
Singapore									2011	Off course
Slovakia									2011	Off course
Slovenia									2011	Off course
Solomon Islands					2007	On course			2011	Off course
Somalia	2009	Off course: Some progress	2009	On course: Good progress	2009	Off course	2009	Off course: No progress	2011	Off course
South Africa	2008	Off course: Some progress			2008	On course			2011	Off course
South Sudan	2010	Off course: Some progress	2010	On course: Good progress	2010	Off course				
Spain									2011	Off course
Sri Lanka	2012	Off course: Some progress	2012	On course: Good progress	2012	Off course			2011	Off course
Sudan	2014	Off course: No progress	2014	On course: Good progress	2014	Off course	2014	On course	2011	Off course
Suriname	2010	On course: Good progress	2010	On course: At risk	2010	Off course	2010	Off course: No progress	2011	Off course
Swaziland	2014	On course: Good progress	2014	Off course: Some progress	2014	On course	2014	On course	2011	Off course
Sweden									2011	Off course
Switzerland									2011	Off course
Syrian Arab Republic	2009	Off course: No progress	2009	Off course: Some progress	2009	Off course	2009	On course	2011	Off course
Tajikistan	2012	Off course: Some progress	2012	On course: Good progress	2012	Off course	2012	On course	2011	Off course
Thailand	2012	Off course: No progress	2012	Off course: No progress	2012	Off course	2012	Off course: Some progress	2011	Off course
The former Yugoslav Republic of Macedonia	2011	On course: Good progress	2011	Off course: No progress	2011	On course			2011	Off course
Timor-Leste	2009	Off course: No progress	2009	On course: At risk	2009	Off course			2011	Off course
Togo	2014	Off course: Some progress	2014	On course: At risk	2014	Off course	2014	Off course: No progress	2011	Off course
Tonga					2012	Off course		.	2011	Off course
Trinidad and Tobago							.		2011	Off course

Continued

Table A1.2 continued

Country	Year of stunting data	Stunting target progress	Year of overweight data	Overweight target progress	Year of wasting data	Wasting target progress	Year of exclusive breastfeeding data	Exclusive breastfeeding target progress	Year of anemia data	Anemia target progress
Tunisia	2012	On course: Good progress	2012	Off course: No progress	2012	On course	2012	Off course: No progress	2011	Off course
Turkey	2013	On course: Good progress	2013	Off course: No progress	2013	On course	2013	Off course: Reversal	2011	Off course
Turkmenistan									2011	Off course
Tuvalu					2007	On course			2011	
Uganda	2012	Off course: Some progress	2012	On course: Good progress	2012	On course	2011	On course	2011	Off course
Ukraine							2012	Off course: Some progress	2011	Off course
United Arab Emirates									2011	Off course
United Kingdom									2011	Off course
United Republic of Tanzania	2014	Off course: Some progress	2013	On course: Good progress	2014	On course	2014	Off course: No progress	2011	Off course
United States	2012	On course: Good progress	2012	On course: Good progress	2012	On course			2011	Off course
Uruguay	2011	Off course: Some progress	2011	Off course: Some progress	2011	On course			2011	Off course
Uzbekistan	2006	On course: Good progress	2006	Off course: No progress	2006	On course	2006		2011	Off course
Vanuatu	2013	Off course: No progress	2013	On course: Good progress	2013	On course	2013	On course	2011	On course
Venezuela	2009	Off course: Some progress	2009	On course: At risk	2009	On course			2011	Off course
Viet Nam	2013	On course: Good progress	2013	On course: Good progress	2013	Off course	2014	On course	2011	On course
Yemen	2011	Off course: Some progress	2011	On course: Good progress	2011	Off course			2011	Off course
Zambia	2013	Off course: Some progress	2013	On course: Good progress	2013	Off course	2014	On course	2011	Off course
Zimbabwe	2014	Off course: Some progress	2014	On course: Good progress	2014	On course	2014	On course	2011	Off course

Source: Categorization of on/off course for stunting and overweight was developed by the *Global Nutrition Report* team in consultation with WHO and UNICEF. Categorization of on/off course for wasting, exclusive breastfeeding, and anemia was developed by WHO and UNICEF.

TABLE A1.3 Prevalence of obesity in 2010 and 2014 and assessment of progress for all countries

	Both sexes				Males				Females			
Country	2010 (%)	2014 (%)	Change	Status	2010 (%)	2014 (%)	Change	Status	2010 (%)	2014 (%)	Change	Status
Afghanistan	2.4	2.9	0.5	Off course	1.4	1.8	0.4	Off course	3.3	4.1	0.8	Off course
Albania	16.1	17.6	1.5	Off course	14.6	16.5	1.9	Off course	17.5	18.7	1.2	Off course
Algeria	22.6	24.8	2.2	Off course	16.6	18.8	2.2	Off course	28.7	30.8	2.1	Off course
Andorra	27.5	29.5	2.0	Off course	26.1	28.5	2.4	Off course	28.8	30.5	1.7	Off course
Angola	8.3	10.2	1.9	Off course	4.6	6.0	1.4	Off course	12.0	14.2	2.2	Off course
Antigua and Barbuda	28.0	30.9	2.9	Off course	19.4	22.8	3.4	Off course	36.4	38.7	2.3	Off course
Argentina	23.7	26.3	2.6	Off course	21.0	23.6	2.6	Off course	26.2	28.9	2.7	Off course
Armenia	17.8	19.5	1.7	Off course	15.1	17.2	2.1	Off course	20.7	22.0	1.3	Off course
Australia	26.0	28.6	2.6	Off course	25.6	28.4	2.8	Off course	26.3	28.8	2.5	Off course
Austria	16.7	18.4	1.7	Off course	18.5	20.5	2.0	Off course	15.0	16.3	1.3	Off course
Azerbaijan	19.4	22.5	3.1	Off course	15.5	19.0	3.5	Off course	23.2	26.1	2.9	Off course
Bahamas	33.5	36.2	2.7	Off course	26.4	29.7	3.3	Off course	40.2	42.5	2.3	Off course
Bahrain	32.5	35.1	2.6	Off course	27.7	30.5	2.8	Off course	40.5	42.8	2.3	Off course
Bangladesh	2.9	3.6	0.7	Off course	1.7	2.1	0.4	Off course	4.2	5.1	0.9	Off course
Barbados	28.3	31.3	3.0	Off course	20.7	24.4	3.7	Off course	35.9	38.2	2.3	Off course
Belarus	21.0	23.4	2.4	Off course	18.1	21.0	2.9	Off course	23.6	25.5	1.9	Off course
Belgium	18.7	20.2	1.5	Off course	20.6	22.3	1.7	Off course	16.9	18.2	1.3	Off course
Belize	20.8	22.5	1.7	Off course	14.4	16.1	1.7	Off course	27.2	28.8	1.6	Off course
Benin	8.0	9.3	1.3	Off course	3.5	4.1	0.6	Off course	12.4	14.5	2.1	Off course
Bhutan	5.5	6.7	1.2	Off course	3.9	4.9	1.0	Off course	7.5	8.8	1.3	Off course
Bolivia	15.3	17.1	1.8	Off course	10.6	12.1	1.5	Off course	19.9	22.2	2.3	Off course
Bosnia and Herzegovina	16.8	17.9	1.1	Off course	14.5	16.3	1.8	Off course	19.0	19.4	0.4	Off course
Botswana	19.4	22.4	3.0	Off course	10.0	12.7	2.7	Off course	29.0	32.3	3.3	Off course
Brazil	17.8	20.0	2.2	Off course	15.1	17.3	2.2	Off course	20.4	22.7	2.3	Off course
Brunei Darussalam	15.9	18.1	2.2	Off course	13.4	16.2	2.8	Off course	18.4	20.1	1.7	Off course
Bulgaria	21.2	23.2	2.0	Off course	19.5	21.8	2.3	Off course	22.7	24.5	1.8	Off course
Burkina Faso	5.3	6.3	1.0	Off course	2.8	3.2	0.4	Off course	7.8	9.2	1.4	Off course
Burundi	2.0	2.6	0.6	Off course	0.6	0.7	0.1	Off course	3.5	4.5	1.0	Off course
Cabo Verde	11.0	13.0	2.0	Off course	6.9	8.6	1.7	Off course	15.1	17.4	2.3	Off course
Cambodia	2.3	3.2	0.9	Off course	1.2	1.7	0.5	Off course	3.4	4.6	1.2	Off course
Cameroon	9.8	11.4	1.6	Off course	4.9	5.8	0.9	Off course	14.7	17.1	2.4	Off course
Canada	25.9	28.0	2.1	Off course	24.6	26.8	2.2	Off course	27.2	29.1	1.9	Off course
Central African Republic	4.4	5.1	0.7	Off course	1.9	2.2	0.3	Off course	6.8	8.0	1.2	Off course
Chad	7.1	8.1	1.0	Off course	3.3	4.0	0.7	Off course	10.8	12.3	1.5	Off course
Chile	25.3	27.8	2.5	Off course	21.0	23.3	2.3	Off course	29.6	32.2	2.6	Off course
China	5.3	6.9	1.6	Off course	4.3	5.9	1.6	Off course	6.4	8.0	1.6	Off course
Colombia	19.0	21.0	2.0	Off course	14.2	16.1	1.9	Off course	23.6	25.7	2.1	Off course
Comoros	5.6	6.6	1.0	Off course	2.0	2.2	0.2	Off course	9.2	11.0	1.8	Off course
Congo	9.5	11.0	1.5	Off course	5.2	6.4	1.2	Off course	13.8	15.7	1.9	Off course
Costa Rica	21.9	24.3	2.4	Off course	17	19.2	2.2	Off course	27.1	29.5	2.4	Off course
Côte d'Ivoire	7.9	9.2	1.3	Off course	4.0	4.7	0.7	Off course	12.0	13.8	1.8	Off course
Croatia	21.4	23.3	1.9	Off course	20.1	22.5	2.4	Off course	22.7	24.1	1.4	Off course
Cuba	22.5	25.2	2.7	Off course	16.1	19.0	2.9	Off course	28.9	31.5	2.6	Off course

Continued

Table A1.3 continued

	Both sexes				Males				Females			
Country	2010 (%)	2014 (%)	Change	Status	2010 (%)	2014 (%)	Change	Status	2010 (%)	2014 (%)	Change	Status
Cyprus	22.0	23.8	1.8	Off course	20.0	21.9	1.9	Off course	24.2	25.7	1.5	Off course
Czech Republic	25.3	26.8	1.5	Off course	24.2	26.2	2.0	Off course	26.3	27.3	1.0	Off course
Democratic People's Republic of Korea	2.2	2.4	0.2	Off course	1.4	1.6	0.2	Off course	2.8	3.1	0.3	Off course
Democratic Republic of the Congo	3.7	4.4	0.7	Off course	1.4	1.6	0.2	Off course	5.9	7.1	1.2	Off course
Denmark	17.7	19.3	1.6	Off course	20.0	21.7	1.7	Off course	15.5	17.0	1.5	Off course
Djibouti	8.3	9.6	1.3	Off course	4.9	5.6	0.7	Off course	11.7	13.5	1.8	Off course
Dominica	23.0	25.8	2.8	Off course	15.8	18.5	2.7	Off course	30.1	33.0	2.9	Off course
Dominican Republic	21.0	23.9	2.9	Off course	15.2	18.2	3.0	Off course	26.8	29.5	2.7	Off course
Ecuador	16.8	18.7	1.9	Off course	12.6	14.4	1.8	Off course	20.9	22.9	2.0	Off course
Egypt	26.2	28.9	2.7	Off course	17.7	20.3	2.6	Off course	34.8	37.5	2.7	Off course
El Salvador	20.0	21.8	1.8	Off course	14.4	15.9	1.5	Off course	25.1	27.0	1.9	Off course
Equatorial Guinea	15.0	17.5	2.5	Off course	9.9	12.5	2.6	Off course	20.3	22.7	2.4	Off course
Eritrea	3.5	4.1	0.6	Off course	1.3	1.4	0.1	Off course	5.7	6.9	1.2	Off course
Estonia	21.2	22.6	1.4	Off course	20.0	22.2	2.2	Off course	22.3	22.9	0.6	Off course
Ethiopia	3.3	4.0	0.7	Off course	1.2	1.5	0.3	Off course	5.3	6.6	1.3	Off course
Fiji	35.0	36.4	1.4	Off course	29.4	30.8	1.4	Off course	40.9	42.3	1.4	Off course
Finland	19.0	20.6	1.6	Off course	19.8	21.6	1.8	Off course	18.3	19.6	1.3	Off course
France	22.0	23.9	1.9	Off course	21.8	23.8	2.0	Off course	22.3	24.0	1.7	Off course
Gabon	15.7	17.6	1.9	Off course	10.9	12.9	2.0	Off course	20.6	22.5	1.9	Off course
Gambia	9.0	10.9	1.9	Off course	4.7	5.8	1.1	Off course	13.2	15.8	2.6	Off course
Georgia	18.6	20.8	2.2	Off course	15.0	17.2	2.2	Off course	21.8	24.0	2.2	Off course
Germany	18.5	20.1	1.6	Off course	19.9	21.9	2.0	Off course	17.2	18.5	1.3	Off course
Ghana	10.1	12.2	2.1	Off course	4.2	5.4	1.2	Off course	16.0	18.9	2.9	Off course
Greece	21.3	22.9	1.6	Off course	20.0	21.9	1.9	Off course	22.6	23.8	1.2	Off course
Grenada	23.6	26.2	2.6	Off course	15.4	18.1	2.7	Off course	31.8	34.3	2.5	Off course
Guatemala	17.1	18.6	1.5	Off course	11.7	13.0	1.3	Off course	22.1	23.9	1.8	Off course
Guinea	5.8	6.8	1.0	Off course	2.8	3.2	0.4	Off course	8.8	10.3	1.5	Off course
Guinea–Bissau	6.1	7.2	1.1	Off course	3.0	3.6	0.6	Off course	9.2	10.8	1.6	Off course
Guyana	20.5	22.9	2.4	Off course	12.1	14.4	2.3	Off course	29.3	31.6	2.3	Off course
Haiti	10.4	11.9	1.5	Off course	6.0	7.2	1.2	Off course	14.6	16.6	2.0	Off course
Honduras	16.5	18.2	1.7	Off course	11.0	12.4	1.4	Off course	21.9	24.1	2.2	Off course
Hungary	22.5	24.0	1.5	Off course	22.1	24.0	1.9	Off course	22.8	23.9	1.1	Off course
Iceland	21.3	22.8	1.5	Off course	22.4	24.1	1.7	Off course	20.2	21.5	1.3	Off course
India	4.0	4.9	0.9	Off course	2.5	3.2	0.7	Off course	5.6	6.7	1.1	Off course
Indonesia	4.3	5.7	1.4	Off course	2.5	3.5	1.0	Off course	6.1	7.9	1.8	Off course
Iran	23.9	26.1	2.2	Off course	18.0	20.1	2.1	Off course	29.9	32.0	2.1	Off course
Iraq	21.0	23.8	2.8	Off course	14.7	17.2	2.5	Off course	27.5	30.5	3.0	Off course
Ireland	23.1	25.6	2.5	Off course	23.3	25.9	2.6	Off course	22.8	25.3	2.5	Off course
Israel	23.5	25.3	1.8	Off course	21.5	23.5	2.0	Off course	25.5	27.0	1.5	Off course
Italy	19.6	21.0	1.4	Off course	18.8	20.4	1.6	Off course	20.3	21.6	1.3	Off course
Jamaica	24.5	27.2	2.7	Off course	15.7	18.4	2.7	Off course	33.0	35.7	2.7	Off course
Japan	2.9	3.3	0.4	Off course	2.9	3.4	0.5	Off course	2.9	3.2	0.3	Off course
Jordan	28.1	30.5	2.4	Off course	20.4	22.7	2.3	Off course	36.2	38.6	2.4	Off course
Kazakhstan	21.2	23.4	2.2	Off course	18.8	21.6	2.8	Off course	23.4	25.0	1.6	Off course
Kenya	5.6	7.0	1.4	Off course	2.4	2.8	0.4	Off course	8.9	11.1	2.2	Off course

Table A1.3 continued

	Both sexes				Males				Females			
Country	**2010 (%)**	**2014 (%)**	**Change**	**Status**	**2010 (%)**	**2014 (%)**	**Change**	**Status**	**2010 (%)**	**2014 (%)**	**Change**	**Status**
Kiribati	39.2	40.6	1.4	Off course	31.5	32.9	1.4	Off course	47.2	48.5	1.3	Off course
Kuwait	36.8	39.7	2.9	Off course	32.5	35.5	3.0	Off course	43.2	45.9	2.7	Off course
Kyrgyzstan	13.0	14.4	1.4	Off course	10.1	11.5	1.4	Off course	15.7	17.3	1.6	Off course
Lao People's Democratic Republic	2.5	3.5	1.0	Off course	1.4	2.1	0.7	Off course	3.6	4.9	1.3	Off course
Latvia	22.2	23.7	1.5	Off course	19.6	22.0	2.4	Off course	24.4	25.1	0.7	Off course
Lebanon	28.4	31.9	3.5	Off course	23.0	26.3	3.3	Off course	34	37.7	3.7	Off course
Lesotho	12.8	14.2	1.4	Off course	3.4	4.1	0.7	Off course	21.8	24.0	2.2	Off course
Liberia	5.4	6.6	1.2	Off course	2.3	2.7	0.4	Off course	8.6	10.6	2.0	Off course
Libya	30.0	33.1	3.1	Off course	23.5	26.6	3.1	Off course	36.7	39.5	2.8	Off course
Liechtenstein												
Lithuania	23.8	25.9	2.1	Off course	20.3	23.1	2.8	Off course	26.7	28.3	1.6	Off course
Luxembourg	20.8	23.1	2.3	Off course	23.9	26.6	2.7	Off course	17.9	19.7	1.8	Off course
Madagascar	4.5	5.4	0.9	Off course	1.9	2.2	0.3	Off course	7.0	8.6	1.6	Off course
Malawi	4.2	5.3	1.1	Off course	1.4	1.6	0.2	Off course	7.0	8.9	1.9	Off course
Malaysia	10.5	13.3	2.8	Off course	7.9	10.6	2.7	Off course	13.0	16.0	3.0	Off course
Maldives	6.7	7.9	1.2	Off course	3.9	5.0	1.1	Off course	9.5	10.8	1.3	Off course
Mali	5.7	6.8	1.1	Off course	3.1	3.8	0.7	Off course	8.4	9.9	1.5	Off course
Malta	24.7	26.6	1.9	Off course	22.6	24.6	2.0	Off course	26.9	28.5	1.6	Off course
Marshall Islands	41.7	42.8	1.1	Off course	35.6	36.9	1.3	Off course	47.8	48.9	1.1	Off course
Mauritania	8.2	9.7	1.5	Off course	4.9	5.8	0.9	Off course	11.6	13.6	2.0	Off course
Mauritius	15.0	17.9	2.9	Off course	9.3	11.2	1.9	Off course	20.7	24.3	3.6	Off course
Mexico	25.9	28.1	2.2	Off course	20.7	22.8	2.1	Off course	30.7	33.1	2.4	Off course
Micronesia	35.6	37.2	1.6	Off course	29.2	31.0	1.8	Off course	42.4	43.7	1.3	Off course
Monaco												
Mongolia	14.4	16.7	2.3	Off course	12.2	14.6	2.4	Off course	16.5	18.8	2.3	Off course
Montenegro	18.7	20.0	1.3	Off course	17.7	19.3	1.6	Off course	19.8	20.7	0.9	Off course
Morocco	20.2	22.3	2.1	Off course	14.1	16.2	2.1	Off course	26.0	28.3	2.3	Off course
Mozambique	4.4	5.3	0.9	Off course	1.5	1.8	0.3	Off course	7.1	8.7	1.6	Off course
Myanmar	2.1	2.9	0.8	Off course	1.0	1.4	0.4	Off course	3.1	4.3	1.2	Off course
Namibia	16.8	18.9	2.1	Off course	7.3	9.2	1.9	Off course	25.7	28.2	2.5	Off course
Nauru	45.4	45.6	0.2	Off course	39.9	39.7	-0.2	On course	51.0	51.6	0.6	Off course
Nepal	2.7	3.3	0.6	Off course	1.6	1.8	0.2	Off course	3.8	4.6	0.8	Off course
Netherlands	18.0	19.8	1.8	Off course	19.4	21.4	2.0	Off course	16.7	18.3	1.6	Off course
New Zealand	26.5	29.2	2.7	Off course	24.8	27.7	2.9	Off course	28.1	30.8	2.7	Off course
Nicaragua	15.7	17.1	1.4	Off course	9.8	10.8	1.0	Off course	21.5	23.2	1.7	Off course
Niger	3.7	4.3	0.6	Off course	1.7	1.9	0.2	Off course	5.8	6.8	1.0	Off course
Nigeria	8.9	11.0	2.1	Off course	4.6	5.9	1.3	Off course	13.4	16.3	2.9	Off course
Norway	21.6	23.1	1.5	Off course	22.4	24.6	2.2	Off course	20.7	21.7	1.0	Off course
Oman	28.4	30.9	2.5	Off course	23.9	27.2	3.3	Off course	34.9	37.7	2.8	Off course
Pakistan	4.7	5.4	0.7	Off course	3.2	3.7	0.5	Off course	6.4	7.3	0.9	Off course
Palau	46.1	47.6	1.5	Off course	41.4	43.1	1.7	Off course	51.0	52.2	1.2	Off course
Panama	23.7	26.8	3.1	Off course	17.6	20.6	3.0	Off course	30.0	33.1	3.1	Off course
Papua New Guinea	26.2	27.9	1.7	Off course	20.9	22.6	1.7	Off course	31.7	33.4	1.7	Off course
Paraguay	14.5	16.3	1.8	Off course	11.6	13.1	1.5	Off course	17.5	19.5	2.0	Off course
Peru	18.5	21.1	2.6	Off course	13.5	15.8	2.3	Off course	23.5	26.5	3.0	Off course

Continued

Table A1.3 continued

	Both sexes				Males				Females			
Country	2010 (%)	2014 (%)	Change	Status	2010 (%)	2014 (%)	Change	Status	2010 (%)	2014 (%)	Change	Status
Philippines	4.1	5.1	1.0	Off course	2.8	3.6	0.8	Off course	5.5	6.6	1.1	Off course
Poland	23.1	25.2	2.1	Off course	21.0	23.5	2.5	Off course	25.1	26.7	1.6	Off course
Portugal	18.4	20.1	1.7	Off course	17.8	19.8	2.0	Off course	18.9	20.3	1.4	Off course
Qatar	38.1	42.3	4.2	Off course	35.4	40.0	4.6	Off course	46.5	49.7	3.2	Off course
Republic of Korea	4.2	5.8	1.6	Off course	3.5	4.8	1.3	Off course	4.9	6.7	1.8	Off course
Republic of Moldova	13.6	14.9	1.3	Off course	10.0	11.4	1.4	Off course	16.9	17.9	1.0	Off course
Romania	20.2	21.7	1.5	Off course	18.5	20.5	2.0	Off course	21.7	22.7	1.0	Off course
Russian Federation	22.2	24.1	1.9	Off course	17.6	20.3	2.7	Off course	26.2	27.4	1.2	Off course
Rwanda	3.1	4.0	0.9	Off course	1.0	1.2	0.2	Off course	5.2	6.6	1.4	Off course
Saint Kitts and Nevis	25.7	28.3	2.6	Off course	18.3	21.2	2.9	Off course	33.1	35.3	2.2	Off course
Saint Lucia	23.6	26.9	3.3	Off course	16.3	19.7	3.4	Off course	30.7	33.9	3.2	Off course
Saint Vincent and the Grenadines	21.8	24.3	2.5	Off course	15.1	17.9	2.8	Off course	28.6	30.9	2.3	Off course
Samoa	41.8	43.4	1.6	Off course	34.0	36.0	2.0	Off course	50.0	51.3	1.3	Off course
San Marino												
Sao Tome and Principe	10.4	12.3	1.9	Off course	5.0	6.2	1.2	Off course	15.7	18.2	2.5	Off course
Saudi Arabia	32.0	34.7	2.7	Off course	26.8	29.9	3.1	Off course	38.8	41.4	2.6	Off course
Senegal	8.5	9.8	1.3	Off course	4.2	4.8	0.6	Off course	12.7	14.6	1.9	Off course
Serbia	17.9	19.5	1.6	Off course	16.7	18.6	1.9	Off course	19.1	20.5	1.4	Off course
Seychelles	23.0	26.3	3.3	Off course	14.2	17.1	2.9	Off course	32.1	35.9	3.8	Off course
Sierra Leone	6.2	7.6	1.4	Off course	2.6	3.1	0.5	Off course	9.8	12.0	2.2	Off course
Singapore	5.0	6.2	1.2	Off course	4.4	5.7	1.3	Off course	5.6	6.8	1.2	Off course
Slovakia	23.4	25.7	2.3	Off course	21.8	24.6	2.8	Off course	24.9	26.7	1.8	Off course
Slovenia	23.2	25.1	1.9	Off course	22.2	24.6	2.4	Off course	24.2	25.5	1.3	Off course
Solomon Islands	26.1	27.7	1.6	Off course	20.1	21.8	1.7	Off course	32.2	33.7	1.5	Off course
Somalia	3.9	4.6	0.7	Off course	1.9	2.1	0.2	Off course	5.9	7.2	1.3	Off course
South Africa	24.1	26.8	2.7	Off course	12.9	15.7	2.8	Off course	34.7	37.3	2.6	Off course
South Sudan	6.3	7.5	1.2	Off course	3.4	4.0	0.6	Off course	9.2	11.1	1.9	Off course
Spain	22.1	23.7	1.6	Off course	21.1	22.8	1.7	Off course	23.1	24.7	1.6	Off course
Sri Lanka	4.8	6.5	1.7	Off course	2.3	3.4	1.1	Off course	7.3	9.5	2.2	Off course
Sudan	6.3	7.5	1.2	Off course	3.4	4.0	0.6	Off course	9.2	11.1	1.9	Off course
Suriname	23.4	26.1	2.7	Off course	16.5	19.4	2.9	Off course	30.2	32.9	2.7	Off course
Swaziland	15.9	17.7	1.8	Off course	6.2	7.5	1.3	Off course	25.2	27.8	2.6	Off course
Sweden	18.8	20.5	1.7	Off course	20.4	22.5	2.1	Off course	17.2	18.6	1.4	Off course
Switzerland	17.8	19.4	1.6	Off course	20.2	22.3	2.1	Off course	15.5	16.5	1.0	Off course
Syrian Arab Republic	21.3	23.5	2.2	Off course	15.5	17.4	1.9	Off course	27.5	29.9	2.4	Off course
Tajikistan	12.1	13.6	1.5	Off course	8.6	9.9	1.3	Off course	15.6	17.3	1.7	Off course
Thailand	6.7	8.5	1.8	Off course	4.1	5.7	1.6	Off course	9.1	11.1	2.0	Off course
The former Yugoslav Republic of Macedonia	18.2	19.6	1.4	Off course	16.5	18.3	1.8	Off course	19.9	20.9	1.0	Off course
Timor–Leste	1.7	2.2	0.5	Off course	0.9	1.2	0.3	Off course	2.5	3.2	0.7	Off course
Togo	6.5	7.5	1.0	Off course	2.6	3.0	0.4	Off course	10.2	11.9	1.7	Off course
Tonga	41.6	43.3	1.7	Off course	34.3	36.4	2.1	Off course	49.0	50.1	1.1	Off course
Trinidad and Tobago	27.0	31.1	4.1	Off course	19.1	24.1	5.0	Off course	34.6	38.0	3.4	Off course
Tunisia	24.6	27.1	2.5	Off course	17.8	20.3	2.5	Off course	31.3	33.8	2.5	Off course
Turkey	27.0	29.5	2.5	Off course	20.4	22.9	2.5	Off course	33.4	35.8	2.4	Off course

Table A1.3 continued

	Both sexes				Males				Females			
Country	**2010 (%)**	**2014 (%)**	**Change**	**Status**	**2010 (%)**	**2014 (%)**	**Change**	**Status**	**2010 (%)**	**2014 (%)**	**Change**	**Status**
Turkmenistan	17.6	20.1	2.5	Off course	14.4	17.1	2.7	Off course	20.6	23.1	2.5	Off course
Tuvalu	38.4	40.3	1.9	Off course	32.4	34.5	2.1	Off course	44.6	46.4	1.8	Off course
Uganda	3.7	4.9	1.2	Off course	1.2	1.6	0.4	Off course	6.3	8.3	2.0	Off course
Ukraine	18.7	20.1	1.4	Off course	15.3	17.1	1.8	Off course	21.7	22.6	0.9	Off course
United Arab Emirates	34.5	37.2	2.7	Off course	30.9	33.8	2.9	Off course	43.2	45.1	1.9	Off course
United Kingdom	25.5	28.1	2.6	Off course	24.1	26.9	2.8	Off course	26.8	29.2	2.4	Off course
United Republic of Tanzania	5.6	7.1	1.5	Off course	2.2	2.8	0.6	Off course	9.0	11.4	2.4	Off course
United States	31.2	33.7	2.5	Off course	29.8	32.6	2.8	Off course	32.5	34.7	2.2	Off course
Uruguay	23.8	26.7	2.9	Off course	19.8	22.5	2.7	Off course	27.5	30.6	3.1	Off course
Uzbekistan	13.6	15.5	1.9	Off course	10.5	12.1	1.6	Off course	16.8	18.9	2.1	Off course
Vanuatu	33.3	35.4	2.1	Off course	27.1	29.4	2.3	Off course	39.7	41.5	1.8	Off course
Venezuela	23.3	24.8	1.5	Off course	18.8	20.3	1.5	Off course	27.9	29.4	1.5	Off course
Viet Nam	2.6	3.6	1.0	Off course	1.5	2.3	0.8	Off course	3.6	4.8	1.2	Off course
Yemen	15.7	17.2	1.5	Off course	9.8	11.1	1.3	Off course	21.8	23.4	1.6	Off course
Zambia	7.1	8.9	1.8	Off course	2.8	3.4	0.6	Off course	11.4	14.3	2.9	Off course
Zimbabwe	9.7	10.5	0.8	Off course	2.2	2.4	0.2	Off course	17.1	18.5	1.4	Off course

Source: WHO (2014b).

APPENDIX 2 PROGRESS IN MEETING NUTRITION FOR GROWTH COMMITMENTS

TABLE A2.1 Country-owned targets versus global targets at the country level

Country	Stunting % (most recent estimate)	Year of most recent esti-mate	Current AARR%	Country target (stunting %)	Target year	Required AARR% (implied by coun-try target)	On/off course (country target)	Required AARR% (by global WHA target)	On/off course (global WHA target)
Bangladesh	41.0	2011	2.7	38	2016	1.5	On course	3.3	Off course
Benin	44.7	2006	-2.7	30	2015	4.5	Off course	5.2	Off course
Burkina Faso	32.9	2012	2.6	25	2020	3.5	Off course	5.5	Off course
Burundi	57.5	2010	0.9	48	2017	2.6	Off course	5.7	Off course
Chad	38.7	2010	0.3	38	2016	0.3	On course	5.8	Off course
Côte d'Ivoire	29.6	2012	5.1	20	2018	6.8	Off course	5.4	Off course
Ethiopia	44.2	2011	2.3	20	2020	9.2	Off course	4.7	Off course
Gambia	23.4	2010	0.1	18	2015	5.4	Off course	3.9	Off course
Guatemala	48.0	2009	0.8	40	2015	3.2	Off course	5.0	Off course
Guinea	31.3	2012	1.4	20	2025	3.5	Off course	5.2	Off course
Indonesia	36.4	2013	0.5	22	2025	4.2	Off course	3.0	Off course
Mauritania	22.0	2012	3.9	12	2015	4.7	Off course	5.1	Off course
Namibia	29.6	2007	0.0	20	2016	4.5	Off course	4.5	Off course
Niger	43.0	2012	1.9	25	2020	7.0	Off course	7.4	Off course
Senegal	19.2	2013	2.7	10	2020	9.8	Off course	5.3	Off course
Sierra Leone	44.9	2010	-0.8	12	2020	14.4	Off course	4.5	Off course
Uganda	33.7	2011	2.6	27	2016	4.5	Off course	6.0	Off course
United Republic of Tanzania	34.8	2011	1.9	35	2015	-0.1	On course	5.7	Off course
Zambia	45.8	2007	2.9	23	2023	4.5	Off course	6.5	Off course
Zimbabwe	32.3	2010	0.1	18	2025	4.1	Off course	4.8	Off course

Source: Authors.

Note: AARR = average annual rate of reduction.

TABLE A2.2 Assessing donors' Nutrition for Growth (N4G) financial commitments

Financial donors	N4G nutrition-specific financial commitment (US$ unless otherwise noted)	Nutrition-specific financial progress (US$ unless otherwise noted)	N4G nutrition-sensitive financial commitment (US$ unless otherwise noted)	Nutrition-sensitive financial progress (US$ unless otherwise noted)	Comments on commitment and reporting	On-/off-course assessment and basis for assessment
Australia	As outlined in Australia's recent budget announcements, the commitment is to provide an extra $A40 million, over four years, to support a new initiative to help more than 1 million people in the Asia-Pacific to better access food and to improve their nutrition.	Disbursements in 2014: $A23,100,441	No disaggregated commitment made	Disbursements in 2014: $A97,017,973	Commitment not clear on nutrition-specific/ nutrition-sensitive breakdown	Unclear Not clear if reported progress restricted to Asia-Pacific; not clear how much of reported progress is extra
Bill & Melinda Gates Foundation	Between now and 2020, the Bill & Melinda Gates Foundation will invest $862.7 million in nutrition-specific and nutrition-sensitive programs. Of this amount, $492 million will be spent on nutrition-specific interventions. This includes a commitment of $100 million over and above the Gates Foundation's 2010 spending levels for such interventions and toward the goal of the Nutrition for Growth event. The Gates Foundation's investment in nutrition-sensitive agriculture programs will total $370.7 million between 2013 and 2020, of which $308.3 million is over and above 2010 spending levels on such programs.	Our 2013 commitments to Basic Nutrition Code 12240 as reported to the OECD DAC were $63,662,173, and our 2013 disbursements under Basic Nutrition Code 12240 were $83,533,708.	US$370.7 million over 2013–2020	Commitments in 2013: $78,900,000 Disbursements in 2013: $43,500,000	Commitment clear, reporting clear	On course Nutrition-specific spending for 2013 is greater than the annual average, given a commitment of US$492 million over eight years. For nutrition-sensitive spending for 2013, disbursements are lower than the annual average, given a commitment of US$370 million over 8 years, but commitments are higher.
CIFF	Last year, CIFF committed over $90 million. Today, CIFF commits up to a further $700 million to address undernutrition. This adds up to a total of $793 million over the period 2013–2020. Most of these funds will be focused on nutrition-specific interventions.	Commitments in 2013: $19,810,789 Disbursements in 2013: $37,482,309		Commitments in 2013: $1,053,056 Disbursements in 2013: $854,116	Commitment clear, reporting clear	On course Total expenditure of US$793 million over eight years implied by commitment. The current disbursement is US$39 million, but expecting CIFF to attain US$99 million (US$793 million/8) in one year from a very low base is unrealistic.

Continued

Table A2.2 continued

Financial donors	N4G nutrition-specific financial commitment (US$ unless otherwise noted)	Nutrition-specific financial progress (US$ unless otherwise noted)	N4G nutrition-sensitive financial commitment (US$ unless otherwise noted)	Nutrition-sensitive financial progress (US$ unless otherwise noted)	Comments on commitment and reporting	On-/off-course assessment and basis for assessment
European Union	Without prejudice to the finalization of the ongoing discussions between the European Parliament and the Council on the Multiannual Financial Framework 2014–2020, the European Union (EU) will commit as much as €410 million ($533 million) during 2014–2020 for nutrition-specific interventions. Of this amount, €340 million ($442 million) is over and above what would have been spent if 2009–2012 average levels of payment in nutrition-specific interventions had been maintained during 2013–2020. The EU also commits to spend as much as €3.1 billion ($4.03 billion) for nutrition-sensitive programs during 2014–2020.	2013 commitments: €66,800,000 2013 disbursements: €41,814,000	€3.1 billion	2013 development commitments: €138,917,000 2013 humanitarian commitments: €260,491,000	Commitment not binding ("as much as")	Unclear Unclear if 2013 figures should even count against commitment due to dates (2014–2020) specified in commitment The 2013 nutrition-specific commitment level (€66 million) is above the average annual upper limit, given a commitment of €410 million over seven years. The 2013 nutrition-sensitive commitments are nearly €400 million euros, which is short of the average annual upper limit, given a commitment of €4.03 billion over seven years.
Germany	The German government will commit a total of €200 million ($260 million) additional funding for nutrition-specific and nutrition-sensitive interventions during 2013–2020.	2013 commitments: $35,534,000 2013 disbursements: $35,666,000	No disaggregated commitment made	2013 commitments: $20,513,000 2013 disbursements: $20,642,000	Commitment not disaggregated by nutrition specific/nutrition sensitive	Unclear Levels are good, but not clear how much is additional
Ireland	The Irish government pledges to double its nutrition efforts over the next eight years, from 2013 to 2020. By doubling its nutrition expenditure, Ireland commits an additional $169 million (€130 million) over this eight-year period for nutrition-specific and nutrition-sensitive programs and interventions.	2013 disbursements: €9,535,808	No disaggregated commitment made	2013 disbursements: €42,766,471	Commitment not disaggregated by nutrition specific/nutrition sensitive	On course Basis for assessment: Ireland commits to doubling its spending to €260 million over an eight-year period. Total disbursements for 2013 are €52 million, which is well over the average annual amount needed, given a commitment of €260 million over eight years.
Netherlands	The Dutch government will commit a total of $195 million (€150 million) for nutrition-specific interventions during 2013–2020, of which $171 million (€132 million) is additional to 2010 levels of investment. We also commit to spend $195 million (€150 million) for nutrition-sensitive programs during 2013–2020.	2013 disbursements: $20,125,566 2013 commitments: $77,560,518	$195 million during 2013–2020	2013 disbursements: $21,615,898 2013 commitments: $6,737,667	Nutrition-sensitive commitment is unclear on what is additional and what is not.	Off course Disbursements for both nutrition-specific and nutrition-sensitive activities are below the average annual levels needed, given a commitment of US$195 million over 8 years for each category.

Table A2.2 continued

Financial donors	N4G nutrition-specific financial commitment (US$ unless otherwise noted)	Nutrition-specific financial progress (US$ unless otherwise noted)	N4G nutrition-sensitive financial commitment (US$ unless otherwise noted)	Nutrition-sensitive financial progress (US$ unless other-wise noted)	Comments on commitment and reporting	On-/off-course assessment and basis for assessment
United Kingdom	The United Kingdom commits to triple its investment in nutrition-specific programs between 2013 and 2020; a total of £375 million (approximately $572 million) more than 2010 levels of investment. This investment in nutrition-specific programs will be increased by another £280 million (approximately US$427 million) if matched by others, with £32 million (approximately $50 million) used to help create a new catalytic fund. Altogether, these investments will total £655 million (approximately $1 billion) between 2013 and 2020. The United Kingdom also commits to increase the proportion of nutrition-sensitive spending in relevant sectors by 8 percentage points between 2013 and 2020, equivalent to approximately £604 million (approximately US$922 million) in total.	2013 commitments: $64,900,000 2013 disbursements: $105,000,000	$922 million more than pre-2013levels	2013 commitments: $422,600,000 2013 disbursements: $734,700,000	Commitments clear, reporting clear	On course Disbursements for both nutrition-specific and nutrition-sensitive activities are well above the average annual level needed, given commitments of US$572 million and US$922 million, respectively.
United States	The US expects to provide, over a three-year period comprising fiscal years 2012 through 2014, US$1.096 billion for nutrition-specific interventions and US$8.919 billion for nutrition-sensitive activities.	2013 commitments: $305,362,000 2013 disbursements: $288,649,000	US$8.919 billion 2012–2014	2013 commitments: $1,774,052,000 2013 disbursements: $1,837,662,000	Clear commitments and reporting although additionality of commitment could be clearer	Off course (but close) Disbursement levels for both categories are just below average annual targets over 3-year period: $1.09bn/3 years; $8.9bn/3 years
World Bank	The World Bank Group projects that it will nearly triple direct financing for maternal and early childhood nutrition programs in developing countries in 2013–2014 to US$600 million, up from US$230 million in 2011–2012. Led by strong demand from IDA countries, an estimated 90 percent of this new funding (US$540 million) will come from the International Development Association (IDA), the Bank's fund for the poorest countries.	Financing for maternal and child nutrition (theme code 68 in WBG coding) programming in developing countries increased from $230 million in 2001–2012 to $680 million in 2013–2014.	No disaggregated commitment made	No breakdown provided	Initial N4G commitment not disaggregated by nutrition specific/nutrition sensitive	On course

Source: Commitments from N4G Compact, progress reports from donors, assessments by Arakelian, Fanzo, Haddad.

Note: CIFF = Children's Investment Fund Foundation.

APPENDIX 3 SCALING UP FINANCIAL AND CAPACITY RESOURCES FOR NUTRITION

TABLE A3.1 Preliminary estimates of upper-bound allocations to nutrition in government budgets

1	2	3	4	5	6	7	8	9	Caveats
Country, year, and number of ministries, departments, and agencies (MDAs)	Upper-bound allocation, nutrition specific (US$ million)	Upper-bound allocation, nutrition sensitive (US$ million)	Government budget (US$ million)	Upper-bound allocation, nutrition specific, as % of government budget	Upper-bound allocation, nutrition sensitive, as % of government budget	Per capita upper-bound allocation, nutrition specific (US$)	Per capita upper-bound allocation, nutrition sensitive (US$)	Per capita upper-bound allocation, children under five years of age, nutrition specific (US$)	
Bangladesh 2014 (MDA=7)	294.476	1,860.375	29,518.854	1.000%	6.300%	2.00	12.00	19.38	Country uses a database linked to the Country Investment Plan. This Plan is part of the National Food Policy, which combined inputs from different stakeholders. The advanced database system tracks planned and actual spending from the government and partners. The database system is linked to the monitoring and evaluation system
	(N=27)	(N=73)							
Benin 2014 (MDA=11)	2.066	107.154	2,043.039	0.100%	5.250%	0.19	10.00	1.23	The estimates of upper-bound allocations are done in consultation with ministries and partners. Around 42% of resources are from the Government of Benin, with 48% from development partners (on-budget). Nutrition governance activities are being led by the Office of the President, in a demonstration of how the Government of Benin is fully supporting nutrition governance activities.
	(N=3)	(N=43)							
Burkina Faso 2013 (MDA=7)	4.944	88.368	3,229.025	0.150%	2.740%	0.29	5.00	1.66	Preliminary data collected and agreed upon by the country.
	(N=7)	(N=24)							
Burundi 2014 (MDA=7)	0.060	34.961	900.086	0.010%	3.880%	0.01	3.00	0.03	Preliminary data collected and agreed upon by the country.
	(N=4)	(N=35)							
Cameroon 2015 (MDA=12)	0.000	346.742	8,328.673	0.000%	4.160%	0.00	15.00	0.00	There are no specific nutrition interventions identifiable in the 2015 budget. The government focal point and the national nutrition community advocate for including them by identifying potential nutrition line items.
	(N=0)	(N=55)							
Chad 2014 (MDA=11)	NA	187.778	3,215.857	NA	5.840%	NA	14.00	NA	Preliminary data being agreed upon by the country. Data collected by country, with support from IDS. Identifying any potential budget items in the nutrition-specific area is not possible.
	(N=0)	(N=24)							

Table A3.1 continued

1	2	3	4	5	6	7	8	9	Caveats
Country, year, and number of ministries, departments, and agencies (MDAs)	Upper-bound allocation, nutrition specific (US$ million)	Upper-bound allocation, nutrition sensitive (US$ million)	Government budget (US$ million)	Upper-bound allocation, nutrition specific, as % of government budget	Upper-bound allocation, nutrition sensitive, as % of government budget	Per capita upper-bound allocation, nutrition specific (US$)	Per capita upper-bound allocation, nutrition sensitive (US$)	Per capita upper-bound allocation, children under five years of age, nutrition specific (US$)	
Comoros 2014 (MDA=4)	0.478	29.175	172.052	0.280%	16.960%	1.00	39.00	4.00	All nutrition-specific interventions are funded by development partners (confirmed on-budget). The government budget covers nutrition-sensitive investments in agriculture, fishery, and social protection.
	(N=5)	(N=28)							
Costa Rica 2014 (MDA=3)	128.608	341.455	9,812.860	1.310%	3.480%	26.00	69.00	351.00	Data were only available from the Ministry of Health, Agriculture, and Education. Budget allocations to social protection and water, sanitation, and hygiene were difficult to determine as these are captured under decentralized budgets. The exercise will expand to other sectors in the coming year.
	(N=3)	(N=10)							
Côte d'Ivoire (MDA=7)	0.000	26.075	6,712.508	0.000%	0.389%	0.00	1.25	0.00	Preliminary data collected and agreed upon by the country
	(N=0)	(N=82)							
Democratic Republic of the Congo 2013 (MDA=14)	0.126	185.321	6,689.922	0.002%	2.770%	0.00	3.00	0.01	Preliminary data collected and agreed upon by the country.
	(N=3)	(N=49)							
Gambia 2013 (MDA=4)	NA	10.228	239.325	NA	4.270%	NA	6.00	NA	A data-gathering exercise was undertaken by R4D. Identifying any budget items for nutrition-specific interventions was not possible. Getting confirmation from the National Nutrition Action (NaNa) on their own budget.
	(N=0)	(N=32)							
Ghana 2014 (MDA=5)	NA	377.881	12,336.749	NA	3.060%	NA	9.00	NA	The figures are preliminary. Work to estimate upper-bound nutrition allocations with greater confidence, using repeated in-country consultations, is ongoing. It is not possible to identify any budget item for nutrition-specific interventions. After the final review of the budget, school feeding was included among nutrition-sensitive interventions. Detailed budget figures will become available in the next few years.
	(N=0)	(N=104)							
Guatemala 2014 (MDA=15)	113.355	607.820	7,846.302	1.450%	7.750%	7.00	38.00	50.00	The allocation of nutrition-specific funds include a multi-sectoral approach. Advanced financial tracking is part of the results-based performance management system.
	(N=6)	(N=25)							

Continued

Table A3.1 continued

1	2	3	4	5	6	7	8	9	Caveats
Country, year, and number of ministries, departments, and agencies (MDAs)	Upper-bound allocation, nutrition specific (US$ million)	Upper-bound allocation, nutrition sensitive (US$ million)	Government budget (US$ million)	Upper-bound allocation, nutrition specific, as % of government budget	Upper-bound allocation, nutrition sensitive, as % of government budget	Per capita upper-bound allocation, nutrition specific (US$)	Per capita upper-bound allocation, nutrition sensitive (US$)	Per capita upper-bound allocation, children under five years of age, nutrition specific (US$)	
Indonesia 2014 (MDA=12)	279.091	1,640.845	158,264.024	0.180%	1.040%	1.00	6.00	12.00	Potential nutrition line items were identified by country through several consultations.
	(N=11)	(N=35)							
Kenya 2014 (MDA=13)	8.635	689.951	18,031.494	0.050%	3.830%	0.19	15.00	1.21	The work to identify potential nutrition line items was done initially by IDS and later reviewed by the country through several consultations. Nutrition-specific allocations include on-budget external funding (99%). Forty-one out of 75 nutrition-sensitive allocations were identified as potential nutrition line items.
	(N=3)	(N=75)							
Lesotho 2015 (MDA=4)	1.392	22.003	1,079.045	0.130%	2.040%	1.00	10.00	5.00	Estimate involved detailed mapping of nutrition-specific interventions with description of items. Government funding accounts for only 1% of nutrition-specific interventions and 99% of nutrition-sensitive interventions.
	(N=89)	(N=18)							
Madagascar 2014 (MDA=9)	7.104	56.218	1,451.264	0.490%	3.870%	0.30	2.00	2.00	These data are preliminary.
	(N=4)	(N=19)							
Maharashtra 2014 (MDA=5)	244.560	1,127.829	33,147.369	0.740%	3.400%	1.23	6.00	7.00	Data were gathered by the state through many consultations. Specific programs are targeted at scheduled tribes (who account for 9.5% of the state's population of 199.6 million) and selected districts.
	(N=10)	(N=13)							
Mauritania 2014 (MDA=7)	0.227	75.959	1,584.529	0.010%	4.790%	0.06	19.00	0.38	These data are preliminary and were gathered by Mauritania.
	(N=3)	(N=51)							
Nepal 2014 (MDA=7)	1.752	456.570	5,096.143	0.030%	8.960%	1.81	16.20	0.06	Preliminary data collected and agreed upon by Nepal and presented during the regional meeting in Bangkok (April 15–16, 2015). The data collection process was supported by SPRING (https://www.spring-nutrition.org). This is a USAID-funded program.
	(N=2)	(N=55)							
Pakistan 2014 (MDA=29)	190.915	1,547.425	56,516.191	0.340%	2.740%	1.00	8.00	9.00	Potential nutrition allocations were identified by the country through several consultations. The estimates include both national and provincial budget items.
	(N=9)	(N=48)							

Table A3.1 continued

1	2	3	4	5	6	7	8	9	Caveats
Country, year, and number of ministries, departments, and agencies (MDAs)	Upper-bound allocation, nutrition specific (US$ million)	Upper-bound allocation, nutrition sensitive (US$ million)	Government budget (US$ million)	Upper-bound allocation, nutrition specific, as % of government budget	Upper-bound allocation, nutrition sensitive, as % of government budget	Per capita upper-bound allocation, nutrition specific (US$)	Per capita upper-bound allocation, nutrition sensitive (US$)	Per capita upper-bound allocation, children under five years of age, nutrition specific (US$)	
Peru 2014 (MDA=7)	294.718	2,034.202	42,868.637	0.690%	4.750%	10.00	66.00	101.00	The allocations are included in seven multisectoral packages. The integrated nutrition package contains all nutrition-specific interventions targeted at children under three years of age. Other interventions in the nutrition package are captured under "nutrition sensitive" and include vaccination, integrated management of common diseases, and other interventions for children under five. Advanced financial tracking is part of the results-based performance management system.
	(N=12)	(N=43)							
Philippines 2015 (MDA=4)	81.118	988.005	55,076.715	0.150%	1.790%	1.00	10.00	7.00	These data are preliminary. The data gathering was done by IDS. Most budget items were from health and education ministries and agencies.
	(N=6)	(N=5)							
South Sudan 2012 (MDA=6)	12.686	50.810	3,000.000	0.420%	1.690%	1.00	4.00	7.00	The preliminary data were agreed upon. A data-gathering exercise was undertaken by R4D.
	(N=9)	(N=31)							
Tajikistan 2014 (MDA=6)	50.149	129.050	1,429.614	3.510%	9.030%	6.00	15.00	41.00	The preliminary data were agreed upon. A data-gathering exercise was undertaken by the country through consultations and the active involvement of the Ministry of Finance.
	(N=3)	(N=13)							
Togo 2014 (MDA=7)	0.108	134.010	1,344.566	0.008%	9.967%	0.02	19.16	0.10	Preliminary data collected and agreed upon by the country, with support from IDS.
	(N=4)	(N=117)							
Uganda 2013 (MDA=6)	3.136	14.808	5,025.058	0.060%	0.300%	1.34	0.39	0.08	Preliminary data were collected by SPRING.
	(N=3)	(N=38)							
Viet Nam 2014 (MDA=2)	26.208	25.960	50,834.855	0.050%	0.050%	0.28	0.28	4.00	Preliminary data were collected and agreed upon by the country. They could access only the Ministry of Health budget and the budget of one program from the Ministry of Agriculture. They will use this exercise to advocate for other ministries, and they would like to present the data with the specified caveats
	(N=7)	(N=8)							

Continued

Table A3.1 continued

1	2	3	4	5	6	7	8	9	Caveats
Country, year, and number of ministries, departments, and agencies (MDAs)	Upper-bound allocation, nutrition specific (US$ million)	Upper-bound allocation, nutrition sensitive (US$ million)	Government budget (US$ million)	Upper-bound allocation, nutrition specific, as % of government budget	Upper-bound allocation, nutrition sensitive, as % of government budget	Per capita upper-bound allocation, nutrition specific (US$)	Per capita upper-bound allocation, nutrition sensitive (US$)	Per capita upper-bound allocation, children under five years of age, nutrition specific (US$)	
Yemen 2014 (MDA=5)	NA	0.140	NA	NA	NA	NA	NA	NA	These data are preliminary. Data collection and confirmation done by the country. They could not complete the data-gathering exercise due to the 2015 Yemen crisis. Identifying nutrition-specific budget allocations is not possible. Most budget allocations are for water supply.
	(N=0)	(N=17)							
Zambia 2014 (MDA=3)	1.503	31.853	6,381.906	0.024%	0.499%	0.10	2.12	0.55	Preliminary data collected and agreed upon by the country
	(N=7)	(N=12)							

Source: Reported by the respective countries; population data are from United Nations (2013b).

Note: NA = not available; N = number of budget line items included in column estimate.

TABLE A3.2 Preliminary estimates of allocations to nutrition in government budgets

Country	Upper-bound allocation, nutrition specific (US$ million)	Actual allocation, nutrition specific (US$ million, after weighting)	Upper-bound allocation, nutrition sensitive (US$ million)	Actual allocation, nutrition sensitive (US$ million, after weighting)	Actual allocation, nutrition specific, as % of total government budget	Actual allocation, nutrition sensitive, as % of total government budget	Total actual nutrition allocation, as % of total government budget	Weighting method	Weighted specific as well
Benin	2.066	0.673	107.154	26.789	0.030	1.31	1.34	1	Y
Burkina Faso	4.944	4.025	88.368	24.709	0.120	0.77	0.89	1	Y
Burundi	0.060	0.060	34.961	11.426	0.010	1.27	1.28	3	Y
Chad	0.000	0.000	187.778	47.101	0.000	1.46	1.46	2	Y
Comoros	0.478	0.338	29.175	4.593	0.200	2.67	2.87	2	Y
Costa Rica	128.608	128.608	341.455	119.235	1.310	1.22	2.53	1	
Côte d'Ivoire	0.000	0.000	26.076	6.617	0.000	0.10	0.10	2	Y
Indonesia	279.091	254.313	1,640.845	655.651	0.160	0.41	0.57	2	
Kenya	8.635	8.635	689.951	136.991	0.050	0.76	0.81	3	
Madagascar	7.104	5.339	56.218	17.315	0.370	1.19	1.56	2	Y
Mauritania	0.227	0.227	75.959	34.231	0.010	2.16	2.17	2	
Nepal	1.752	1.752	456.570	11.705	0.030	0.23	0.26	3	Y
Togo	0.108	0.108	134.010	34.758	0.009	2.59	2.59	2	Y
Viet Nam	26.208	26.208	25.960	6.490	0.050	0.01	0.06	1	

Source: Data provided by SUN focal points to SUN Secretariat.

Notes: Weighting methods: (1) nutrition specific = 100%, nutrition sensitive = 25%; (2) nutrition specific or sensitive = 100%, 75%, 50%, or 25%; (3) nutrition specific = 100%, nutrition-sensitive = any percentage from 5% to 100%.

TABLE A3.3 Nutrition for Growth (N4G) donor signatories and their reported commitments and disbursements for 2013

Donor agency	2013 commitments (thousands of US$)			2013 disbursements (thousands of US$)		
	Nutrition-specific	Nutrition-sensitive	Total	Nutrition-specific	Nutrition-sensitive	Total
Australia[a]	—	—	—	17,787	74,704	92,491
Canada	154,530	—	—	169,350	—	—
EU	75,484	451,218	526,702	47,250	—	—
France	1,553	33,599	35,152	2,606	33,599	36,205
Germany	35,534	20,513	56,047	35,666	20,642	56,308
Ireland	—	—	—	10,776	48,326	59,102
Netherlands	77,561	6,738	84,299	20,216	21,616	41,832
Switzerland[b]	0	30,240	30,240	0	29,160	29,160
United Kingdom of Great Britain and Northern Ireland	64,900	422,600	487,500	105,000	734,700	839,700
United States of America	305,362	1,774,052	2,079,414	288,649	1,837,662	2,126,311
Gates Foundation	63,662	78,900	142,562	83,534	43,500	127,034
CIFF	19,811	1,053	20,864	37,482	854	38,336
World Bank	—	—	680,000	—	—	—

Source: Reported by the respective agencies.

Notes: — indicates "not reported." CIFF = Children's Investment Fund Foundation.

[a] For Australia, the 2013 figures reported represent the 2014 calendar year.

[b] Switzerland is not an N4G signatory but nevertheless provided a breakdown of nutrition-specific and nutrition-sensitive financial data.

NOTES

CHAPTER 1

1 Appendix Table A4.1 (see globalnutritionreport.org/the-report/appendixes) provides a tally (and self-assessment) of commitments made by the *Global Nutrition Report* team in 2014 for the *Global Nutrition Report 2015*.

2 We conducted an assessment of actions taken between November 2014 and June 2015 that were consistent with 2014 *Global Nutrition Report* top-line messages. Results of this assessment are reported in Appendix A4.2.

CHAPTER 2

1 In 2015 WHO and UNICEF will release global on-/off-course assessments for the global nutrition targets for 2025 set by the WHA in 2012, but not before this edition of *Global Nutrition Report* goes to print.

2 New ways of assessing WHA progress are emerging (see, for example, Webb et al. 2015), and we will review them in preparation for the 2016 report.

3 UNICEF reports that some refinements to existing methods were attempted in 2014–2015 but yielded inconclusive results. At present the group is pursuing a different approach than had been applied in the past to generate low birth weight rates from survey data.

4 For one country, Romania, a baseline prevalence estimate was not available in the *Global Nutrition Report 2014* when stunting progress was tracked using AARR only, and so it was not possible to make an assessment using the new rules applied in the *Global Nutrition Report 2015*.

5 Overweight in children under age 5 is defined here as a weight-for-height Z-score > 2 standard deviations above the median. There is no definition of obesity for children under 5 using the WHO definition.

6 The target AAPPI is calculated such that all countries achieve a rate of 50 percent by 2025. For all countries with a baseline less than 60 percent, we propose a lower limit such that no country would have a target AAPPI below 1.2. Countries with baseline of 60–70 percent would have a target of 0.6 percentage points, and countries above 70 percent would have a target of 0 percentage points. Countries are assessed by determining the percentage of their target AAPPI they have achieved.

7 Full results for each country and target are presented in appendix tables. Appendix Table A1.1 lists the most current values for each country for the six WHA Global Nutrition Target 2025 indicators. Appendix Table A1.2 lists the on-/off-course status for all countries and all indicators. Appendix Table A5.1 applies *Global Nutrition Report 2014* and *Global Nutrition Report 2015* rules to old and new data for stunting and wasting (see globalnutritionreport.org/the-report/appendixes).

8 In terms of data availability, in 2015 108 countries have data to assess the four WHA indicators from the 2014 *Global Nutrition Report*, whereas in 2014 that number was 98 (under the new rules).

9 The full survey details have yet to be released to allow for a full review and for use in global databases.

10 There is no statistically significant relationship between the two variables.

11 The estimates are modeled.

12 These data reflect the information provided in WHO (2015l) as of September 1, 2014. The information has since changed.

13 Appendix Table A5.2 lists prevalence of adult (both sexes, male, and female) overweight and obesity (BMI ≥ 25), obesity (BMI ≥ 30), and diabetes for all countries for 2010 and 2014, percentage change, and the *Global Nutrition Report* assessment of progress (see globalnutritionreport.org/the-report/appendixes).

14 For regional obesity rates for women age 20–49 years, see Figure 2 in Black et al. (2013).

15 The 13 countries are Albania, Bosnia and Herzegovina, Djibouti, Iceland, Japan, Latvia, Malta, Montenegro, Nauru, Norway, Singapore, Ukraine, and Venezuela (WHO 2014b).

PANEL 2.1

1 This analysis was undertaken by the Emergency Nutrition Network with funding support from the U.S. Agency for International Development Office of Foreign Disaster Assistance and Irish Aid.

2 Weight, height, sex, and age data of children age 6–59 months were extracted and analyzed using STATA 13. Data were available for 3,173 children from Pakistan, 7,368 from the Democratic Republic of the Congo, 8,770 from Ethiopia, 23,646 from Nigeria, and 7,114 from Bangladesh. Anthropometric categories were defined using the WHO growth standards. Concurrent wasting and stunting was defined to include children who were both wasted (weight-for-height < -2SD) and stunted (height-for-age < -2SD).

CHAPTER 5

1 The 2016 *Global Nutrition Report* will aim to improve this balance, bringing in estimates on the cost of scaling up best-practice interventions to address unhealthy diets and physical inactivity (WHO 2011b).

2 For stunting, a preliminary estimate is available for the additional funding needed for nutrition-specific interventions to meet the WHA target (reduction in the number of under-5 children who are stunted by 40 percent by 2025) (R4D 2015). R4D estimates a gap of US$39.7 billion in nutrition-specific interventions over the period 2016–2024. It outlines the following scenario for sharing this investment: US$19.7 billion from countries, US$9.7 billion from donors, US$6.5 billion from households, and US$3.8 billion from new innovative sources. This annual rate of nutrition-specific scale-up for donors for the first four years is equivalent to the increase in

their nutrition specific spending between 2013 and 2014. Even though countries would be counted on to meet the bulk of the finance gap, the speed of scale-up for them in the scenario presented in the study is more gradual in the first three years.

3 The work was led by SUN government members with facilitation from the SUN Movement Secretariat. Half of the countries conducted the exercise by themselves while the other half received remote support for the initial step 1 from the Global Nutrition Report Secretariat, the Results for Development Institute (R4D), and the Strengthening Partnerships, Results, and Innovations in Nutrition Globally project (SPRING). Updated information is available from the SUN Movement website at http://scalingupnutrition.org/about/financial-tracking-resource-mobilization/budget-analysis.

4 As reported in the 2014 *Global Nutrition Report*, a range of tools is available for tracking financial resources to nutrition (Picanyol 2014). Public expenditure reviews are the most detailed but are also resource intensive. National health accounts, compiled by WHO, are important but cover only health-related nutrition expenditures.

5 For nearly all countries it was difficult to identify the 12 *Lancet* nutrition-specific interventions within budget line items. In most national budgets, it is only possible to identify the delivery platforms (such as integrated maternal, newborn, and child healthcare). As a result, "nutrition-specific" budget line items tend to relate to programs, services, and delivery mechanisms addressing the continuum of care before and during the 1,000-day window of opportunity.

6 As Appendix Table A3.2 shows, each country chose its own weighting method. Three approaches were undertaken: (1) nutrition-specific = 100 percent, nutrition-sensitive = 25 percent; (2) nutrition-specific or nutrition-sensitive = 100 percent, 75 percent, 50 percent, or 25 percent; (3) nutrition-specific = 100 percent, nutrition-sensitive = any percentage from 5 to 100 percent. Future exercises should aim to converge on a common set of weights to promote country comparability.

7 "Nutrition-sensitive" budget line items in this exercise relate to programs, interventions, or services with a clear nutrition goal (such as dietary diversification and dietary supplementation) among several nonnutrition goals, plus allocations to sectors that broadly address nutrition (such as access to drinking water, sanitation, education, and social protection). The total summarized in column 8 in Appendix Table A3.1 refers to the upper bound before weighting in step 3.

8 Findings were discussed at in-country consultations and four regional workshops facilitated by UNICEF on behalf of the UN Network and the SUN Movement Secretariat. Each country government team decided which ministries, departments, and agencies to search through and which budget line items to include in the analysis, so country comparisons of generated estimates are not strictly valid.

9 It shows the most recent data available from the OECD's DAC Creditor Reporting System database (OECD 2014).

10 Note, however, that several studies point out the imperfect match between the Creditor Reporting System category "12240: Basic Nutrition" and nutrition-specific interventions (for example, ACF International 2012).

11 Switzerland is not an N4G signatory but nevertheless provided a breakdown of nutrition-specific and nutrition-sensitive financial data.

12 Note that the World Bank's nutrition commitments are demand driven by countries—they cannot be predetermined.

13 Total ODA in 2014 held firm at US$135 billion (OECD 2015a).

14 The methodology used to allocate spending to nutrition-specific and nutrition-sensitive categories is described in Ickes et al. (2015).We use 2012 data because only nine donors provided a nutrition-specific/nutrition-sensitive breakdown for 2013 (see Appendix Table A3.3).

15 The United States and World Bank did not provide nutrition-sensitive disbursements for 2012, and the World Bank did not provide any disbursement data for 2013. The United States, however, provided a full set of data for 2013: it reported US$0.288 billion in nutrition-specific disbursements and US$1.84 billion in nutrition-sensitive disbursements—approximately a 1:6 ratio.

16 Disbursements consist of nutrition-specific disbursements by Australia, Canada, France, Germany, Ireland, the Netherlands, Switzerland, the United Kingdom, the United States, EU institutions, and the Gates Foundation (for 2010 and 2012, taken from the DAC Creditor Reporting System) plus the nutrition-sensitive disbursements reported by the Gates Foundation, Canada, the EU, Germany, Ireland, and the United Kingdom (for 2010 and 2012 as reported to the *Global Nutrition Report* Secretariat).

17 See also Results UK (2014) for a good review of nutrition financing options.

18 The 10 interventions, which largely overlap with Bhutta et al. (2013) are (1) community nutrition programs for growth promotion (includes breastfeeding promotion and complementary feeding promotion), (2) vitamin A supplementation for children aged 6–59 months, (3) therapeutic zinc supplement with oral rehydration salts for children, (4) multiple micronutrient powders for children 6–23 months, (5) deworming for children 12–59 months old, (6) iron–folic acid supplementation for pregnant women, (7) iron fortification of staple foods, (8) salt iodization, (9) public provision of complementary food for the prevention of moderate acute malnutrition in children, and (10) community-based management of severe acute malnutrition in children. Interventions from Bhutta et al. 2013 for which there are no delivery mechanisms or those that lack WHO guidance protocols (such as preventive zinc) are not included in these estimates because they are not realistically scalable in the short to medium term.

19 The OneHealth tool helps to estimate costs for nutrition interventions within the health system, but not outside it (IHP+ 2015).

20 The assessment of cost-effectiveness is based on WHO-CHOICE criteria found at WHO (2015b).

21 Work is ongoing to estimate the costs and benefits of scaling up selected nutrition-sensitive interventions in the social protection, agriculture, education, and water and sanitation sectors that have shown potential for improving nutrition outcomes.

22 Estimates are based on cost per DALY saved. The DALYs are calculated as documented in Shekar et al. (2014, 2015a–c). With regard to nutrition-sensitive interventions, initial estimates suggest that investments in school-based deworming, biofortification, and aflatoxin control in high-aflatoxin areas may be cost-effective investments through the education and

agriculture sectors (Shekar et al. 2014, 2015 a–c). However, evidence for the impact of nutrition-sensitive interventions is less conclusive than evidence for nutrition-specific ones. This analysis of costs and benefits is thus preliminary and points to the need for more robust data on nutrition-sensitive interventions to inform future priorities for scaling up.

23 See the summary in Savedoff (2011).

24 See details in Martin and Haque (2013).

25 Interview with Dr. Kaosar Afsana, director of BRAC Health, Nutrition, and Population Program, December 15, 2014.

PANEL 5.1

1 This panel is adapted from the executive summary of Tanzania, Ministry of Finance (2014).

2 Although the public expenditure review reported allocations to nutrition, it did not report actual expenditures on nutrition activities.

PANEL 5.3

1 This panel is based on Gillespie, Menon, and Kennedy (2015).

PANEL 5.4

1 The ANLP and similar programs in Southeast Asia (SEANLP) and Francophone Africa (PLAN), not covered here, are independent regional offshoots of the ENLP.

CHAPTER 7

1 See reports from the Global Panel on Agriculture and Food Systems for Nutrition (2013), IPES Food (2015), Nugent (2011), and the EAT Forum (2015).

2 Other important aspects of food systems, including international trade, research, and technology development, are not explicitly covered here but could be used as indicators.

3 For more in-depth, detailed discussion of food system and food security indicators, see Nesheim et al. (2015), IFPRI (2015), ILSI/CIMSANS (2015), Reytar et al. (2014), Stein (2014), Gillespie and Smith (2008), FAO (2014), and Prosperi et al. (2014). For discussion of previous food-system typologies, see World Bank (2008) and Fan and Pandya-Lorch (2012).

4 This logic model is similar to conceptual models cited in Nesheim et al. (2015), ILSI/CIMSANS (2015), and Gillespie and Smith (2008).

5 Appendix Table A7.1 shows the range of each food system type for each indicator, and Appendix Table A7.2 lists countries by food system type (see globalnutritionreport.org/the-report/appendixes).

6 Appendix Table A7.4 provides several important references on what constitutes healthy and unhealthy diets. Appendix Table A7.5 provides dietary intake shares of 11 food groups excluding staple foods for selected country examples (see globalnutritionreport.org/the-report/appendixes).

7 The Euromonitor data do not allow us to break out ultraprocessed foods from packaged foods category.

PANEL 7.1

1 Urbanization, agricultural value added per worker, and the share of dietary energy supply from cereals, roots, and tubers.

CHAPTER 8

1 The Global Alliance on Nutrition (GAIN) reports that GAIN and its partners are working with more than 1,000 medium- and large-scale processors on food fortification in more than 25 countries. GAIN has documented several examples of the role of small and medium-scale enterprises in food fortification, and this "gray material" is being sifted by Bhutta et al. for an upcoming review (Bhutta et al. 2015).

CHAPTER 9

1 It is important to note that Table 9.1 misses some of the most egregious data gaps because we included indicators in the nutrition profiles only if more than 25 countries collect them.

2 There are 10 components to this score, and they relate to the quality of reporting and the use of recognized standards in finance, economics, education, and vaccination. The construction of the score is described in detail here: http://datatopics.worldbank.org/statisticalcapacity/files/Note.pdf.

3 Other mechanisms that are important but less explicitly linked to nutrition include the Codex Alimentarius, the UN Committee on the Rights of the Child, UN Committee on the Elimination of Discrimination against Women, and the Millennium Development Goal reports.

PANEL 9.2

1 This panel is drawn from material kindly provided by Britt Broersen, Inge D. Brouwer, Saskia Osendarp (Netherlands Working Group on Global Nutrition), and Gillian Swann (Public Health England).

PANEL 9.4

1 The missing regions account for less than 10 percent of the total population, and their inclusion or exclusion is unlikely to produce large differences.

PANEL 9.5

1 The methodology for PECSs is adapted from the WHO Immunization Coverage Cluster Survey methodology.

PANEL 9.8

1 The Humanitarian Accountability Partnership (HAP), People in Aid, and others have developed standards for accountability and technical verification mechanisms.

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