2020

Global Nutrition Report

Action on equity to end malnutrition

ENDORSEMENTS

Dr Lawrence Haddad, Executive Director of The Global Alliance for Improved Nutrition (GAIN)

The Covid-19 crisis has made it ever clearer that inequity is a maker and a marker of malnutrition. The crisis hurts the nutrition status of the most vulnerable first and hardest. In turn, the malnourished will be more susceptible to the virus. This report shows us how to move towards greater equity and, hence, improved nutrition outcomes.

Gerda Verburg, United Nations Assistant Secretary General and Coordinator of the Scaling Up Nutrition (SUN) Movement

The *2020 Global Nutrition Report* is launched in the midst of the Covid-19 crisis. This is not only a health crisis followed by an economic crisis. In many developing countries, it is a health and nutrition crisis, combined with a socioeconomic crisis. Lockdowns impact people's income, and their capacity to achieve food and nutrition security. Closed schools mean that school-meals programmes are no longer providing nutritious meals for children. Smallholder farmers and food producers, often women with few rights and limited ability to make decisions, will be particularly affected. In any new normal after this crisis, nutrition must be understood and recognised as an indispensable part of health, food, education and economic development. Particular attention must be paid to equity, the theme of this year's report, ensuring that all forms of policy, action and systemic change support the poorest and most vulnerable, leaving no one behind.

Henrietta H. Fore, Executive Director, United Nations Children's Fund (UNICEF)

As the *2020 Global Nutrition Report* highlights, now more than ever, we need to strengthen our collective efforts to ensure that the most vulnerable children benefit from good diets and nutrition services and practices. In particular, we need food systems and food environments that deliver nutritious, safe, affordable and sustainable diets for all children, no matter where they live.

As we enter the final decade of the 2030 Agenda for Sustainable Development, we have an opportunity to accelerate our progress towards this goal, by more rigorously collecting, analysing and applying good-quality data to shape programmes that can bring us closer to ending malnutrition in all its forms. UNICEF is proud to be part of this important effort.

Shinichi Kitaoka, President, Japan International Cooperation Agency (JICA)

Ahead of the Nutrition for Growth Summit, the *2020 Global Nutrition Report* is a must-read. The world is in the middle of a war with the unprecedented threat of Covid-19. The endeavour to address malnutrition in all its forms, in addition to medical intervention, is an indispensable element in combating such infectious diseases. Balanced intake of nutritious food is essential for improving fundamental immunity. In this sense, we should emphasise the importance of improving nutritional status as a preventive measure, key to establishing a resilient society. Because good nutrition for everyone is also an important element of human security, taking swift action on nutrition will help to protect lives and dignity. Based on this understanding, JICA will make continued efforts to tackle malnutrition.

Dr Qu Dongyu, Director-General, Food and Agriculture Organization of the United Nations (FAO)

The call for transformation of food systems – to make healthy diets available, accessible, attractive and safe – has never been more relevant than now. The emergence of Covid-19 has highlighted the fragility of our food systems. We need to seize upon this crisis as an opportunity to rebuild and reshape food systems to be more resilient, equitable and sustainable. This calls for united action on all fronts to end the inequities in food systems that fail to make nutrition accessible and affordable for all. We should not settle for a world where over 800 million people go to bed hungry and where over two billion do not have access to quality diets. FAO stands ready to work with all stakeholders to make this food-systems transformation a reality and to ensure that no one is left behind.

David M. Beasley, Executive Director, World Food Programme

Again this year, the Global Nutrition Report holds up a mirror to the world that reflects how well we are keeping our promise to end malnutrition. While we see encouraging instances of progress, the current global reality of conflict, and Covid-19 and its consequences, will throw us a significant curveball, and, as always, it's the vulnerable who will suffer most. Let's use this year's report to examine, reflect and reset, and create a world where we like the face we see in the mirror.

Dr Tedros Adhanom Ghebreyesus, Director-General, World Health Organization

Health inequities based on social factors such as employment status, income level, gender and ethnicity have significant social and economic costs to both individuals and societies. Inequities are at the root of many of the world's greatest public health challenges. The focus of the *2020 Global Nutrition Report* on "Action on equity to end malnutrition" highlights dramatic inequities in the burden of stunting, wasting, obesity, micronutrient deficiencies, and diet-related non-communicable diseases. It clearly lays out the issues in our health systems and food systems that limit the ability of vulnerable populations to receive the nutrition and care they need to live healthy and productive lives. Now is the time to take dramatic action and commit ourselves to eliminating inequities in malnutrition.

Rt Hon. Anne-Marie Trevelyan MP, Secretary of State for International Development of the United Kingdom

The *2020 Global Nutrition Report* is an important reminder that the world needs to work together to tackle malnutrition, which has such a major impact on people's lives. We must use these findings as a catalyst for more progress. The release of this report during the Covid-19 outbreak serves to remind us that those who are malnourished, including girls and women, will be particularly vulnerable to this disease, and Covid-19 will likely exacerbate malnutrition in low- and middle-income countries. The UK remains committed to a humane and responsible approach to preventing and treating malnutrition. It is part of our ambition to end the preventable deaths of newborns, children and mothers by 2030. Furthermore, preventing malnutrition can support efforts to boost economic productivity and resilience in low- and middle-income countries to reduce the impact of climate change. The UK especially supports the calls in this report to address inequalities in all forms of malnutrition, to make nutrition an integral part of healthcare provision and to support a shift to healthier, equitable and sustainable diets. Investment and action on nutrition is more crucial than ever.

Amir M. Abdulla, UN Nutrition Chair, United Nations System Standing Committee on Nutrition (UNSCN)

The theme for this year's report is timely and important: action on equity to end malnutrition. This edition of the Global Nutrition Report focuses on the inequities in basic social services and malnutrition outcomes. Earlier reports, including previous editions of the Global Nutrition Report, have already identified inequality as a major determinant for malnutrition. As the editorial of *UNSCN News* 43 (2018, 'Advancing equity, equality and non-discrimination in food systems: pathways to reform') states, "we need to reframe the problem of hunger and malnutrition as a problem of social justice, to address power in the food chains, to narrow the divide in social protection schemes and to strengthen the accountability of government".

The Covid-19 pandemic shows the interconnectedness of the various systems that determine nutrition outcomes: the food, health and socioeconomic systems. It also shows that these systems now function in a way that means the most powerful and rich suffer less from the pandemic. Let's join forces and use the lessons of this year's Global Nutrition Report to address inequities in the system to end all forms of malnutrition and leave no one behind.

This report was produced by the Independent Expert Group of the Global Nutrition Report, supported by the Global Nutrition Report Stakeholder Group and the Secretariat at Development Initiatives. The writing was led by the co-chairs M.G. Venkatesh Mannar and Dr Renata Micha, supported by group members and supplemented by additional analysts and contributors.

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ACKNOWLEDGEMENTS

The Independent Expert Group, under the leadership of co-chairs **M.G. Venkatesh Mannar** and **Dr Renata Micha**, would like to sincerely thank all the people and organisations that supported the development of the *2020 Global Nutrition Report*.

The core Global Nutrition Report team at Development Initiatives worked closely with **M.G. Venkatesh Mannar** and **Dr Renata Micha**, and in support of the wider Independent Expert Group, to bring this year's report to life. The project was managed by **Hannah Sweeney** and **Nathalie Willmott**. Data analysis was led by **Jordan Beecher**, with extensive analysis and research across the report by **Sam Ashby**, **Dean Breed**, **Georgia Colston** and **Adam Hughes**. **Harpinder Collacott** and **Charlotte Martineau** contributed to the report and provided editorial guidance. Communications were managed by **Telche Hanley-Moyle**, supported by **James Harle** and **Anna Hope**. **Amy Cox** led outreach and engagement. **Simon Murphy** managed production of the report, with support from **Alice McAndrew** and **Georgina Carver**. **Dan Coppard**, **Tony German** and **Judith Randel** carried out quality reviews on the report. Additional communications advice on the report's messaging and design was provided by **Portland Communications**. Editing was done by **Nina Behrman**, and design by **Definite.design** and **Soapbox**.

We are also grateful to peer reviewers from *Global Food Security* for carrying out the external peer review of the report this year: **Namukolo Covic**, **Mario Herrero**, **Thorne Lynam**, **John McDermott** and **Boyd Swinburne**.

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We are particularly grateful to the co-chairs of the Stakeholder Group: **Abigail Perry**, DFID, UK, and **Lucy Sullivan**, Feed the Truth, US .

We also received written contributions from people whose work could not be included in this year's report but nevertheless informed our thinking: **Lawrence Haddad**, GAIN, UK; **Luc Laviolette**, Global Financing Facility, USA; **Donald Mavundese**, **Azita Shamsolahi** and **Paul Stuart**, Send a Cow, UK; **Will Nicholson**, Food Foundation, UK; **James Ronicle**, Ecorys, UK; **Meera Shekar**, World Bank, USA; and members of the Independent Expert Group.

The *2020 Global Nutrition Report* was made possible through funding from the Bill & Melinda Gates Foundation, the European Commission, the government of Canada, Germany's Federal Ministry of Economic Cooperation and Development (BMZ), Irish Aid, the UK's Department for International Development (DFID) and the US Agency for International Development (USAID). The views and opinions expressed in this report are those of the authors and may not necessarily reflect the views or opinions of the donors.

Finally, we thank you, the readers of the Global Nutrition Report, for your enthusiasm and constructive feedback from the *2014 Global Nutrition Report* to today. We aim to ensure the report stays relevant using data, analysis and evidence-based success stories that respond to the needs of your work, from decision-making to implementation, across the development landscape.

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Suggested citation: 2020 Global Nutrition Report: Action on equity to end malnutrition. Bristol, UK: Development Initiatives.

Disclaimer: Any opinions stated herein are those of the authors and are not necessarily representative of or endorsed by Development Initiatives Poverty Research Ltd or any of the partner organisations involved in the *2020 Global Nutrition Report*. Not all Independent Expert Group members will necessarily agree with every word in the report. The boundaries and names used do not imply official endorsement or acceptance by Development Initiatives Poverty Research Ltd.

In May 2020, updates to the report were made on pages 36, 37, 52, 54, 55, 56, 129, 131 and 159.

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ISBN: 978-1-9164452-7-7

Copy editing: Nina Behrman

Design and layout: Definite.design and Soapbox

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THE 2020 GLOBAL NUTRITION REPORT IN THE CONTEXT OF COVID-19

As the world's leading report on the state of global nutrition, the Global Nutrition Report sheds light on where progress has been made and where challenges remain. New analysis shows that global and national patterns hide significant inequalities within countries and populations, with the most vulnerable groups being most affected. The *2020 Global Nutrition Report* therefore examines the critical role of addressing inequity to end malnutrition in all its forms. Inequity is a cause of malnutrition – both undernutrition and overweight, obesity and other diet-related chronic diseases. Inequities in food and health systems exacerbate inequalities in nutrition outcomes that in turn can lead to more inequity, perpetuating a vicious cycle.

Although the *2020 Global Nutrition Report* was written before the current coronavirus pandemic, its emphasis on nutritional well-being for all, particularly the most vulnerable, has a heightened significance in the face of this new global threat. The need for more equitable, resilient and sustainable food and health systems has never been more urgent.

Covid-19 does not treat us equally. Undernourished people have weaker immune systems, and may be at greater risk of severe illness due to the virus. At the same time, poor metabolic health, including obesity and diabetes, is strongly linked to worse Covid-19 outcomes, including risk of hospitalisation and death.

People who already suffer as a consequence of inequities – including the poor, women and children, those living in fragile or conflict-affected states, minorities, refugees and the unsheltered – are particularly affected by both the virus and the impact of containment measures. It is essential that they are protected, especially when responses are implemented.

Good nutrition is an essential part of an individual's defence against Covid-19. Nutritional resilience is a key element of a society's readiness to combat the threat. Focusing on nutritional well-being provides opportunities for establishing synergies between public health and equity, in line with the 2030 Agenda for Sustainable Development.

Covid-19 exposes the vulnerability and weaknesses of our already fragile food systems. Covid-19 has tested our food systems, already stressed by increasing climate extremes. Containing the virus has caused food and nutrition shortages and driven governments to reduce social services, such as school nutrition programmes, that the most marginalised rely upon. In the context of food and nutrition shortages, accessibility and affordability of healthy, sustainably produced food becomes even more challenging. Access to staple food distribution and local food markets is at risk. Millions of households in formerly food-secure regions of the world have fallen into severe food insecurity. Levels of hunger and malnutrition could double within the space of just a few weeks.

As measures to slow the spread of Covid-19 are enacted around the world, we must ensure that there is enough nutritious food, distributed fairly, to cover basic nutrition needs – especially for the most vulnerable. Quite simply, and as the *2020 Global Nutrition Report* highlights, food systems everywhere must become equitable, nutritious, efficient and inclusive.

Covid-19 exposes deadly healthcare disparities. Transformed and strengthened health systems must focus on delivering preventive nutrition and health services and be ready to respond to crises.

They should also be enhanced to address challenges faced by specific populations, especially older people and those with pre-existing conditions, such as weakened immune systems and poor metabolic health. They should specifically pay attention to women and children, especially to their nutritional well-being and healthcare. Yet even the strongest health systems are struggling with high healthcare costs and a shortage of medical personnel, equipment and facilities.

The *2020 Global Nutrition Report* highlights the need to integrate nutrition into universal health coverage as an indispensable prerequisite for improving diets, saving lives and reducing healthcare spending, while ensuring that no one is left behind. Reversing the obesity epidemic would also lessen the burden on our healthcare systems, as obesity is not only one of the costliest health conditions but also a major risk of Covid-19 hospitalisations and complications.

The way forward: strengthened coordination, alignment, financing and accountability. We are only just beginning to feel the full range of disruptions to health service delivery, food supply chains, economies and livelihoods as a result of the virus. As Covid-19 spreads in lower-income countries across the world, people's health, food, education and social protection systems are being tested. Contributions from all sectors of society are necessary to address our diverse challenges. National governments are leading the response, providing strategic direction and ensuring coordinated and aligned programming. Civil society organisations are also key. Yet additional resources will be needed to combat the virus at different levels of these vital systems; this should not come at the expense of essential public health and nutrition actions. Special attention should be paid to supporting women, as they play such a vital role in helping societies everywhere to become Covid-ready.

There is a real risk that, as nations strive to control the virus, the gains they have made in reducing hunger and malnutrition will be lost. These gains must be protected through increased and well-targeted official development assistance, as well as domestic resource allocations, focused on nutritional well-being. We must actively prevent the main drivers of malnutrition through more equitable, resilient, sustainable systems for food and health security, backed up by responsive social protection mechanisms.

We know that tackling malnutrition requires political commitment and simultaneous actions across multiple sectors, as well as considerable investment in data systems for implementation of programmes and tracking of progress. As the new Covid-19 reality emerges, it is important to avoid the wholesale displacement of the gains that have been made, while managing a new and ever-present threat. Looking beyond the present pandemic emergency, there is a need for well-functioning, well-funded and coordinated preventive public health strategies that pay attention to food, nutrition, health and social protection. We must learn from the challenges posed by Covid-19 and turn them into opportunities to accelerate actions needed to address inequities across malnutrition in all its forms, as called for by the *2020 Global Nutrition Report*.

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Executive summary

2015. Gujarat, India.
Padma, a representative from a trade union for poor, self-employed women in the informal sector, leads a nutrition programme for mothers.
Photo: Paula Bronstein/Getty Images/Images of Empowerment

ACTION ON EQUITY TO END MALNUTRITION

The Global Nutrition Report calls on governments, businesses and civil society to step up efforts to address malnutrition in all its forms and tackle injustices in food and health systems.

Everyone deserves access to healthy, affordable food and quality nutrition care. This access is hindered by deeper inequities that arise from unjust systems and processes that structure everyday living conditions. This year's Global Nutrition Report uses the concept of nutrition equity to elucidate these inequities and show how they determine opportunities and barriers to attaining healthy diets and lives, leading to unequal nutrition outcomes. We examine the global burden of malnutrition with an equity lens to develop a fuller understanding of nutrition inequalities. In doing this, we pinpoint and prioritise key actions to amplify our efforts and propel progress towards ending malnutrition in all its forms.

The Global Nutrition Report calls for a pro-equity agenda that mainstreams nutrition into food systems and health systems, supported by strong financing and accountability. With only five years left to meet the 2025 global nutrition targets, time is running out. We must focus action where the need is greatest for maximum impact.

The global burden of malnutrition

Today, one in every nine people in the world is hungry, and one in every three is overweight or obese. More and more countries experience the double burden of malnutrition, where undernutrition coexists with overweight, obesity and other diet-related non-communicable diseases (NCDs).

The trend is clear: progress is too slow to meet the global targets. Not one country is on course to meet all ten of the 2025 global nutrition targets and just 8 of 194 countries are on track to meet four targets. Almost a quarter of all children under 5 years of age are stunted. At the same time, overweight and obesity are increasing rapidly in nearly every country in the world, with no signs of slowing.

Progress on malnutrition is not just too slow, it is also deeply unfair. New analysis shows that global and national patterns mask significant inequalities within countries and populations, with the most vulnerable groups being most affected. Nutrition outcomes also vary substantially across countries. Underweight is a persisting issue for the poorest countries and can be ten times higher than in wealthier countries. Overweight and obesity prevail in wealthier countries at rates of up to five times higher than in poorer countries.

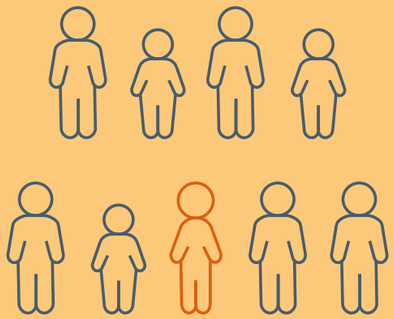
Within every country in the world, we see striking inequalities according to location, age, sex, education and wealth – while conflict and other forms of fragility compound the problem. This report finds a strong urban–rural divide, and even larger differences across communities. In children under 5 years of age, wasting can be up to nine times higher in certain communities within countries, four times higher for stunting and three times higher for overweight and obesity.

There is a clear link between infant and young child feeding practices and household characteristics. Continued breastfeeding up to 1 or 2 years of age is less common for children in wealthier households, urban areas or with a more educated mother. In contrast, rates of solid food introduction and minimum diet diversity are substantially lower for children in the poorest households, in rural areas or with a less educated mother. Although more granular high-quality nutrition data is needed, we have enough to act.

Governments, businesses and civil society must step up efforts to address malnutrition in all its forms by tackling injustices in food and health systems

Today, significant barriers hold back millions of people from healthy diets and lives

Globally, 1 in 9 people is hungry or undernourished



1 in 3 people is overweight or obese

New analysis shows that global and national patterns hide inequalities within countries and communities, with vulnerable groups being most affected

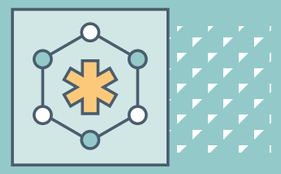
Underweight persists in the poorest countries, with rates up to 10 times higher compared to the richest countries. In contrast, overweight and obesity are prevailing in the richest countries, up to 5 times higher.

Rates of solid, semi-solid or soft food introduction and minimum diet diversity are substantially lower for children in the poorest households, rural areas or with a less-educated mother.

Poor diets and resulting malnutrition are not simply a matter of personal choices. Most people cannot access or afford a healthy diet or quality nutrition care

Food and health systems need to be transformed

We should address inequities in food systems and make healthy, sustainable food the most accessible and affordable choice for all.



We should fully integrate nutrition in health systems and make nutrition care, preventive and curative, universally available.

Now is the time to act. Stakeholders must work in coordination to overcome barriers that are holding back progress to end malnutrition

Build equitable, resilient and sustainable food and health systems

Invest in nutrition, especially in the communities most affected

Focus on joint efforts – global challenges show how vital this is

Leverage key moments to renew and expand nutrition commitments and strengthen accountability

For sources and full notes for country- and regional-level data, please see: 2020 Global Nutrition Report, figures 2.6 and 2.13. Global data taken from: FAO, 2019. The state of food security and nutrition in the world; Ng M., Fleming T., Robinson M. et al., 2014. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. The Lancet 384(9945); NCD Risk factor Collaboration, 2019.

Tackling injustices in food and health systems

Poor diets and resulting malnutrition are among the greatest current societal challenges, causing vast health, economic and environmental burdens. To fix the global nutrition crisis equitably, we must shift our approach dramatically in two ways: focusing on food and health.

First, we must address inequities in food systems, from production to consumption. Current food systems do not enable people to make healthy food choices. The vast majority of people today simply cannot access or afford a healthy diet. The reasons for this are complex. Existing agriculture systems are largely focused on an overabundance of staple grains like rice, wheat and maize, rather than producing a broader range of more diverse and healthier foods, like fruits, nuts and vegetables. Meanwhile, highly processed foods are available, cheap and intensively marketed; their sales are still high in high-income countries and growing fast in upper-middle- and lower-middle-income countries.

The climate emergency makes it critical to rethink food systems. And this presents an opportunity to shift to approaches ensuring that healthy and sustainably produced food is the most accessible, affordable and desirable choice for all. These approaches must amplify the voices of marginalised groups and address the true cost of food to the environment, as well as to human health. Likewise, they must work both within specific contexts and across sectors to address all elements of the food system.

Second, we must address nutrition inequities in health systems. Malnutrition in all its forms has become the leading cause of ill health and death, and the rapid rise of diet-related NCDs is putting an intolerable strain on health systems. Yet, most people cannot access or afford quality nutrition care for prevention or treatment. Worldwide, only about one-quarter of the 16.6 million children under 5 years of age with severe acute malnutrition received treatment in 2017, highlighting the urgent need to address this unacceptable burden. Nutrition actions represent only a tiny portion of national health budgets, although they can be highly cost-effective and can reduce healthcare spending in the long term. These are largely focused on undernutrition and are rarely delivered by skilled nutrition professionals. At the same time, health records and checks are not optimised to screen, monitor and treat malnutrition, such as through assessments of diet quality and food security.

Global commitment to universal health coverage is an opportunity to integrate nutrition care fully into health systems. Essential nutrition services – preventive and curative – should be universally available to all, with a focus on those who need it most. Strong governance and coordination across sectors is key to building functional and resilient health systems. Mainstreaming and scaling up nutrition care within health systems would save lives and reduce staggering healthcare spending.

Only by tackling injustices in food and health systems will we achieve the transformations needed to end malnutrition in all its forms.

Investments to improve nutrition outcomes

The intensified drive needed to meet global targets and end malnutrition is the collective responsibility of all sectors and countries. Domestic funding by country governments is crucial to ensure sustained improvements. At the same time, the international donor community has a duty to step up where governments lack the resources to respond effectively.

So far, investments have focused on addressing undernutrition. We have seen some success here, as rates of stunting are gradually decreasing over time. In contrast, overweight and obesity are rapidly increasing. The funding gap to address overweight, obesity and other diet-related NCDs is growing too. Countries have to be equipped to fight both sides of malnutrition at the same time.

We need to examine investments in nutrition through an equity lens. Investments must respond to need, and volumes of financing should be proportionate to the burden. We should proactively develop new financing mechanisms that can complement existing sources. Nutrition inequalities exist across countries as well as within communities. Therefore, decisions on resource allocation by need should be informed by granular data at the subnational level, through evidence-based and cost-effective solutions. Coordination is essential to prioritise equitable nutrition investments. Directing resources and programmes to communities and people most affected would enable faster, more equitable progress towards ending malnutrition.

Critical actions to achieve nutrition equity

Food is an important global issue – crucial to health, equity, sustainability, economies and livelihoods. Increased global recognition that governments, businesses and civil society are accountable for healthier and more equitable food and health systems provides an opportunity for us to invest in nutrition to preserve our future. Over the next two years, there are key opportunities to prioritise nutrition in policy agendas and to rethink our food and health systems. These include the Tokyo Nutrition for Growth Summit (N4G), the 2020 UN Climate Change Conference (to be held in 2021) and the 2021 Food Systems Summit.

We urge leaders to prioritise action to ensure that all people, particularly those most affected by malnutrition, have unhindered access to healthy and affordable food, and to quality nutrition care. Governments must work with stakeholders across sectors to overcome the inequities holding back progress to end malnutrition. To drive the transformative change needed to achieve nutrition equity, and end malnutrition in all its forms, we must focus on three key areas: food systems, health systems and financing. The Global Nutrition Report proposes the following specific actions.

Food systems

To ensure that healthy and sustainably produced food is the most accessible, affordable and desirable choice for all, sectors must work together to mainstream nutrition into all elements of the food system.

- Implement strong regulatory and policy frameworks to support healthier diets for all at country and community level and across sectors, from production to consumption.
- Optimise agricultural subsidies and increase public investment for producing a broader range of more diverse and healthier foods.
- Provide support for public transport schemes and shorter supply chains for fresh-food delivery products, particularly to the most nutritionally disadvantaged or harder-to-reach groups.
- Implement, monitor and evaluate evidence-based food policies to support healthy, sustainable and equitable diets, such as fiscal, reformulation, school- and worksite-based, labelling and marketing policies.
- Hold the food industry accountable for producing and marketing healthier and more sustainable food products through strengthened mechanisms.
- Strengthen and increase research spending to address major nutrition questions, identify cost-effective solutions and stimulate innovation.

Health systems

To save lives and cut healthcare costs, sectors must work in collaboration to mainstream nutrition as a basic health service through leveraging existing infrastructure and introducing new technologies.

- Roll out nutrition services within health services by developing costed nutrition care plans, that should be scaled up and sustained to cover all forms of malnutrition, including overweight, obesity and other diet-related NCDs.
- Invest in human resources to increase the number of qualified nutrition professionals and level-out access to quality nutrition care.
- Use a variety of health professionals and workers to alleviate inequities in access, and enhance their performance through educational and development opportunities.
- Include nutrition-related health products like therapeutic foods and innovative technological solutions like digital nutrition counselling, where appropriate – especially when working with more remote and harder-to-reach communities.
- Optimise health records and checks for nutrition care, to deliver preventive and curative nutrition services and identify those in greatest need.
- Commit to routine and systematic collection of equity-sensitive nutrition data at the community level, disaggregated by key population characteristics to strengthen the evidence base and inform targeted priority-setting.

Nutrition coordination, financing and accountability

Sectors must work in partnership to develop complementary funding and accountability mechanisms focused on directing resources and programmes to the communities and people most affected by malnutrition.

- Increase domestic financing to respond to the needs of communities most affected by malnutrition – including undernutrition, as well as overweight, obesity and other diet-related NCDs.
- Invest in data management systems to strengthen data on financial flows, enabling alignment with national nutrition priorities.
- Increase international nutrition financing and coordination, targeting populations most in need – especially in fragile and conflict-affected countries and in those with limited possibility for domestic resource mobilisation.
- Establish an international system of governance and accountability to address power imbalances in the food and health system and hold to account those responsible for creating inequities in food and health systems.
- Establish support spaces for dialogue on coordinated action to achieve nutrition equity and sensitise the policy space through lobbying for community involvement – from design to evaluation.
- Undertake situational assessments to identify bottlenecks in food, health, education and social protection, to remove barriers to improving nutrition outcomes.

We need to act now. We need to be well resourced, strongly coordinated and accountable. Meeting the global nutrition targets would enable healthier, happier lives for all. With an extra push at the N4G summit, this success is within reach.

01

Introduction: towards global nutrition equity

2014. Rwanda.
A volunteer leads a nutrition education class.
Photo: Global Communities/Juozas Cernius.

Inequalities in all forms of malnutrition

Poor diet is the leading cause of mortality and morbidity worldwide, exceeding the burdens attributable to many other major global health challenges.[1] The resulting global malnutrition crisis includes hunger and undernutrition – mainly stunting, wasting, underweight and micronutrient deficiencies – and diet-related non-communicable diseases (NCDs) – mainly overweight, obesity, diabetes, cardiovascular disease and cancer. This double burden of malnutrition – two sides of one crisis – has vast health, economic and environmental implications, affecting every country of the world in some form. Yet, there are marked differences in nutrition outcomes, or nutrition inequalities, by key sociodemographic characteristics, such as geographic location, age, gender, ethnicity, education and wealth. The *2020 Global Nutrition Report* provides high-quality data and in-depth analyses to shed light on the global burden of malnutrition. Our aim is to help disentangle the patterns and causes of nutrition inequalities to drive action and ensure that no one is left behind.

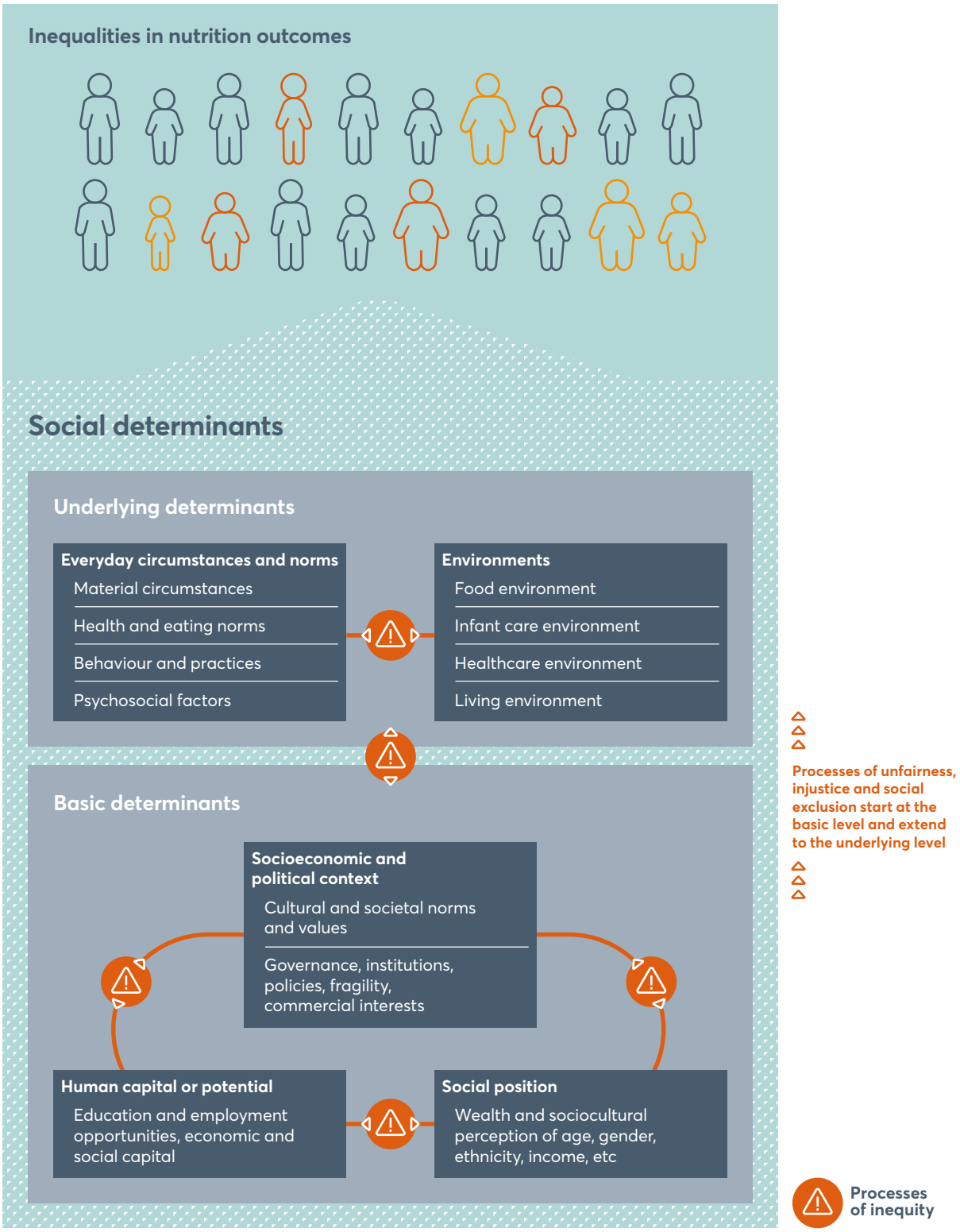
Currently, 1 in 9 people – 820 million worldwide – are hungry or undernourished, with numbers rising since 2015, especially in Africa, West Asia and Latin America.[2] Around 113 million people across 53 countries experience acute hunger, as a result of conflict and food insecurity, climate shocks and economic turbulence.[3] At the same time, more than one-third of the world's adult population is overweight or obese, with increasing trends over the past two decades.[4]

Latest data reveals some progress towards select 2025 global nutrition targets, including maternal, infant and young child nutrition (MIYCN) targets,[5] and diet-related NCD targets.[6] Childhood stunting has dropped globally from 165.8 million in 2012 to 149 million in 2018, representing a 10% relative decrease. No country worldwide has managed to reverse the rising overweight and obesity trend. Overall, progress towards global nutrition targets is far too slow or non-existent (see Chapter 2).[7] Malnutrition is persisting at unacceptably high levels, with marked differences between countries, within countries and by population characteristics.

Global leaders affirmed a vision for a world that 'leaves no-one behind' by committing to the Sustainable Development Goals (SDGs).[8] This vision includes a world free from malnutrition in all its forms.[9] Immediately following the SDGs, the United Nations (UN) Decade of Action on Nutrition 2015–2025[10] articulated the goal of eliminating all forms of malnutrition by 2025, a goal underpinned by the principle of universality and achieving food and nutrition security for all.[11] The principle of universality refers to an inclusive approach ensuring that everyone has fair access to the resources and services they need to achieve optimal nutritional health. Equity adds an ethical dimension and focuses on opportunities rather than outcomes. Unequal nutrition outcomes are rooted in deeper inequities that arise from unjust systems and processes that structure everyday living conditions. These systems and processes shape opportunities and barriers to attaining healthy diets, healthy environments, adequate healthcare and healthy lives. Considerable progress has been made in measuring nutrition inequalities, but we have been less clear on understanding and confronting inequity. Recognising this gap, this year's Global Nutrition Report focuses on nutrition equity.

Inequity affects people throughout the social hierarchy and is grounded in the marginalisation, stigmatisation or relative disempowerment of different individuals and groups. As the voices and ideas of marginalised people are unheard or ignored, their health and nutrition needs are not addressed. While a focus on *inequality* is about understanding the differences in nutrition outcomes, such as diets and disease patterns, among different population groups, looking at *inequity* shifts the focus to the underlying systems and processes that generate unequal distributions of outcomes.[12] If inequalities in nutrition outcomes are avoidable through human intervention – and evidence suggests they are – then these inequalities are by definition inequitable.[13] We need a pro-equity policy agenda to inform priority-setting, target resources according to needs, and ensure that no one is left behind. To achieve the SDGs and related global nutrition targets for all, it is critical to explain the reasons for inequalities in nutrition outcomes through understanding nutrition inequities and their determinants.

FIGURE 1.1
Nutrition equity framework



Source: Adapted from the World Health Organization (WHO) Commission on the Social Determinants of Health[14] and broadly aligned with the United Nations Children's Fund (UNICEF) framework.[15]

Nutrition inequities and their determinants

This Global Nutrition Report proposes a conceptual framework (Figure 1.1) to help understand and address nutrition inequities through their determinants. The framework is adapted from the World Health Organization (WHO) Commission on the Social Determinants of Health[16] and broadly aligned with the United Nations Children's Fund (UNICEF) framework.[17] Unequal and avoidable outcomes are caused by inequitable processes, which are the focus of an equity analysis. This nutrition equity framework drills deeper through determinants at basic and underlying levels (in alignment with structural and intermediary WHO levels, both of which map roughly to, but expand on, similar UNICEF levels).

At the underlying level, nutrition inequity is caused by the way that people's everyday social, psychological/behavioural and material circumstances interact with their wider environments. These environments include: access to adequate and quality food; provision for infant care; healthcare environments; and wider living environments (including sanitation and opportunities for physical activity). There may be multiple interactions at this level. For example, a family caring for a child weakened by poor diet and malnutrition, resulting partly from inadequate sanitation and immunisation status, may find themselves unable to afford or access adequate health services, including advice and support for prevention. In time, this may lead to further deterioration of material or psychosocial circumstances, due to, for example, missed earning opportunities and diversion of family caring resources.

People's everyday circumstances and exposure to food, healthcare and living environments are ultimately determined by factors described at the basic level, which can produce unequal exposure or access to the underlying determinants. The basic level of the nutrition equity framework describes how nutrition inequity originates in inequalities in social position, human capital and potential, which are shaped by or differ according to socioeconomic and political contexts. These contexts vary in stability, particularly in countries or regions affected by conflict or other forms of fragility (including economic, environmental, political, security and societal forms as set out in the Organisation for Economic Co-operation and Development (OECD) Fragility Framework[18]).

The basic level of the framework is particularly useful for highlighting how someone's social position can significantly affect their human capital and potential. Social position is influenced not only by wealth but also by sociocultural perceptions of age, gender, ethnicity, education or disability. Human capital or potential includes education and employment opportunities, and access to social networks, all of which in turn affect everyday circumstances and environments. For example, poorer people may have less money to access food, health services or education, or they and others (including wealthier people) may find this access also restricted by other forms of social discrimination.

Processes of unfairness, injustice and social exclusion (Box 1.1) start at the basic level and extend to the underlying level. For example, particular groups are excluded from political processes, or are stigmatised and receive fewer opportunities to build their human capital. Food systems are affected by a range of powerful commercial determinants, such as marketing, advertising and the influence of companies on government policy (such as through lobbying), which can in turn affect both people's behaviours and their immediate food environment.[19] Both basic and underlying factors encompass social, political and commercial determinants. From now on, we will refer to these collectively as social determinants (adapting the WHO's terminology on the social determinants of health).

BOX 1.1
What causes inequity?

Injustice: Social injustice occurs due to discrimination against individuals or groups because of social norms and cultural values, leading to them being treated as unequal, unwanted or stigmatised. Often, these forms of discrimination intersect[20] and policy failure to recognise this discrimination perpetuates the inequities.[21] The resulting social position – 'a disabled boy' or 'a low-caste woman' – becomes a source of repeated unfairness throughout lives and generations, affecting access to education, health and nutrition.[22]

Unfairness: Multiple points of unfairness throughout the life course stem from basic social injustices. Suboptimal access to life chances (such as education)[23] result in suboptimal knowledge, services and physical environments.[24] Some social groups may find that they are further discriminated against, by health workers[25] for example. The same 'disabled boy' or 'low-caste woman' may find themselves unable to access adequate healthcare because services are neither designed for their needs nor available in their communities, or because they lack the knowledge to seek help. Similar factors may bar access to food markets, or adequate sanitation, collectively contributing to poorer nutrition outcomes.

Political exclusion and imbalances in power: Those in marginalised social positions are less likely to be represented in institutions that allocate educational or economic opportunities[26] and frame policies and programmes that address the underlying causes of nutrition inequities. This lack of power works at multiple levels, from assumptions that dictate what happens within a family (such as whether a girl goes to school), through barriers in setting public health standards,[27] to the relative voices of different countries within trade or other global agreements[28] and powerful food manufacturers lobbying behind closed doors against public health measures or undermining scientific research.[29]

The causes of inequity are complex, driven by the multiple ways in which social determinants interact at the basic and underlying levels, and influence, collectively, the social, institutional, policy and commercial contexts within which people live. Everyday circumstances, environment, social position, human capital, and social context all jointly determine a person's likelihood of becoming malnourished. Poor food environments that affect everyone may arise from poor policy choices, weak governance, state fragility or conflict. But even these society-wide effects are differential, usually disproportionally affecting poorer, more vulnerable or more excluded groups.[30] It is no coincidence therefore that many forms of malnutrition affect the most socially and politically powerless groups: women, children, ethnic minorities and those less educated or living in poverty. Exposure to these inequity determinants and their impact on people's wellbeing is often long term and cumulative, rather than episodic.

Nutrition equity through action on social determinants

Global leaders reaffirmed their commitment to bringing justice, equality and human rights into efforts to tackle global problems through the Sustainable Development Goals, set in 2015. SDG 10 (Box 1.2) is directly relevant to tackling the global malnutrition epidemic and recognises the importance of acting on social determinants as the root causes of nutrition inequities.

Pro-equity policy agenda to deliver nutrition actions

Nutrition actions need to become more 'equity-sensitive' to comprehensively address malnutrition. This requires linking more closely to the overarching SDG vision of 'leaving no one behind'. Within the international development community, stakeholders have already begun to embrace the approach to 'reach the furthest behind first'.[31] With a renewed focus on data that helps pinpoint nutrition inequalities, it is imperative to translate this overarching vision into actionable, equity-sensitive nutrition policies.

Governments and policymakers should consider how broader social policies, covering housing, labour, urban planning, transport, gender, education and social protection, are impacting nutrition outcomes, and integrate these into nutrition strategies. Such broader pro-equity actions are now increasingly being incorporated into municipal food strategies through consideration of the food and health linkages from an equitable and systemic perspective.[32] For example, the Brighton and Hove Food Partnership (UK), between the local health and municipal authorities and civil society organisations, has resulted in a food strategy action plan that lists "employment, social benefits, and housing and fuel costs" as part of its "preventative approach to tackle food poverty".[33]

A pro-equity nutrition policy agenda should also consider potential environmental links and implications. There is a growing and urgent need to improve our understanding of links between our food and our planet that go beyond waste production and water pollution. Our food affects our climate, and in turn our climate affects our food. We need to optimise the diets of all people and achieve a sustainable food system worldwide. A recent Lancet Commission recognises the importance of these links and recommends connecting "the silos of thinking and action between undernutrition, overweight and obesity and climate change to work collaboratively on common systemic drivers" in systems of food and agriculture, transportation, urban design and land use.[34] Now is the time to make healthy, sustainably produced foods the most accessible, desirable, affordable and convenient choices for all.

BOX 1.2
Equity and the focus on justice, vulnerability and non-discrimination

Sustainable Development Goal 10: Reduce inequality within and among countries

SDG 10 recognises that equality and the pursuit of equity are inextricably linked in the imperative to 'leave no one behind':

"We envisage a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination; of respect for race, ethnicity and cultural diversity; and of equal opportunity permitting the full realisation of human potential and contributing to shared prosperity. A world which invests in its children and in which every child grows up free from violence and exploitation. A world in which every woman and girl enjoys full gender equality and all legal, social and economic barriers to their empowerment have been removed. A just, equitable, tolerant, open and socially inclusive world in which the needs of the most vulnerable are met."[35]

Source: Transforming our world: the 2030 Agenda for Sustainable Development.[36]

Governance to address nutrition inequities

Strengthened governance, coordination, political commitment and accountability is crucial to address nutrition inequities, as further emphasised by the WHO Commission on the Social Determinants of Health (CSDH):

> **In order to address health inequities, and inequitable conditions of daily living, it is necessary to address inequities – such as those between men and women – in the way society is organized… To achieve that requires more than strengthened government – it requires strengthened governance: legitimacy, space, and support for civil society, for an accountable private sector, and for people across society to agree public interests and reinvest in the value of collective action.[37]**

At global and national levels, it will be necessary to prioritise policies and financing to address the broader social determinants of nutrition inequities. The ability of different groups and individuals to access healthy, nutritious diets is ultimately related to "the inequitable distribution of power, money and resources" highlighted by the WHO Commission.[38] Addressing these inequities through greater political commitment, leadership and governance, combined with capacity-building, training and earmarked financial and human resources, is required to achieve equality in nutrition outcomes. This calls for action by key stakeholders, including national governments, the UN system, civil society organisations and businesses. Action must also take place at subnational levels, to address inequities within countries.

This requires a renewed focus on inclusive governance, human rights and accountability. Such 'thinking and working politically' is being embraced by international development actors,[39] and has catalysed multiple studies of nutrition governance.[40] Previous Global Nutrition Reports have highlighted efforts to build and sustain political commitment to nutrition through renewed emphasis on governance and accountability. This includes forms of social accountability involving people participating and auditing the decisions and services that affect them most.[41] Examples of a rights-based approach to nutrition, in terms of national programmes, legislation and constitutional guarantees, are Brazil's Right to Food movement[42] and India's Transformation of Aspirational Districts initiative[43] (see Spotlight 3.1 in Chapter 3).

Better government structure and coordination has a direct bearing on mitigating nutrition inequalities. A study of 116 countries, over a 15-year period, compared changes in childhood stunting against basic governance attributes (bureaucratic effectiveness, law and order, political stability, restraint of corruption and democratic accountability), concluding that "better quality of governance in countries serves to reduce child undernutrition, independent of income".[44]

Under conditions of political and economic instability, or other forms of fragility, governance is often compromised, leading to aggravation of nutrition inequities and resulting nutrition inequalities. Fragility and conflict can undermine basic services and infrastructure, raise food prices, devalue currencies and introduce damaging coping mechanisms (such as missing meals or withdrawing children from school) that can have longer-term consequences. This calls for specific actions to bridge the humanitarian–development divide and address multiple drivers and manifestations of nutrition inequities in fragile states.

Measuring and understanding nutrition data with an equity lens

Accountability on global nutrition is necessary to identify and understand the drivers of unequal nutrition outcomes and facilitate the right action for impact. Current accountability mechanisms – including the Global Nutrition Report – need to take a more equity-sensitive approach to their assessments, analysis and reporting. This year's report reveals strong evidence for the presence of nutrition inequities in health systems, food systems and financing, and inequalities in all forms of malnutrition. It also highlights the significant information gaps which need to be filled by "simultaneous disaggregation of data by multiple dimensions, including income, sex, age, race, ethnicity, migration status, disability, geographic location and other characteristics relevant to national contexts", as well as "qualitative work to understand root causes".[45] The latter dimension is critical to bring forward the voices of those affected by malnutrition, and of those who play vital roles in the provision of food and care.[46]

Since inequities are pervasive across all areas of society, equity actions cannot happen in isolation or be limited to one sector alone. Box 1.3 illustrates how an equity lens can be applied to nutrition action through a set of straightforward questions when designing or implementing a new nutrition policy or programme. It may not be feasible or acceptable to track all of these indicators in all situations, and the local context and appropriate use of data should always be considered. Table 1.1 summarises priority actions aligned with an equity focus on data, environments and governance towards equitable nutrition outcomes.

BOX 1.3
Designing equitable nutrition actions

The following questions can be applied to most areas of analysis and action on nutrition.

Situation analysis

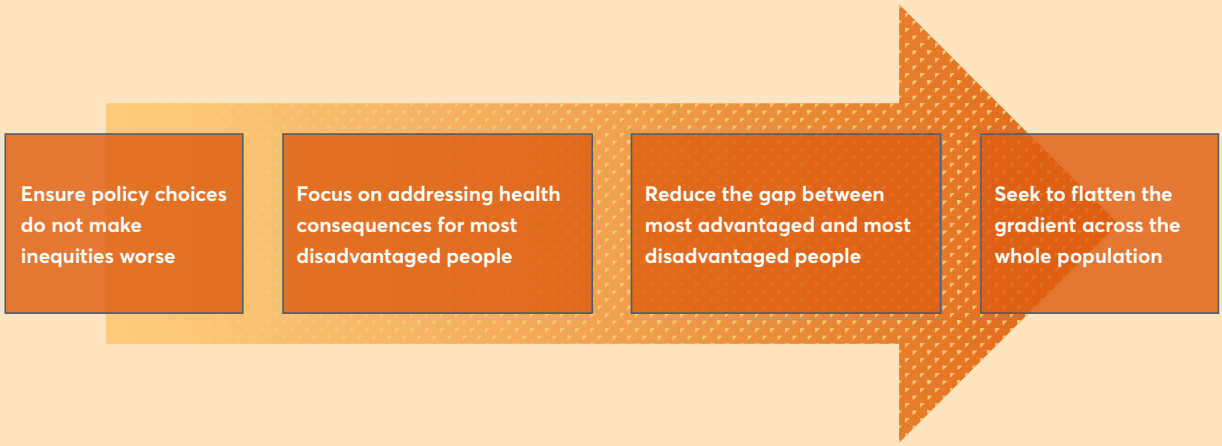
- Are nutrition outcomes distributed fairly? How do they differ when disaggregated by a range of potential forms of social discrimination and marginalisation – not only by wealth (e.g. income), but also by gender, ethnicity, sexuality, disability, migration status, geography and broader determinants of social position such as entitlements and social and cultural capital?
- Is coverage of programmes that can influence nutrition outcomes – particularly those concerned with health, food and living environments – extending to those identified as most in need (interpreted through disaggregated data analysis)?
- Which aspects of people's daily living conditions – including housing, sanitation and basic income levels – may be contributing to their differential exposure to these different environments?
- Are there particular assumptions about forms of social identity (e.g. gender, ethnicity, disability) that are contributing to the marginalisation of some groups from decision-making structures?

BOX 1.3 (CONTINUED)
Designing equitable nutrition actions

Designing action

- What kind of governance arrangements, policy and programming actions would tackle the basic and systemic drivers of these inequities, among those most at risk of exclusion, marginalisation or discrimination?
- Is refocusing with a more specific equity lens likely to improve their effectiveness at preventing unequal nutrition outcomes?
- How does this apply to more macro-level policies such as trade or labour policy, agricultural subsidies or social protection?
- How do we give more power to those most at risk of exclusion, marginalisation or discrimination?
- How do we better harness and improve existing systems of democracy, governance, accountability and rights-based approaches, with nutrition objectives in mind?

FIGURE 1.2
How stakeholders can address nutrition inequities



Source: WHO-EU 2014 – Obesity and inequities.

TABLE 1.1
Priority actions for nutrition equity

PRIORITIES FOR AN EQUITY AGENDA	EQUITY-SENSITIVE NUTRITION ACTIONS
DATA Measure and understand nutrition data from an equity perspective	• Leverage and analyse existing nutrition data with a strengthened equity lens. • Enhance the collection of new disaggregated health and nutrition data, for example incorporating determinants such as age, sex, ethnicity, education, wealth, disability, migration status, geographic location data into demographic, health or nutrition surveys. • Collect and analyse qualitative accounts of inequities at the community level to increase understanding of the root causes of inequities.
ENVIRONMENTS	
NUTRITION SECTOR Universally address the broader social determinants of nutrition	• Ensure universal access to and coverage of nutrition services, such as community-based support for infant and young child feeding, treatment of acute malnutrition and maternal health services.[47] • Ensure universal access to services relating to the social determinants of nutrition, including primary healthcare, immunisation, agricultural extension, nutrition education, sanitation and safe drinking water.[48] • Provide additional funding and resources for those most nutritionally disadvantaged, including young children, expectant and nursing mothers, adolescents and older people, in line with commitments to universal health coverage. • Provide financial and other resources for civil society organisations and community groups reaching and including nutritionally vulnerable communities. • Invest in health/nutrition workforces, increasing nutrition and equity awareness and knowledge across sectors, and develop clear processes for ensuring that specific groups do not experience exclusion or discrimination at the point of service.[49]
MULTISECTORAL Universally target the broader social determinants of nutrition	• Tackle inequities in resource distribution via, for example, systems of social protection, support for stable employment, agrarian and land reform.[50] • Adopt government-wide approaches to policy and regulation to target multiple drivers of nutrition inequity simultaneously – including housing, education, planning, food systems, transport and finance.
GOVERNANCE Leverage SDG 10 on inequality to address the broader social determinants of nutrition	• Incorporate nutrition-equity considerations into decisions on macro-economic policies in trade, investment, debt/finance and taxation. • Address power imbalances in food systems, via a strengthened system of international governance and accountability, rights-based approaches to food and nutrition policy development and programming, responsible business models and civil society action.[51] • As part of this, establish and support new spaces for dialogue, participation and coordinated action, whether globally (e.g. UN Committee on World Food Security,[52] the Scaling Up Nutrition (SUN) movement[53]) and within climate change forums (e.g. Conference of the Parties[54]) or nationally (e.g. SUN networks[55] or food policy councils). • Include alternative voices in thinking and action to sensitise policy spaces and systems that affect nutrition – in particular, ensure community involvement in the design, provision, monitoring, evaluation or audit of services. • Work across the humanitarian–development divide to address multiple drivers and manifestations of nutrition inequity in fragile states.

The *2020 Global Nutrition Report*

Since 2014, the Global Nutrition Report has provided high-quality, comprehensive and credible data for tracking progress, guiding action, inspiring commitment and mobilising financing to end malnutrition in all its forms. It is a key mechanism to hold all stakeholders (public and private, from all relevant sectors) accountable to the commitments made by global leaders.

The *2020 Global Nutrition Report* presents the latest data and evidence on the state of global nutrition.[56] There is now an increased global recognition that poor diet and consequent malnutrition are among the greatest health and societal challenges of our time. This year's report applies an equity lens to analyse and interpret global nutrition data, elucidate how nutrition can be integrated into the health system, understand the role of food systems in shaping healthier diets and environments, and highlight nutrition financing needs and accountability. The presence of nutrition inequities in health systems, food systems and financing, and inequalities in all forms of malnutrition all highlight the need for multifaceted equitable nutrition action. This is crucial to achieving the 2025 global nutrition targets.

Chapter 2 presents and analyses the latest available data on the global burden of malnutrition and progress towards meeting the 2025 global nutrition targets (on MIYCN and NCDs). It goes deeper to characterise inequalities in nutrition indicators across countries and within countries with a focus on location, and further by key population characteristics, such as age, sex, wealth and education. It highlights key data gaps and the need for granular, systematically collected nutrition data for informed priority-setting and resource targeting according to needs.

Chapter 3 recognises the centrality of nutrition to a healthy life and emphasises the need to integrate and mainstream nutrition within our health systems. It identifies inequities and challenges in such integration and proposes actions across each of the WHO's six health system building blocks to ensure universally covered, equitable, effective and sustained access to high-quality nutrition care. Implementing effective and cost-effective nutrition actions would improve diets, save lives and reduce health spending.

Chapter 4 examines the crucial role food systems can play in supporting healthier, equitable and sustainable diets. Addressing inequities in food systems (from production to consumption) through equity-sensitive food policies – such as agricultural, labelling, fiscal, reformulation, school procurement and marketing policies – could ensure that healthy, sustainably produced foods are the most accessible, desirable, affordable and convenient choices for all. Everyone needs to be part of the solution, with appropriate mechanisms in place to track effectiveness, financing and accountability.

Chapter 5 presents and analyses the current state of global nutrition financing, primarily from domestic and donor resources. The analysis reveals that nutrition financing remains particularly low, with differences noted by sector, malnutrition form, and population covered, and that more granular data is needed for equitable resource prioritisation. A renewed and increased focus on equitable nutrition financing, leveraging both existing and innovative funding mechanisms, is critical to universally achieving the 2025 global nutrition targets.

Chapter 6 highlights that equitable nutrition is a collective responsibility and calls for all stakeholders to engage and act. This year marks the midpoint of the UN Decade of Action on Nutrition, and the upcoming Tokyo Nutrition for Growth Summit will offer a unique opportunity for world leaders to make bold nutrition commitments that support a pro-equity agenda, so that all people can survive and thrive.

02

Inequalities in the global burden of malnutrition

2013. British Columbia, Canada.
The launch of an initiative encouraging healthy and active lifestyles.
Photo: Province of British Columbia.

KEY POINTS

1. Malnutrition persists at unacceptably high levels on a global scale. Despite some improvements in select nutrition indicators, progress is insufficient to meet the 2025 global nutrition targets. Among children under 5 years of age, 149.0 million are stunted, 49.5 million are wasted and 40.1 million are overweight. There are 677.6 million obese adults.

2. Progress varies across countries and by form of malnutrition. The latest data shows that no country is 'on course' to meet all eight global nutrition targets being tracked, and just eight countries are on course to meet four targets. No country is on course to meet the targets on anaemia or adult obesity.

3. Countries can be burdened by multiple forms of malnutrition, particularly when affected by conflict or other forms of fragility. Addressing drivers and consequences of fragility requires more and better data to inform the design of equitable interventions.

4. Global, regional and national patterns mask nutrition inequalities within countries and by sociodemographic characteristics, such as subnational location, age, sex, wealth and education.

5. Data gaps are more striking for certain nutrition indicators, subnational locations, and key population characteristics, such as ethnicity and disability. These data gaps prevent both improved understanding of nutrition inequalities and informed priority-setting.

The state of global nutrition

Since 2014, the Global Nutrition Report has provided high-quality, comprehensive and credible data to assess the state of global nutrition, complemented by online Country Nutrition Profiles.[1] The *2020 Global Nutrition Report* continues to shed light on the global state of nutrition and progress towards the 2025 global nutrition targets. It builds on prior reports and uses new and more granular data to go deeper and understand who is affected, where and by what form of malnutrition.

This chapter presents the latest data on the 2025 global nutrition targets, collectively referring to the maternal, infant and young child nutrition (MIYCN) targets, and the diet-related non-communicable disease (NCD) targets. These include targets for six MIYCN indicators: low birth weight, stunting in children under 5 years of age, wasting in children under 5 years of age, overweight in children under 5 years of age, anaemia in women of reproductive age and exclusive breastfeeding. They also include diet-related NCD indicators in adults: salt intake, raised blood pressure, diabetes and obesity. In recognition of the need to evaluate other key nutrition indicators and comprehensively assess the state of global nutrition across the life course, data is also tracked and presented for: multiple infant and young child feeding (IYCF) indicators, child and adolescent anthropometric indicators (underweight, overweight, and obesity), and adult anthropometric indicators (underweight and overweight, in addition to obesity). Definitions of all indicators can be found in Appendix 1.

This chapter provides an overview of inequalities in these nutrition indicators across countries and within countries by location and key population characteristics such as age, sex, wealth and education. More detailed data at global, regional and country levels, at the most granular level available, is available on the Global Nutrition Report website.[2] This data and findings are an indispensable prerequisite for informed priority-setting targeting the intersections between diet and disease, and ensuring that no one is left behind.

Progress towards the 2025 global nutrition targets

Global progress

Figure 2.1 presents the baseline and latest data for the 2025 global nutrition targets. Multiple sources were used to compile this global data, and global progress towards meeting the targets is assessed as 'on course', 'off course' or 'some progress'. (Appendix 2 gives details of the data and methods used.)

Looking at the MIYCN targets, the world is 'off course' to meet the anaemia target, with 613.2 million (32.8% prevalence) adolescent girls and women aged 15 to 49 years being affected. Anaemia prevalence is substantially higher in pregnant (35.3 million, 40.1%) than non-pregnant (577.9 million, 32.5%) adolescent girls and women. There has been some progress towards achieving the exclusive breastfeeding target, with 42.2% of infants under 6 months being exclusively breastfed; yet, accelerated improvements would be needed to reach the 2025 target. Globally, 20.5 million newborns (14.6%) have a low birth weight, with levels of progress well below those required to achieve the 2025 target. Stunting still affects 149.0 million (21.9%) children under 5 years of age, and wasting affects 49.5 million (7.3%) children under 5 years of age; progress is far too slow to achieve any of those targets. Notably, Asia is home to more than half of the world's stunted children (81.7 million, 54.8%).[3] We are also off course to meet the target for overweight in children, with 40.1 million (5.9%) children under 5 years of age being overweight.

FIGURE 2.1
Global progress towards the 2025 global nutrition targets

Maternal, infant and young child nutrition targets

Anaemia

OFF COURSE

TARGET 50% reduction of anaemia in women of reproductive age.

Baseline (2012)	30.3%
2016 data	32.8%
NON-PREGNANT WOMEN	32.5%
PREGNANT WOMEN	40.1%
Target (2025)	15%

In 2016, anaemia affected 613.2 million women of reproductive age, 35.3 million of whom were pregnant.

Baseline proportion for 2012 was revised to 30.3% in 2017. Current prevalence reflects increase since then.

Exclusive breastfeeding

SOME PROGRESS

TARGET Increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%.

Baseline (2005–2012)	37%
2018 data	42.2%
Target (2025)	50% or more

In 2018, 42.2% of infants 0–5 months were exclusively breastfed.

An increase of 5 percentage points over 6 years reflects very limited progress. The estimate for 2018 was 40.7%.

UPDATED DATA

Low birth weight

SOME PROGRESS

TARGET 30% reduction in low birth weight.

Baseline (2012)	15%
2015 data	14.6%
Target (2025)	10.5%

The latest estimate is that there are around 20.5 million children with low birth weight.

Achieving the 2.74% average annual rate of reduction (AARR) required between 2012 and 2025 to meet the global nutrition target will necessitate more than doubling progress. This will involve both improved measurement and programme investments to address the causes of low birth weight.

UPDATED DATA

Childhood stunting

OFF COURSE

TARGET 40% reduction in the number of children under 5 who are stunted.

Baseline (2012)	165.8m
2018 data	149m
Target (2025)	Around 100m

In 2018, 149.0 million children were stunted.

The current AARR (2.2%) is below the required AARR (4.0%). There will be about 30 million stunted children above the 100 million target of 2025 if current trends continue. The baseline status has been updated from 165.2 million children in the *2018 Global Nutrition Report* to 165.8 million.

UPDATED DATA

Childhood wasting

OFF COURSE

TARGET Reduce and maintain childhood wasting to less than 5%.

Baseline (2012)	7.9%
2018 data	7.3%
Target (2025)	Less than 5%

In 2018, 7.3% of children were wasted, equivalent to 49.5 million children.

Global prevalence was 7.3% in 2018, compared to 7.9% in 2012, demonstrating negligible progress towards the 5% target for 2025. A substantial increase in efforts will be required to break the global status of inertia in wasting and lower the rate in the direction of the 5% target by 2025.

UPDATED DATA

Childhood overweight

OFF COURSE

TARGET No increase in childhood overweight.

Baseline (2012)	5.5%
2018 data	5.9%
Target (2025)	5.5% or less

In 2018, 5.9% of children were overweight, equivalent to 40.1 million children.

The baseline status has been updated from 5.4% in the *2018 Global Nutrition Report* to 5.5%.

UPDATED DATA

FIGURE 2.1 (continued)
Global progress towards the 2025 global nutrition targets

Diet-related NCD targets

Salt intake

OFF COURSE

TARGET 30% relative reduction in mean population intake of salt/sodium.

Baseline (2010)	5.6g per day
2017 data	5.6g per day
MEN	5.8g per day
WOMEN	5.3g per day
Target (2025)	3.95g per day

In 2017, the global mean sodium intake was 5.6g per day.

This data is for adults 25 years and over. There is no available global database on trends and projections in mean sodium consumption. The *2020 Global Nutrition Report* defines the current AARR to be 0.2%, far from the required AARR of 2.4%. The baseline proportion for 2010 was revised to 5.6g per day in the *2020 Global Nutrition Report*. Estimate includes China. If China were excluded, the global average would be 4.0g per day. Mean population recommended intake is 2g per day.

UPDATED DATA

Raised blood pressure

OFF COURSE

TARGET A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstance.

MEN	
Baseline (2014)	24.3%
2015 data	24.1%
Target (2025)	18.2%
WOMEN	
Baseline (2014)	20.2%
2015 data	20.1%
Target (2025)	15.2%

In 2015, 597.4 million men and 529.2 million women had raised blood pressure – 1.13 billion adults in total.

Probability of meeting the global target is almost zero for both sexes based on projections to 2025.

Adult obesity

OFF COURSE

TARGET Halt the rise in prevalence.

MEN	
Baseline (2014)	10.4%
2016 data	11.1%
Target (2025)	10.4%
WOMEN	
Baseline (2014)	14.4%
2016 data	15.1%
Target (2025)	14.4%

In 2016, 284.1 million men and 393.5 million women were obese – 677.6 million adults in total.

Probability of meeting the global target is almost zero for both sexes based on projections to 2025.

Adult diabetes

OFF COURSE

TARGET Halt the rise in prevalence.

MEN	
Baseline (2012)	8.7%
2014 data	9.0%
Target (2025)	9.0%
WOMEN	
Baseline (2012)	7.7%
2014 data	7.9%
Target (2025)	7.9%

In 2014, 217.8 million men and 204.4 million women were diabetic – 422.1 million adults in total.

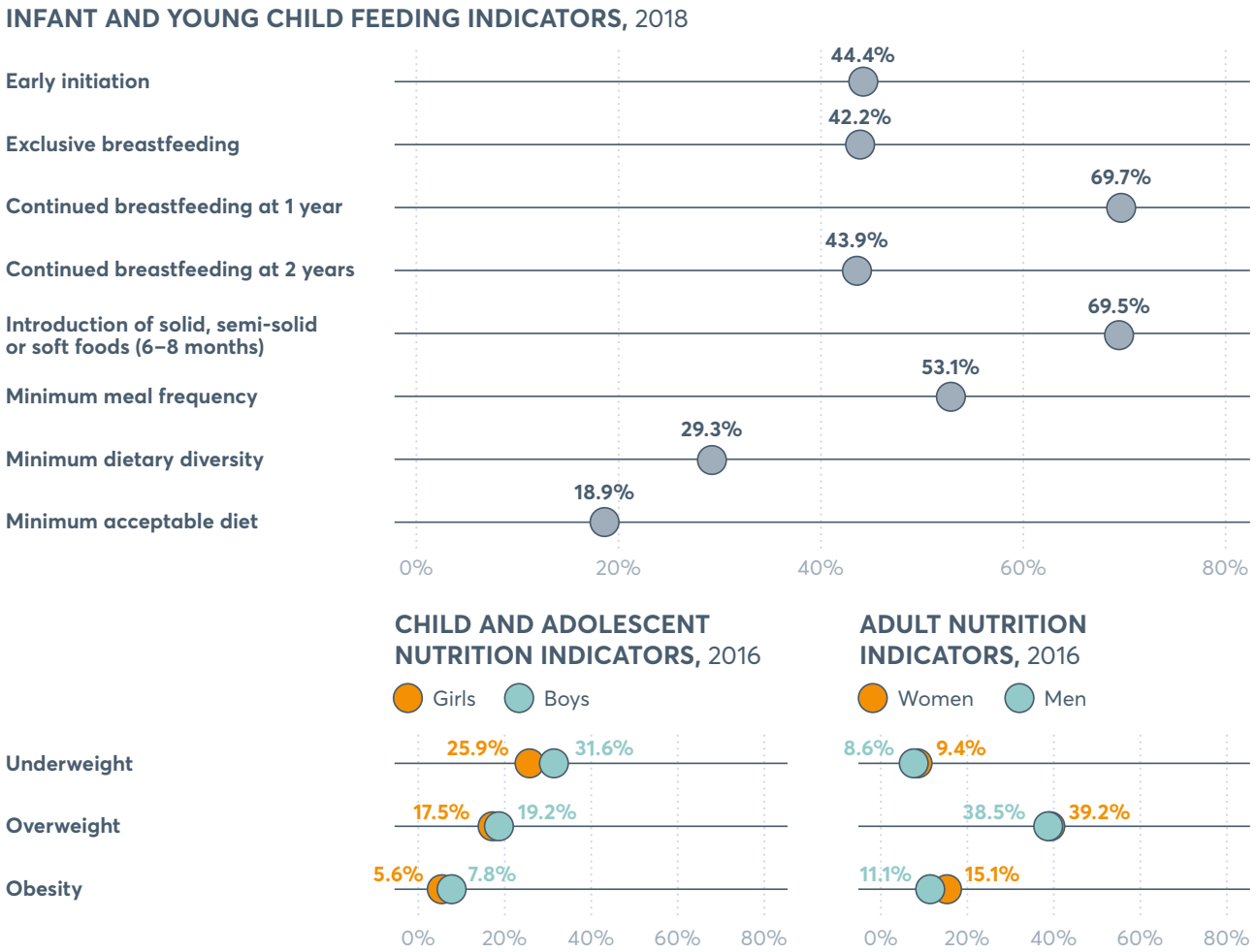
Probability of meeting the global target is low (<1% for men, 1% for women) based on projections to 2025.

Source: UNICEF global databases Infant and Young Child Feeding, 2019, UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight, (March 2019, New York), NCD Risk Factor Collaboration, WHO Global Health Observatory and Global Burden of Disease, the Institute for Health Metrics and Evaluation, UNICEF-WHO low birthweight estimates, 2019.
Note: Baseline year aligns as close as possible to the year that each target was adopted (generally 2012 for maternal, infant and young child nutrition targets, and 2014 for diet-related non-communicable disease (NCD) targets). For diabetes, given the lack of global post-2014 data, data in 2012 are shown as the baseline for reference. Latest year reflects the most recent year for which data is shown. Childhood refers to children under 5 years of age; salt intake is adults aged 25 years and older, all other adult targets are for those 18 years and over. Data on diet-related NCDs (all but salt) is age-standardised using the WHO standard population. The methodologies for tracking progress differ across targets. See Appendix 1 for definitions of indicators. See Appendix 2 for details on data and methods used to assess progress towards global nutrition targets.

All diet-related NCD targets are globally off course and at alarming levels, with projected probabilities of meeting any of the targets being close to zero. Mean global sodium intake for adults (aged 25+ years) is estimated at 5.6g/day, slightly higher in men (5.8g/day) than women (5.3g/day). Globally, 1.13 billion (22.1%) adults (18+ years) have raised blood pressure, more men (597.4 million, 24.1%) than women (529.2 million, 20.1%). A staggering 677.6 million (13.1%) adults (18+ years) are obese worldwide, with more women being obese (393.5 million, 15.1%) than men (284.1 million, 11.1%). Diabetes affects 422.1 million (8.5%) adults (18+ years), with slightly more diabetic men (217.8 million, 9.0%) than women (204.4 million, 7.9%).

Overall, malnutrition persists at unacceptably high levels on a global scale. Despite some improvements in exclusive breastfeeding, progress overall is far too slow to meet the 2025 global nutrition targets. Intensified efforts and actions are needed to reach each of those targets.

FIGURE 2.2
Global prevalence of infant and young child feeding indicators, child and adolescent and adult nutrition indicators



Source: UNICEF global databases Infant and Young Child Feeding, 2019, NCD Risk Factor Collaboration 2019, WHO Global Health Observatory 2019 and Global Burden of Disease, the Institute for Health Metrics and Evaluation 2019, UNICEF-WHO low birthweight estimates, 2019.
Note: Data on adult indicators for those aged 18 and older and child and adolescent indicators for those aged 5–19 is age-standardised using the WHO standard population. The methodologies for tracking progress differ between targets. See Appendix 1 for definitions of indicators. See Appendix 2 for details of data and methods used to assess progress towards global nutrition targets.

Beyond these nutrition indicators with global targets, the Global Nutrition Report also tracks several IYCF, adolescent and adult indicators (Figure 2.2). Infant and young child feeding practices remain poor. Fewer than half (44.4%) of all newborns are put to the breast within the first hour of birth (known as early initiation), while only 42.2% of infants under 6 months of age are exclusively breasted. Around two-thirds (69.7%) of children aged 12–15 months and less than half (43.9%) of children aged 20–23 months are breastfed. When it comes to solid food, only 69.5% of infants aged 6–8 months eat any solid food at all. Of children aged 6–23 months, only roughly half (53.1%) get the recommended minimum number of meals, with fewer than one in three children (29.3%) receiving the minimum diet diversity. This means that fewer than one in five (18.9%) eat a minimum acceptable diet. The latest sex-disaggregated global data on child and adolescent (5–19 years) and adult (18+ years) anthropometrics shows that far more children and adolescents are underweight than overweight or obese worldwide, while far more adults are overweight or obese than underweight. (We discuss this in more detail below in this chapter, under 'Inequalities in malnutrition').

National progress

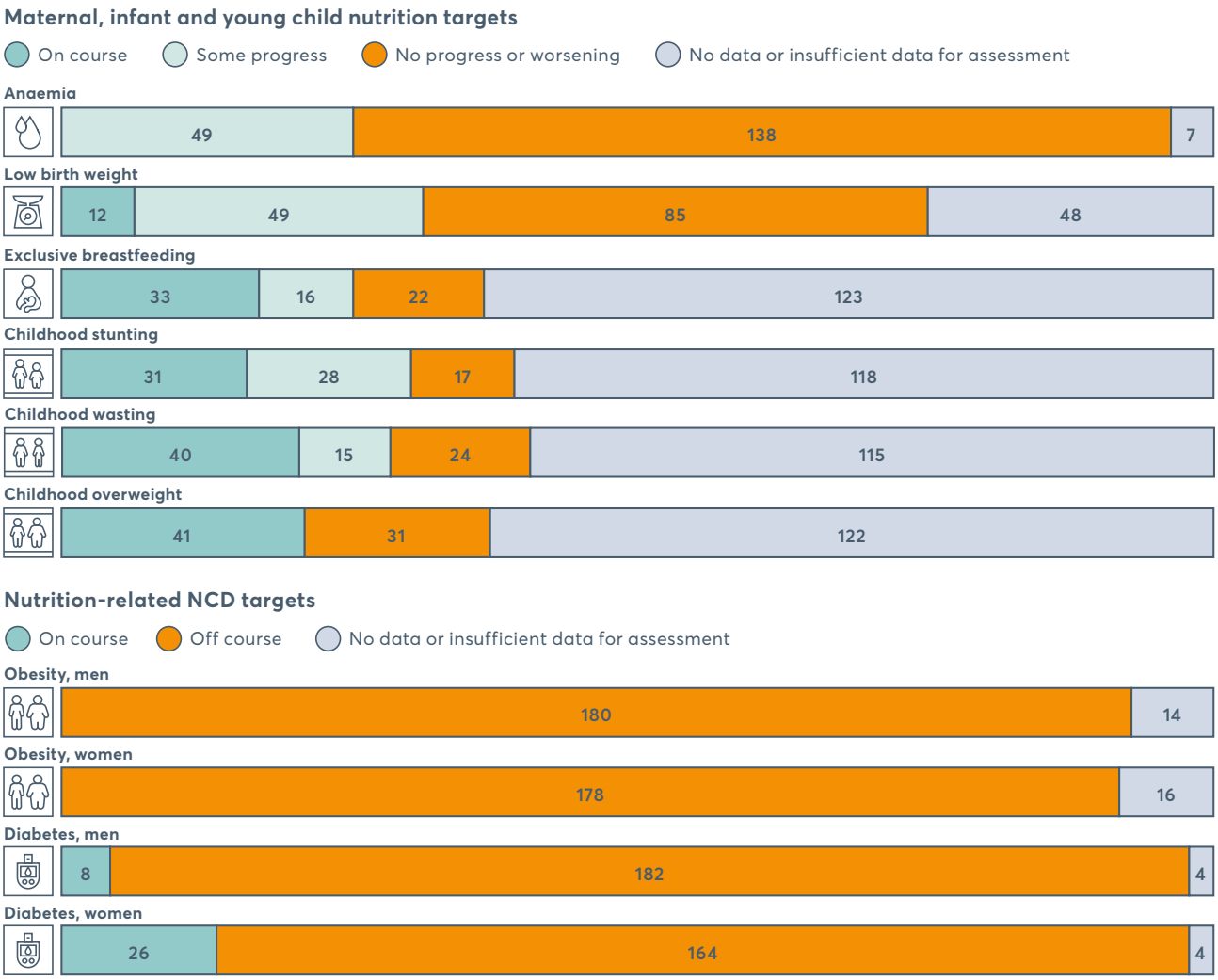
The Global Nutrition Report also reports on country-level progress towards the 2025 global nutrition targets (Figure 2.3). Country-level progress is assessed as 'on course', 'some progress' or 'no progress or worsening' for MIYCN targets, and 'on course' or 'off course' for diet-related NCD targets (see Appendix 2 for details on data sources and methods used). Of the ten 2025 global nutrition targets, progress was not assessed at the country level for salt intake and raised blood pressure, due to lack of comparable projections.

Data availability and quality differ across indicators because of varying methodologies and modelling approaches. It is, therefore, possible that some countries may have made progress towards the targets that is not reflected in these analyses. For instance, data for the MIYCN indicators, excluding anaemia and low birth weight, is based on surveys that mostly cover low-income and lower-middle-income countries, thus the full picture is incomplete. Data for anaemia, low birth weight and the NCD targets is available for all countries, but based on modelled estimates, which may not accurately represent actual country-level status.

The assessment of country-level progress reveals that too few countries are 'on course' to meet any one of the global targets (Figure 2.3). The latest available data shows that 41 countries are 'on course' for childhood overweight, 40 for wasting and 31 for stunting; 33 countries are 'on course' for exclusive breastfeeding, and only 12 for low birth weight. Worse still, no country is 'on course' to reach the anaemia target, nor is any country 'on course' to halt the rise in adult obesity. Likewise, only a low proportion of countries are 'on course' to meet the diabetes target.

Across the targets, 106 countries with available data are 'on course' to meet at least one global nutrition target, with an additional 28 showing 'some progress' in at least one target. Of these 106, 56 countries are 'on course' to meet at least two targets; 21 countries to meet at least three, and just 8 countries to meet four targets, which is the maximum number of targets any country is on track to meet.

FIGURE 2.3
Country-level progress towards the 2025 global nutrition targets



Source: UNICEF global databases Infant and Young Child Feeding, 2019, UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight, (March 2019, New York), NCD Risk Factor Collaboration 2019, WHO Global Health Observatory 2019, UNICEF-WHO Low birthweight estimates, 2019.
Notes: Assessment based on 194 countries. Childhood is under-5, and diet-related non-communicable disease (NCD) targets are assessed for adults 18 years and over. The methodologies for tracking progress differ between targets. See Appendix 1 for definitions of indicators. See Appendix 2 for details of data and methods used to assess progress towards global nutrition targets.

The double burden of malnutrition

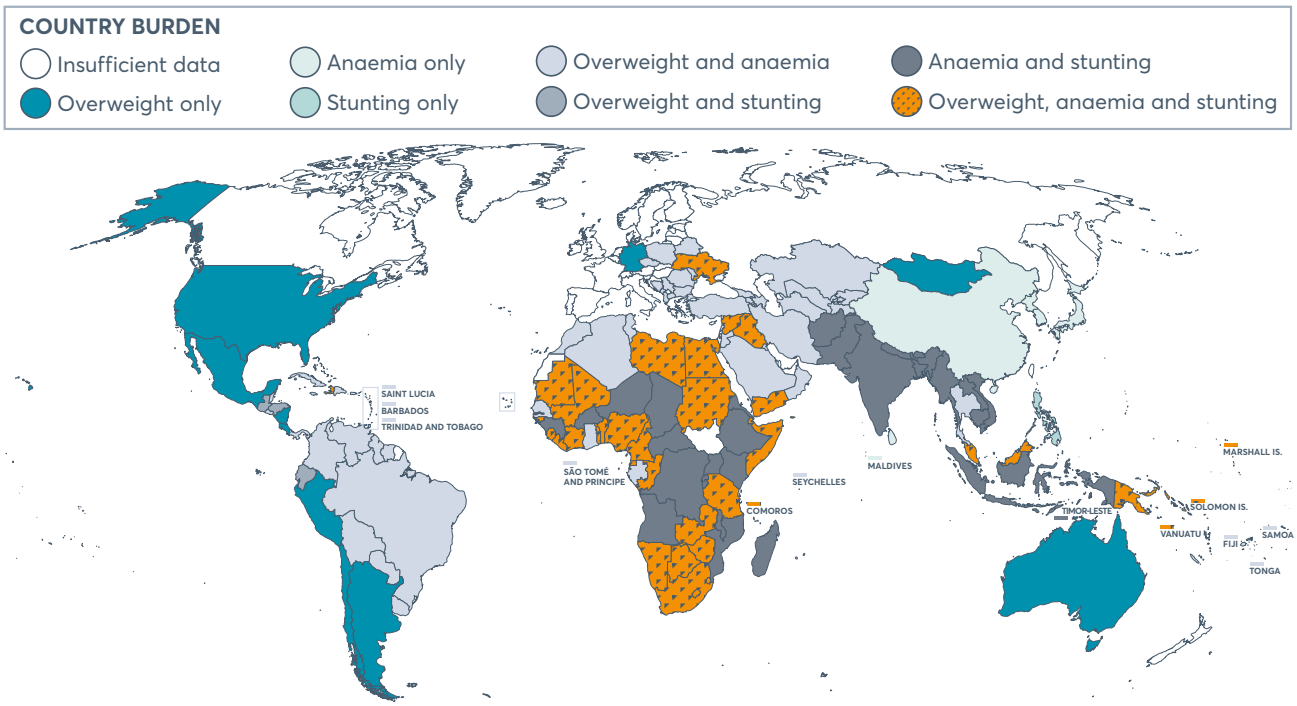
There are two sides to the global malnutrition crisis we are facing: the major global impacts of food insecurity and undernutrition, which have long been recognised; and the tremendous diet-related NCD impacts that have more recently emerged. This double burden of malnutrition is characterised by the coexistence of undernutrition alongside overweight or obesity (a major driver of other diet-related NCDs, such as diabetes and cardiovascular disease). This can occur at any population level: country, city, community, household and individual.[4]

Building on previous Global Nutrition Report analyses, and using the latest available data, the coexistence of three different forms of malnutrition at the country level was assessed (Figure 2.4): childhood stunting (aged under 5 years), anaemia among women of reproductive age (aged 15–49 years), and overweight (including obesity) in adult women (aged 18+ years). Of the 194 countries assessed, 143 have comparable data for all three indicators. All 143 countries experience at least one form of malnutrition at high levels, based on the three indicators and their respective thresholds. Of the 51 countries not represented in this analysis, the majority (40, 78.4%) are high-income. Of the 143 countries, 124 experience high levels of at least two forms of malnutrition (56 countries: anaemia and overweight; 28: anaemia and stunting; 3: overweight and stunting). Of the 124 countries, 37, mainly in Africa, experience high levels of all three forms. Only 19 countries experience high levels of just one form (1: stunting, 7: anaemia, 11: overweight). Although data availability and quality varies between countries and indicators, and over time, it is apparent that most countries globally are burdened by one or more forms of malnutrition.

Some notable country-level changes are observed over the past two decades, particularly for Guatemala and Peru. In 2000, Guatemala experienced high levels of all three malnutrition forms – overweight, stunting and anaemia – but anaemia has since dropped below the threshold (from 26.1% to 16.4% between 2000 and 2016). Peru was similarly burdened by all three forms of malnutrition in 2000, but has dropped below the high threshold level for both stunting (from 31.3% to 12.9% between 2000 and 2017) and anaemia (from 32.4% to 18.5% between 2000 and 2016).

FIGURE 2.4

Map of countries with overlapping forms of stunting in children under 5, anaemia among women of reproductive age, and overweight in adult women



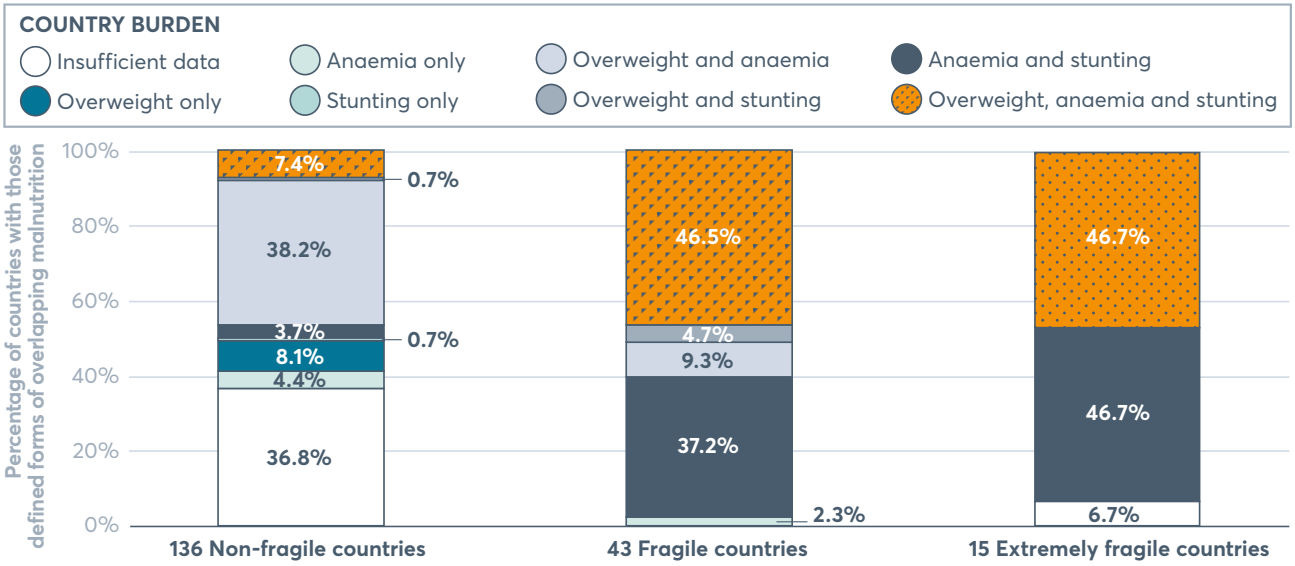
Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight, (March 2019, New York), NCD Risk Factor Collaboration 2019, WHO Global Health Observatory 2019.

Notes: Prevalence (%) thresholds used to determine whether a country is experiencing a high prevalence for a given form of malnutrition: stunting in children aged under 5 years: ≥20%; anaemia among women of reproductive age (15–49 years): ≥20%; overweight (including obesity) in adult women aged ≥18 years: body mass index of ≥25kg/m^2 ≥35%. Based on latest data available for 143 countries.

Countries affected by conflict or other forms of fragility (as discussed in Chapter 1) are at a higher risk for malnutrition. In 2016, 1.8 billion people (24% of the world's population) were living in fragile or extremely fragile countries.[5] This figure is projected to grow to 2.3 billion people by 2030 and 3.3 billion by 2050. In such settings, prevalence of wasting[6] among children under 5 years of age, an acute form of malnutrition, can be used to assess the recent nutrition status of these young children, as well as the overall food and nutrition situation of the general population.[7] A wasting prevalence of 15% or more is regarded as very high and a trigger for intervention.[8] Tufts University carried out a study in four countries: Bangladesh and Niger (both fragile, following the classification of OECD),[9] and Chad and South Sudan (both extremely fragile, following the same classification). This study found that, over the last decade, acute malnutrition prevalence[10] has occasionally dipped below 15%, but has generally remained above this threshold, despite substantial humanitarian efforts.

New analysis by the Global Nutrition Report demonstrates that fragile countries (20 of 43, 46.5%) and extremely fragile countries (7 of 15, 46.7%) are disproportionally burdened by high levels of all three forms of malnutrition compared to non-fragile countries (10 of 136, 7.4%) (Figure 2.5). Likewise, a greater proportion of fragile countries (42 of 43, 97.7%) and extremely fragile countries (14 of 15, 93.3%) experience at least two forms of malnutrition at high levels compared with non-fragile countries (68 of 136, 50.0%). Of note, there are variations in the forms of malnutrition that fragile, extremely fragile and non-fragile settings mostly face. Non-fragile countries are mostly burdened by high levels of overweight (overweight alone or overlapping with other forms, 74 of 136, 54.4%), whereas fragile countries experience high levels of anaemia (41 of 43, 95.3%) and extremely fragile countries have high levels of anaemia and stunting (14 of 15, 93.3%). These findings highlight the need to understand and address drivers of fragility itself, and how these lead to unequal nutrition outcomes.

FIGURE 2.5
Overlapping forms of stunting in children under 5, anaemia in adolescent girls and women, and overweight in adult women, by fragility



Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight, (March 2019, New York), NCD Risk Factor Collaboration 2019, WHO Global Health Observatory 2019, OECD 2018.
Notes: Prevalence (%) thresholds used to determine whether a country is experiencing a high prevalence for a given form of malnutrition: stunting in children under 5 years: ≥20%; anaemia in adolescent girls and women aged 15–49 years: ≥20%; overweight (including obesity) in adult women aged ≥18 years: body mass index of ≥25kg/m² ≥35%. The figure is based on latest data for 194 countries. Numbers and percentages shown in each column correspond to each country group, classified by fragility state, as non-fragile, fragile and extremely fragile. This determination is based on the OECD States of Fragility 2018 framework, assessed by five core dimensions: political, societal, economic, environmental, and security.[11]

As explored in the previous report, multiple forms of malnutrition can also coexist at the individual level.[12] The *2018 Global Nutrition Report* highlighted the coexistence of stunting and wasting at the individual level, meaning that a given child can be both stunted and wasted at the same time, placing them at increased risk for deleterious nutrition deficits, impaired cognitive development and even death. Of the 111 countries with available data, 10 have prevalence above 5% of coexisting stunting and wasting in individuals, and these are concentrated in Africa (7) and Asia (3). Of those, Yemen, South Sudan and Sudan have the highest prevalence, all at 6.7%.

Stunting and overweight can also coexist in the same child at the same time. Across the 111 countries with available data, 10 countries in Africa (5) and Western Asia (5) have a prevalence of at least 5% in coexisting childhood stunting and overweight at the individual level. Syria is the only country in which this prevalence exceeds 10% (11.1%), followed by Equatorial Guinea (8.6%) and Egypt (8.1%). Understanding how different forms of malnutrition can coexist at the individual, household and country level, and across the life course, is crucial, requiring more systematically collected and granular data.

Inequalities in malnutrition

Global, regional and national patterns can mask inequalities in nutrition indicators within countries and by sociodemographic characteristics. Elucidating inequalities in nutrition indicators is pivotal for informed priority-setting, guiding equitable distribution of resources and targeting interventions according to need. This chapter presents disaggregated data for a range of nutrition indicators – both those with a global target, and others of interest as introduced above – by location, age, sex, wealth and education.

Data availability, coverage and granularity can vary by dataset and nutrition indicator, and this chapter leverages and presents some of the latest available data. (Appendix 1 provides details on data sources.) Hence, we have grouped and jointly presented nutrition indicators as determined by their data availability (and how they are usually assessed) and level of available disaggregation, chronologically covering the life course. For all indicators, notably less global data is available by ethnicity or disability, precluding similar assessments.

Inequalities in infant and young child feeding indicators

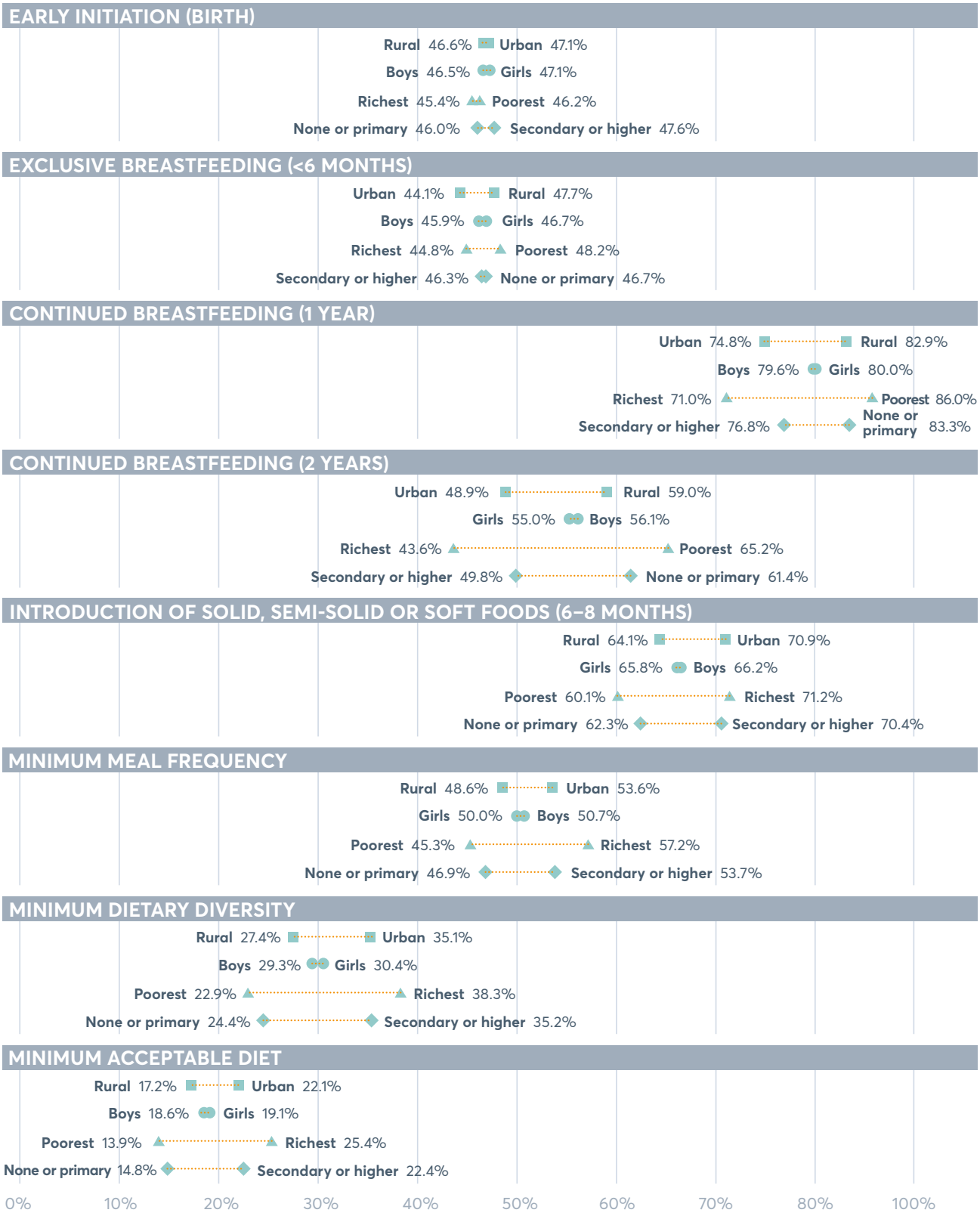
Figure 2.6 shows sociodemographic inequalities in the prevalence of IYCF indicators by urban–rural location, sex, wealth and education. Data availability varies by indicator, ranging from 70 to 85 countries, mostly representing low-income and lower-middle-income countries. The magnitude and direction of observed inequalities differs by assessed indicator and sociodemographic characteristic. Prevalence is generally similar by sex.

While no major differences are seen across population groups for early initiation and exclusive breastfeeding, large inequalities are evident for continued breastfeeding at 1 and 2 years. Continued breastfeeding prevalence is lower in urban than rural areas, in line with evidence suggesting an inverse relationship between urbanicity and breastfeeding behaviours[13] even in low- and middle-income settings. For continued breastfeeding at 2 years, the wealth and education gaps widen, with lower prevalence of continued breastfeeding among children in the richest households or with a more educated mother.[14]

There are contrasting inequalities in solid food introduction, meal frequency, dietary diversity and minimum acceptable diet. Children from the richest households do far better, as do those in urban areas, or with a more educated mother. Looking specifically at minimum acceptable diet (the composite measure of meal frequency and dietary diversity), the wealth gap is 11.5%, the location gap 4.9%, and the education gap 7.7%.

FIGURE 2.6

Inequalities in infant and young child feeding indicators by urban–rural location, sex, wealth and maternal education



Source: UNICEF global databases Infant and Young Child Feeding, 2019.

Notes: Prevalence (%) estimates are based on population-weighted means of between 70 and 85 countries, using latest available data across all population groups by indicator (number of countries varies by indicator due to differences in available surveys). Inferences may be affected by the different number of included countries. Location is classified as 'urban' and 'rural' (as defined in the survey). Wealth is asset-based wealth scores at the household level and is classified as 'poor' (lowest wealth quintile) and 'rich' (highest wealth quintile). Education is classified as 'none or primary' and 'secondary or higher' and refers to educational level of the mother. Definitions of all indicators can be found in Appendix 1.

Inequalities in stunting, wasting and overweight among children under 5

Figure 2.7 presents the prevalence of stunting, wasting and overweight (including obesity) in children aged under 5 years by urban–rural location, sex, wealth and education, using the population-weighted mean of 98 countries for which there is available data across all population groups. Similarly to IYCF indicators, mostly low- and lower-middle-income countries are represented. This data suggests that absolute inequalities are more profound for stunting compared to wasting and overweight. Across all three indicators, no major differences are noted by sex, while largest inequalities are seen by wealth: stunting and wasting are more prevalent among the poorest, and overweight among the richest.

Location and education show contrasting inequalities for stunting and wasting versus overweight. Stunting and wasting prevalence is higher among children in rural areas and with less educated mothers, whereas the reverse is seen for overweight, which is higher for children in urban areas and with more educated mothers. Such wealth, location and education gaps are evident even in mostly low- and lower-middle-income settings. This perpetuates vulnerability and creates barriers to escaping poverty, posing a significant challenge to the global community and its commitment to leave no one behind and reach the zero-hunger target.

Stunting

To quantify gaps by sociodemographics, we assessed all countries with available data for a given population group, and not just those with data for all groups. The largest inequalities are seen by wealth, followed by education and location, while stunting is only slightly higher in boys (33.5%) than girls (31.2%). Average stunting rates are estimated to be more than twice as high among children living in the poorest households (43.6%) compared with those in the richest (18.6%). The magnitude of this wealth gap varies across the 92 countries with available stunting data by wealth, with the absolute difference in prevalence being 5% or higher in 79 countries, and 10% or higher in 62 countries. This wealth gap is greatest in Guatemala (poorest 66.4%, richest 17.5%, difference 49.0%), Nigeria (poorest 62.8%, richest 18.3%, difference 44.5%) and Lao PDR (poorest 60.6%, richest 19.7%, difference 40.9%).[15]

Stunting is also higher among children with less educated (39.2%) versus more educated (24.0%) mothers. Of 82 countries with available stunting data by maternal education, the education gap is 5% or higher in 62 countries, and 10% or higher in 40 countries. This gap is largest in Guatemala (higher 25.9%, lower 55.4%, difference 29.5%), Burundi (higher 31.3%, lower 58.6%, difference 27.3%) and Eritrea (higher 19.4%, lower 46.2%, difference 26.8%).

Of 110 countries with available stunting data by location, children living in rural areas (35.6%) have higher stunting rates than those living in urban areas (25.6%). The location gap is at least 5% in 70 countries, and at least 10% in 41. It is largest in Burundi (rural 58.8%, urban: 27.8%, difference 30.9%) and Lao PDR (rural 48.6%, urban 27.4%, difference 21.2%). Peru is a country with large location and wealth inequalities. Spotlight 2.1 shows the links between urban–rural location and wealth, and how these impact stunting in Peru.

Wasting

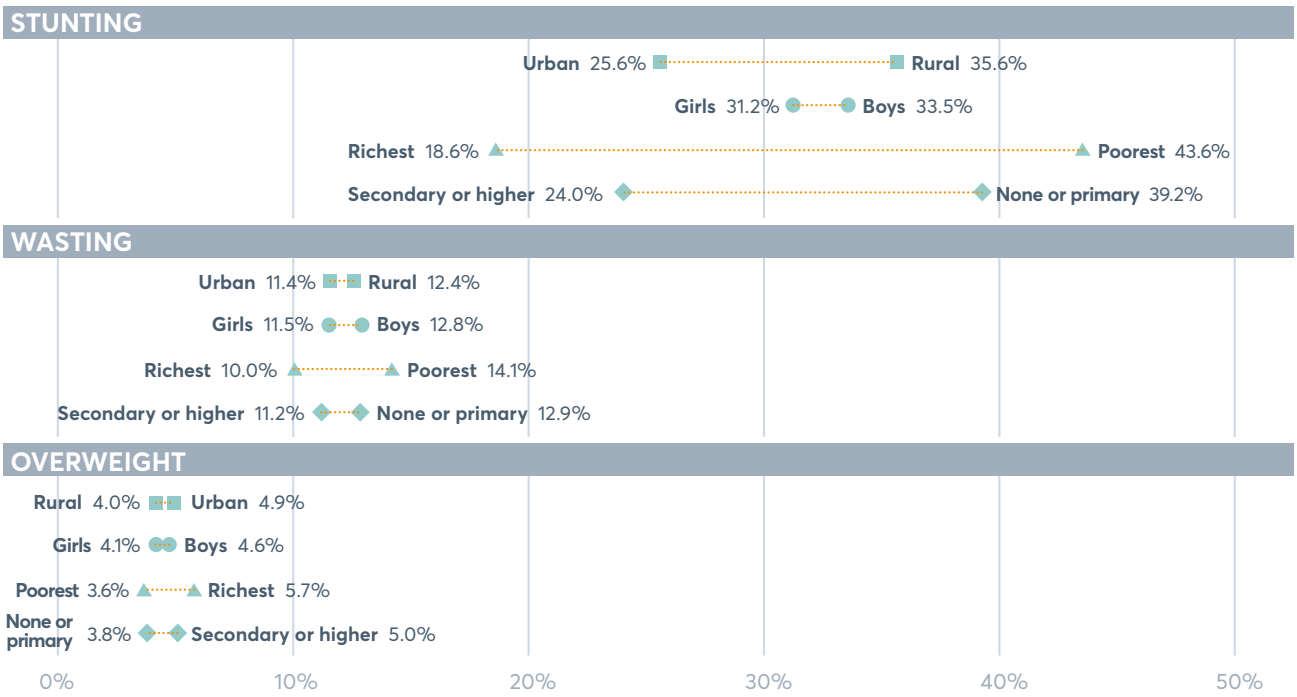
There are modest inequalities in wasting prevalence by wealth, with only small differences by sex, location and education. Rates are only slightly higher in boys (12.8%) than girls (11.5%), for children located in rural (12.4%) versus urban (11.4%) areas, and for children of mothers with less (12.9%) versus more (11.2%) education. For wasting, the gap was largest between children living in the poorest (14.1%) versus the richest (10.0%) households. Of 107 countries with available wasting data, the wealth gap is 5% or greater in 15 countries. It is largest in Djibouti (poorest 28.3%, richest 12.8%, difference 15.5%), South Sudan (poorest 30.1%, richest 17.4%, difference 12.8%) and Eritrea (poorest 20.3%, richest 7.8%, difference 12.5%).

Overweight

Inequalities in childhood overweight are less profound by sociodemographic characteristics. Average rates are minimally higher in boys (4.6%) than girls (4.1%). Despite the relatively similar prevalence by location, wealth and education – partly due to representation of mainly low- and lower-middle-income countries – there are some interesting patterns. Overweight is higher for children in the richest (5.7%) versus poorest (3.6%) households, in urban (4.9%) versus rural (4.0%) areas, and with more (5.0%) versus less (3.8%) educated mothers. Similar patterns are observed on a country-level basis, where the largest wealth gap is seen in Peru (rich 14.8%, poor 2.8%, difference 12.0%) and Eswatini (rich 17.5%, poor 5.8%, difference 11.7%).

Geospatial analytical frameworks can be used to assess malnutrition at subnational level, and to understand within-country inequalities (Spotlight 2.2). Drilling down to the subnational level, analysis reveals heterogeneity in levels and probability of meeting the 2025 global nutrition targets for childhood wasting, stunting and overweight. Such analyses can identify locations disproportionally affected, and inform priority-setting and targeted resource allocation at the community level.

FIGURE 2.7
Inequalities in stunting, wasting and overweight in children under 5, by urban–rural location, sex, wealth and education



Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight, (March 2019, New York).
Notes: Childhood refers to 0–59 months. Estimates are based on population-weighted means of 98 countries for which there is available data across all population groups by indicator using the latest available estimates for each country between the years 2000 and 2018. 'None or primary' and 'secondary or higher' refer to education levels of the mother. Wealth quintiles are determined by asset-based wealth scores at the household level, where highest refers to the wealthiest quintile and lowest to the least wealthy quintile. Definitions of all indicators can be found in Appendix 1.

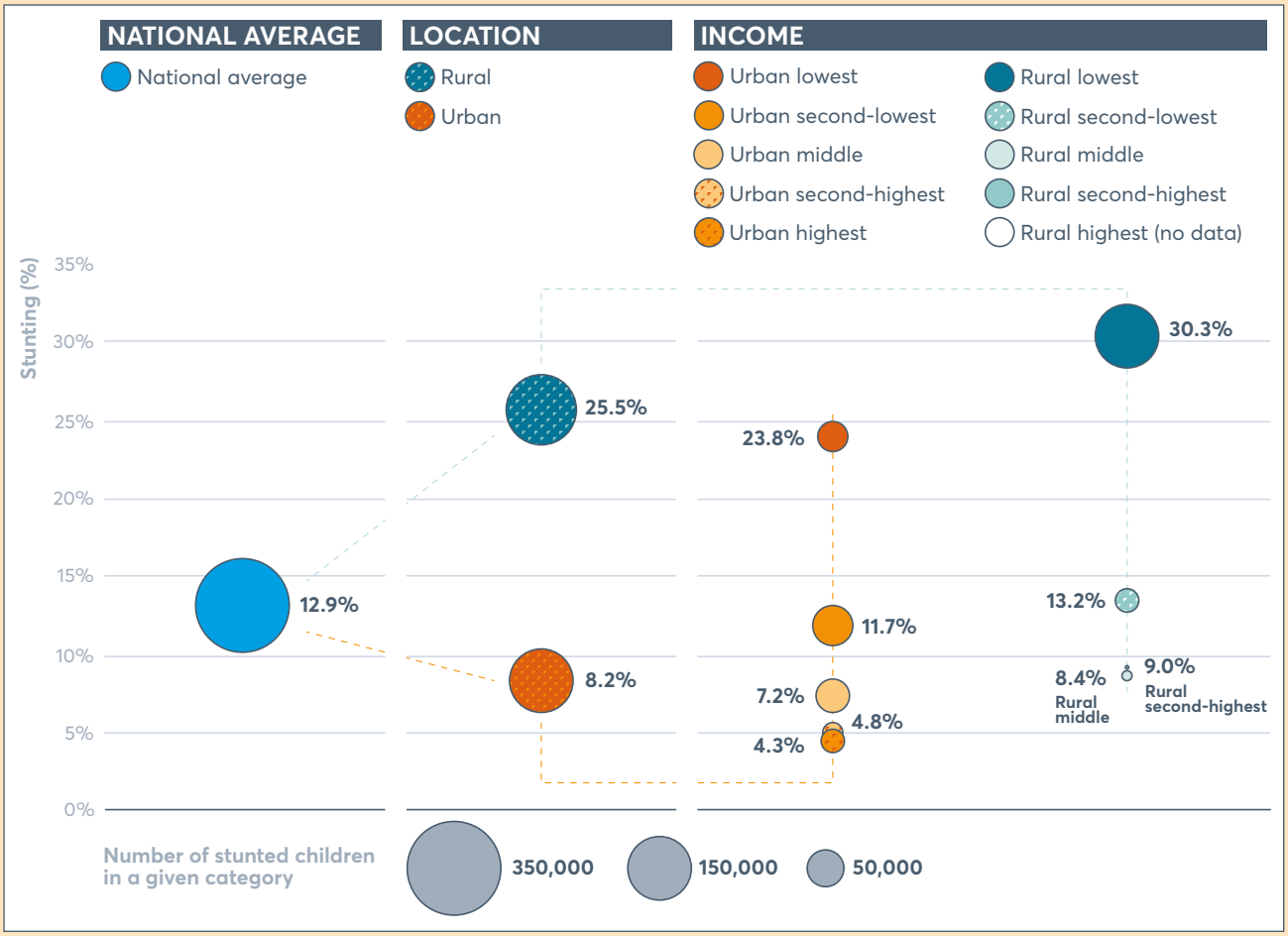
SPOTLIGHT 2.1

The rural–urban divide in Peru

Jordan Beecher

Peru has made progress in reducing stunting, supported by cross-party political commitment to nutrition policy.[16] However, current levels sit at 12.9%. Inequalities in stunting are evident by urban–rural location: stunting affects 25.5% of children in rural areas and 8.2% of children in urban areas. Wealth also interacts with urban–rural location (Figure 2.8): while the richest households are predominantly found in urban areas and the poorest in rural areas, the urban poor have stunting rates almost as high as the rural average; and stunting rates for the rural rich are the same as the urban average. These intersecting inequalities are probably based on inequities such as: marginalised ethnic groups residing predominantly in rural areas; poor access to services in rural areas and for the poor everywhere; and less voice in political or social decision-making for poor and rural populations.[17] We need more information on these deeper determinants of undernutrition in Peru in order to understand and address the drivers of unequal nutrition outcomes.

FIGURE 2.8
Inequalities in stunting in children under 5 between urban–rural location and wealth in Peru, 2017



Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight (March 2019, New York). Adapted from Save the Children's GRID data tool (https://campaigns.savethechildren.net/grid).
Notes: Prevalence estimates are based on the latest DHS-style survey carried out in 2017 in Peru. Wealth is asset-based wealth scores at the household separated into quintiles. Size of the bubble represents the number of stunted children in a given category.

Using geostatistical analytic frameworks to estimate under-5 childhood stunting, wasting and overweight burdens at subnational levels

Damaris K. Kinyoki, Amelia Apfel, Megan F. Schipp, Lucas Earl, Julia Devin and Simon I. Hay

Substantial inequalities within countries in childhood malnutrition have motivated calls for more granular local estimates to inform appropriate interventions and policies at the subnational level. In addition, rises in childhood overweight and obesity are prompting more holistic targeting of both undernutrition and overweight. Recent geospatial estimates from the Institute for Health Metrics and Evaluation (IHME)[18] reveal how national-level figures can mask inequalities in prevalence and levels of progress within nations and regions. Detailed results by country are available online via an interactive visualisation tool,[19] and the data can be downloaded from IHME's website.[20]

Using modelled estimates from 105 low- and middle-income countries in 2017, the analysis identified the location of populations with highest prevalence, even within high-performing regions and countries (Figure 2.9). Details on data and methods used have been published elsewhere.[21] For example, much of Latin America, the Caribbean, and East Asia have low national prevalence of stunting in children under 5 years of age. At the subnational level, however, prevalence can reach above 40% in communities of southern Mexico and central Ecuador, approaching levels seen in sub-Saharan Africa and South Asia. Critical wasting prevalence (≥15%) in 2017 was apparent across the Sahelian region, stretching from Mauritania to Sudan, as well as in areas of South Asia. Although patterns varied broadly across countries, large contiguous areas with ≥15% child overweight were found across most of Latin America, the Caribbean, northern and southern African countries, and East and Central Asia.

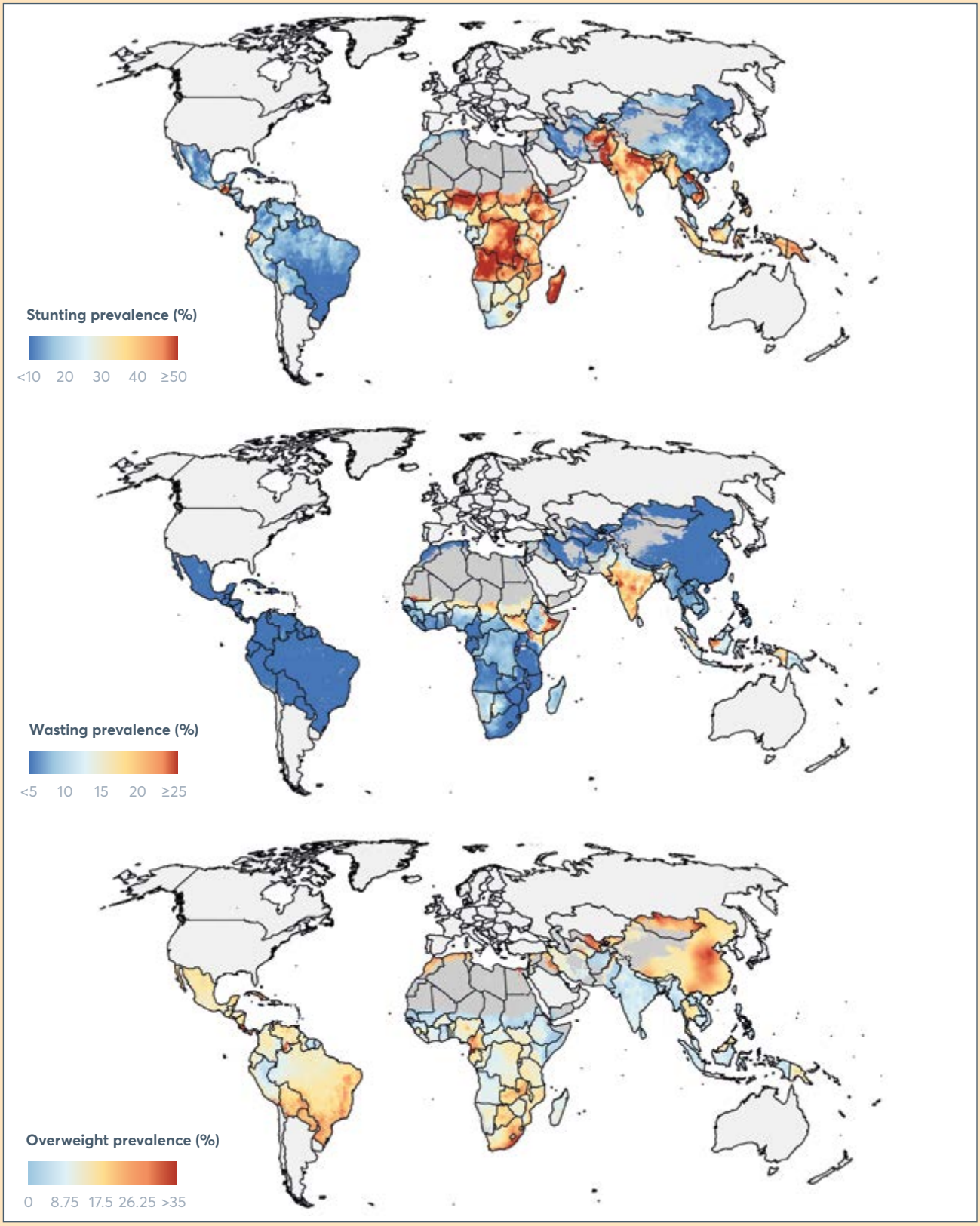
Paired with other data analyses within countries, these results can pinpoint locations with persistently high levels of malnutrition. In 2017, regions with the highest prevalence of stunting were primarily throughout much of sub-Saharan Africa, South Asia, and Oceania. There were communities with estimated levels of 40% and higher in Jigawa State in Nigeria, Karuzi Province in Burundi, Uttar Pradesh State in India and Houaphan Province in Laos. Areas of Somalia, northeastern Kenya, and Ethiopia's Afar and Somali regions experienced critical wasting (≥15%), as they coped with erratic climatic conditions, competition for resources and civil instability. Overweight exceeded 15% in eastern Brazilian states (e.g., Rio Grande do Sul and Minas Gerais), and Peru's coastal cities of Tacna, Ilo, Islay and Callao. In Africa, areas with estimated overweight prevalence greater than 15% were concentrated in North Africa throughout Morocco, Algeria, Tunisia, Egypt and parts of Libya, as well as along South Africa's southern coast and in parts of Botswana and Zambia. Large areas in eastern and northern China and throughout Mongolia also had estimated overweight prevalence greater than 15%.

Countries with the largest within-country inequalities in malnutrition rates are also highlighted by this analysis. The largest disparities in stunting were observed in Nigeria, Indonesia and India, where the levels varied four-fold across communities. The greatest levels of disparity in wasting were estimated in Indonesia, Ethiopia, Nigeria and Kenya, with nine-fold differences in wasting prevalence across communities. Within-country differences in child overweight were highest in South Africa, Peru and China, with three-fold differences across communities. Such instances of within-country inequalities highlight areas that lag far behind and require focused attention.

The modelled estimates also confirmed exemplar locations that have demonstrated improvement. For example, Peru's cross-cutting community-level strategy (*El Presupuesto por Resultados*) has been praised for contributing to halving stunting levels in less than a decade.[22] Algeria, Uzbekistan and Egypt have shown impressive progress in reducing disparities in malnutrition prevalence during the study period.[23]

This data can be used to inform priority-setting and direct resources to the areas of greatest need, particularly when representative survey-based data is not available. Such geospatial analysis can be used to inform decision-makers by identifying locations disproportionally affected by malnutrition, and highlighting within-country inequalities.

FIGURE 2.9
Prevalence of stunting, wasting and overweight among children under 5 at the 5 × 5-km grid cell-level, 2017

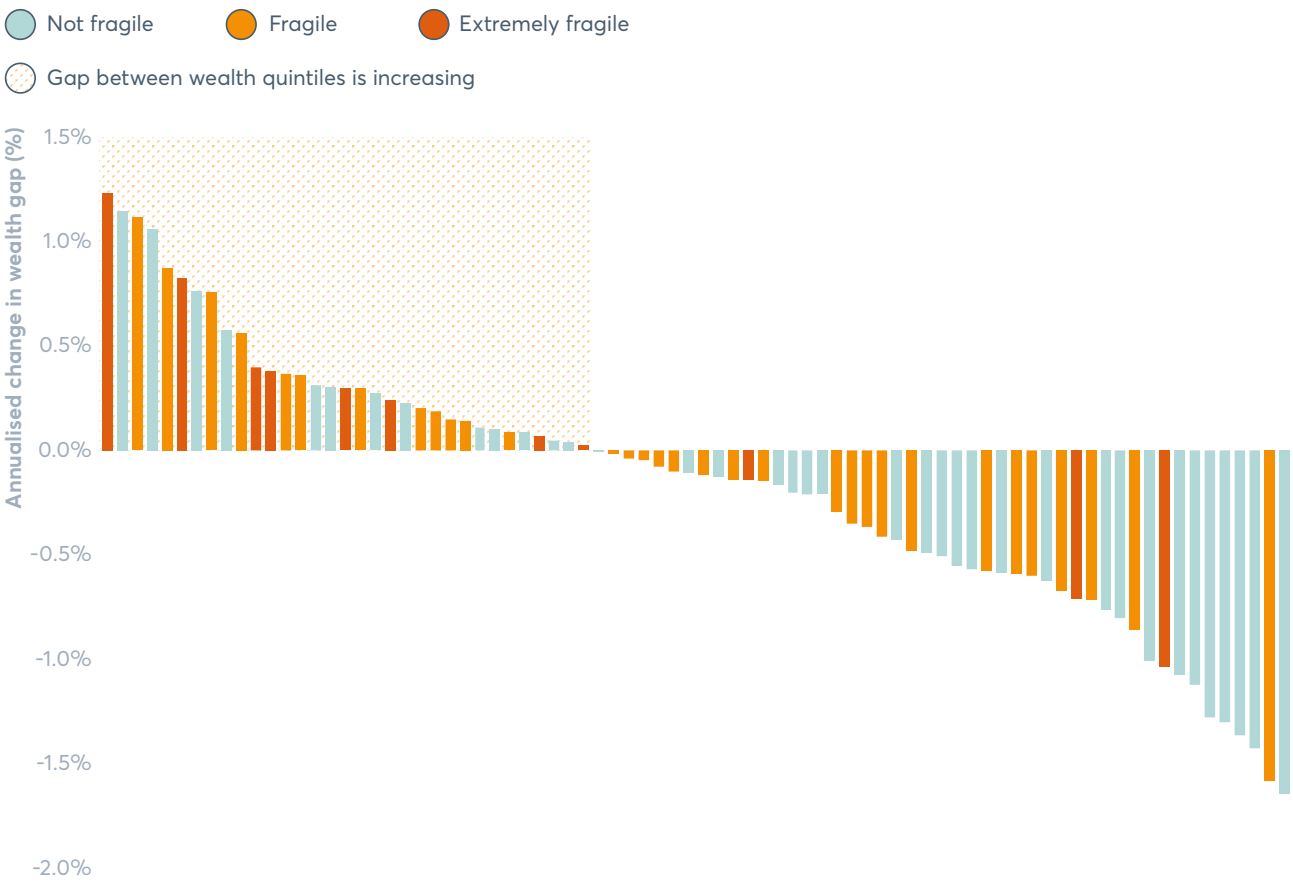


Source: Stunting and wasting maps: Kinyoki D.K. et al., 2020. Mapping child growth failure across low- and middle-income countries. Nature, 577, pp. 231–34, doi:10.1038/s41586-019-1878-8 Overweight map: doi:10.1038/s41591-020-0807-6
Notes: Based on data from 105 low- and middle-income countries in 2017, at 5km x 5km grid cell-level. Light grey indicates high-income countries that were excluded from the model, while dark grey indicates areas where the total population density was less than ten individuals per 1km×1km grid cell.

While the latest available data provides a snapshot of existing inequalities, repeated data shows how these differences have changed over time. Stunting rates have been slowly but steadily declining, with global prevalence falling from 32.5% in 2000 to 21.9% in 2018. Wasting prevalence (measured at one point in time) is typically not analysed over time, as wasting can fluctuate rapidly over the course of a year. In contrast, prevalence of overweight in children under the age of 5 was 5.9% for 2018, with no major differences noted since 2000 (4.9%). Inequalities across nutrition indicators for children under the age of 5, as shown in Figure 2.7, were largest for stunting, particularly by wealth. Therefore, exploring how this wealth gap in stunting changes over time would provide new insights into nutrition inequalities.

Country-level analysis across 80 countries with available survey data, mostly low- or lower-middle-income countries, reveals that the median annualised decrease in stunting prevalence is larger in the poorest group (0.8%) than in the richest group (0.5%). In fact, the inequality between the poorest and richest households in stunting (wealth gap) is decreasing in 47 countries but increasing in 33 (Figure 2.10). For the 47 countries where the wealth gap is decreasing, the median annualised decrease is 0.5%, mainly due to larger decreases in the prevalence of the poorest group. Of the 33 countries where the wealth gap is increasing, the median annualised increase is 0.3%, mainly due to larger decreases in the richest group. In roughly half of fragile or extremely fragile countries, the wealth gap is increasing; in the rest it is decreasing, warranting further investigation.

FIGURE 2.10
Annualised change in wealth inequality in stunting prevalence in children under 5 across 80 countries, by fragility, 2000–2018

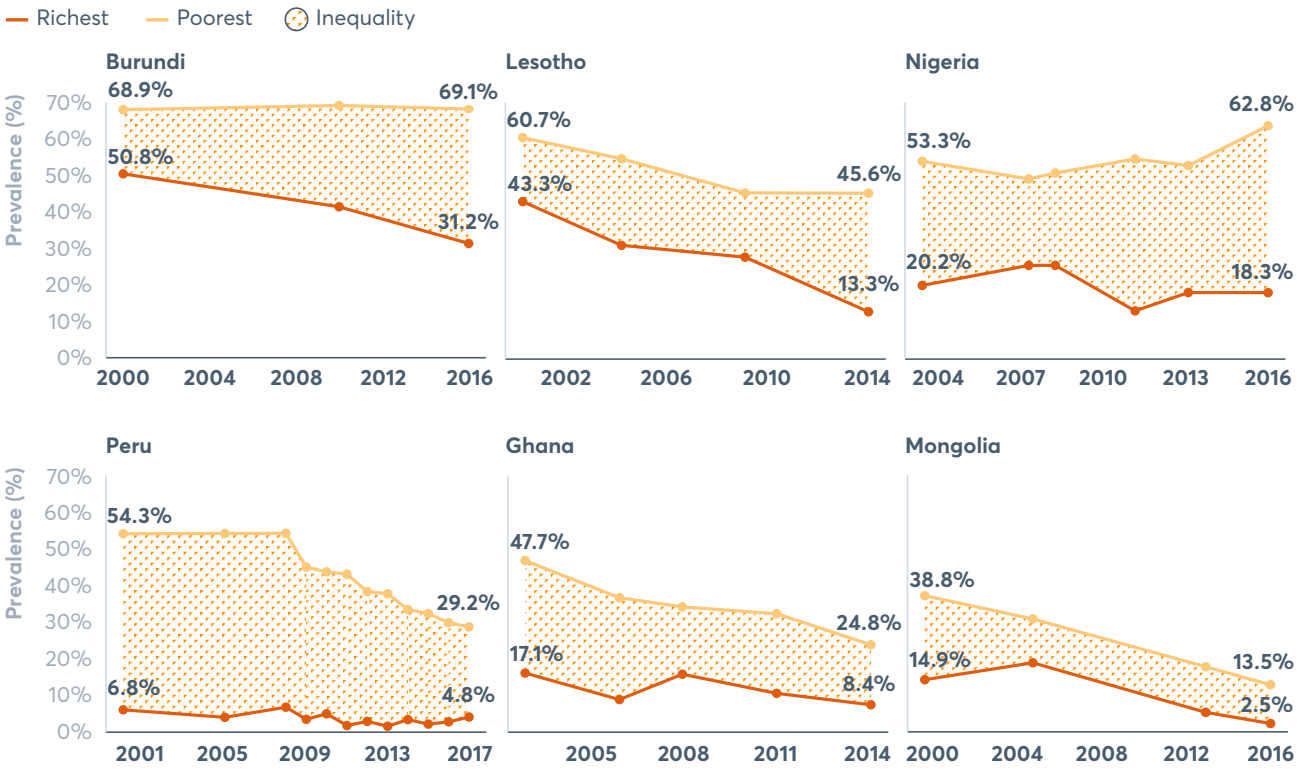


Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight, (March 2019, New York) and OECD, 2018.
Notes: Annualised change refers to the difference in stunting prevalence between the lowest and highest wealth quintiles observed in each country (bar) between the years 2000 and 2018. Positive values indicate that the difference in stunting prevalence between the lowest (poorest) and highest (richest) wealth quintiles is increasing (wealth gap increasing), whereas negative values indicate that the wealth gap is closing. Fragility is determined by the OECD States of Fragility 2018 framework, and is based on five core dimensions: political, societal, economic, environmental and security. Wealth quintiles are determined by asset-based wealth scores at the household level, where highest refers to the wealthiest quintile and lowest to the least wealthy. In all but four countries (Madagascar, Trinidad and Tobago, Montenegro, and Bosnia and Herzegovina), the poorest group has consistently higher prevalence than the richest. All of those four have reduced their wealth gap, with a median annualised decrease of 0.6%.

Despite these general declining trends, there are noticeable differences in patterns of change at country level. A notable case is Lesotho, where stunting decreased by 30 percentage points in the richest group (2000 43.3%, 2014 13.3%, difference 30.0%), and by only half that much in the poorest group (2000: 60.7%, 2014: 45.6%, difference 15.1%) (Figure 2.11). In five of the ten countries with the largest wealth inequality in stunting, the increased gap is driven by a decrease in the richest group, coupled with an increase or stagnation in the poorest group. This applies to Benin, South Africa, and three fragile or extremely fragile countries – Burundi, Lao PDR, and Nigeria. Burundi and Nigeria are shown in Figure 2.11. Such differential patterns in the wealth gap, particularly when the poorest groups are left further behind, should be carefully considered in the design and implementation of nutrition actions. There are cases though in which comparatively greater reductions are seen in the poorest groups, such as in Peru, Ghana and Mongolia (Figure 2.11). Despite these improvements, the wealth gap is still present, disproportionally burdening the poor, and needs to be addressed.

FIGURE 2.11

Prevalence of stunting in children under 5 by wealth for select countries, 2000–2017



Source: UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight (March 2019, New York).
Notes: Countries with greatest increases and decreases in the gap between the highest and lowest wealth quintiles for stunting are chosen using the earliest and latest post-2000 data points and calculating the absolute change in gap. Wealth quintiles are determined by asset-based wealth scores at the household level, where highest refers to the most wealthy quintile and lowest to the least wealthy.

Inequalities in childhood and adolescent underweight, overweight and obesity

Comparatively less granular data is available for children and adolescents aged 5 to 19 years. Far more boys and girls are underweight than overweight or obese worldwide (Figure 2.12). Childhood and adolescent underweight has decreased globally, from 37.0% in 2000 to 31.6% in 2016 among boys, and from 29.6% in 2000 to 25.9% in 2016 among girls. During the same period, overweight has increased from 10.3% to 19.2% among boys and 10.3% to 17.5% among girls, and obesity from 3.3% to 7.8% among boys and 2.5% to 5.6% among girls.

By sex, prevalence for each of those indicators is slightly higher in boys than in girls. This modest gap between the sexes is relatively stable over time, with signs of increase for overweight and obesity. Similar patterns are seen on a country level, yet this sex gap can also be wider, or reversed (with girls higher than boys). Latest data suggests that Lesotho has the largest sex gap in childhood and adolescent underweight (boys 32.5%, girls 14.1%, difference 18.4%), followed by Zimbabwe (boys 32.5%, girls 15.0%, difference 17.5%) and DR Congo (boys 37.8%, girls 21.9%, difference 15.9%). For overweight, the largest sex gap is seen in southern and eastern African countries, most notably Lesotho (boys 6.2%, girls 24.7%, difference 18.5%), Eswatini (boys 8.3%, girls 25.0%, difference 16.7%) and Zimbabwe (boys 6.7%, girls 22.3%, difference 15.8%). The largest gaps where overweight prevalence in boys exceeds that of girls are seen in East Asian nations, most notably China (boys 35.0%, girls 20.8%, difference 14.2%) and South Korea (boys 33.7%, girls 21.1%, difference 12.6%). The largest gaps for obesity are observed in Southeastern and East Asian nations, such as Brunei (boys 18.3%, girls 9.9%, difference 8.4%), China (boys 15.4%, girls 7.1%, difference 8.3%) and South Korea (boys 12.9%, girls 4.7%, difference 8.3%).

Looking further at potential inequalities by country income (Figure 2.13), prevalence of childhood and adolescent underweight is on average up to three times higher in low- and lower-middle-income countries compared with upper-middle- and high-income countries. The reverse is seen for childhood and adolescent overweight, where prevalence is up to four times higher in upper-middle- and high-income countries than in lower-middle- or low-income ones. Likewise for obesity, there are up to four-fold differences between high- and upper-middle-income countries versus lower-middle- and low-income countries. This data, coupled with the rising prevalence of child and adolescent overweight and obesity, suggests that high- and upper-middle-income countries are disproportionally burdened.

Inequalities in adult nutrition indicators

Underweight, overweight and obesity

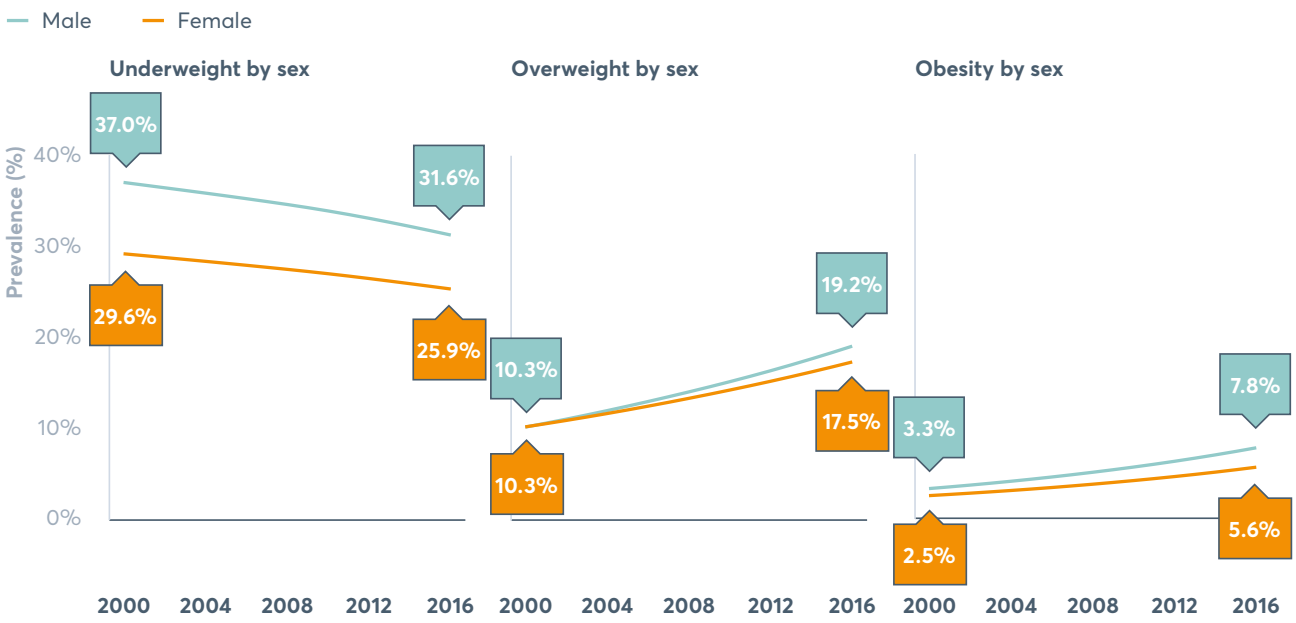
Our world has substantially transitioned over the past four decades,[24] from one in which adult underweight prevalence was more than double than that of obesity, to one in which more adults are obese than underweight, both globally and in all regions except parts of sub-Saharan Africa and Asia. The rising global burdens of overweight and obesity, both in adults and in children and adolescents, cannot be ignored. We need more concentrated efforts and actions to slow down and stop the worldwide rise in obesity. Targeting poor diets through effective and cost-effective approaches should be a top priority for governments, policymakers, clinicians, the food system, the health system, and public–private partnerships in the 21st century to reverse the global obesity epidemic.

Far more men and women are overweight or obese than underweight, and women are generally affected more than men (Figure 2.14). Looking at trends since 2000, male underweight has decreased from 11.1% in 2000 to 8.6% in 2016 and female underweight has decreased from 11.5% to 9.4% in the same period. In contrast, overweight (including obesity) has increased from 31.7% (609.8 million) to 39.2% (1.02 billion) in women, and in men from 29.7% (560.0 million) to 38.5% (984.6 million). Obesity in men has risen from 6.7% (124.7 million) to 11.1% (284.1 million), and in women from 10.6% (201.8 million) to 15.1% (393.5 million). These time-trends align with what is observed in adolescents (Figure 2.12).

There are similar sex differences on a country-level basis, although this sex gap can widen even further, or reverse (with men higher than women). For underweight, women generally have a higher prevalence then men but, at the country level, the reverse sex gap can be as high as 7.4% in Lesotho (women 4.5%, men 11.9%), 6.5% in Equatorial Guinea (women 10.1%, men 16.6%), 6.2% in Zimbabwe (women 4.9%, men 11.1%). The largest sex gap where women have higher prevalence than men is in Japan (women 6.8%, men 3.9%). For overweight, the largest sex differences are seen in southern and eastern African countries: 32.5% in Lesotho (women 53.7%, men 21.1%), 30.6% in Zimbabwe (women 52.8%, men 22.2%) and 30.4% in Eswatini (women 52.6%, men 22.2%). Large sex gaps in obesity are found in countries in the same regions, most notably South Africa (women 39.6%, men 15.4%, difference 24.2%), Lesotho (women 26.7%, men 4.6%, difference 22.0%), Botswana (women 29.3%, men 8.1%, difference 21.2%), Eswatini (women 26.2%, men 5.4%, difference 20.8%) and Zimbabwe (women 25.3%, men 4.7%, difference 20.5%).

FIGURE 2.12

Global prevalence of underweight, overweight and obesity in children and adolescents aged 5–19 years by sex, 2000–2016

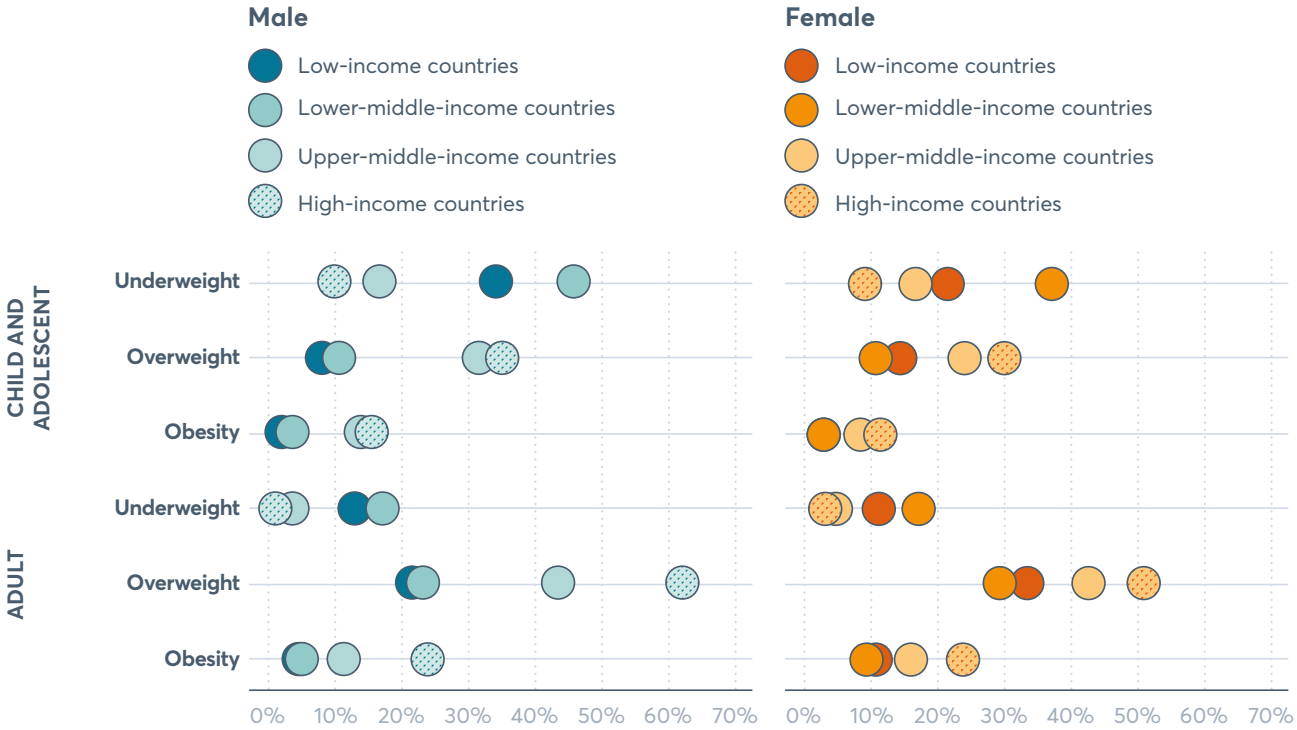


Source: NCD Risk Factor Collaboration 2019.
Notes: All indicators are based on global modelled age-standardised estimates up to 2016 using the WHO standard population. Underweight is defined as below minus one standard deviation (SD) from the median of the WHO growth reference, overweight (including obesity) as above one SD, and obesity as above two SDs.

Underweight remains prevalent in the world's poorest regions, especially in South Asia.[25] The highest underweight prevalence is seen in low- and lower-middle-income nations, up to ten times higher than in high- and upper-middle-income countries (Figure 2.13). As for adolescents, the reverse is seen for adult overweight, where prevalence can be up to three times higher in high- and upper-middle-income than lower-middle- and low-income countries. Obesity prevalence in adults can be up to five times higher in high- and upper-middle-income than in lower-middle- and low-income countries.

FIGURE 2.13

Global prevalence of underweight, overweight and obesity in children and adolescents aged 5–19 years and adults, by country income, 2016



Source: NCD Risk Factor Collaboration 2019.

Notes: All child and adolescent indicators are based on modelled age-standardised estimates for children and adolescents aged 5–19 years and all adult indicators are based on modelled age-standardised estimates for adults aged 18+ (using the WHO standard population). All modelled estimates are based on 187 countries from 2016. Childhood and adolescent (5–19 years) underweight is defined as below one standard deviation (<-1 SD) from the median BMI-for-age of the WHO growth reference, overweight (including obesity) as above one SD (>+1 SD) and obesity as above two SDs (>+2 SD). Adult underweight is defined as a body-mass index of less than 18.5kg/m^2, overweight (including obesity) as equal to or greater than 25kg/m^2, and obesity as equal to or greater than 30kg/m^2. Countries are classified by gross national income per capita as in high- (56, 30%), upper-middle- (54, 29%), lower-middle- (47, 25%) and low- (30, 16%) income groups.[26]

Country-level analysis from 190 countries reveals that the median annualised increase in overweight prevalence is the same in both sexes (0.07%). However, the sex gap is increasing in 120 countries and decreasing in 70 (Figure 2.15). Of the 120 countries where the gap is increasing, the median annualised increase is 0.16%, mainly due to larger increases among women. Of the 70 countries where the sex gap is decreasing, the median annualised decrease is 0.10%, mainly due to larger increases among men. This inequality is widening at a greater rate in most currently fragile and extremely fragile countries than in non-fragile countries, with a few exceptions (Iraq, North Korea, Libya, Occupied Palestinian Territory and Venezuela). Of the 120 countries where the sex gap is increasing, 39 (32.5%) are categorised as fragile and 13 (10.8%) as extremely fragile, with a median annualised increase of 0.20% and 0.18% respectively. In contrast, of the 70 countries with a decreased gap, only 4 (5.7%) are fragile and 1 (1.4%) extremely fragile. This suggests that fragile and extremely fragile settings are more heavily burdened by this sex gap in obesity.

Salt intake

High salt (sodium) intake increases systolic blood pressure, a major risk factor for cardiovascular disease and chronic kidney disease, and the leading dietary risk factor for death and illness worldwide.[27] Given the key roles of social and environmental factors in shaping dietary habits, population-based approaches should be a crucial component of efforts to target salt intake. Effective strategies can be designed and implemented at the local level (e.g., in schools, workplaces and community settings), as well as regionally, at the state level, and at national levels, tailored according to need. Nationally representative US analysis has revealed that high salt intake is the leading dietary risk factor for stroke and heart disease, disproportionally affecting men, ethnic groups other than white and people of lower education.[28] Global data on salt intake, or any other dietary factor, is not yet available by key sociodemographics. However, such disaggregated global data on at least 55 dietary factors will be made available by the Global Dietary Database in 2020.[29]

We need such granular global data on what people are actually consuming to investigate drivers of dietary intakes and transitions over time, and to inform the design and implementation of specific policies to reduce diet-related health burdens and inequalities in different nations.

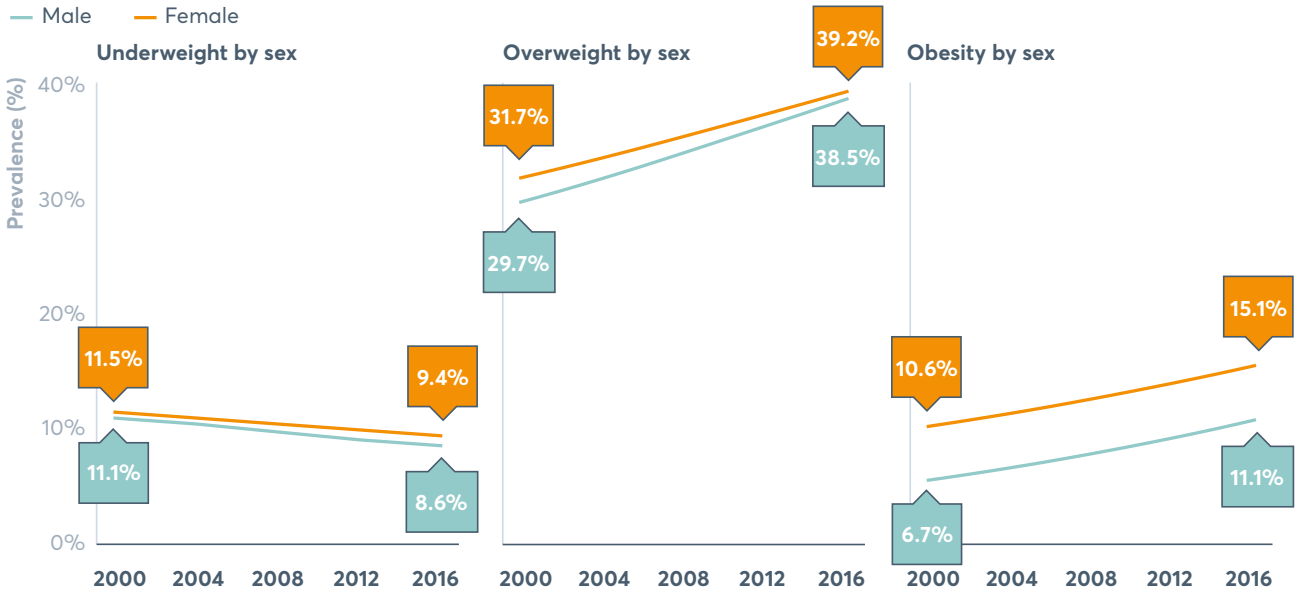
Globally, average sodium intake among adults (aged 25 years and over) is virtually unchanged since 2010. Men have slightly higher intake (5.8g/day) than women (5.3g/day) at a global level, with relatively larger differences seen at country level. The difference is greatest in southern and eastern European countries, such as Hungary (men 5.7g/day, women 3.9g/day, difference 1.8g/day), Czechia (men 5.6g/day, women 3.9g/day, difference 1.7g/day) and Slovenia (men 5.5g/day, women 3.9g/day, difference 1.6g/day).

Raised blood pressure

Over the past four decades, the number of people with raised blood pressure in the world has increased.[30] Though raised blood pressure has traditionally affected high-income countries, the majority of the observed increase is due to raises in low- and middle-income countries, and driven to a great extent by the growing and ageing population. It is now most prevalent in low-income countries in South Asia and sub-Saharan Africa, while being a persistent health issue in Central and Eastern Europe.[31]

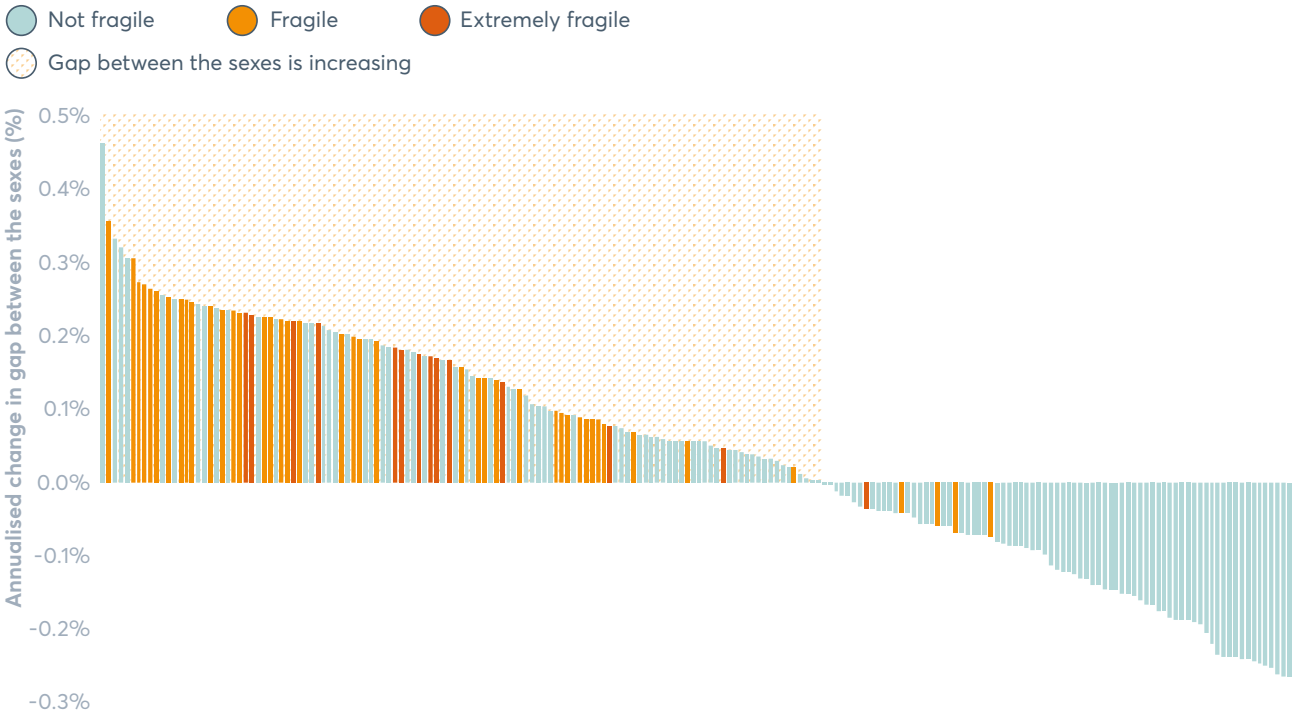
Despite an increase in the number of people affected, the global prevalence of raised blood pressure has remained relatively unchanged with only slight decreases between 2000 and 2015 (Figure 2.16). Globally, more men (24.1%) than women (20.1%) have raised blood pressure, with largest sex gaps at the country level seen in Northern Europe, most notably in Latvia (men 36.4%, women 22.9%, difference 13.5%), Estonia (men 34.3%, women 20.9%, difference 13.4%) and Iceland (men 26.2%, women 13.0%, difference 13.2%).

FIGURE 2.14
Global prevalence of underweight, overweight and obesity in adults by sex, 2000–2016



Source: NCD Risk Factor Collaboration 2019.
Notes: All indicators are based on modelled age-standardised global estimates up to 2016 using the WHO standard population for adults aged 18 years and older. Adult underweight is defined as a body-mass index of less than 18.5kg/m², overweight (including obesity) as equal to or greater than 25kg/m², and obesity as equal to or greater than 30kg/m².

FIGURE 2.15
Global annualised change in sex inequality for adult obesity, by fragility, 2000 and 2016



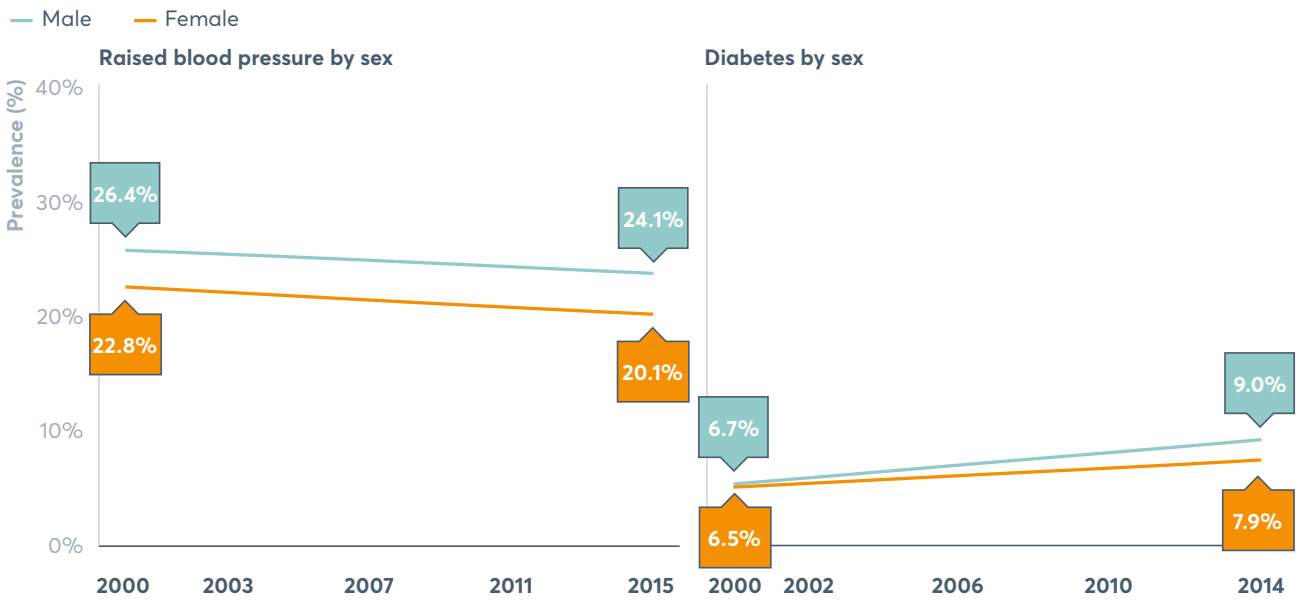
Source: NCD Risk Factor Collaboration 2019 and OECD 2018.
Notes: Annualised change refers to the difference in obesity (BMI ≥30kg/m²) prevalence between men and women (ages 18 and over) observed in each of 190 countries (bars) between the years 2000 and 2016. Positive values indicate the difference (gap) between the sexes is increasing, whereas negative values indicate the difference is decreasing. Fragility is determined by the OECD States of Fragility 2018 framework, and is based on five core dimensions: political, societal, economic, environmental and security.[32] In most countries, women had higher prevalence than men in 2000 and this gap increased or decreased in the same direction over time. Six European countries (Switzerland, Denmark, Sweden, Austria, Germany and Iceland) had higher prevalence for men than women in 2000 and this gap increased in the same direction to 2016. Nineteen other countries had higher prevalence in women in 2000 but changed to higher prevalence in men by 2016; ignoring the change in direction of the inequality, 6 countries have increased the gap and 13 have decreased it.

Diabetes

There are tremendous health risks of overweight and obesity. The annual medical costs of treating the consequences of obesity are staggering, and are expected to reach US$1.2 trillion per year by 2025, with the US being by far the biggest spender.[33] Diabetes is one of these consequences: presently, someone is estimated to die every eight seconds from diabetes or its complications – with projected increases over time.[34] Of all global health expenditure, 10% is spent on diabetes (US$760 billion).[35] Some alarming statistics from the International Diabetes Federation reveal that one in two adults with diabetes are undiagnosed, two in three people with diabetes live in urban areas, and three in four people with diabetes live in low- and middle-income countries.[36]

Over the past four decades, diabetes prevalence in adults has increased, or, at best, remained unchanged, in every country. This increase has been faster in low- and middle-income countries than in high-income countries.[37] The picture is similar for the past two decades (Figure 2.16). Globally, only slightly more men (9.0%) than women (7.9%) have diabetes, with similar small differences observed at the country level.

FIGURE 2.16
Global prevalence of raised blood pressure and diabetes in adults by sex, 2000–2015



Source: NCD Risk Factor Collaboration 2019.
Notes: Based on global modelled estimates in adults aged 18 years and over from 2000 to 2015 for raised blood pressure, and from 2000 to 2014 for diabetes. Data presented is age-standardised using the WHO standard population.

RECOMMENDED ACTIONS

- We need intensified efforts and actions to address the persistent unacceptably high levels of malnutrition.
- Interventions, policies and prevention initiatives should be equity-sensitive, targeting multiple drivers of nutrition inequities concurrently, particularly for areas or population groups disproportionally burdened by malnutrition.
- There is a pressing need for high-quality, systematically collected granular nutrition data – such as on diets, anthropometry, micronutrient status and related health outcomes – to investigate drivers of nutrition inequalities and transitions over time, and establish priorities according to need.
- Countries should commit to and invest in the routine collection of equity-sensitive nutrition data. Data should be granular, disaggregated to the local level and by key population characteristics, such as age, sex, ethnicity, education and wealth.

03

Mainstreaming nutrition within universal health coverage

2012. Washington DC, US.
A clinical dietitian teaches a patient how to manage weight and blood pressure through better nutrition.
Photo: US Department of Agriculture/Stephen Ausmus.

KEY POINTS

1. Poor diets and resulting malnutrition are among the greatest societal challenges in our era, causing vast health, economic and environmental burdens.

2. The global commitment to universal health coverage is a unique opportunity to address malnutrition in all its forms. Integrating nutrition within health systems would generate substantial health gains and be highly cost-effective.

3. WHO's six building blocks of a health system provide a helpful framework for comprehensively integrating nutrition into health systems.

4. Coverage and quality of nutrition actions within primary healthcare settings are limited and generally focused on undernutrition.

5. Nutrition actions are supported by only a minuscule portion of national health budgets and are typically not delivered by qualified nutrition professionals.

6. Mainstreaming nutrition within universal health coverage requires a joint effort by governments and key stakeholders to build functional and resilient health systems, supported by strengthened governance and coordination.

The case for nutrition as a key element of primary healthcare

The 2019 United Nations General Assembly had for the first time a dedicated focus on universal health coverage (or universal healthcare) (UHC). This General Assembly reaffirmed that "health is a precondition for and an outcome and indicator of all three dimensions of sustainable development" and strongly committed to "achieve universal health coverage by 2030, with a view to scaling up the global effort to build a healthier world for all".[1] The call for achieving universal health coverage as enunciated in Sustainable Development Goal (SDG) 3.8, is loud and clear: all countries of the world should make efforts to ensure that everyone has access to a minimum set of high-quality healthcare interventions without facing financial hardship. Optimal health and well-being is a human right and not the privilege of only those who can afford to pay.

The UN declaration on UHC recognises primary healthcare as the most inclusive, effective and efficient whole-of-society approach to ensuring people's physical and mental health and social well-being. The declaration further highlights the fundamental role of healthy diets and of healthy, equitable and sustainable food systems – along with quality education, gender equality and women's empowerment, access to safe drinking water and sanitation, and social protection mechanisms – in building healthier societies.

The case for including nutrition as an integral component of primary healthcare is compelling:

- For decades, health systems and clinicians have focused on the medical, drug-treatment-based model of disease that ignores fundamental causes such as diet and lifestyle. The consequences of this narrow approach are evident: the global malnutrition epidemic that is sweeping the world.

- Poor diets are among the leading health and societal challenges of the 21st century, leading to disability and death, growing inequalities, staggering healthcare costs and environmental implications.

- As governments and policymakers increasingly recognise the depth and breadth of malnutrition burdens, they are compelled to act. Integrating nutrition actions into health systems to promote healthier eating, and prevent and treat undernutrition and diet-related chronic diseases, could generate substantial health gains and be highly cost-effective.[2]

There is increased recognition that key stakeholders, including governments and the private sector, are accountable for healthier and more equitable food and health systems. This change reflects a shift away from placing the full responsibility – and blame – on individuals for making healthier choices, and has translated into growing population-based nutrition actions on a global scale. Population-based interventions can reach broader segments of society, require less individual effort and can be less costly, compared with individual-based approaches. Such 'upstream' strategies should benefit everyone, particularly those less privileged and of lower socioeconomic status, especially if integrated within a universal health coverage system. While policies and programmes were created over decades to address hunger and food insecurity, far less was known about how to improve diet quality and address diet-related non-communicable diseases (NCDs). Recent advances and efforts in nutrition policies to prevent NCDs can inform current priority areas and contribute to the development of a universal health coverage plan to address diet-related chronic diseases.

Ensuring equitable access to effective nutrition interventions within health systems can play a pivotal role in improving diets, preventing and treating disease, reducing healthcare costs, and ultimately improving everyone's health. However, these justifications are not yet matched by a robust approach that unites nutrition and healthcare in terms of equitable policy, financing, monitoring and evaluation. Nutrition is frequently under-prioritised in national healthcare policy and financing discussions. The current Global Nutrition Report highlights the need to integrate nutrition into universal health coverage[3] as an indispensable prerequisite for improving diets, saving lives and reducing healthcare spending, while ensuring that no one is left behind.

This chapter focuses on key challenges and opportunities in the comprehensive integration of nutrition into healthcare, so that everyone can access the nutrition care they need, when and where they need it and without financial hardship.

Integrating nutrition into universal health coverage

The vision of WHO and UNICEF for universal coverage of primary healthcare in the 21st century is:

a people-centred approach to health that aims to equitably maximise the level and distribution of health and well-being by focusing on people's needs and preferences (both as individuals and communities) as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation and palliative care, and as close as possible to people's everyday environment.[4]

Primary healthcare is essential to the achievement of universal health coverage and leads to a range of health and economic benefits.[5] As such, it is the principal means by which nutrition care should be streamlined and delivered at the community level, while ensuring optimal coverage and delivery of high-quality services. Still, nutrition services should be introduced at multiple levels of healthcare delivery, including secondary and tertiary care. Lack of access to primary healthcare with appropriately integrated nutrition actions can mean that quality nutrition services do not reach everyone. It is often the most vulnerable and disadvantaged people who have least access to services. When nutrition services are delivered through other mechanisms, there is a risk that they are not of consistently high quality or optimal coverage, and that they are not systematically monitored and evaluated.

To integrate nutrition into primary healthcare tailored to different contexts and needs, a range of governance and operational levers are required. These include policy frameworks, equitable allocation of resources, engagement with community stakeholders and the private sector, appropriate health workforce, and physical infrastructure.[6] The nature of primary healthcare services available – and hence the extent and type of nutrition interventions that can and should be integrated – varies from country to country, according to context-specific needs, government structure, coordination and financing. For example, primary healthcare systems in fragile states are tailored to deal with increased levels of stunting, wasting, and micronutrient deficiencies, while also facing multiple other societal challenges such as restricted population access, systems disruption, supply breaks and high staff turnover. Crucially, primary healthcare systems need to be sensitive and responsive to differential population needs and social determinants, such as those influenced by location, age, gender, wealth, ethnicity, migration status, and disability, in order to target and tailor interventions according to need. Strikingly, worldwide, only 4.4 million of the 16.6 million children under 5 years of age with severe acute malnutrition currently have access to treatment, highlighting the urgent need to address this unacceptable burden.[7]

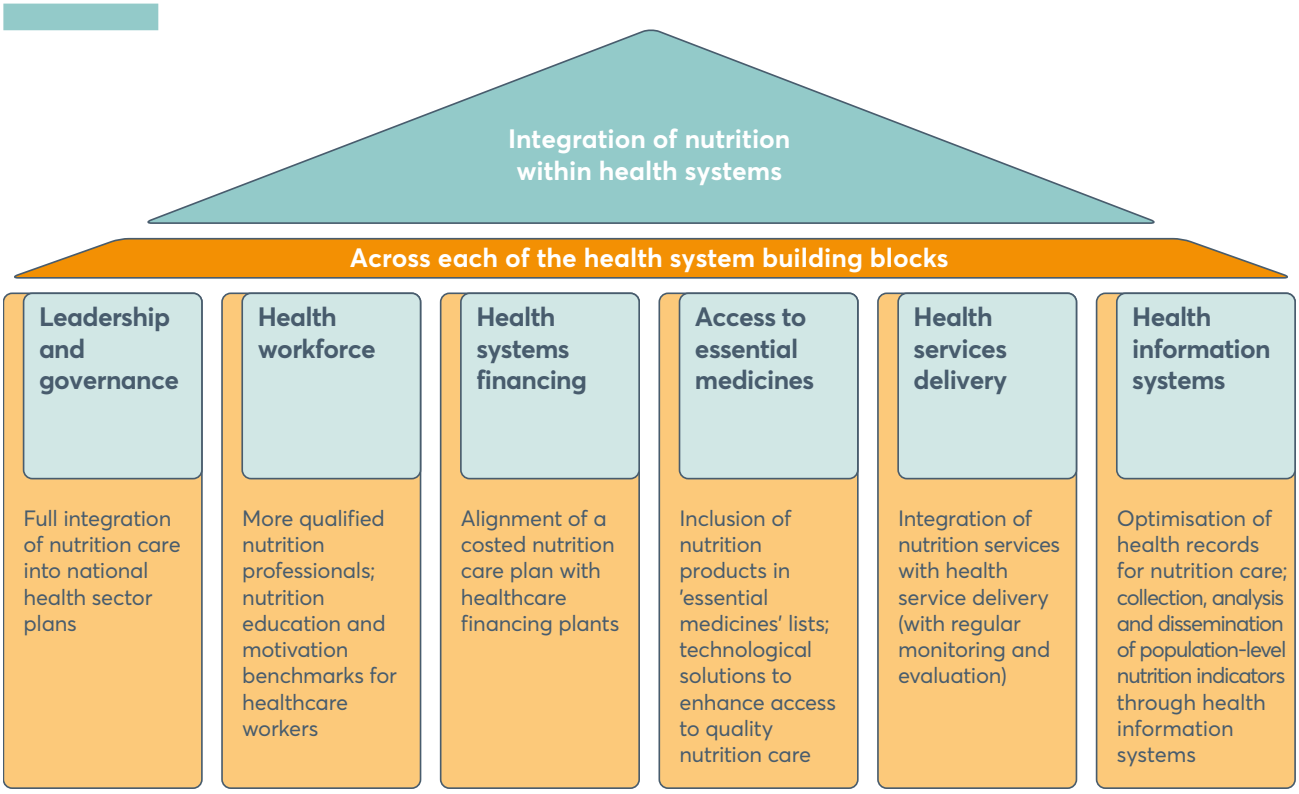
The major global impacts of food insecurity and undernutrition have long been recognised, leading to a traditional focus on actions concentrated on undernutrition. Failing to recognise and target the staggering diet-related NCD burdens – that can coexist with undernutrition – through our health systems, will aggravate nutrition inequalities and the malnutrition burdens. The essential nutrition actions put forward by WHO highlight a minimum set of nutrition interventions across the life course that should be universally available, aimed primarily at undernutrition.[8] Key essential nutrition actions relevant to primary healthcare include micronutrient (e.g., iron, vitamin A, iodine) supplementation, treatment of acute malnutrition, and promoting and supporting adequate infant and young child feeding. Yet, of the thirty essential nutrition actions proposed, only one focuses on overall diet and diet-related NCDs by means of creating a broader environment that promotes healthy diet habits (mainly focused on fruits and vegetables, total fats, saturated fats and trans

fats) that has extensions to primary healthcare provision. Interventions targeting other areas of the health sector (e.g., infectious disease control and reproductive health) also have the potential to collectively improve nutritional status.

In recent years, several other key dietary targets and strategies have been identified to tackle universally undernutrition and diet-related NCDs that could be considered for integration into universal health coverage.[9] Examples include medical prescriptions for free or discounted healthy foods,[10] integration of standardised clinical assessments of diet quality and food insecurity into electronic health records,[11] and medically tailored meals for high-risk, food-insecure patients with complex chronic conditions.[12] It is essential for health systems to expand their services to target diets and diet-related NCDs, to address malnutrition rigorously and comprehensively.

Mainstreaming nutrition within universal health coverage will require a joint effort by governments and key stakeholders to build functional and resilient health systems, supported by strengthened governance and coordination. Delivery of high-quality and effective healthcare services, and nutrition care, depends on available health workforce, supplies and financing, and is vital to achieving universal health coverage. We used the WHO's health systems framework, encompassing six building blocks, to assess how nutrition could be comprehensively integrated into health systems.[13] To ensure equitable, effective and sustained access to high-quality nutrition care, it is necessary to consider how each of these six essential components – or building blocks – of a health system could mainstream nutrition within health systems. The six components are: leadership and governance, health workforce, financing, access to essential medicines, service delivery and information systems (Figure 3.1).[14] The following sections consider how nutrition can be integrated and mainstreamed within each of these components, highlighting key challenges and opportunities, and with a focus on equity.

FIGURE 3.1
Framework for equitable integration of nutrition within health systems



Source: Adapted from WHO, 2007.[15]
Note: Nutrition care covers all services that would comprehensively prevent and treat malnutrition in all its forms.

Leadership and governance

Leadership and governance form the core of a strong health system and are critical to addressing nutrition inequities within health systems through strengthened policy frameworks, oversight and accountability.[16] Given the multisectoral nature of nutrition, the administration of nutrition programmes is divided between multiple government ministries and departments, with only few countries having a designated coordinating department or ministry for nutrition information.[17] Effective leadership will, therefore, foster synergies both within the health sector and with other relevant sectors. It will also promote and ensure access of services by the most vulnerable, including marginalised or traditionally overlooked population groups. This is crucial to meeting the 2025 global nutrition targets.

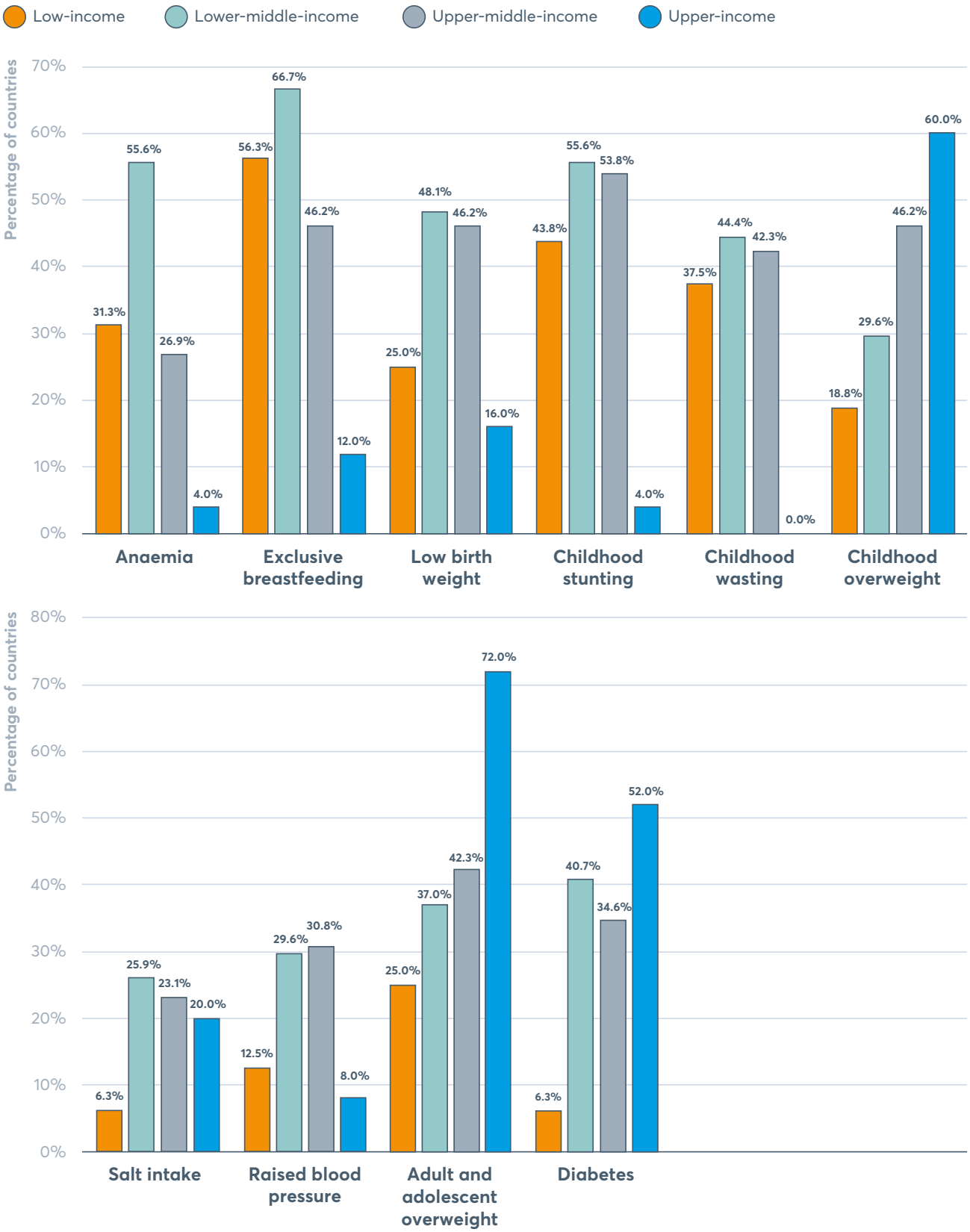
Nutrition must be fully integrated into national health planning. According to the Global Nutrition Policy Review 2 (GNPR2),[18] of 167 countries reporting nutrition policies, strategies and plans, only 95 reported health-sector plans with integral nutrition objectives. Among these, there is substantial variation in how goals, indicators or national targets align with the global nutrition targets. As shown in Figure 3.2, the integration of global nutrition targets is most comprehensive among lower-middle-income and upper-middle-income countries. The focus of lower-middle-income country plans is mainly on countering undernutrition, especially through promoting exclusive breastfeeding, and reducing stunting and wasting. High-income countries focus more on overweight, obesity and diabetes. It is important for lower-income countries to not overlook overweight, obesity and other diet-related NCDs, and to ensure that their policy instruments are fit to tackle both sides of malnutrition, particularly when these coexist. It is also important for higher-income countries to recognise the persistence of anaemia and low birth weight still experienced in vulnerable population subgroups. The low level of attention paid to breastfeeding in high-income countries is concerning given the role of breastfeeding as a 'double-duty action' for the prevention of both undernutrition and obesity.[19]

Nutrition actions within health systems need to carefully consider nutrition equity in relation to both undernutrition and diet-related NCDs, to ensure that they are inclusive and that no one is left behind. Such population-based strategies should be evidence-based and recognise that society may be unevenly and simultaneously affected by different forms of malnutrition, in order to tackle inequities and target populations according to need.

Corruption (or healthcare fraud) should also not be neglected by governments as it poses a major threat to universal health coverage, by giving rise to inequities in access to healthcare and leading to detrimental health and economic outcomes.[20] It is estimated that more than US$500 billion in health resources are lost due to corruption worldwide annually, exceeding the US$371 billion needed per year to achieve the health-related SDG targets.[21] Corruption in the healthcare sector can take various forms and impact all countries in some way, leading to compromised delivery and access to essential healthcare services.[22] Appropriate anti-corruption regulations should be carefully considered, integrated and monitored to ensure equitable access to healthcare.

FIGURE 3.2

Inclusion of goals, targets or indicators related to the global nutrition targets in health sector plans across 94 countries by country income, 2016–2017



Source: Further analysis of GNPR2.[23]

Notes: Bars correspond to the percentage (%) of countries within a given income group that have included in their health sector plans nutrition objectives related to the global nutrition targets. Of 167 countries reporting nutrition policies in 2016–2017, 95 reported health sector plans with integral nutrition objectives. Of those, 94 (all but Niue) were classified by gross national income per capita as high- (25, 26.6%), upper-middle- (26, 27.7%), lower-middle- (27, 28.7%) and low- (16, 17.0%) income groups.[24] Generalisations may be affected by the lack of representativeness within and across country income groups.

Health workforce

The health workforce is at the heart of the healthcare delivery system, consisting largely of healthcare providers/professionals, including physicians (medical doctors), nutrition professionals (dieticians/nutritionists), nurses and midwives, health management and support workers. This includes both skilled professional as well as lay health workers, those who are paid and unpaid, and the public and private sector.[25]

Universal health coverage cannot be achieved unless the capacity of the health workforce is increased. Health workforce capacity broadly relates to availability (numbers and supply), distribution (recruitment, allocation and retention) and performance (productivity and quality of delivered services).[26] Low- and middle-income countries are faced with large deficiencies and inequitable distribution of qualified health workers. This is a major barrier in delivering essential health services,[27] and the situation is projected to worsen.[28]

In the case of nutrition, this inequitable distribution is even more profound. The density of trained nutrition professionals[29] (per 100,000 people) has been identified as an appropriate measure of capacity.[30] While norms for an acceptable level for this indicator have not yet been developed, the figures are far too low at the moment. Of the 194 countries surveyed, 159 responded and 126 of those provided detailed information to enable assessment. The median number of trained nutrition professionals stands at only 2.3[31] per 100,000 people.[32] Only 23 countries have densities of 10 nutrition professionals per 100,000 population or higher as reported in GNPR2.[33] The same report also highlights that the WHO Americas and Western Pacific regions have the highest densities of nutrition professionals (median 3.7 and 4.2 per 100,000 people respectively), while the Africa region has the lowest (median 0.9 per 100,000 people), with no trained nutrition professionals at all reported in six countries.[34] Quality standards in nutrition education, by means of national qualifying exams and board certification, as well as continuous education requirements, are also essential to ensure quality of provided nutrition care. Notably, national licence and qualification systems for dieticians and nutritionists are currently largely absent from lower-income countries.[35]

Utilising a variety of health professionals for delivery of nutrition interventions would facilitate the integration of nutrition into health platforms and help alleviate inequities in access. The number of qualified nutrition professionals should be increased as part of strengthening the delivery of nutrition services within the health system. Depending on the type of the intervention and country-specific context, other health professionals could and should play important roles. Recognising the central role of physicians in healthcare provision, benchmarks for minimum nutrition knowledge and skills should be established for physicians, such as through compulsory nutrition education and continuing educational requirements. Yet, currently physicians are not necessarily equipped to deliver high-quality and effective nutrition care.[36] Similar benchmarks for nutrition education should be established for all other key allied healthcare providers, such as nurses and midwifes, to ensure that any health professionals involved in the delivery of nutrition care are consistently and rigorously trained.

It is important also to recognise the critical role of frontline workers, such as community health workers, in covering the increased demand for essential nutrition services at a lower cost and especially when there are key staff shortages (that can be further aggravated in humanitarian emergencies). It is imperative to ensure that these workers receive adequate nutrition training and are appropriately equipped to provide quality nutrition care. Yet, pre-service nutrition training curricula for health workers typically lasts less than 20 hours, while the trainers have limited capacity.[37]

Innovative technological solutions, such as mobile applications, are a promising tool for delivering standardised treatment and protocols and improving provision of care.[38] Financial and non-financial incentives, such as training and job advancement opportunities, community recognition, mentorship and supervision for professional growth (and support of protocol adherence), can have a considerable impact on frontline health worker job satisfaction and performance.[39] Conversely, insufficient incentives, such as increased workloads and time commitments, and payment delays, can lead to lower motivation and performance, even interruption of service delivery.[40] The size, nature and role of frontline workers should be carefully considered and appropriately integrated in the delivery of nutrition services, depending on the country-specific context and needs.

Education and training programmes for all healthcare providers need to be institutionalised and adapted to meet the evolving nature of nutrition care delivery – covering the whole spectrum of poor diets and malnutrition forms – to ensure that every member of the health workforce contributes to their fullest extent. National health systems, with fully integrated nutrition care, should carefully consider the appropriate number, distribution and skillset of health workers delivering nutrition care, and enhance their performance through development opportunities. This is critical to achieving high-quality primary healthcare and ensuring that all people can access quality nutrition services.

Health systems financing

Adequate financing of fully integrated nutrition care into health systems is key to achieving universal health coverage and equitable access to nutrition services. The recent United Nations General Assembly on universal health coverage recognises "the fundamental importance of equity, social cohesion and social protection mechanisms to ensure access to health without financial hardship for all people, particularly for those who are vulnerable or marginalised".[41] Fee-for-service approaches limit access and exclude vulnerable populations; ensuring services are free at the point of delivery and tailored to population-specific needs will result in fair and equitable access for all.

Given the hidden nature of some forms of malnutrition, and variable self-perception of diet intake and quality, it is likely that those most in need of nutritional care will not seek it if they must pay for it. This is a major equity issue, as requiring out-of-pocket expenditures for what may appear to be non-urgent health and nutritional care could exclude those with limited resources and place them at greater risk of adverse health consequences. Nutrition financing is, therefore, critical to achieving and maintaining high-quality and equitable nutrition care for all, and particularly for those in greatest need.

Although funding for nutrition actions has increased in recent years, fewer than half of the countries with existing nutrition policies have a costed nutrition operational plan (58 of 149 countries).[42] Those plans are structured around nutrition-specific and nutrition-sensitive actions, while healthcare financing plans are developed separately and focus on health system investment needs, of which nutrition should be an inherent part (e.g., within health information systems, workforce, infrastructure and emergency preparedness). This disconnect poses a challenge for integrating and budgeting nutrition into healthcare financing plans, unless those plans are well-aligned with other nutrition multisectoral plans.

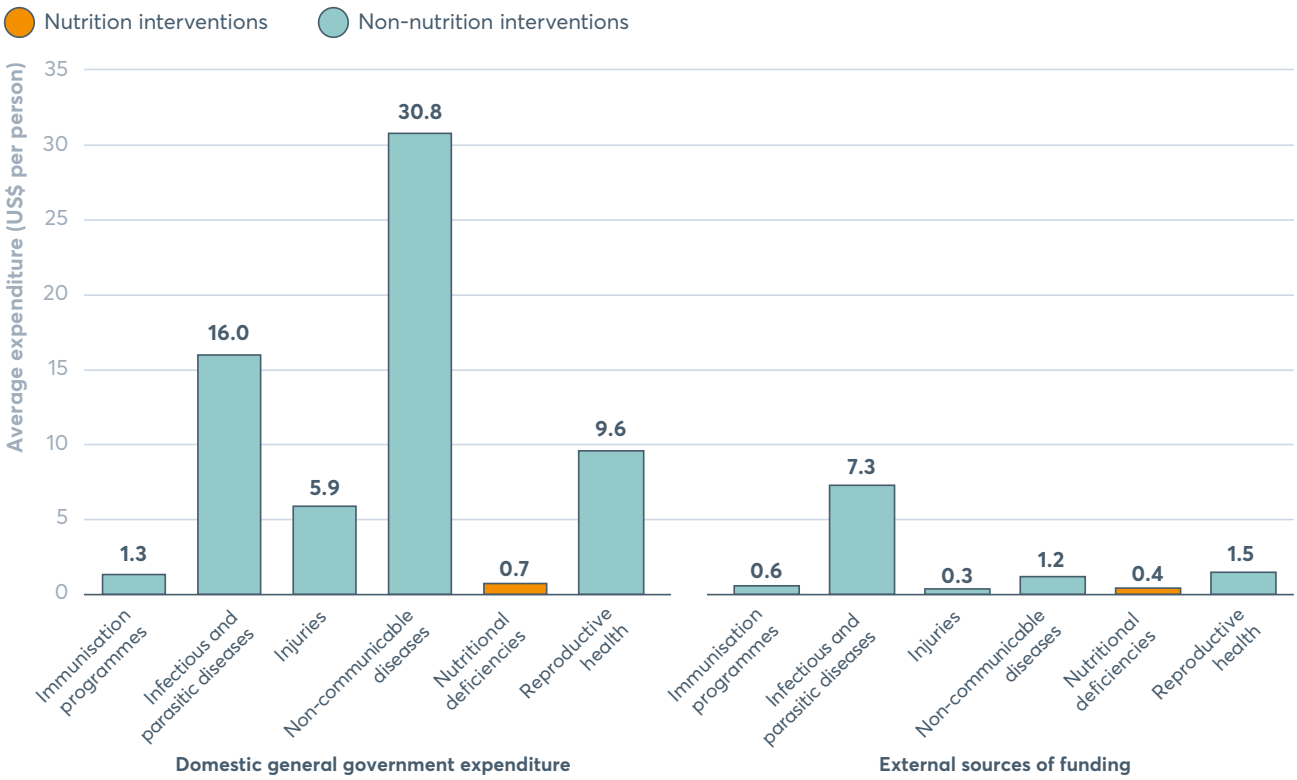
A model for projected resource needs in 67 low- and middle-income countries found that an additional US$371 billion would be needed per year to reach the health-related SDG targets, three-quarters of which would need to go towards health systems strengthening. This represents an opportunity for nutrition to be costed and integrated into health systems as part of infrastructure strengthening. Of the remaining quarter, to cover disease prevention and control, and other programme-specific costs, nutrition would account for only 5%.[43]

Data available from 48 mostly low-income countries that are part of the System of Health Accounts shows that average government expenditure on 'nutritional deficiencies'[44] is US$1.87 per person – the lowest of government expenditures among all disease categories assessed (Figure 3.3). Funding from external sources of funding allocated to the same category is even lower, at US$1.11 per person. Crucially, expenditure on nutrition is not proportionate to the burden of malnutrition.

In nearly all nations, healthcare spending continues to increase dramatically, with diet-related chronic diseases being a major driver of healthcare costs.[45] Given increased disease and economic burdens caused by poor diets, governments and policymakers should recognise the vital role nutrition can have in improving our health and reducing crushing healthcare costs. Identifying cost-effective – or even cost-saving – nutrition interventions that can be integrated into the health system would save lives and reduce healthcare spending.

Given that the US is heavily burdened by diet-related NCDs,[46] recent efforts there to integrate nutrition into healthcare can provide a basis for consideration in other contexts. Innovative healthcare strategies for healthier eating, such as implementing medical prescriptions of healthy food within large government healthcare programmes, could generate substantial health gains.[47] Such programmes have the potential to be highly cost-effective across population groups, including by age, ethnicity, education, income and disability, closing any potential inequality gaps.[48] From a healthcare perspective, such nutrition interventions can be as or more cost-effective than many currently covered medical interventions, such as statins for primary prevention or drug treatment for hypertension.[49]

FIGURE 3.3
Annual expenditure by disease category in 48 countries, 2016



Source: WHO Global Health Expenditure Database.[50]
Notes: Data was available for 48 unique countries that reported annual spending for at least one disease category. Number of countries with available data for a given disease category varies, ranging from 39 to 42.

Other examples of promising nutrition strategies within healthcare include incorporation of standardised clinical assessments (including nutritional screening tools) of diet quality and food insecurity into electronic health records, as part of routine care;[51] and medically tailored meals to high-risk, food-insecure patients with complex chronic conditions.[52] Depending on the country-specific context and population needs, such interventions can be considered for adaptation and extension to capture the whole spectrum and consequences of poor diets. Public–private partnerships could also help support nutrition strategies through the health system, as currently considered and implemented in the US.[53]

A group of experts, led by the World Bank, researched multiple health interventions focused on lower-income countries, based on their costs, effectiveness, feasibility of implementation, and capacity to deliver significant outcomes.[54] In 2017, they proposed two packages of interventions to be considered by countries when defining their national healthcare packages: the essential package (EUHC), which comprised 218 interventions, and a high-priority package (HPP), which included a subset of 97 interventions of the EUHC, selected using more stringent criteria. Most strategies included in the EUHC are highly cost-effective and equitable (Table 3.1).

To improve the coverage of nutrition services, it is critical to ensure that essential nutrition actions are a core component of national universal health coverage packages and that nutrition interventions are well resourced and integrated more effectively into diverse health-delivery platforms. Equitable funding allocations to enable sustainable integration of nutrition within health systems are key to more effective and equitable universal health coverage. This can be achieved through the development of a costed plan that: accounts for the effectiveness and cost-effectiveness of nutrition interventions; uses allocative efficiency analyses across key interventions and geographical areas; considers cost-sharing with other interventions and public–private partnerships; and continuously tracks spending linked to performance monitoring and evaluation.

TABLE 3.1
Nutrition interventions included in the Essential Universal Health Coverage (EUHC) developed by the World Bank in 2017

REVISED INTERVENTION NAME (FOR THOSE APPEARING IN MULTIPLE PACKAGES OR REQUIRING CLARIFICATION)	INCLUDED IN HEALTH PRIORITY PACKAGES	COST-EFFECTIVENESS SCORE	EQUITY SCORE
Counselling of mothers on providing thermal care for preterm newborns (delayed bath and skin-to-skin contact)	Yes	High	Moderate
Detection and management of severe acute malnutrition and referral in the presence of complications	Yes	High	Best
Promotion of breastfeeding or complementary feeding by lay health workers	Yes	Moderate	Best
Provision of iron and folic acid supplementation to pregnant women, and provision of food or caloric supplementation to pregnant women in food-insecure households	Yes	Moderate	Best
Provision of vitamin A and zinc supplementation to children according to WHO guidelines, and provision of food supplementation to women and children in food-insecure households	Yes	High	Best
School-based education on sexual health, nutrition and healthy lifestyle	No	Low	N/A
Mass drug administration for lymphatic filariasis, onchocerciasis, schistosomiasis, soil-transmitted helminthiases and trachoma, and foodborne trematode infections	Yes	High	Best

Source: Watkins et al., 2017.[55]
Notes: Adapted from source; Cost-effectiveness score: No data = no economic evaluation data are available; Not cost-effective = Incremental cost-effectiveness ratios (ICER) greater than US$4,100 per DALY averted; Low = ICER between US$1,301 and US$4,100 per DALY averted; Moderate = ICER between US$251 and US$1,300 per DALY averted. High = ICER generally less than US$250 per DALY averted; Equity score: Best = Health-adjusted age of death (HAAD) greater than 50 years (greatest potential to help the worst off); Moderate = HAAD between 40 and 49 years; Worst = HAAD of less than 40 years.

Access to essential medicines

The ability to provide equitable nutritional care tailored to needs is critically dependent upon access to and delivery of essential nutrition-related products and technologies. Essential nutrition products, as essential medicines, should be "available within the context of functioning health systems at all times, in adequate amounts, in the appropriate dosage, with assured quality, and at a price that individuals and the community can afford".[56] Tracking the availability and use of essential nutrition products and improving local production processes, supply-chain management, monitoring of stocks, and distribution models could help ensure that nutritional products and technologies are available when and where they are needed and for those who need them most.

Inclusion of nutrition products in national Essential Medicines Lists (EMLs) can facilitate integration within national supply chains, and enhance access to development funding and provision of tax breaks to support local production. The WHO EML model serves as a guide for the development of national and institutional EMLs, and is revised every two years.[57] The most recent edition of the WHO EMLs includes several nutrition-related products, such as iron, folic acid, zinc (only for diarrhoea), micronutrient powders, vitamin C, calcium, vitamin D, iodine, some B vitamins, and vitamin A.[58]

Of the 137 countries with a national EML in 2017, most include all nutrition-related products listed above, except for the micronutrient powders, which were a new addition to the 2019 EMLs.[59] However, some important nutrition products, such as ready-to-use therapeutic foods (RUTFs) for severe acute malnutrition in children are not yet part of the WHO EMLs.[60] Taking into account how critical EMLs are in promoting primary healthcare, inclusion of such nutrition-related products could help in the management of severe acute malnutrition and other diet-related health conditions.

In addition to ensuring access to essential nutrition products, we need to accelerate the development of low-cost, field-friendly technological solutions to assess nutritional status, and ensure timely administration of nutritional support and active follow-up for compliance and progress assessment. Examples of technological solutions include anthropometric devices/tools to measure birth weight or screen for health conditions such as severe acute malnutrition, overweight or obesity,[61] and non-invasive techniques, including mobile applications, to measure micronutrient deficiencies[62] or other biomarkers of dietary intake.[63] Such technologies could complement traditional clinical assessments and screening tools, facilitate the screening and diagnosis of nutrition-related conditions at the point of care, and be collectively integrated into standard practice. Some of these devices are already available, while others are at various stages of development.

Another promising low-cost opportunity to improve access to quality nutrition care is the provision of remote (phone or online) counselling. These so-called digital interventions have been used to help with weight and NCD management, and with nutritional support during pregnancy and lactation, among others.[64] Such digital interventions have multiple advantages, including: extending nutrition services beyond the facility context to more remote or harder-to-reach communities; reaching individuals who do not traditionally attend clinics and are not identified during routine surveillance activities; and offering opportunities to resource-limited countries to implement integrated nutrition actions, especially for addressing overweight, obesity and other diet-related NCDs. New or simplified technologies that enable greater reach, coverage and speed of assessment or delivery present avenues for enhancing equity and quality of interventions.

Health services delivery

There is considerable evidence to suggest that integrating nutrition services into health systems is an effective, equitable and cost-effective approach. However, the extent to which nutrition interventions are integrated within the health system is not well understood, nor do we know what a successful integration would look like. In addition, coverage in many developing countries is low.[65] The recent Transformation of Aspirational Districts initiative, in India, highlights a successful integration and delivery of equitable nutrition services as part a broader effort to transform healthcare (Spotlight 3.1).

SPOTLIGHT 3.1

Addressing equity and social justice: India's Transformation of Aspirational Districts initiative

Alok Kumar, Rajan Sankar and Basanta Kumar Kar

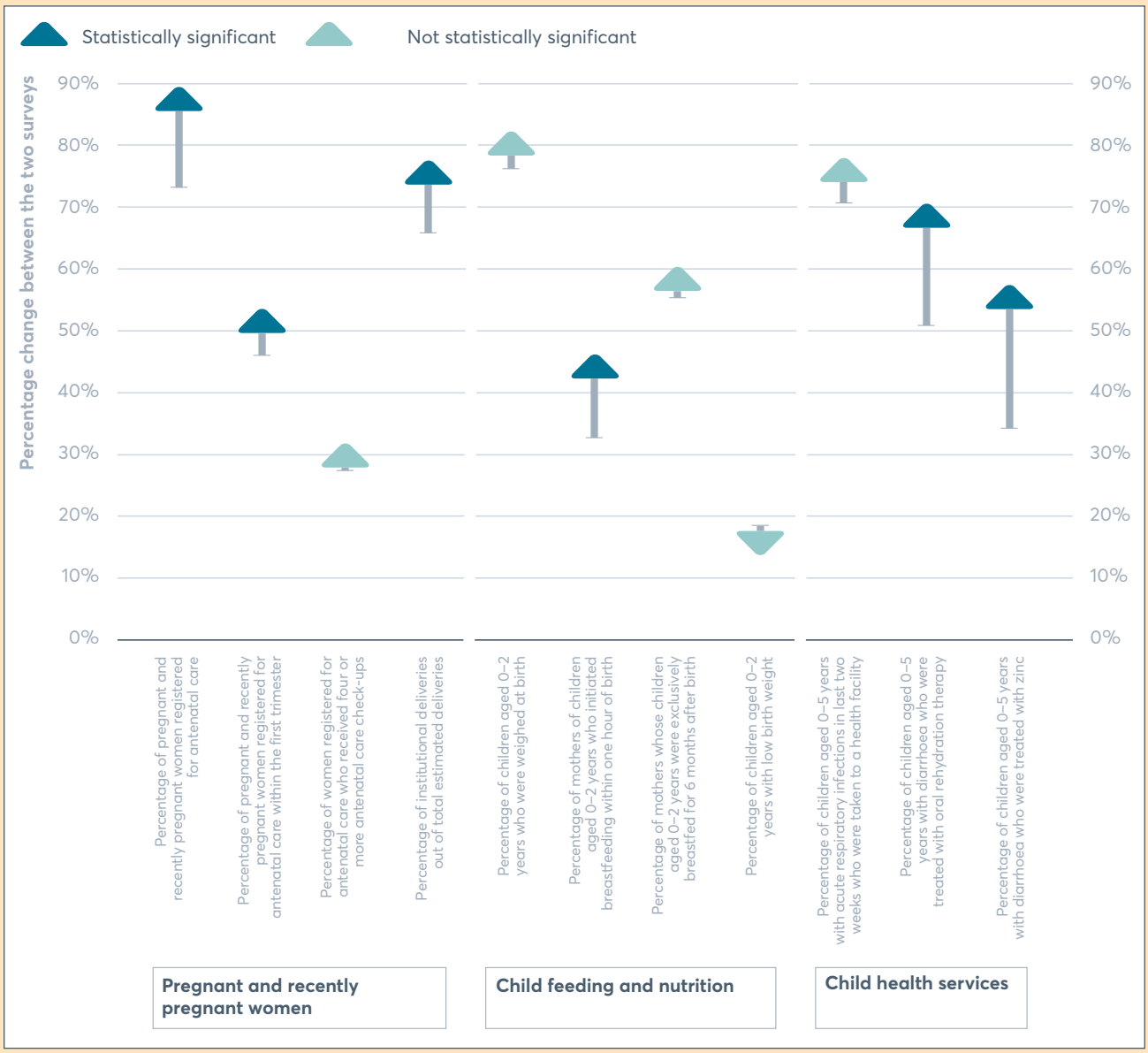
In India, one in two women of reproductive age is anaemic, one in three children under five years of age is stunted, and one in five children under five years is wasted. Inequalities are evident for stunting, with stunting prevalence being 10.1% higher in rural vs urban areas. Rates of overweight or obesity reach 20.7% in adult women and 18.9% in adult men. With this coexistence of undernutrition and overweight or obesity, India faces the double burden of malnutrition.[66]

Recognising that the quality of life of all its citizens is not consistent with India's significant economic growth over the past ten years, and that that there is major variation within states in terms of social and economic development indicators, India launched the Transformation of Aspirational Districts programme in January 2018. This is a unique programme that focuses policy attention towards addressing inequity, social injustice and exclusion in 115 'aspirational districts' in 28 states, through a concerted effort to improve the performance of services – including health, nutrition, education, infrastructure, agriculture and water resources – in districts with pockets of under-development. The programme aims to remove heterogeneity in living standards in India and improve the ability of all individuals to participate fully in the economy through the rapid and effective transformation of the target districts.

One aim of the programme is to increase the number of women and children in the 1,000-day window of opportunity who are identified by Accredited Social Health Activists and Anganwadi[67] workers in these districts and targeted with a set of converging health and nutrition interventions. These include four antenatal-care visits, iron supplementation during pregnancy, treatment of anaemia, increasing the number of institutional and home deliveries attended by a skilled birth attendant, early initiation of breastfeeding, counselling on infant and young-child feeding, birth weight measurement, child growth monitoring and treatment of diarrhoea with oral rehydration salts and zinc.

A key innovation within this programme was to introduce six-monthly household surveys to gauge the coverage and quality of the interventions. The results demonstrate encouraging progress in health and nutrition outcomes (Figure 3.4). This progress can be attributed to an inclusive approach with firm appreciation of ground realities, which ensures the district is kept at the locus of inclusive development.

FIGURE 3.4
Delivery of Poshan Abhiyaan (National Nutrition Mission) interventions in the aspirational districts: results from two rounds of household surveys



Source: National Family Health Survey (NFHS-4), Champions of Change, Aspirational District, NITI Aayog, Poshan Abhiyaan (National Nutrition Mission), Ministry of Women and Child Development, Government of India.
Note: The length of the line indicates the magnitude of the change (delta) between the two rounds of surveys; an upward pointing arrow denotes positive change, and a downward pointing arrow a negative change.

Improved programme delivery is spurred by competition, based on outcomes and sustained targeted efforts of the state and local governments. District implementation teams are also provided with small-area estimates derived from sophisticated statistical analysis of the household data, providing 'development intelligence' to direct field action.

Full sources for this spotlight can be found in the notes.[68]

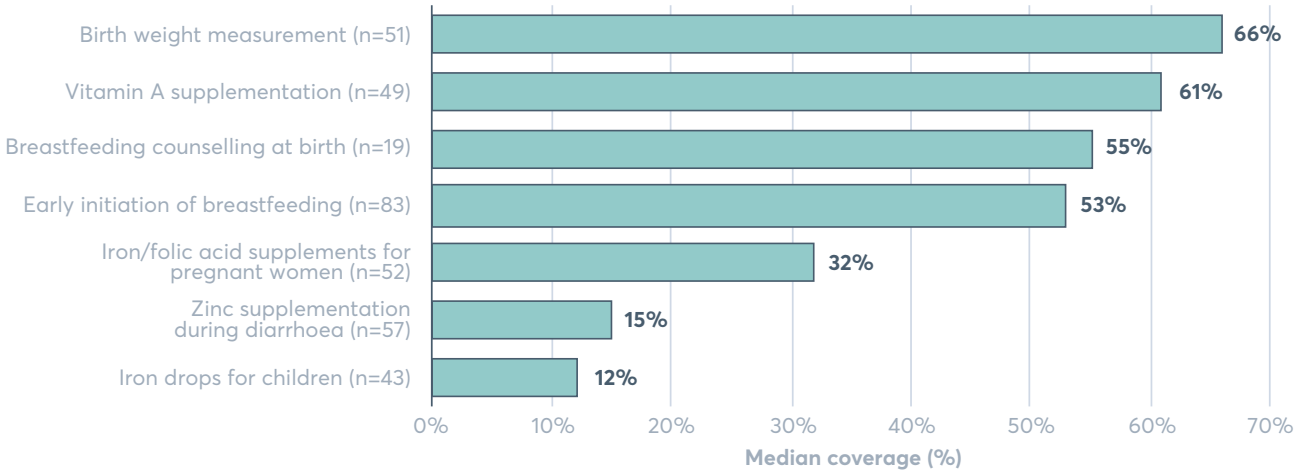
Available health services should meet minimum quality standards to ensure that all people have access to the care they need. Although the structure, coordination and type of available health services differs between countries, it is possible to identify essential elements of 'good service delivery' against which progress can be assessed. These elements include: comprehensiveness, accessibility, coverage, continuity, quality, person-centredness, coordination, and accountability and efficiency.[69] Optimal nutrition is increasingly recognised as the foundation to achieving a healthy life – and that it should be integral to health service delivery. However, there is little data available to understand the type and extent of inequities in existing nutrition service delivery.

The GNPR2 reports that most countries in 2016–2017 have health systems in place for delivering interventions on infant and young child nutrition (120 of 122 countries), promotion of healthy diets (76 of 119 countries), and delivery of vitamin and mineral supplementation (96 of 131 countries).[70] Using coverage as a measure of service delivery, analysis of Demographic and Health Surveys (DHSs) and Multiple Indicator Cluster Surveys (MICSs) between 2012 and 2018 revealed that the median coverage of specific maternal, infant and young child interventions is low among low- and lower-middle-income countries (Figure 3.5). Median rates are only: 12% for childhood iron supplementation, 15% for childhood zinc supplementation; and 32% for iron and folic acid supplementation in pregnancy.

Interventions that are better integrated into perinatal care or delivered alongside immunisations have higher coverage values of their target populations: highest for birth weight measurement (66%), followed by vitamin A supplementation for children under 5 years of age (61%), breastfeeding counselling at birth (55%) and early initiation of breastfeeding (53%).

Population coverage was higher for the richest compared to poorest groups, with the exception of early initiation of breastfeeding (Figure 3.6). Largest absolute wealth differences were seen for birth weight measurement (33.2%), breastfeeding counselling at birth (22.3%) and iron/folic acid supplementation for pregnant women (17.4%). These findings suggest potential inequities in the delivery of antenatal and postnatal nutrition care across primarily low- and lower-middle-income countries. This can lead to worsened health outcomes, and highlights the need to strengthen nutrition care delivery.

FIGURE 3.5
Population coverage of selected maternal, infant and young child interventions delivered in healthcare settings

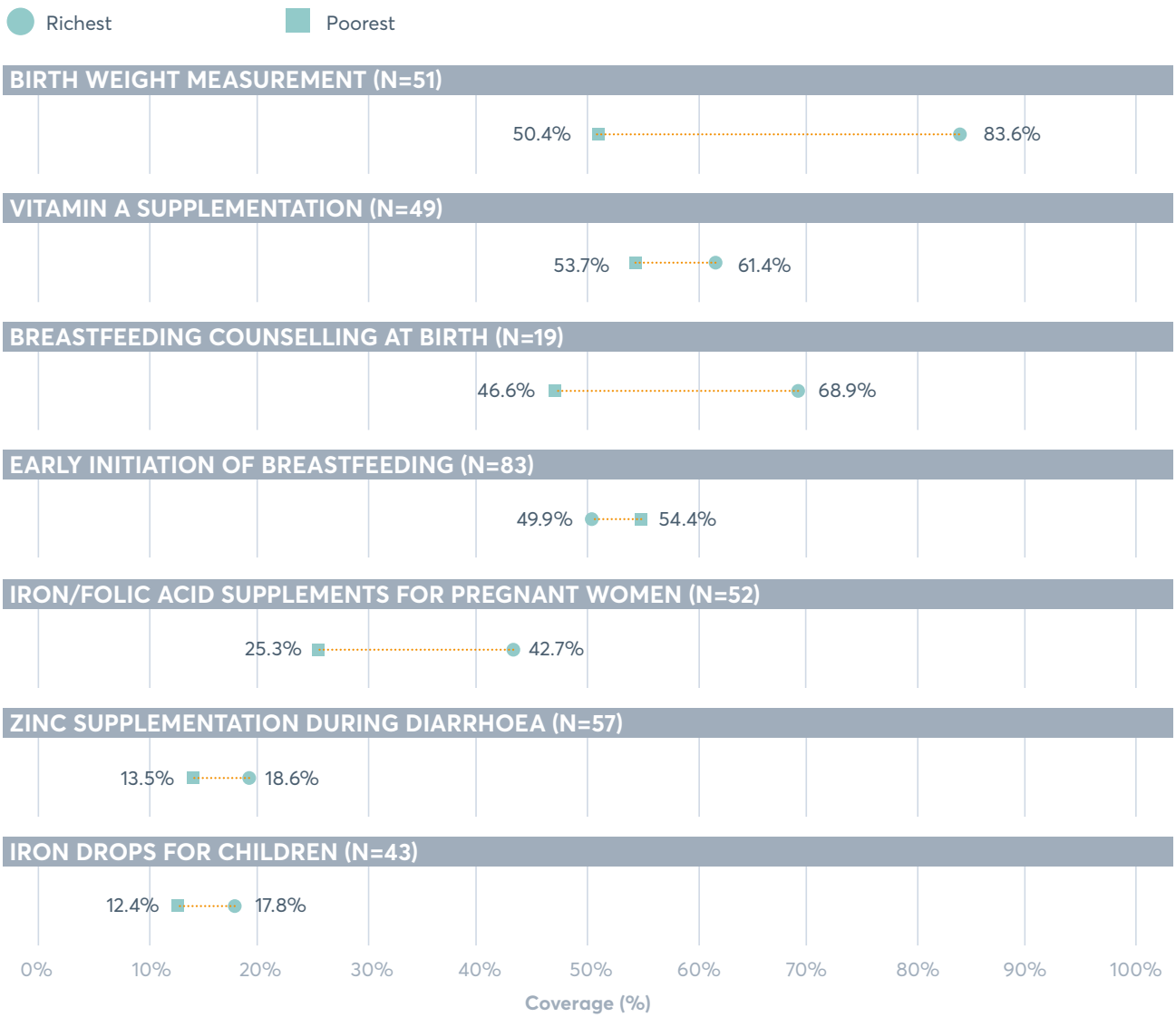


Source: Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) published between 2012 and 2018, latest available data used by country.
Notes: Coverage is defined as the proportion of people who receive a specific intervention or treatments. Numbers in parentheses correspond to total number of countries with data on the specific nutrition intervention.

The coverage of nutrition interventions in healthcare typically lags far behind the coverage of traditional health ('non-nutrition') services. For example, in an analysis of 35 lower-income countries covered by DHSs (Figure 3.7), the median coverage of iron and folic acid supplementation during pregnancy (33.4%) was only half of that for at least four antenatal care visits (66.6%). It is important to extend such analyses to other nutrition interventions, and to understand the reasons that could be driving inequities in coverage, that will ultimately lead to suboptimal health outcomes. Improving adherence and compliance for nutrition interventions, such as through targeted counselling and management of potential adverse effects, from skilled nutrition professionals, is essential for enhanced delivery of nutrition care.

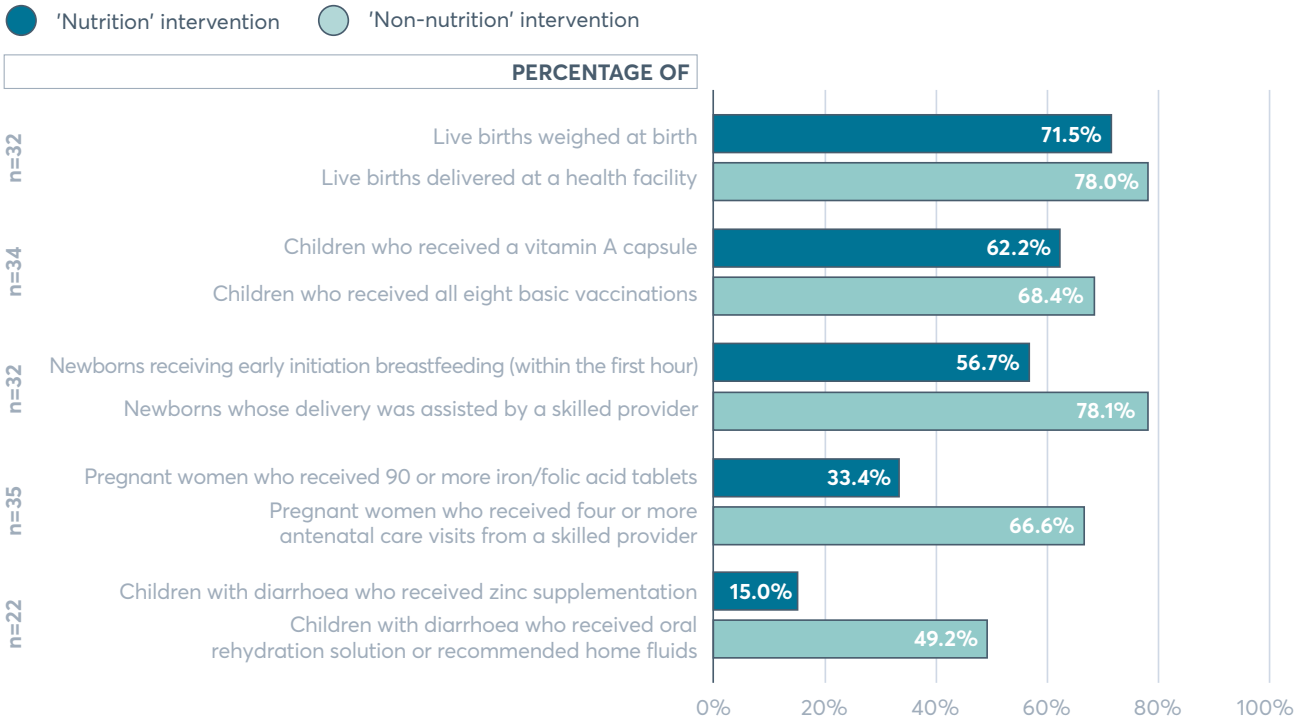
FIGURE 3.6

Population coverage of selected maternal, infant and young child interventions delivered in healthcare settings, by population wealth



Source: Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) published between 2012 and 2018, latest available data used by country.
Notes: Coverage is defined as the proportion of people who receive a specific intervention or treatments. Interventions are ranked by the median percentage (%) of whole population coverage as shown in Figure 3.5. Wealth is asset-based wealth score at the household level and is classified as 'poor' (lowest wealth quintile) and 'rich' (highest wealth quintile).

FIGURE 3.7
Population coverage of maternal and child 'nutrition' vs 'non-nutrition' interventions in 35 countries



Source: Demographic and Health Surveys (DHSs) published between 2012 and 2018, latest available data used by country.
Note: Population coverage is defined as the proportion of people who receive a specific intervention or treatments.

All considered, nutrition care should be an integral part of healthcare delivery services to ensure improved diets and related health outcomes, particularly for those who would benefit most. Multi-component interventions collectively targeting nutrition, as well as non-nutrition targets, have the potential to be even more equitable, effective and cost-effective.[71] There is a need for 'good nutrition service delivery', consistently monitored and evaluated across all related dimensions, with a focus on equity, for people to achieve and retain their fullest health potential.

Health information systems

Access to reliable and up-to-date nutrition information is essential to a range of stakeholders, including governments, policymakers, healthcare providers and scientists. It is therefore imperative that the routine collection of high-quality nutrition information (data) becomes an integral part of, and tracked through, government health information systems. Health information systems serve multiple users and purposes and are designed to support planning, management and decision-making in the health system, both on a routine basis and during emergencies.[72]

A good health information system ensures the collection, analysis, dissemination and use of reliable and timely health information through three key functions: generation of individual-, facility- and population-level data; capacity, in reasonable time, to detect, investigate, communicate and contain events that pose a threat to public health; and capacity to collate, disseminate and promote the application of this knowledge.[73]

The integration of nutrition within these functions is essential for collecting and utilising high-quality nutrition data to: assess individual and population nutritional status/needs; provide sound individual nutrition care; and design, monitor and evaluate targeted nutrition policies and interventions.[74] Yet, there are several gaps and challenges, but also opportunities, in achieving this.

Health information systems use different types, or sources, of data, each type serving different purposes.[75] These types include: individual-level data on a patient's profile, needs, and treatment (i.e., health records), which serve as the basis for sound individualised care; health-facility-level (public and private) data to document and/or manage daily operations, such as human resources, scheduling, equipment/supplies, billing/financing, and coverage and performance of services and programmes; population-level data for public health decision-making, mainly through national health and demographic surveys; and nutrition-surveillance facility and community information, mainly to cover urgent services, such as for epidemic diseases or emergency relief.

Optimising (electronic) health records for nutrition care should be the first step in delivering high-quality nutrition services, from screening, assessing, diagnosing intervening and monitoring, to discharge planning.[76] The two key elements to achieve this include using a systematic framework and language to facilitate the documentation of nutrition care delivery, such as the Nutrition Care Process (NCP),[77] and incorporating this framework's components into patients' health records. Over the past decade, NCP has been implemented increasingly around the world.[78] However, clinical assessments of diet quality and food insecurity, along with relevant screening tools, are generally not comprehensively integrated or standardised in health records.[79] Likewise, health facility data is rarely optimised to document coverage and performance of preventive or curative nutrition programmes, and is not necessarily representative of services available to the population as a whole.[80] This is limiting the ability to provide tailored nutrition care, particularly to those who need it most,[81] and making time-management less efficient for health professionals.[82] Incorporating such assessments into standard health records (ideally electronic) and routine care would streamline the integration of nutrition into healthcare, and could lead to decreased health and economic burdens.[83]

Population-level nutrition data is critical for population-level problem diagnosis, surveillance, planning, evaluation and monitoring. Large-scale nationally representative health and nutrition surveys, that collectively assess the health and nutrition status of the population, are a key source of such data. Ideally, data should be collected at the individual level, using standardised assessment tools and methods, and in a systematic, consistent and comparable manner.[84] Moreover, the data should allow disaggregation and analysis by key demographic characteristics, such as sex, age, ethnicity, wealth, migration status, disability, geographic location, and others as relevant to national contexts. Granular data is essential to identify inequalities in nutritional status across different population groups and inform the design and implementation of equitable nutrition interventions. Examples of such ongoing large-scale health and nutrition surveys include the US National Health and Nutrition Examination Survey (NHANES)[85] and the UK National Diet and Nutrition Survey (NDNS),[86] which, although thorough and detailed, may not be feasible in lower-income countries, due to a range of different challenges, including increased costs.[87]

Lower-income countries are either lacking nutrition data or relying on limited data. In these settings, population-level nutrition data is primarily derived from: national household consumption and expenditure surveys (HCESs), that do not collect individual-level dietary intakes, thus precluding assessment of sociodemographic differences; Demographic and Health Surveys[88] or Multiple Indicator Cluster Surveys,[89] that are relatively infrequent (roughly every three years);[90] sporadic small-scale surveys on population subsamples with limited generalisability; and community and facility nutrition data that aims to address significant public health issues (such as micronutrient deficiencies and supplementation, infant and young children feeding practices, and anthropometry/growth status),[91] or inform decision-making during emergencies.[92]

These sources rarely collect data on other important nutrition indicators such as: individual-level dietary intakes, biomarkers, multiple other anthropometric indicators, related health outcomes, nutrient supplementation during pregnancy, clean water accessibility, sanitation and hygiene practices, or other indicators to track the coverage and quality of preventive or curative nutrition actions.[93] A recent mapping of nutrition components within health information systems in 57 countries of the Scaling Up Nutrition (SUN) movement showed that systems most commonly track vitamin A supplementation (48), followed by breastfeeding counselling in antenatal care (33) and management of acute malnutrition (32).[94] Only 18 countries routinely collect data on iron and folic acid supplementation during pregnancy.

We need mechanisms to streamline and improve the routine collection, use and integration of high-quality nutrition data in lower-income settings. It is important to leverage existing infrastructures and resources to increase the capacity and upgrade nutrition assessment methodology and tools. At the same time, this is also an opportunity for innovation, given the rapidly expanding availability and application of mobile platforms and other technologies in higher-income countries.[95] The International Dietary Data Expansion (INDDEX) Project seeks to address high-quality dietary data collection impediments and expand capacity in low-income countries, by developing and validating standardised and streamlined technologies for the collection and processing of individual dietary data.[96] The National Information Platforms for Nutrition (NIPN) initiative supports low-income countries in strengthening their information systems for nutrition and improving data analysis to more efficiently prevent malnutrition.[97] Data for Decisions to Expand Nutrition Transformation (DataDENT) aims to transform the availability and use of nutrition data by addressing gaps in nutrition assessment and advocating for stronger nutrition data systems.[98]

Optimising the collection, quality, availability and accessibility of population-level nutrition data worldwide, and integrating this into health information systems, would be a major improvement and an invaluable asset for public health. Peru and Guatemala are two examples of middle-income countries that have managed to develop and annually update health information systems with integrated nutrition information.[99] Several low-income countries are currently building their own nutrition information systems.[100]

It is crucial, now more than ever, to invest in the comprehensive integration of nutrition into health information systems. This will ensure the sound provision of targeted nutrition care, timely identification of those at increased nutritional risk, fastest possible response to emergencies, greater accountability, informed policy design and prevention initiatives, and efficient and effective management of financial, human and other resources. Comprehensive health and nutrition information systems are a complex, yet feasible, undertaking. If achieved, such systems will have multiple benefits for public health.

RECOMMENDED ACTIONS

- Nutrition care, preventive and curative, must be fully integrated into national health-sector plans, supported by a strengthened multisectoral approach. Essential nutrition services should be part of the standard package of available healthcare services, universally available to all.

- The number of qualified nutrition professionals should be increased to enhance the delivery of quality nutrition care. Frontline workers involved in nutrition service delivery should have the required pre- and in-service training, means and motivation to perform their assigned roles.

- Costed nutrition-care plans should be developed and aligned with healthcare financing plans. Nutrition-care financing should be scaled up and sustained, for all people to achieve and maintain the healthiest diet and life possible.

- Nutrition products, such as ready-to-use therapeutic foods, should be readily available and affordable. Innovative technological solutions, such as remote counselling and web applications, can enhance access to quality nutrition care, particularly for those harder to reach.

- Nutrition services within health systems should be regularly monitored and evaluated to address inequities in delivery, coverage and access.

- Optimising health records for nutrition care should be the basis for delivering sound nutrition services and identifying those in greater need. The collection, analysis and dissemination of high-quality disaggregated nutrition data should be mainstreamed in public health information systems, to underpin the design and implementation of equitable nutrition interventions.

04

Food systems and nutrition equity

2009. Kokoda, Papua New Guinea.
A nurse puts up a poster in a village near Kokoda.
Photo: Roger Wheatley, AusAID.

KEY POINTS

1. Imbalances in food systems are major drivers of dietary and nutrition inequities. They can restrict access to healthy diets or promote low-quality diets.

2. There is a need for food systems to: go beyond a narrow focus on energy intake; reduce the dominance of cereal production (maize, rice and wheat); and increase the availability of healthy foods such as fruits and vegetables, nuts and whole grains.

3. The food environment, where consumers make decisions about what to eat, is inequitable for many in terms of physical access, affordability, targeting of advertising, and marketing and quality of foods.

4. The interconnected causes of inequities in food systems require an integrated response at global, national and local levels, bringing together the capacity of multiple sectors.

5. An equity-sensitive approach to food systems that delivers healthy diets would seek to reduce inequities, as well as directly address food availability, accessibility and price in local food environments.

6. Addressing inequities within food systems is ultimately about addressing power imbalances: amplifying the voice of those excluded, and holding the powerful to account.

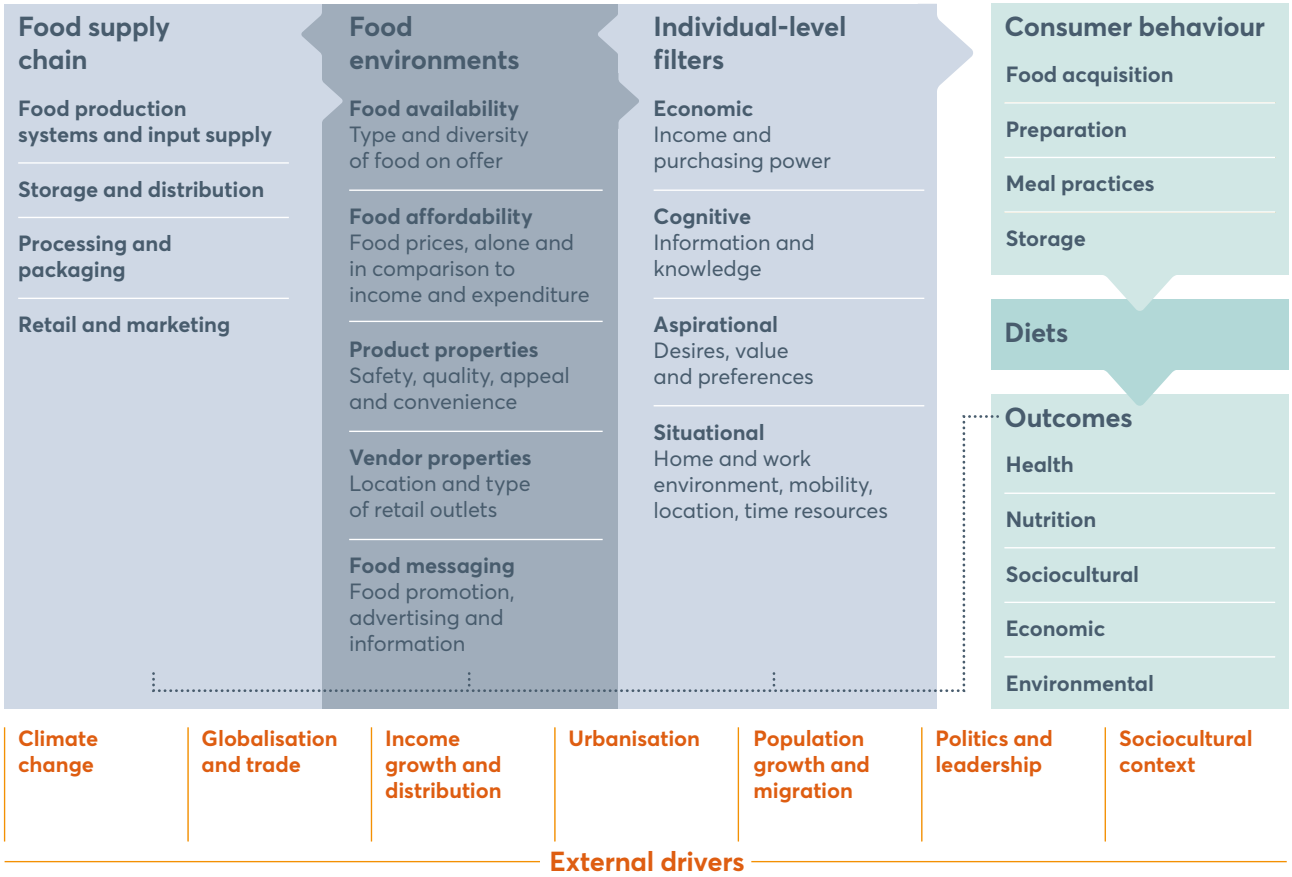
Introduction

A food system gathers all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socioeconomic and environmental outcomes.[1]

Components of the food system include food supply chains, food environments, consumer behaviour and external drivers (Figure 4.1). These components are interdependent and collectively influence diets and broader outcomes including nutrition and health.

With urbanisation, globalisation and trade liberalisation, food systems are changing rapidly. Food environments are globally connected; supply chains are longer and more complex. These changes have a dramatic impact on the nutritional status of populations. The way that people access food, the kinds of food they purchase, the methods of consumption and the culturally conditioned meanings of food and eating are also shaping food systems.

FIGURE 4.1
Food system framework



Source: Adapted from HLPE (2017), Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

Food environments refer to the physical, economic, political and sociocultural contexts in which consumers engage with the food system to make their decisions about acquiring, preparing and consuming food. Food environments are the connecting link between supply systems and demand systems – they impact food supply chains and their functions, and the choice and quality of individual diets through a variety of factors. They determine: the types of food available at a given time, the physical access to these foods by the consumer, affordability, food promotion, advertising and information, and food quality and safety.

Inequitable processes affect each component of the food system, resulting in unequal outcomes ranging from poor availability and unaffordability to an overabundance of food of low nutritious quality and limited access to healthy foods. Inequities within food environments alone can be substantial for populations, given the crucial role of food environments as underlying determinants of nutrition outcomes (Figure 4.1). Addressing inequities within the food environment could mitigate impact on nutritional outcomes across food systems. The existing inequities in food systems restrict access to healthy diets for some people, leading to unequal nutrition outcomes and malnutrition in all its forms. The food environment, therefore, deserves a special focus. This chapter proposes a focus on inequities across food environments to highlight emerging solutions and propose concrete actions.

Inequities across food environments

Food availability

Food availability refers to the type and diversity of food on offer, and is affected by food production systems.[2] Producing food to enable quality, diversity, safety and healthy diets requires consideration of issues such as: water and land access, food losses at farm gates, loss of biodiversity in species and varieties of food, and marginalised traditional or indigenous foods.[3] Global agriculture has largely focused on staple grains and seed oils, which is inconsistent with most national food-based dietary guidelines.[4] Such prioritisation creates inequities in production of non-staple food, and therefore an imbalance in availability.

Spotlight 4.1 shows that virtually all the increase in food energy (calories) from 1970 to 2010 is accounted for by non-staple crops, which are relatively more nutrient-dense. The proportion of calories from sugars and sweeteners has declined since 1970. This positive trend highlights the need for a more balanced policy and research and development focus on non-staple crops, to support producers to diversify. This in turn could improve the diversity of crops contributing to a balanced and healthy dietary composition.

Similarly, natural resources, ecosystems and climate change affect food production, and in turn the quality and quantity of food available to consumers. At the same time, consumer choices and demand influence the type of food produced and therefore potentially increase pressure on ecosystems and can contribute to climate change.

Figure 4.3 shows how animal-sourced foods have a significant impact on greenhouse gases. Production of staple grains (60% of which are used as animal fodder),[5] fruits and vegetables also creates environmental stress, as does intensive use of crop land and fresh water. Additionally, nitrogen and phosphorus fertiliser applications can affect the quality of food. Production and consumption practices affect many people living in low-income countries who do not have the resources to adapt fast enough to environmental changes and are limited in their options[6] for accessing healthy food. Between demand and supply, a well-regulated food environment – with specific attention to environmental impact, ecosystems management and effect on climate change – is an opportunity to ensure more equitable availability and accessibility of food for all, and to reduce inequality of nutrition outcomes.

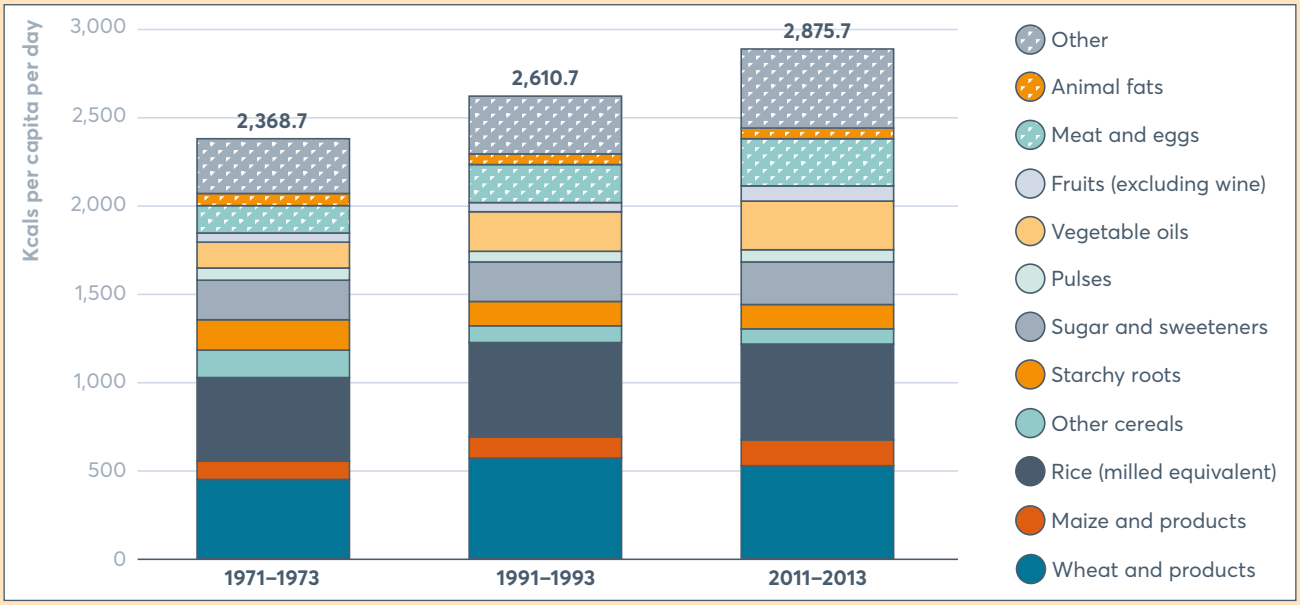
SPOTLIGHT 4.1

Towards a more diverse agri-food system – beyond staple grains

Prabhu Pingali

There is a disconnect between agricultural policy and contemporary nutritional challenges. Agricultural policy has been slow to respond to the persistent problem of micronutrient malnutrition and child stunting, as well as the emerging challenges of overweight and obesity.[7] Agricultural policy is heavily biased towards improving staple-grain productivity, especially for the major staples of rice, wheat and maize, while dietary diversity needs are not adequately addressed. Figure 4.2 shows that total calorie consumption per person per day has risen over time, but the share of staple cereal calories within total calorie consumption has declined. The figure also shows that the absolute amount of staple cereal calories has declined since the 1990s.

FIGURE 4.2
Global average energy intake by food group, 1971–2013

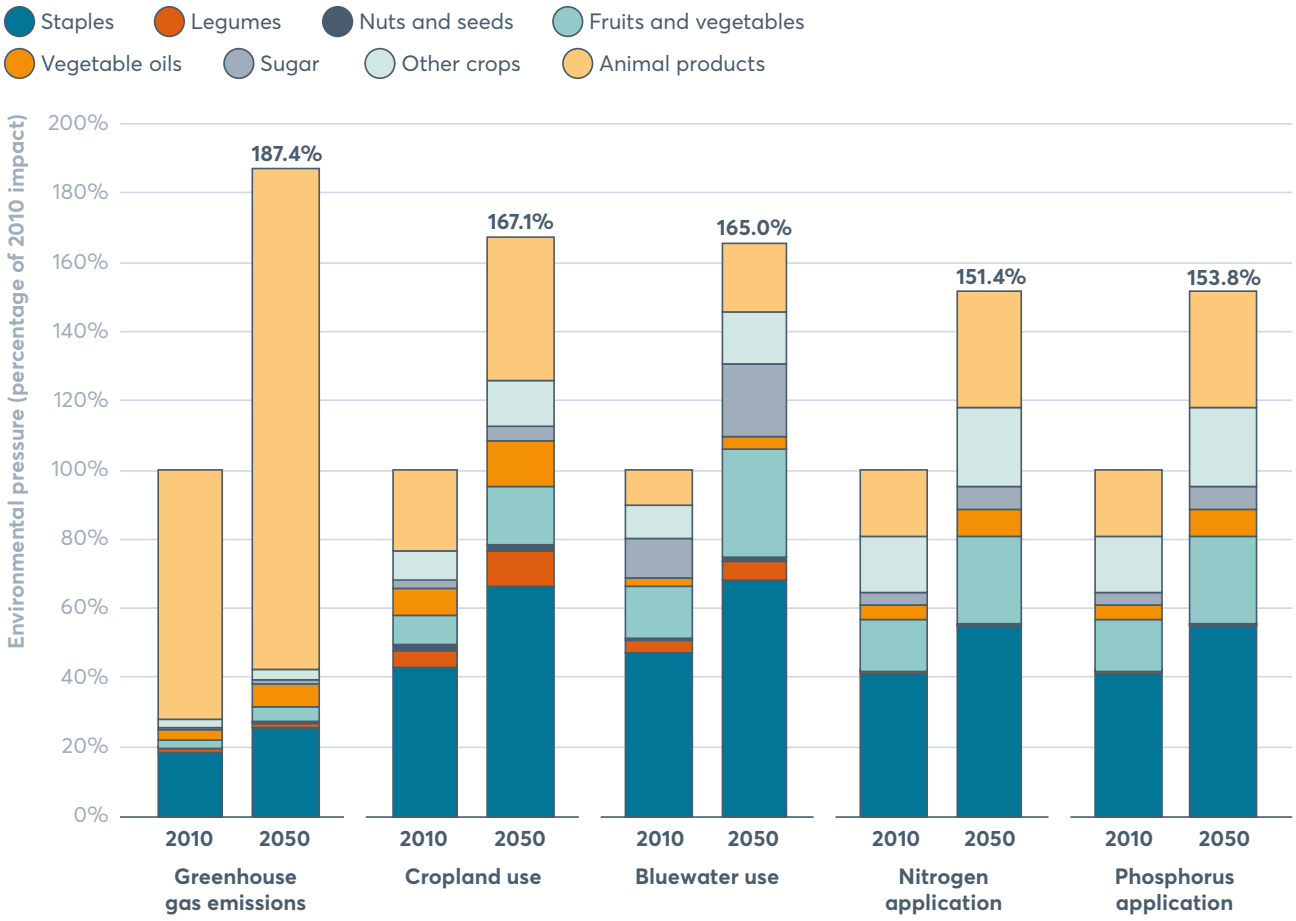


Source: Prabhu Pingali, 2015. Agricultural policy and nutrition outcomes – getting beyond the preoccupation with staple grains. Food Security, 7, pp. 583–91.

Donor funding for research and development has prioritised major staples at the cost of more nutritious crops and livestock. The Consortium of International Agricultural Research Centers (CGIAR),[8] for instance, has traditionally allocated most of its commodity research budget to the major staples, increasing this after the 2008 food price crisis.[9] The balance of funding has to be shared between fifteen crops, livestock, fish and trees. Research and development investments should prioritise neglected staples such as sorghum, millets and tropical tubers. Such investments could provide new opportunities for growth where agricultural conditions are not ideal. These opportunities would make the production of healthy food more attractive to producers and therefore improve the availability of more nutritious food, especially for the rural poor.[10]

Poorly developed market infrastructure and the large number of smallholders results in high transaction costs (arising from bargaining, managing, policing and arbitration) for integration into fresh food and livestock value chains. This has discouraged smallholders from diversifying their production systems. Given the demonstrated link between food production and dietary diversity, this affects dietary composition.[11] Investments in transport systems, cold chains (temperature controlled storage and transportation facilities) and improved connectivity allow for better functioning of markets for perishable products. Institutional interventions, such as producer organisations (formal rural organisations whose members organise themselves with the objective of improving farm income through improved production, marketing, and local processing activities) help to reduce transaction costs and form market linkages for small farms. A holistic view of agricultural policy would require governments to look beyond the major staples to ensure availability of and access to a wider and healthier basket of food.

FIGURE 4.3
Impacts of different food groups on the environment



Source: Springmann et al., 2018.[12]
Note: Bluewater = fresh water in streams, rivers, lakes and aquifers.

People's physical access to diverse types of food in a given food environment depends on four types of food sources: production-based entitlement (growing food); trade-based entitlement (buying food); own-labour entitlement (working for food); inheritance and transfer entitlement (being given food by others).

Geographic conditions and lack of appropriate infrastructure can limit the availability and distribution of food. This is especially true for perishable foods, in low-income contexts and rural places where built living environments are often inadequate for ensuring healthy and safe food supplies. Critical factors that influence access include: mobility (distance to food entry points and available means of transportation); health; purchasing power and relative food prices; access to land of adequate size and quality, agricultural inputs, technology and services; time, facilities and equipment available for food preparation; knowledge and skills. The inequities in food accessibility for the rural, the poor and the geographically isolated result in limited access to sufficient quantities of healthy food.[13]

Inequitable provision of basic infrastructure such as housing, sanitation, energy and transport increases the vulnerability of populations to malnutrition. Where infrastructure is completely compromised, such as in conflict situations, breakdown of food availability and access can occur. In these contexts, it becomes incredibly difficult not only to access diverse and healthy foods but even to access sufficient quantities to ensure recommended calorie intakes.

Food affordability

For consumers to be able to purchase and consume healthy foods that are available within the food environment, such foods need to be affordable. For the most vulnerable groups of the population, nutrient-rich foods such as animal-source foods, fruits and vegetables are not affordable. Both price levels and volatility affect household purchasing power, welfare and food security, and nutrition.[14]

A healthy diet consists of fresh foods that are more perishable and subsequently require either cold chains or shorter-distance supply chains, as demonstrated in Spotlight 4.2. A lot of cheaply available food tends to be highly processed and unhealthy.[15] The affordability of healthy food is key to ensure a fair food environment for all. Increasing production and consumption of fresh foods locally, through targeted income support, nutritional assistance and agricultural development programmes, which encourage farmers to diversity the crops that they grow and foods that they consume, is a potential route to making healthy diets more affordable and accessible.

SPOTLIGHT 4.2

The high cost of nutritious foods in poorer countries

Derek Headey

Poor diets during pregnancy and in early childhood are a leading cause of undernutrition in early life, which manifest in compromised physical growth and brain development. But why are diets – including those of infants and young children – so inadequate in less developed countries?

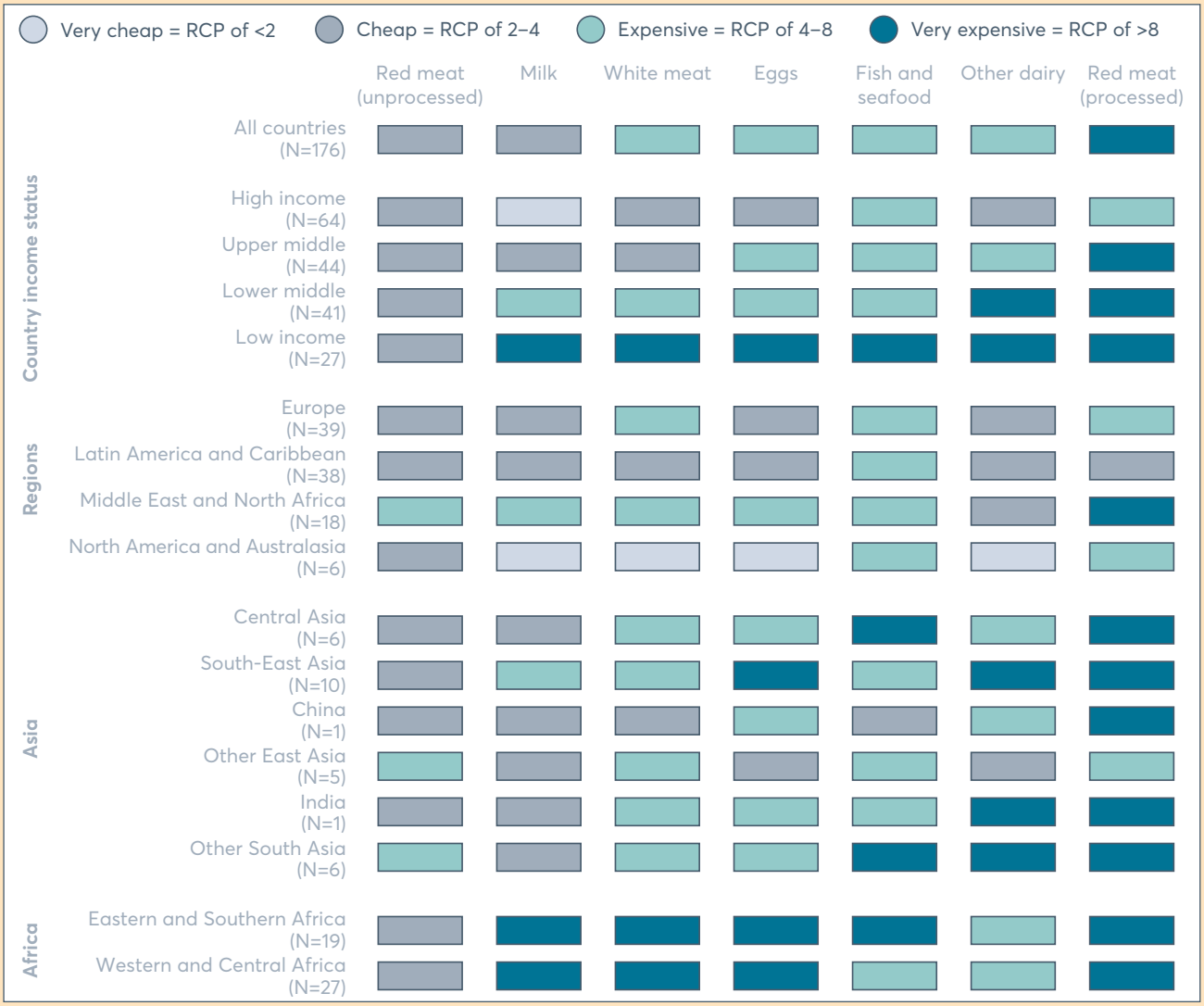
A recent study suggests that the affordability of nutritious foods may be a more serious constraint than is commonly thought. For 657 foods in 176 countries, the study constructed 'relative caloric prices' (RCPs), which measure the cost of a given food calorie (e.g. egg calories) relative to the cost of a calorie from a staple food (e.g. rice). Conceptually, RCPs capture the cost of diversifying away from the starchy staples that poor people depend on. They also have the convenient property of being currency-free, making international comparisons relatively straightforward.

The authors found that nutrient-dense foods are often very expensive sources of calories relative to staples (Figure 4.4). Egg calories in Burkina Faso, for example, are around 15 times as expensive as calories from starchy staples like maize, rice and sorghum, whereas egg calories in the US are just 1.9 times as expensive as those from America's main staples.[16] Throughout sub-Saharan Africa, eggs, fresh milk and fortified infant cereals are prohibitively expensive for the poor, though fish is relatively affordable in West and Central Africa. Dairy is quite cheap in India, while fish is relatively cheap in Southeast Asia.

A similar analysis for fresh fruits and vegetables shows that the situation with these foods is more nuanced. Green leafy vegetables are not dense in calories and are, therefore, expensive (given the large volume that has to be consumed to gain enough calories) almost everywhere. Vitamin-A-rich fruits and vegetables are typically quite expensive, but other fruits and vegetables can be moderately cheap, and legumes are a relatively cheap source of calories in most regions.[17]

The high cost of many nutrient-dense foods in populations most at risk of undernutrition is a major barrier to resolving undernutrition and warrants urgent policy attention. A key objective of pro-equity, nutrition-sensitive food policies should be to improve the affordability of nutrient-rich foods, both economy-wide and for the poorest households. At the level of a whole economy, this could be done by achieving lower prices through improved agricultural and trade policies. For the poorest households, affordability could be increased by targeted income support, nutritional assistance and agricultural development programmes that encourage diversification and consumption of home-produced foods. The critical importance of feeding nutrient-dense foods to infants and young children, and for pregnant and breastfeeding women, also justifies efforts to improve nutritional knowledge among both present and future care-givers.

FIGURE 4.4
Heat map of RCPs of animal-sourced foods in 176 countries, 2011



Source: Estimated from data described in Headey and Alderman, 2019.[18]
Note: The statistics reported are population-weighted means of the relative caloric prices (RCPs) for each income or regional group, grouped by World Bank income levels and major region, shaded according to the categories described in the legend.

Product and vendor properties

Product properties refer to the safety, quality and appeal of food available in the food environment. Vendor properties describe the location and type of a retail outlet. How people access, prepare and consume food is changing rapidly and depends on the food available to consumers. Packaged and processed foods now comprise a significant share of many diets around the world; and most of those foods are not aligned with the World Health Organization (WHO) definition of a healthy diet.[19] As noted in the previous Global Nutrition Report, Europe, North America and Oceania purchase the highest volumes of packaged foods, although sales growth is stagnant or declining. In contrast, Asia and Africa are undergoing significant growth in sales of packaged foods. Spotlight 4.3 shows the sales of processed foods and sugar-sweetened drinks by country-income category. Growth in sales of these foods and drinks is significant in middle- and low-income countries.

SPOTLIGHT 4.3

Global trends and patterns in processed food and drink sales

Phillip Baker, Priscilla Machado, Kate Sievert, Kathryn Backholer, Colin Bell and Mark Lawrence

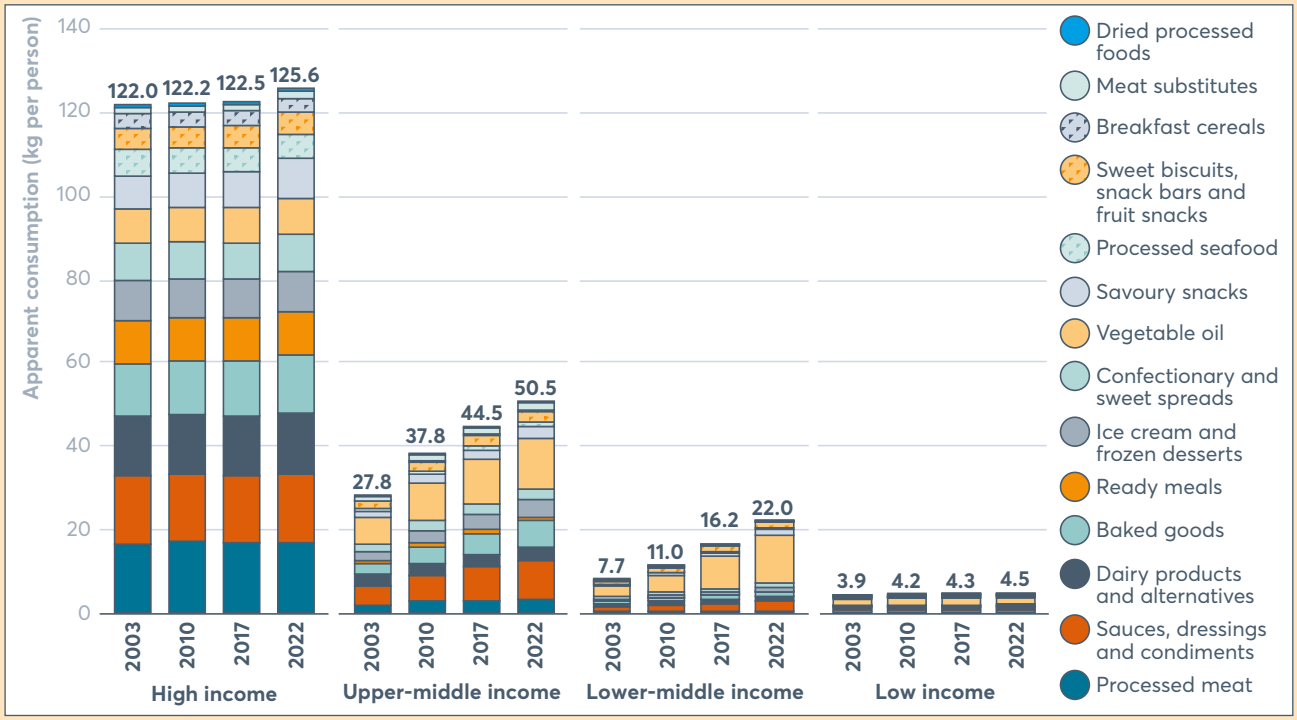
Processed foods, and especially 'ultra-processed foods' such as savoury snacks, processed meats, sugar-sweetened drinks, confectionery, frozen desserts, breakfast cereals and dairy products, now comprise a significant share of many diets around the world. They are widely available, cheap and intensively marketed. Such foods are often high in added sugars, trans fats and salt, as well as low in fibre and nutrient-density. They are the major contributor to dietary energy in many high-income countries and play an increasing role in the nutrition transition underway in countries undergoing rapid economic and social change.

Yet there is still relatively little data on the role of processed foods and sugary drinks in diets, especially in middle- and low-income countries (MICs and LICs), often because these categories are absent from health and dietary surveys. Instead, industry sales data is often used to shine a light on how purchasing these products is changing worldwide. Euromonitor International sales data reveals patterns in worldwide purchasing, and differences between countries at different stages of economic and social transition. Sales are increasing modestly or declining in many high-income countries (HICs) but growing quickly in upper-middle- and lower-middle-income countries (UMICs and LMICs).

There are notable differences between countries in the types of foods and drinks purchased. In HICs, a wider diversity of processed food types is purchased when compared to other regions. However there are large increases in purchases of processed and convenience foods such as savoury snacks, sweet biscuits, fruit snacks, baked goods, processed meat and meat substitutes. In UMICs, the 'culinary food ingredient' categories (vegetable oils, sauces, dressings and condiments) comprise a much greater share of purchases than in HICs (Figure 4.5).

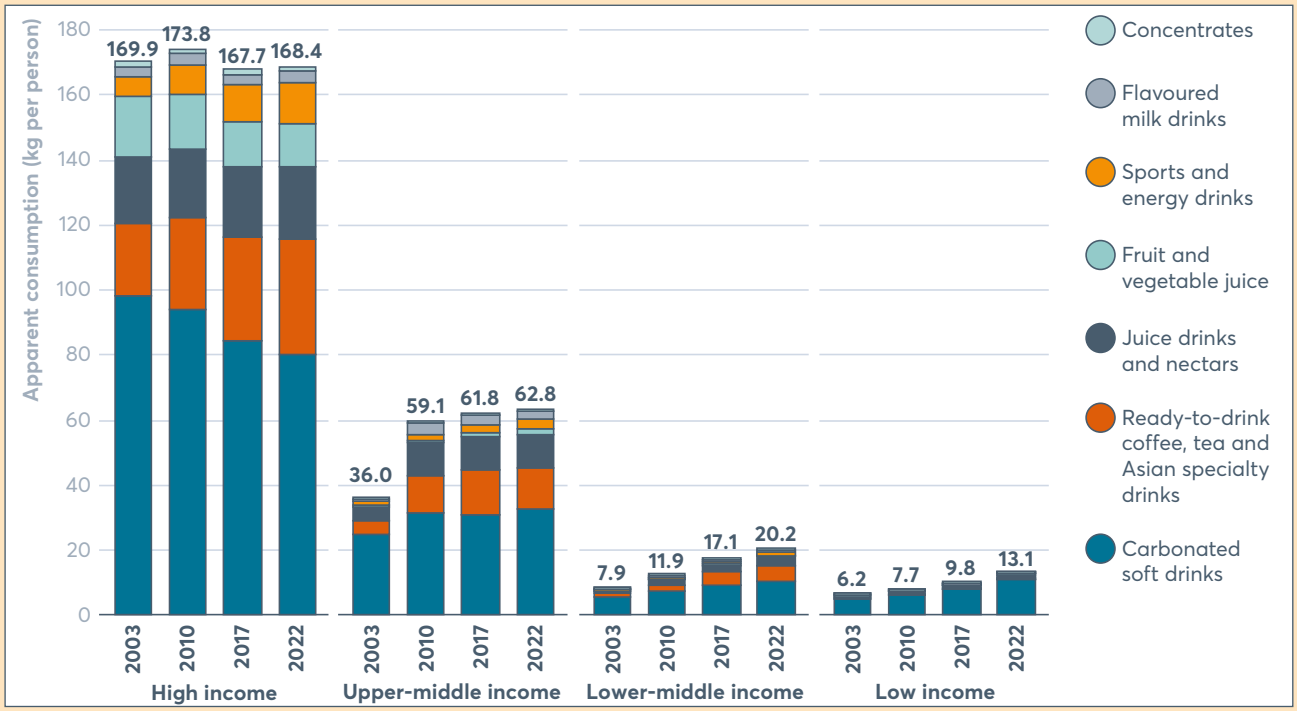
Fizzy drinks make up the largest category of beverages consumed globally. However, sales in this category are sharply declining or stagnant in many HICs and UMICs, but growing strongly from a low baseline in LMICs and LICs. However, declines in the carbonates category in HICs have been offset by significant growth in non-carbonate categories – for example, sports and energy drinks, and the ready-to-drink coffee and tea categories (Figure 4.6).

FIGURE 4.5
Processed food sales by country-income level, 2003–2017 with projections to 2022



Source: Data from Euromonitor International Market Information Database.[20]
Note: Data from Euromonitor Passport Market Information Database for 73 high-income countries, 55 upper-middle-income countries, 43 lower-middle-income countries, and 34 low-income countries.

FIGURE 4.6
Sales of non-alcoholic drinks by country-income level, 2003–2017 with projections to 2022



Source: Data from Euromonitor International Market Information Database.[21]
Note: Data from Euromonitor Passport Market Information Database for 73 high-income countries, 55 upper-middle-income countries, 43 lower-middle-income countries, and 34 low-income countries.

Full sources for this spotlight can be found in the notes.[22]

SPOTLIGHT 4.4

Supermarkets and rising obesity in Africa

Kathrin M. Demmler and Matin Qaim

A recent study tried to address the question of whether the spread of supermarkets contributes to rising overweight and obesity, with data from Kenya,[23] one of the countries with the highest supermarket growth rates in Africa. The study focused on consumers in medium-sized towns. Around 500 households were randomly selected, and, in these households, socioeconomic and nutrition data was collected from male and female adults, first in 2012 and then again in 2015. In 2015, more detailed medical data was also collected.

Mean body mass index (BMI) and the proportion of adults being overweight or obese were found to be higher among those who bought some or all of their food in supermarkets than among those who used only traditional retailers (Figure 4.7). However, this simple comparison does not allow causal interpretation because supermarket users and non-users may also differ in terms of other factors. The analysis on shopping in supermarkets and obesity found that buying food in supermarkets instead of traditional markets is associated with an increased BMI of 0.64kg/m^2 on average. The estimates also suggest that using supermarkets is associated with a 7% higher probability of being overweight or obese (Figure 4.7).[24]

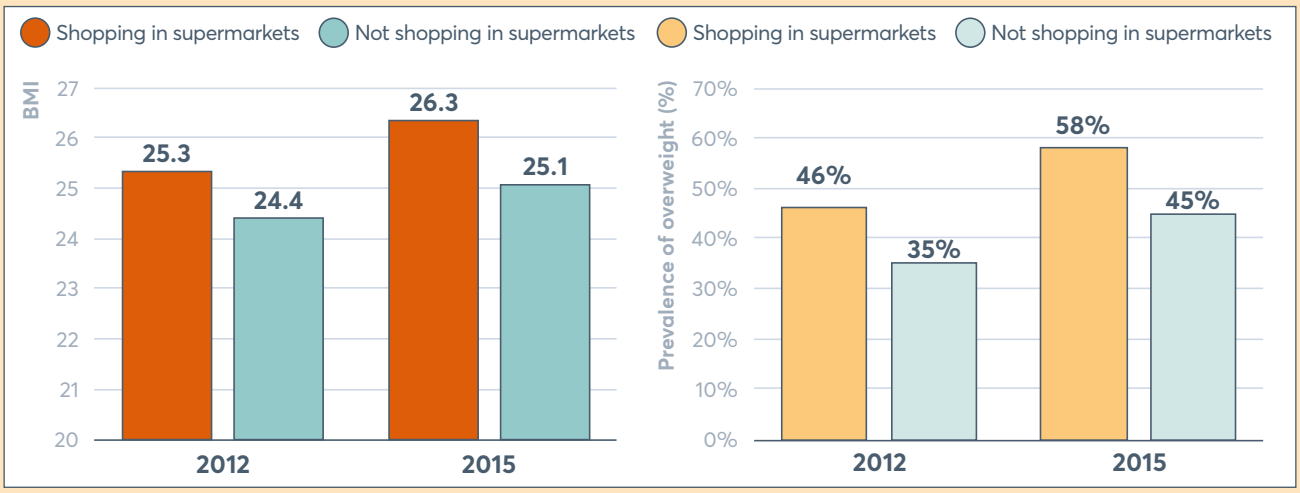
Rising rates of obesity are known to contribute to several non-communicable diseases (NCDs). Evaluating the medical data collected in 2015 reveals that buying food in supermarkets raises the likelihood of suffering from pre-diabetes (by 16%) and the metabolic syndrome (by 7%).[25]

These negative effects of supermarkets on adult nutrition and health can be attributed to the fact that the average price per calorie of food from supermarkets is lower than from traditional retailers. "Cheaper calories contribute to higher calorie consumption, which may improve food security for households that suffer from calorie undersupply".[26] However, in urban areas of Kenya, adult overweight is now more prevalent than underweight. Also, supermarket users often consume more processed foods.

The study results suggest that supermarkets can influence dietary habits to a significant extent. Nevertheless, if properly managed, they could also have positive effects, such as making nutritious foods more accessible to poor consumers at affordable prices.

FIGURE 4.7

Supermarket users and non-users in Kenya: body mass index and overweight, 2012 and 2015



Source: Demmler et al., 2018.
Notes: BMI = body mass index measured in kg/m^2; overweight or obese = BMI>25kg/m^2.

Full sources for this spotlight can be found in the notes.[27]

The rapid spread of more formal supermarkets and fast-food chains influences consumer behaviour and food consumption patterns.[28] This expansion, while offering consumers a wider range of products, also entails major organisational changes in the whole food supply chain. There is growing evidence that this shift in food retailing is resulting in increased consumption of unhealthy foods. The informal sector within the food supply chain, however, continues to operate in parallel in several countries and is still an important mechanism in meeting food and nutrition needs. For example, in sub-Saharan Africa, informal traders meet the food needs of many poor urban households. However, the growth of supermarket chains is diminishing the role of this sector.[29] Spotlight 4.4 shows the impact of supermarkets on obesity in Africa and confirms that the retail environment affects people's food choices and nutrition.[30] This is a cause for concern, and demands policy and planning responses in order to promote desirable nutrition outcomes.

The supermarket revolution also affects power relationships within food-supply chains.[31] The procurement processes of supermarkets and large processors are changing the rules of the game for farmers and first-stage processors.[32] Small farmers are particularly challenged to meet the requirements and standards of supermarket chains, their centralised procurement systems and large-scale agro-processors in terms of volume, cost, safety, quality and consistency. Food systems now need complex and multi-scale governance mechanisms, which should involve a range of actors across public and private sectors, as well as civil society, to tackle inequities.[33]

Food marketing and labelling

Information provided about food – and how food is promoted and advertised – influences consumer preferences, purchasing behaviour and consumption patterns, both negatively and positively.[34] Food promotion, for example, has a direct influence on preferences of children, adolescents and adults and their nutrition knowledge, diets and health. Advertising of ultra-processed food is more prevalent in low-income neighbourhoods, and marketing in these communities is increasing.[35] Spotlight 4.5 highlights inequities in food marketing to children by income and ethnic group.

SPOTLIGHT 4.5

Inequities of food marketing to children

Camilla Corvalan and Fernanda Mediano

Malnutrition and unhealthy diets are known to be unequally distributed by income and ethnic group.[36] The marketing of foods and drinks high in fat, sugar and salt are believed to contribute to poor dietary behaviours particularly among children[37] resulting in diet-related diseases when they become adults.

Recent evidence shows that the marketing of unhealthy foods is targeted to specific groups, based on income and ethnicity, thereby contributing to increasing health disparities. Evidence from the United States (US) shows that African-Americans and Latinos are disproportionately exposed to outdoor advertisements for high-calorie, low-nutrient-dense foods and drinks, and sedentary entertainment and transportation, while being relatively underexposed to advertising for nutritious foods and drinks, and goods and services promoting physical activities.[38] Similar results have been recently reported concerning food marketing on US television.[39]

There is also some evidence that corporate marketing strategies vary depending on the economic status of the country. For example, analyses of corporate websites of the world's three largest fast-food and drink companies showed that those companies promoted diet/healthier products more frequently in wealthier countries than in lower-income countries, while advertisement of their philanthropic activities was more frequent in lower-income countries.[40]

There is evidence that breast-milk substitutes are promoted and advertised in ways that contravene regulations, such as the International Code of Marketing of Breastmilk Substitutes,[41] in low- and middle-income countries of Africa and Asia, with a detrimental impact on compliance with recommended breastfeeding practices.[42]

Altogether, this evidence indicates that corporate marketing strategies have the potential to increase the burden of malnutrition in countries concerned. To restrict the disproportionate promotion of unhealthy foods and ensure healthier food environments that do not further worsen health disparities within and between countries, there is a need for stronger government regulatory efforts because self-regulatory campaigns have had limited impact.[43]

"The bulk of food and beverage advertisements derive from a small number of transnational companies; and [...] that existing regulatory arrangements in countries do not appear to have created more favourable/healthy television food advertising environments compared with countries without any such policies."[44] There is a need to regulate private sector marketing and advertising of foods and drinks, and to balance these with public measures including information campaigns to provide consumers with complete and unbiased information. Mass media public information campaigns have been consistently shown to be more successful in improving knowledge and attitudes among women, educated and higher socioeconomic status groups;[45] however they have not been consistently effective in improving diet and health outcomes. Interestingly, this could possibly deepen existing inequities and so calls for special efforts in information dissemination designed to reach all groups more equitably.[46]

Labelling of foods and the provision of declarations on food packaging are important tools to inform consumers, shape their preferences and influence industry behaviour by encouraging product reformulations. They are also useful for implementing and monitoring more consumer-oriented approaches such as front-of-pack labelling (FOPL), marketing restrictions, taxation/subsidies and school food policies. Yet the "use and understanding of the dominant standard in nutrition labelling – nutrition information panels – is significantly lower among lower income, lower literacy and ethnic minority groups."[47] The use of interpretive FOPL (i.e. nutrition information with recommendations/judgements rather than specific facts) is recommended in addition to the mandatory nutrition declaration, as these can be more easily understood by consumers of different literacy levels.

FOPL can follow a nutrient-specific system (such as Chile's black label) or a summary indicator system (such as the UK's 'traffic lights') but they should signal unhealthiness to guide consumers' choices to more nutritious options.[48] However, while presenting advantages, mandatory labelling can be a barrier for small-scale producers and processors to entering or remaining in markets.

Data gaps

In addition to collecting more and better food-environment data, we need to understand what people are eating and how they make food choices. This is necessary for developing food and nutrition policies, including dietary guidelines. Comprehensive information on diets, food sourcing and costs is needed, therefore, but has been difficult to obtain. Such data is now becoming available, with better use of metrics and surveys that feed into larger databases. Case studies are also providing important insights. Despite these improvements, there are still large gaps in knowledge at the national level, particularly in low-income settings.

Most research on food environments stems from high-income countries and focuses mainly on obesity and non-communicable diseases. Although, as mentioned in the *2018 Global Nutrition Report*, initiatives such as INFORMAS[49] are used by some LMICs, there is very little information available – not only on the low-income context but on rural food environments and for those in conflict or protracted-crisis situations. In addition to societal inequities that constrain data collection and analysis, challenges arise from within the research framework, beginning with the lack of consensus on defining the food environment and standardised metrics and tools, as outlined in Spotlight 4.6.

Food environments in the LMICs: identifying and filling the gaps

Bianca Carducci, Christina Oh and Zulfiqar A. Bhutta

There is mounting global literature on the relationship between the food environment and public health. This is particularly so around the effective prevention of non-communicable diseases (NCDs) and prevention and management strategies concerning the food environment, including food policy, promotion and marketing. However, there are gaps in evidence to inform the development of appropriate interventions, especially within the context of LICs and LMICs. Additionally, consensus on the definition, purpose and depth of the 'food environment' is required to streamline future research.

There is also considerable diversity of opinion on standardised metrics and tools to measure the food environment. Unlike high-income countries where formal channels to acquire food allow for convenient measurement, LMIC food retail environments are dynamic, unregulated and possess a large proportion of informal food vendors. This results in enormous variety in metrics in terms of reference points (i.e. food accessibility), media coverage (i.e. food promotion) and level of implementation (i.e. policies). Moreover, tools to measure the food environment are limited to labour-intensive data collection processes in LMICs, compared to the use of global positioning systems, geographical information systems, remote sensing and satellite imagery in richer countries. Similarly, other dimensions of the food environment, such as food safety and food quality, are often difficult to measure in an LMIC setting due to poor government regulation and compliance, as well as instability.

The household food environment is a critical space for food purchasing decisions, food preparation and, ultimately, development of food attitudes, knowledge, preferences and behaviours. However, little is known about appropriate effective measures at this level. A consensus on valid and reliable metrics and tools in an LMIC context is urgently needed to assess the impact on health outcomes.

Within food-environment literature, there is a need for better representation of participants from low- and lower-middle-income countries and of those from rural settings to discern demographic-specific health needs. Finally, there are various empirical research gaps relating to data analysis, including adjustment for confounding variables and poor disaggregation of data, for example, by income level, gender and age.

In summary, investment in food-environment research, with consideration of key knowledge gaps, is necessary to address the evolving nutrition transition and the rising double burden of malnutrition in LMICs.[50] This is in addition to the promotion of publicly available data repositories, including big data and commercial databases.

Addressing the inequities

While many societal inequities permeate food systems, there is a unique set of factors concerning power imbalances across food systems. These imbalances arise from the influence of agribusiness, food and drink industries, international development policymakers and donors. Such groups influence how governments structure their food systems and environments, and also affect the poorest marginalised consumers, who are excluded from this process. All these factors shape the types of foods people have access to on a daily basis. There is an "implicit tension between government action to promote food security and economic growth by encouraging investment, and government action to reduce the consumption of highly processed foods to prevent diet-related NCDs".[51]

Approaches that require a lower level of personal agency are both more effective and equitable for all.[55] Beyond focusing on a few interventions that adjust small and specific elements of food systems, there is a need to broaden efforts to change system-wide drivers of poor nutrition suggested by recent reports, including: the EAT-Lancet Commission on Food, Planet, Health;[56] The Lancet Commission on The Global Syndemic of Obesity, Undernutrition and Climate Change;[57] and the Double Burden of Malnutrition Lancet Series.[58]

An equity-focused approach to food systems that deliver healthy diets would therefore ideally consider actions that seek to reduce inequities in the immediate conditions in which people are born, live, work and play. It would also directly address food availability, accessibility and price in local food environments.[59]

"In the context of a rights-based approach, those most impacted by inequitable, dysfunctional food systems and unhealthy food environments include low-income consumers, the rural and urban poor, smallholder and subsistence farmers [...] indigenous people",[52] small-scale retailers, processors and distributors.

Addressing dietary and nutrition inequities is about improving the distribution of *opportunities* to live a healthy and fulfilling life. Governments and other food-system actors generally favour interventions focused on individual-level efforts.[53] While direct action can help, it is important also to consider the underlying unequal distribution of factors that support the opportunity to eat a healthy diet[54] (see Figure 1.1). Unless this oversight is addressed, dietary and nutrition inequities will persist and possibly increase. Food choice is not a simply personal decision: food and diets are shaped by context and driven by deep, often unseen, systemic and social factors. New decision-making and accountability mechanisms are needed to address the uneven power dynamics.

"Policymakers need to create strong regulatory and fiscal frameworks [free from conflict of interest] that provide guidance to those who produce the diets from our food systems."[60]

"Trade and subsidy policies need to align better with those that promote healthy diets".[61] Voluntary self-regulation efforts by the corporate sector are patchy and inadequate: while some in the food and drink industry are acting in ways that benefit public health, their efforts alone are not enough. Box 4.1 outlines some of the positive actions and collaborations in the food and drink sector to support good health and nutrition. Social movements and civil society organisations can act to rebalance power across the food system, towards healthy systems in the public interest of those whose voices go unheard.

BOX 4.1

Areas where the private sector can contribute to improved nutrition

The private food and drink sector has a responsibility both to promote healthy eating and to prevent unhealthy diets under human rights principles. The sector must act following established codes of conduct; governments and civil society should hold organisations accountable to their commitments. There are ways in which commercial goals can work for the public good as well. An example is the Scaling Up Nutrition (SUN) Business Network (SBN),[62] established in 2015 as the business arm of the SUN Movement. The SUN Business Network Indonesia has identified five key areas through which the private sector can contribute to improved nutrition:

1. Agriculture and nutrition, providing investment in technological innovations
2. Large-scale food fortification, adding essential vitamins to staples and condiments
3. Increasing availability of specially formulated foods for target groups
4. Workforce nutrition programmes, educating employees about the importance of nutritious foods
5. Supporting nutrition-sensitive interventions, to strengthen underlying health systems.[63]

Through these approaches, food companies can help to make nutritious foods more accessible to consumers, which in turn can significantly improve diets and health. The actions should include transparent labelling, reducing sugar, salt and fat content in their products, and fortifying their products with essential nutrients.[64] Governments are also imposing regulations to compel businesses to do more. For example, Denmark has introduced a ban on products containing trans fats, while South Africa was the first country to legislate maximum salt levels in foods.[65] Food companies can also work with the nutrition community to improve the nutritional quality of their products.

Some emerging solutions

- Optimisation of farm subsidies and increased public investment for producing healthier agricultural and food products. For example, one option is increased research spending on biofortified crops and livestock, another is reduced subsidies for staple foods but increased support for healthier vegetables, fruits, nuts and fish.

- Support for public transport schemes and shorter supply chains for fresh-food delivery programmes, to improve access to healthy food among disadvantaged groups and reduce inequities in diets.

- Development of policies to encourage healthy food outlets and improve physical access to foods, especially in low- and middle-income countries, as these countries urbanise. Such policies need to include actors in the informal food sector.

- Cash transfers to increase the affordability of foods and drive food-system change. However, these need to be promoted with complementary policy measures, a well-defined set of policy goals and rigorous evaluation.[66]

- Use of fiscal instruments (like taxes on sugar-sweetened beverages and unhealthy foods) and regulatory mechanisms (such as bans) to support healthier diets and hold the food industry accountable. Depending on the type of food system and the national and local context, taxes and subsidies may influence food choices and intakes.

- Limiting advertising of ultra-processed food, creating food-based dietary guidelines, improving labelling and regulating health claims on packaged foods to create an equitable food environment where consumers can make informed choices without being misled.

- Development of policies and investments to diversify food production away from the staple food cereals and towards more diversified non-staple crop production, and to improve value chains to increase incomes of small-scale farmers.

RECOMMENDED ACTIONS

A range of different strategies and interventions is necessary to shift to healthier, environmentally sustainable and more equitable diets for all. Interventions targeting food environments should be included along with agricultural and food-supply approaches. This will require coordination of global, national and local actions through multiple sectors such as agriculture, health and transport. All stakeholders, including governments, industry, consumers and civil society, must act through different entry points of the food system.

- **Governments need to create strong regulatory and policy frameworks, and fiscal instruments, to support healthier diets. Governments should also set up adequate monitoring and accountability systems to ensure compliance.**
- **The food and drink industry should comply with international and national codes of conduct, including health and nutrition benefits to society and environmental protection and improvement.**
- **Civil society should actively identify, define and recommend evidence-based policies to promote healthy, sustainable and equitable food systems and should hold the government and the food industry accountable for their actions.**
- **International agencies in collaboration with all stakeholders (including donors) should promote, monitor and track progress to achieve healthy, sustainable and equitable food systems globally.**

05

Equitable financing for nutrition

2018. Tucuru, Guatemala.
The municipal market in Tucuru.
Photo: UN Women/Ryan Brown.

KEY POINTS

1. The 2013 Nutrition for Growth (N4G) summit triggered an increased and sustained investment in international assistance for nutrition. Increases in domestic resources for nutrition have been mixed and marginal at best.

2. Current levels of nutrition financing are no longer increasing, and remain far below the levels required to deliver on global targets.

3. Domestic investments are key for country ownership and long-term sustainability of programmes. We need strong leadership and coordinated action to prioritise nutrition investments to achieve greater equity and impact for those most in need.

4. Data on where and how nutrition investments are made remains inadequate. We urgently need information systems that provide disaggregated data for decision-making at the subnational level.

5. There is a growing funding gap for addressing malnutrition related to overweight and non-communicable diseases in poorer countries.

6. Stronger evidence on the costs and benefits of multisectoral actions for nutrition could provide the basis for smarter and more systematic investments in nutrition across sectors.

7. It is critical to develop new financing mechanisms that can complement existing sources. The Japan N4G summit is an opportunity to renew and expand financial commitments for nutrition, as well as strengthening accountability.

Introduction

An equity-focused approach to nutrition finance has the potential to make existing nutrition expenditures more efficient and better targeted so that the appropriate interventions reach the people who need them most – providing higher returns on investment.[1] This chapter presents the current state of nutrition financing in terms of mobilisation of domestic and donor resources, trends in nutrition-specific and nutrition-sensitive aid and funding gaps. It then considers how external and domestic nutrition financing mechanisms and investments need to adapt to be more equitable. It proposes approaches that draw on actors and resources outside the conventional funding channels, and emphasises investments in robust information systems to generate disaggregated data at subnational levels to address the needs of the most vulnerable and marginalised groups.

The current state of nutrition financing

Global target

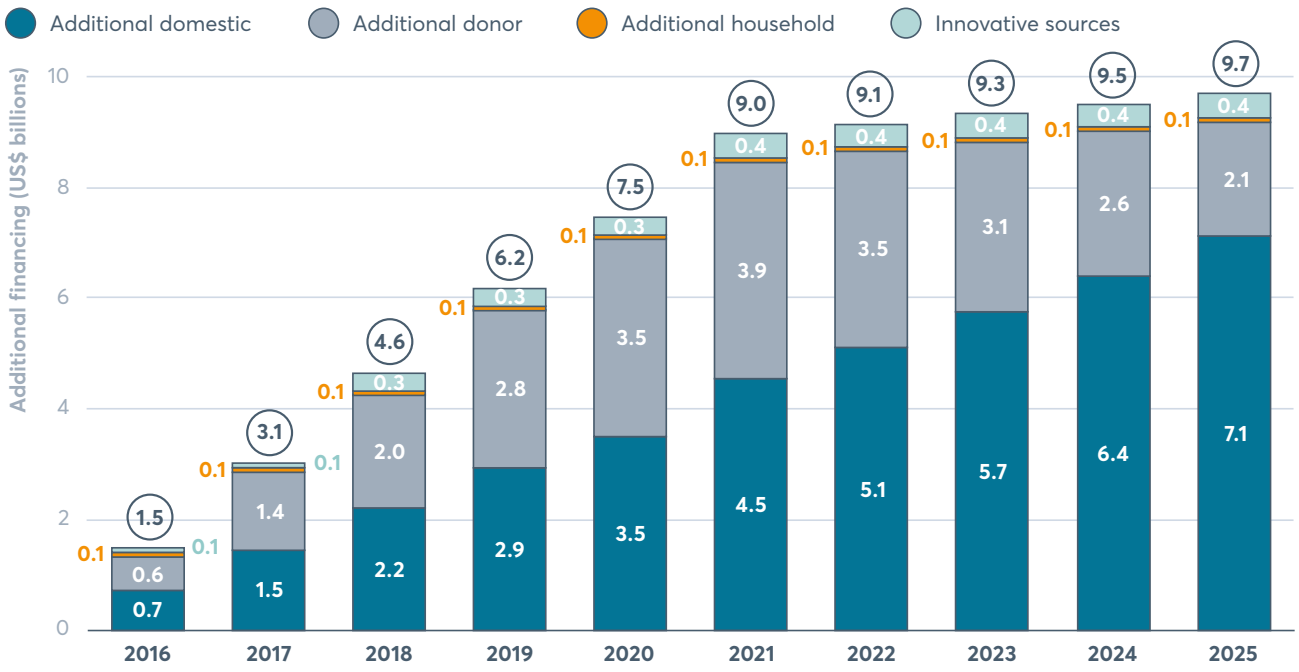
The 2017 Investment Framework for Nutrition (IFN)[2] estimated the cost and financing needs to achieve the World Health Assembly (WHA) nutrition targets for stunting, anaemia and exclusive breastfeeding and to scale up treatment of severe wasting by 2025. The framework estimated that an average annual investment of US$7 billion above existing levels of spending would be required over ten years to finance the scale-up of evidence-based interventions to achieve these targets. It was projected that this scale-up, coupled with improvements in the underlying determinants of undernutrition, by 2025 would help to save the lives of 3.7 million children, reduce stunting cases by 65 million, reduce the number of women with anaemia by about 43%, achieve the exclusive breastfeeding target, and treat 91 million cases of severe acute malnutrition. A priority package of ready-to-scale interventions within this framework was estimated to cost an average of US$2.3 billion per year.[3]

The IFN calls for donors, countries, innovative financing mechanisms, businesses, and even consumers themselves to act in "global solidarity" to "mobilise the resources needed to accelerate progress against malnutrition".[4] Figure 5.1 shows the Global Solidarity financing scenario in the IFN, which models financing needs from different sources. The scale of additional funding required for this package calls for a strong commitment by both countries and donors. It also calls for the scale-up of other sources of investment, beyond the traditional mix of financing, that can be attracted directly to improve access to good nutrition as well as drive financing across sectors that affect nutrition.

The following two sections review the latest evidence on spending by governments and donors for nutrition-specific funding required to achieve the WHA nutrition targets. It is important to note that the WHA targets are a subset of all desired nutrition outcomes. The IFN focuses on the necessary activities and investments to realise these targets and does not cost the achievement of the broader goals. However, the framework remains a pivotal mechanism for tracking progress.

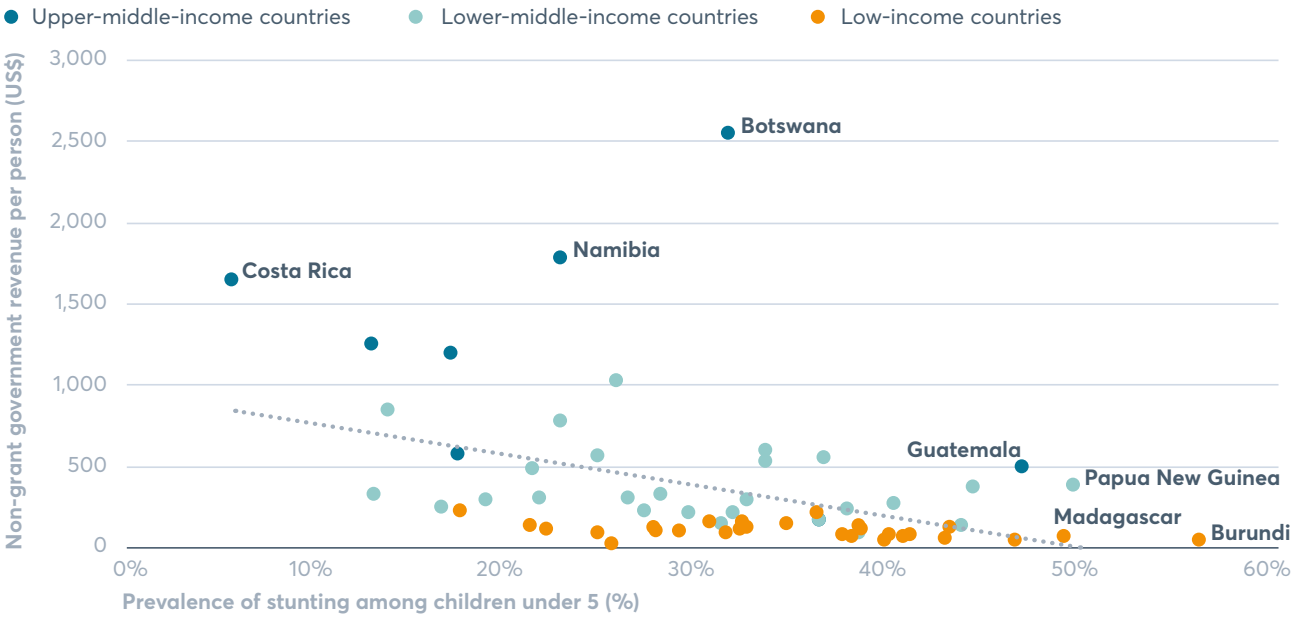
National and international investments in nutrition, while detailing whether they are specific or sensitive to nutrition outcomes, are not disaggregated in their reporting in a way that allows them to be tracked directly against the framework goals. The financial analysis that follows, therefore, assumes that trends in nutrition financing generally reflect progress against the framework. There have been some advances in tracking investments in nutrition-sensitive actions, and in response to non-communicable diseases,[5] but these are not discussed in detail here due to limited data.

FIGURE 5.1
The Global Solidarity financing scenario: additional financing needs to achieve WHA nutrition targets



Source: Adapted from Investment Framework for Nutrition.[6]
Notes: The Global Solidarity financing scenario projects what it would take to mobilise the total ten-year costs of US$70 billion to achieve the WHA targets based on a set of financing principles driven by country ability to pay and estimation of baseline 2015 spending by income group. In this model, upper-middle-income countries pay for 100% of scale-up costs; by 2025, lower-middle-income countries pay for 70% of scale-up costs and low-income countries pay for 50% of scale-up costs. Donors ramp up investments in the first six years and begin to taper off in 2021 when domestic financing covers most of the scale-up costs. The financing scenario does not include costs of intermittent presumptive treatment of malaria in pregnancy (total cost = US$416 million), as this is currently being funded by other sources, including the President's Malaria Initiative, the Global Fund to Fight AIDS, TB and Malaria and, to some extent, country governments.

FIGURE 5.2
Government revenue and stunting prevalence in 61 countries



Source: UNICEF/WHO/World Bank Group: Joint child malnutrition estimates, OECD Development Assistance Committee (DAC) Creditor Reporting System (CRS), World Bank, 2019.
Notes: Non-grant government revenue includes tax and non-tax revenue but excludes grants. Amounts for 2017, divided by 2017 population data. Income groups as defined by the World Bank country and lending groups, June 2019.

SPOTLIGHT 5.1

Low domestic revenue mobilisation in Somalia is hampering government investment in nutrition

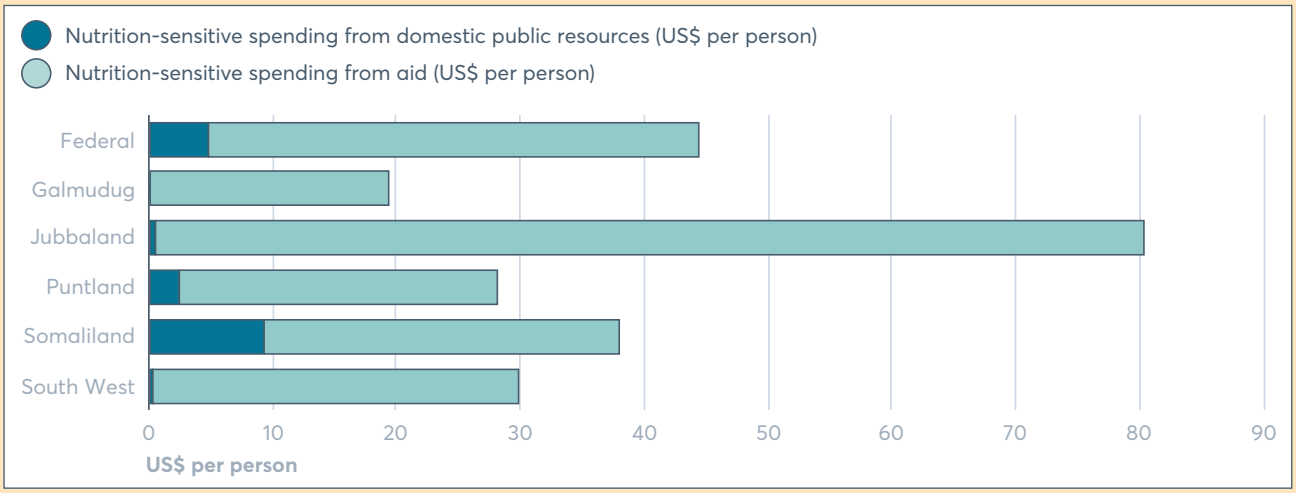
Richard Watts

In 2018, the Federal Government of Somalia undertook nutrition budget analysis on its own budget and five state governments.[7] The investigation detailed both nutrition-sensitive spending funded by domestic public resources and all aid spending reported to governments (Figure 5.3). This produced several key findings, as follows.

Aid played a crucial role in financing for nutrition – the aid component of nutrition-sensitive areas in 2017 was almost ten times larger than the share of domestic public resources (US$490 million compared to US$55 million). A primary focus of aid in that year was in response to droughts, which left an estimated 3.2 million people severely food-insecure and created a crisis that could not be dealt with by governments alone.

Domestic public investment in nutrition was significantly lower in newly formed states – compared to more established states in Somalia, state government investment in nutrition was substantially lower in Galmudug (US$0.05/capita), Jubbaland (US$0.6/capita) and South West (US$0.2/capita).

FIGURE 5.3
Nutrition-sensitive aid and domestic public resource funding in Somalia



Source: 2017 budget documents of the Federal, Galmudug, Jubbaland, Puntland, Somaliland and South West governments; 'Aid Flows in Somalia: Analysis of Aid Flow Data', March 2018. Ministry of Planning, Investment and Economic Development, Federal Government of Somalia.

The significant differences in the share of nutrition-sensitive funding between aid and domestic public resources in Somalia are primarily a result of low domestic revenue mobilisation. At present, the revenue base is very narrow, with a high dependence on port duties in the Federal (Mogadishu port), Somaliland (Berbera port) and Puntland (Bosaso port) governments. Other newly formed governments without established major ports are facing even more significant challenges in raising revenue, highlighted by the lower investments in nutrition by Galmudug, Jubbaland and South West states.

With a significant focus of current government spending on administration and security, it will be essential to increase domestic revenue mobilisation to free fiscal space to enable further investment in nutrition. There has been some progress in this regard, with the federal government reporting a 30% rise in non-grant revenue in 2018 compared to 2017, with plans to develop fiscal federalism structures through a fishery and petroleum revenue-sharing framework.[8] However, given the fragile context of Somalia, it is likely in the medium term that external support in financing nutrition will remain critical.

Full sources for this spotlight can be found in the notes.[9]

Mobilising domestic resources

The substantial amounts of additional funding required to reach the WHA targets for nutrition by 2025, as estimated by the IFN, need to be met through a mix of domestic allocations from country governments, official development assistance (ODA), and other financing mechanisms.[10] Within this mix, country ownership is critical to ensure the necessary political and institutional leadership for sustained action and outcomes, as well as the use of appropriate investments and mechanisms. Country ownership, and country investment through domestic resource mobilisation, is therefore vital.[11]

Different countries face different nutrition challenges on different scales, with different abilities to meet the costs. It is worth highlighting, although it may not be surprising, that countries facing the greatest malnutrition burden are often those with the least ability to finance action to address it (Figure 5.2).

Such disparities are equally prevalent at the subnational level. A case study of finance data disaggregated at a subnational level in Somalia (Spotlight 5.1) shows that spending is not allocated according to need, nor is there subnational government capacity to raise revenues or fiscal space to make nutrition investments.

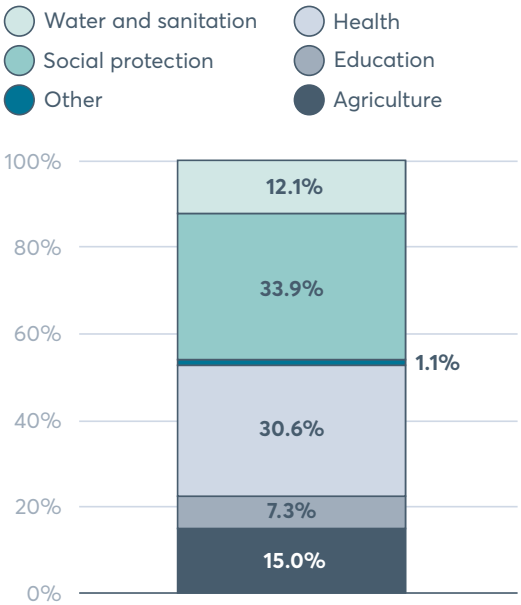
While domestic sources of nutrition finance are vital for scale-up and sustainability, particularly in low-income countries (LICs) and lower-middle-income-countries (LMICs), a key finding of this report is that sparse data makes it almost impossible to track progress in nutrition investments accurately. Data is disparate, incomplete or incomparable. This chapter, therefore, draws on a limited set of assessments undertaken for subsets of countries and sectors. From these, it concludes that there is minimal evidence to suggest that governments are scaling up resources. Increases are nominal at best, with some countries moving in the wrong direction.

The WHO Global Health Expenditure database, covering 38 countries and detailing spending on health by disease including nutritional deficiencies from 2015 to 2017, shows a slight increase (5.6%) in total health spending; however, spending on nutrition deficiencies fell by 5.6% from 2015 to 2017, meaning that the proportion of health spending on nutrition deficiencies fell from 1.6% to 1.4%. The picture for low-income countries was more positive, with a 23.9% increase in health spending and a 20.1% increase in expenditure on nutritional deficiencies.[12] A separate review of the expenditure across 32 countries between 2015 and 2016 found that spending on nutrition-specific interventions increased slightly in 12 countries but decreased in 20 countries.[13]

Based on available global data, we can conclude that the proportion of expenditure directed to nutrition for many countries remains low. There is even some national evidence of falling investments in nutrition. For example, Guatemala, which is considered progressive in its nutrition policy, has seen a large drop in domestic public investment in food and nutrition security since 2014.[14]

Data on domestic investments for nutrition within other sectors is available through the Scaling Up Nutrition (SUN) budget-tracking exercise. The latest available data across 45 countries shows that 69.4% of nutrition spending (for both nutrition-specific and nutrition-sensitive interventions) comes from outside the health sector, with social protection accounting for under half of this (Figure 5.4).

FIGURE 5.4
Domestic public investments in nutrition, by sector



Source: Budget analysis exercise, SUN Movement Secretariat, 2019.
Note: Based on 45 countries with data points ranging from 2015 to 2019.

Data limitations inhibit an assessment of nutrition spending over time within these sectors. However, inadequate government spending on many sectors, such as agriculture and education – that are important sources of nutrition-sensitive spending – is a matter of concern for indirect nutrition investments.[15]

- In agriculture, there is little progress in public funding outside East Asia, the Pacific, the Middle East and North Africa.[16]
- Education expenditure in 29 SUN countries increased only by 6.6% in real terms from 2015 to 2017, with 12 countries showing either a growth of less than 1% or an absolute decline.[17]
- The water, sanitation and hygiene sector is an exception, with mixed trends. In 24 countries with available data, total real-term funding increased from 2017 to 2019 by 11.1% per year, although 9 countries reported declines.[18] Despite increases, however, a substantial financing gap remains, which has an indirect impact on nutrition. According to the recent GLAAS report,[19] the majority of countries responding to the questionnaire said they had less than 50% of the financial resources needed to implement their water, sanitation and hygiene plans, with the situation being worse in rural areas, calling for a more equitable allocation of resources.

In summary, while available data is inadequate to quantify the domestic financing gap, the limited evidence available suggests that domestic spending on high-impact nutrition interventions is not at the level required according to the Investment Framework. Proportions of sector budgets such as health ascribed to nutrition outcomes are small. Increases in nutrition spending are marginal at best, and spending is falling in many countries. We need renewed efforts to mobilise the domestic resources critical to achieving sustainable impact.

Mobilising donor resources

Donor resources refers to the external support provided to scale up national-level nutrition programming from country donors, multilateral donors (including the European Union, development banks and UN institutions) and private donors.[20] Limitations in the data available restrict efforts to map these resources accurately. Beyond donors that report their spending through the N4G process (Table 5.1), there is poor tracking of nutrition-sensitive ODA. There is limited information on the expenditures and activities of donors outside the OECD Development Assistance Committee (DAC) and of South–South donors. Improved clarity on this data is vital for improving nutrition outcomes and coordination efforts. Several initiatives and mechanisms to monitor donor resources for nutrition-specific aid, and emerging tools, are enabling improved tracking and analyses of nutrition aid beyond the basic nutrition purpose code[21] (Spotlight 5.2).

Improvements in global tracking of donor disbursements

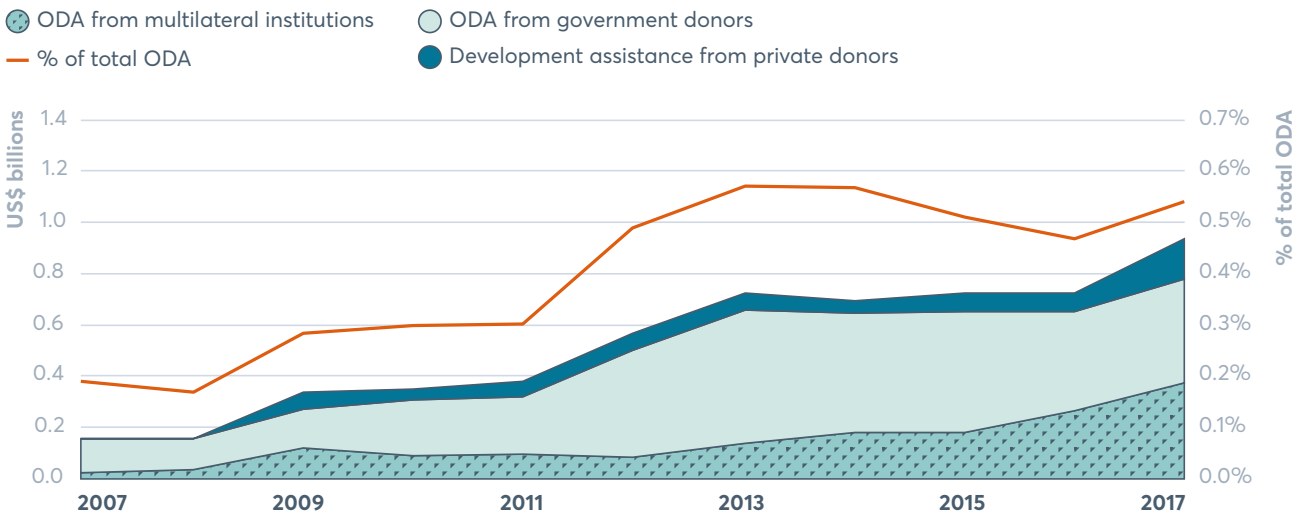
J.S. Kouassi, Mary D'Alimonte and Kedar Mankad

Tracking aid for nutrition is critical for monitoring and accountability. The SUN Donor Network has been using data from the OECD DAC Creditor Reporting System (CRS) to monitor spending against commitments made at the first Nutrition for Growth (N4G) Summit in 2013. The CRS previously had limited ability to track aid for nutrition but has recently been improved in the following ways.

- The purpose code for basic nutrition has been amended to remove school feeding and match the global definition of 'nutrition-specific'. The CRS has also added new purpose codes for non-communicable diseases that will make it easier to track aid projects including investments to reduce exposure to unhealthy diets that contribute to obesity.
- A nutrition policy marker, to improve tracking of nutrition aid across sectors, has been adopted voluntarily. This has been developed in collaboration with the SUN Donor Network and other SUN Movement partners, including Action Contre la Faim. The SUN Donor Network, the SUN Movement Secretariat and the OECD Secretariat are currently developing guidance to support DAC member agencies to adopt and implement the nutrition policy marker.
- New private philanthropic donors, such as the Children's Investment Fund Foundation, have begun reporting to the OECD. This enables the CRS to capture additional information on donor financing.

All these improvements come at an opportune time. Better systems to track aid for nutrition will enable a better understanding of funding trends and gaps and could lead to an improved perspective on whether vulnerable and marginalised populations are being reached with appropriate interventions. This will support more accurate and comparable monitoring of overall progress, and of the anticipated donors' financial commitments at the N4G Tokyo Nutrition Summit.

FIGURE 5.5
ODA disbursements for basic nutrition, 2007–2017



Source: Development Initiatives based on OECD Development Assistance Committee (DAC) Creditor Reporting System (CRS). Data downloaded on 29 January 2020.
Notes: ODA amounts are based on gross ODA disbursements, and include ODA grants and loans but exclude other official flows reported to the OECD DAC CRS. Government donors include DAC-member country donors and other government donors (Kuwait and the United Arab Emirates). Multilateral institutions include all multilateral organisations reporting ODA to the OECD DAC CRS. The amounts for private donors are based on private development assistance reported to the OECD DAC. Such assistance includes all international concessional resource flows voluntarily transferred from private sources for international development. These flows are the private finance channelled through NGOs, foundations and corporate philanthropic activities. All amounts are constant 2017 prices.

Trends in nutrition-specific aid

Donor disbursements reported under the CRS code for basic nutrition (a proxy for nutrition-specific aid) and under private development assistance reached US$1.25 billion in 2017, representing an average annual increase of 11.3% in real terms since 2012 (Figure 5.5). Nutrition ODA from private donors such as philanthropic organisations contributed to this growth, although this growth may, at least in part, be attributed to better reporting. Trends in the proportion of ODA allocated to basic nutrition have been less consistent. Following increases over five years between 2008 and 2013, percentages fell each year until 2017, when there was an increase in spending for basic nutrition to 0.54% of ODA, up from 0.47% in 2016 but still below 2013 levels.

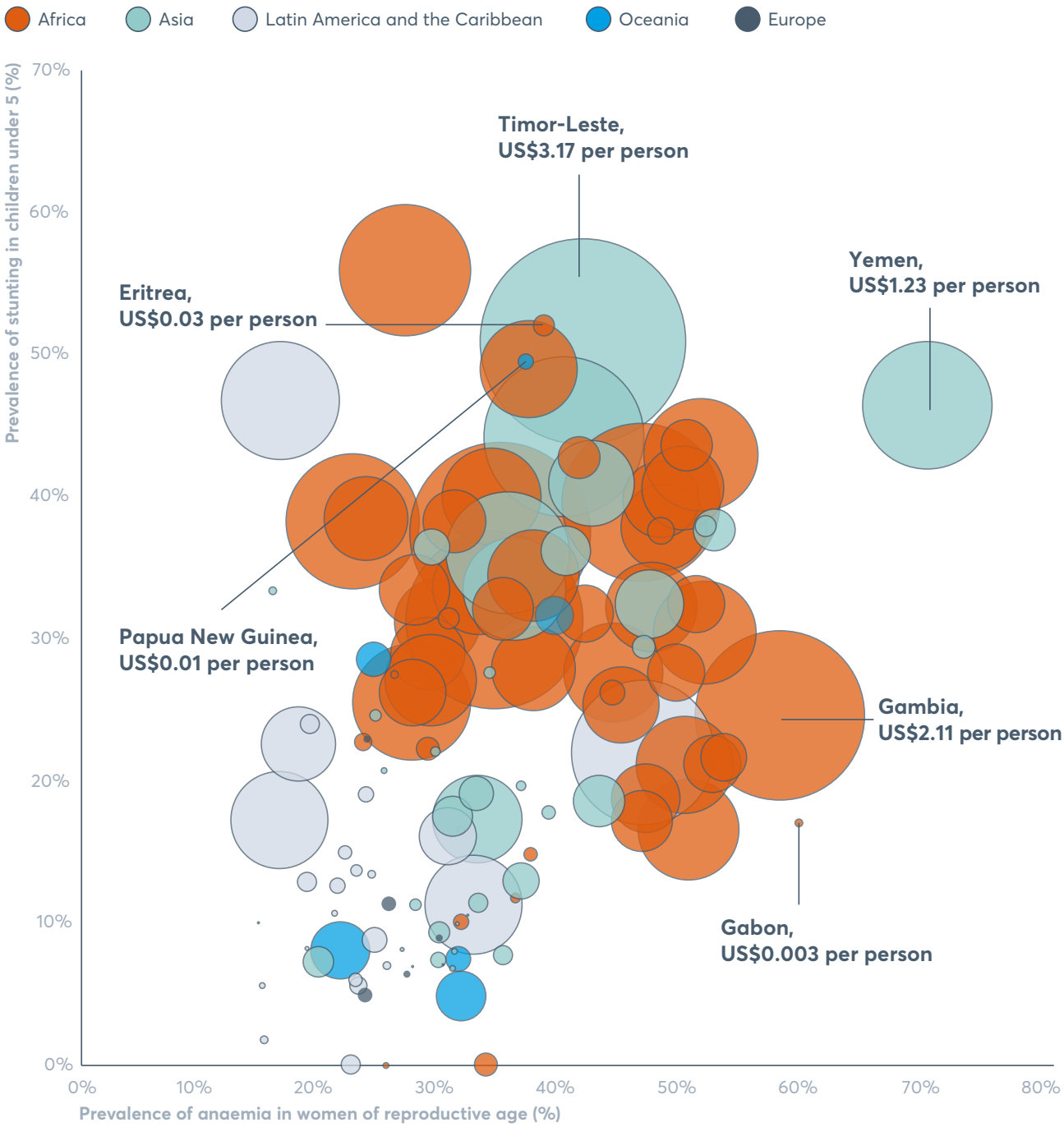
From an equity perspective, the allocation of nutrition aid based on social determinants is as vital as overall volumes. ODA needs to be targeted where needs are greatest and where the domestic capacity to address those needs is weakest. An exploratory assessment of per capita basic nutrition ODA – nutrition ODA that has been planned and programmed – against malnutrition indicators suggests that aid does tend to target countries with higher rates of malnutrition (Figure 5.6).[22] Rates of anaemia in women of reproductive age (WRA) and of childhood stunting each has a statistically significant, positive correlation with basic nutrition ODA per capita.[23] Additionally, when tested together, stunting is found to be a much better predictor than anaemia of where such aid is allocated.

However, there is scope for significant improvement. Several countries with high needs receive relatively small volumes of nutrition assistance. For example, Gabon has the second-highest prevalence of WRA anaemia at 59.1% but receives among the lowest amount of basic nutrition ODA per capita – an average of less than half a cent per person across 2015–2017. Eritrea similarly received an average of US$0.03 per person over the latest three years despite its stunting prevalence of 52.0%, while Papua New Guinea received US$0.01 per person on average with a stunting prevalence of 49.5%.

Multiple factors shape where and how donors allocate their aid, and more research is required to understand these better, as the first step to improved targeting. However, many countries facing extremely high levels of stunting and anaemia, and receiving very low per-person basic nutrition aid volumes, are fragile. Fragile and extremely fragile countries account for 57 of the 124 countries assessed (46.0%). Yet, six of the eight countries that received an average of less than US$1 per person across 2015–2017 and also have a WRA anaemia prevalence over 50% (i.e. countries with low basic nutrition aid and high malnutrition) fall into these categories. Similarly, when looking at countries with this low allocation, the 12 with the highest stunting prevalence all sit in one of these fragility groups.

Ways of delivering nutrition assistance also need to be considered. Nutrition aid is also delivered, for example, through humanitarian assistance, a modality one would expect to be more prevalent in fragile contexts. Indeed, averaged over the 2015–2017 period, 9 of the 15 extremely fragile countries received more nutrition aid via international humanitarian assistance than as basic nutrition ODA. Conversely, 54 of the 67 non-fragile countries did not receive any humanitarian nutrition assistance. Nutrition aid delivered through different modalities may be driven by different needs, with different objectives and subject to oversight from different sets of actors. Therefore, we need a better understanding of the types of nutrition assistance delivered in different contexts, and how each of these contributes to global commitments.

FIGURE 5.6
Allocation of 2017 basic nutrition ODA by recipient malnutrition burden



Source: UNICEF/WHO/World Bank Group: joint child malnutrition estimates; WHO Global Health Observatory; OECD Development Assistance Committee (DAC) Creditor Reporting System (CRS); World Bank, 2019.
Note: Bubble size represents the average basic nutrition aid received across 2015, 2016 and 2017, divided by 2017 population to show per capita amounts.

ODA financing for overweight, obesity and diet-related NCDs in LMICs and LICs

ODA financing to support improved nutrition needs to consider malnutrition in all its forms, and this includes overweight, obesity and diet-related non-communicable diseases (NCDs). The estimated rates of adult overweight and obesity, for example, have increased from 2012 to 2016 in every country – including the poorest – and the economic costs of diet-related NCDs are high. Globally, 27.3% of NCD deaths in 2017[24] were attributed to dietary risk factors.[25] To date, investment in many LICs and LMICs has focused on undernutrition. However, there is a growing funding gap for addressing malnutrition related to overweight, obesity and NCDs. These have traditionally been a problem for high-income countries where significant domestic resources are being allocated. However, over the past decade, there have been rapid increases in rates of overweight and obesity in LMICs, which have largely been ignored in nutrition aid allocations.

Increasing rates of overweight and obesity are still regarded by some as a marker of success in the war on food insecurity, coupled with a perception that addressing it can be delayed until countries reach their targets for economic development and hunger-reduction. Such an approach may have devastating health and economic impacts for low- and middle-income countries. Overweight, obesity and diet-related NCDs are conditions that often require expensive, lifelong therapies and care that these countries are currently ill-equipped to provide.[26] As highlighted by *The Lancet*'s series on the double burden of malnutrition:

The OECD CRS has added new purpose codes specifically for NCDs (Spotlight 5.2). Improvements in global tracking of donor disbursements will help to provide a more comprehensive picture of aid allocations to the prevention and treatment of NCDs. The Global Nutrition Report applies its own methodology to track spending on diet-related NCDs and finds that such disbursements increased to US$39.8 million in 2017, up US$7.3 million from 2016 (Figure 5.7). Funding commitments to NCDs have also increased, rising to US$57.5 million in 2017 from US$51.2 million in 2016. Disbursements to NCDs increased by 22.6% between 2016 and 2017. Meanwhile, during the same period, disbursements to the basic nutrition sector increased by 21.2%, and disbursements to all sector-focused aid grew by only 5.4%. Indeed, NCD disbursements marginally increased their share of total ODA from 0.018% in 2016 to 0.020% in 2017.

Given the high number of countries facing multiple burdens of malnutrition, it is crucial that external and domestic financing systems adapt urgently to expand investment both in actions that have a demonstrated impact on overweight and obesity and in those that address undernutrition. The WHO policy brief, *Double duty actions*[28] highlights how informed investment can address the double burden of malnutrition (two sides of one crisis) by exploiting synergies in actions to ensure good nutrition overall. Improving the availability of quality data on the cost of overweight, obesity and diet-related NCDs in all contexts will help to facilitate appropriate decision-making, including global and national target-setting for the reduction of adult overweight and obesity.

the new emergent reality is that undernutrition and overnutrition are interconnected and, therefore, double-duty actions that simultaneously address more than one dimension must be implemented for policy solutions to be effective.[27]

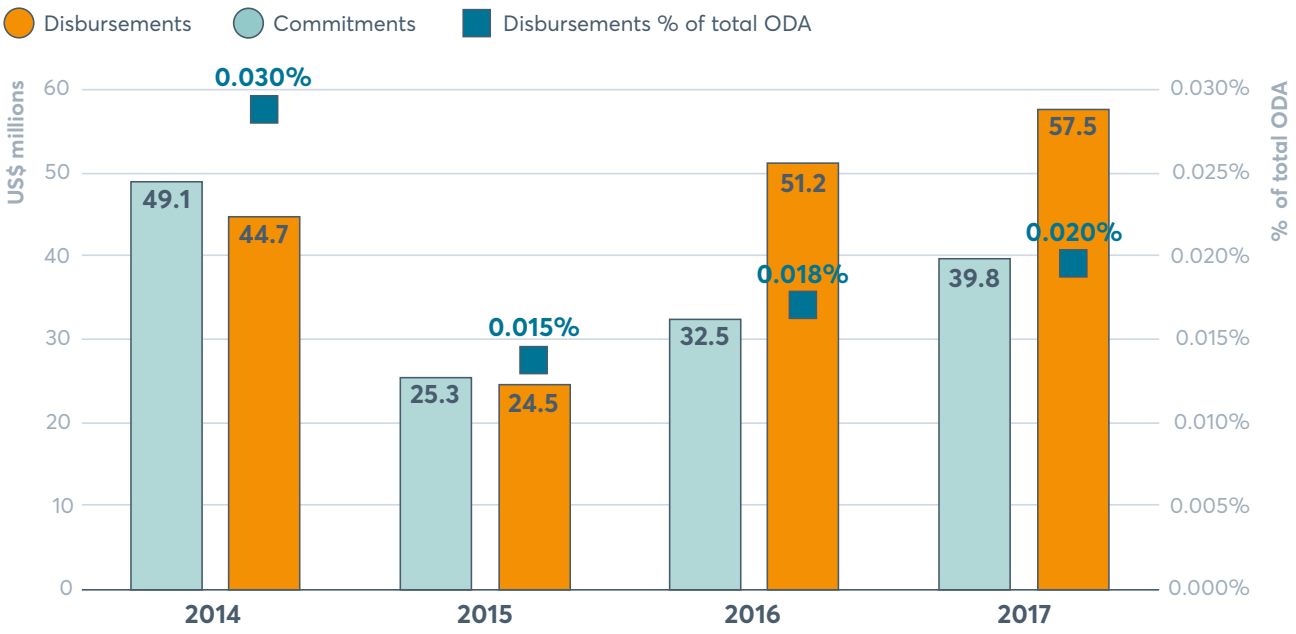
Tracking aid against WHA nutrition targets

In consultation with the SUN Donor Network, researchers have been tracking donor aid in support of the IFN priority package of interventions to assess whether the donor financial targets have been met.[29] Using data from the OECD CRS that includes aid from both within and outside the basic nutrition code, the analysis finds that donors have made positive progress in mobilising funding for the WHA targets. Between 2015 and 2017, priority-package aid increased by 11% (annualised), from US$1.1 billion to US$1.4 billion.[30] Mapping these disbursements to the IFN priority-package financing scenario benchmarks suggests that, overall, donors mobilised 93% of their proposed share of priority-package costs for 2017. While this is positive, more is needed: there was still a gap of US$100 million in external donor support needed for priority interventions in 2017. More importantly, the gap in support of the full IFN package costing US$7 billion per year, as shown in Figure 5.1, will be substantially more significant, although this is yet to be quantified. As Figure 5.8 shows, not all targets have seen the same funding increases.

Monitoring donor financial commitments made at N4G

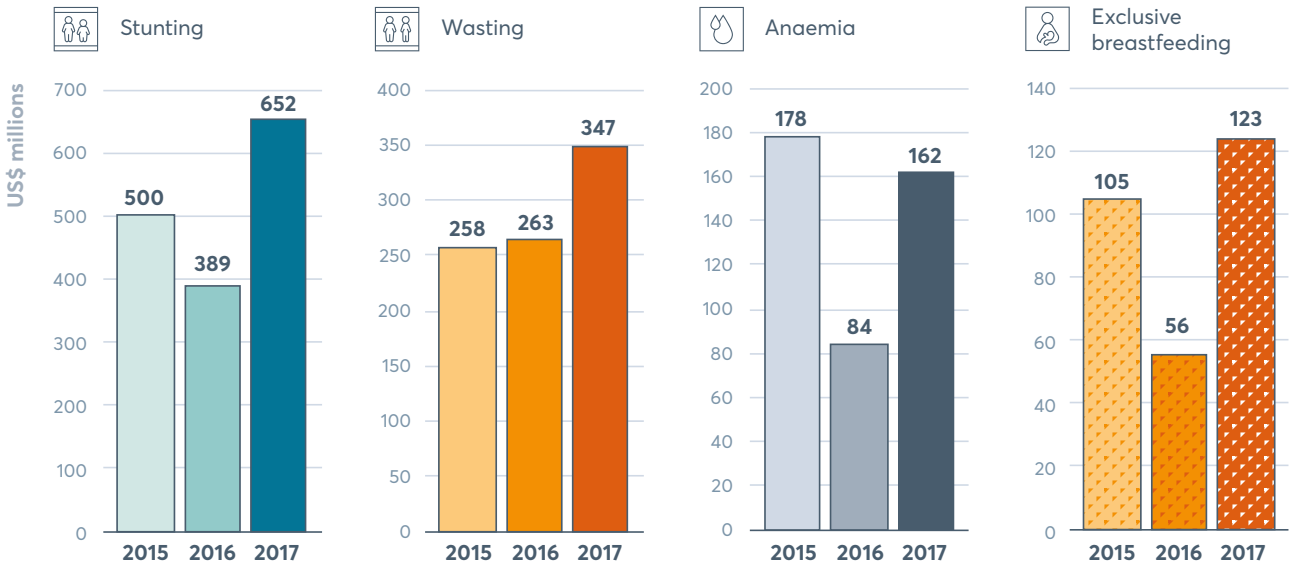
Nutrition for Growth (N4G) was established through a partnership between the governments of the United Kingdom, Brazil and Japan, championed by leading philanthropic foundations and civil society organisations. Its goal is to secure new financial and political commitments from governments, donors, civil society, the UN and business, to help end malnutrition in all its forms by 2030. Every year, the GNR tracks the commitments made by stakeholders through the N4G process. Table 5.1 shows the latest donor-reported disbursements to nutrition-specific and nutrition-sensitive actions between 2010 and 2017.

FIGURE 5.7
Donor spending on diet-related NCDs



Source: Development Initiatives based on OECD Development Assistance Committee (DAC) Creditor Reporting System (CRS). Data downloaded on 11 July 2019.
Note: The graph presents donor spending coded under the purpose codes for NCDs. However, actual donor spending on addressing NCDs is likely to be quite different, as investments under many other purpose codes will also impact diet-related NCDs.

FIGURE 5.8
Donor disbursements to select WHA nutrition targets



Source: Results for Development, 2019. Tracking aid for the WHA nutrition targets: progress towards the global nutrition goals between 2015–2017. Washington, DC: Results for Development.
Notes: Disbursements across the WHA targets cannot be summed due to intervention overlap. See endnotes for details of the actions and targets of the package.[31]

TABLE 5.1
Nutrition disbursements reported by donors to Global Nutrition Reports

REPORTED AS US$ THOUSANDS	NUTRITION-SPECIFIC						
	2010	2012	2013	2014	2015	2016	2017
AUSTRALIA	6,672	16,516	NA	20,857	NA	15,639	NA
CANADA	98,846	205,463	169,350	159,300	108,600	97,628	93,099
EU	50,889	8	54,352	44,680	48,270	29,721	57,097
FRANCE	2,895	3,852	2,606	6,005	4,660	8,572	4,339
GERMANY	2,987	2,719	35,666	50,572	51,399	18,047	19,621
IRELAND	7,691	7,565	10,776	19,154	13,079	12,391	NA
NETHERLANDS	2,661	4,007	20,216	25,025	31,604	46,331	NA
SWITZERLAND	0	0	0	0	0	0	0
UK	39,860	63,127	105,000	87,000	92,400	156,000	99,035
US	82,613	229,353	288,649	263,241	382,891	296,974	195,921
GATES FOUNDATION	50,060	80,610	83,534	61,700	96,500	96,616	144,532
CIFF	980	5,481	37,482	26,750	53,607	32,784	NA
WORLD BANK	NA	NA	NA	NA	NA	NA	NA

REPORTED AS US$ THOUSANDS	NUTRITION-SENSITIVE						
	2010	2012	2013	2014	2015	2016	2017
AUSTRALIA	49,903	114,553	NA	87,598	NA	128,706	NA
CANADA	80,179	90,171	NA	998,674	1,271,986	1,309,732	1,102,545
EU	392,563	309,209	315,419	570,890	423,704	496,672	538,637
FRANCE	23,003	27,141	33,599	NR	23,781	16,446	25,991
GERMANY	18,856	29,139	20,642	51,547	84,174	186,780	142,809
IRELAND	34,806	45,412	48,326	56,154	54,217	54,248	NA
NETHERLANDS	2,484	20,160	21,616	18,274	28,422	56,510	NA
SWITZERLAND	21,099	28,800	29,160	26,501	43,656	42,190	59,971
UK	302,215	412,737	734,700	780,500	928,300	693,000	706,334
US	2,005,880	1,968,759	2,449,706	2,656,269	2,555,332	3,038,180	3,548,197
GATES FOUNDATION	12,320	34,860	43,500	29,200	42,000	62,619	37,289
CIFF	0	0	854	154	20,725	21,595	NA
WORLD BANK	NA	NA	NA	NA	NA	NA	NA

REPORTED AS US$ THOUSANDS	TOTAL						
	2010	2012	2013	2014	2015	2016	2017
AUSTRALIA	56,575	131,069	NA	108,455	NA	144,345	NA
CANADA	179,025	295,634	NA	1,157,974	1,380,586	1,407,360	1,195,645
EU	443,452	309,217	369,771	615,570	471,974	526,393	595,734
FRANCE	25,898	30,993	36,205	NA	28,441	25,018	30,330
GERMANY	21,843	31,858	56,308	102,119	135,573	204,827	162,430
IRELAND	42,497	52,977	59,102	75,308	67,295	66,640	NA
NETHERLANDS	5,145	24,167	41,832	43,299	60,027	102,841	NA
SWITZERLAND	21,099	28,800	29,160	26,501	43,656	42,190	59,971
UK	342,075	475,864	839,700	867,500	1,020,700	849,000	805,369
US	2,088,493	2,198,112	2,738,356	2,919,510	2,938,223	3,335,154	3,744,118
GATES FOUNDATION	62,380	115,470	127,034	90,900	138,500	159,235	14
CIFF	980	5,481	38,336	26,904	74,332	54,379	NA
WORLD BANK	NA	NA	NA	NA	NA	NA	NA

Source: Based on data provided by the donors.
Notes: Data is in current prices. Most donors reported in US$; where they did not, an annual average market exchange rate from OECD or the US Internal Revenue Service is used. CIFF: Children's Investment Fund Foundation; Gates Foundation: Bill & Melinda Gates Foundation; NR: no response to our request for data; NA: not applicable (meaningful totals cannot be calculated owing to missing data or data produced using a methodology other than the SUN Donor Network's). Calculations and reporting often differ by country and donor, as shown by symbols (* and +) and explained in the notes.[32]

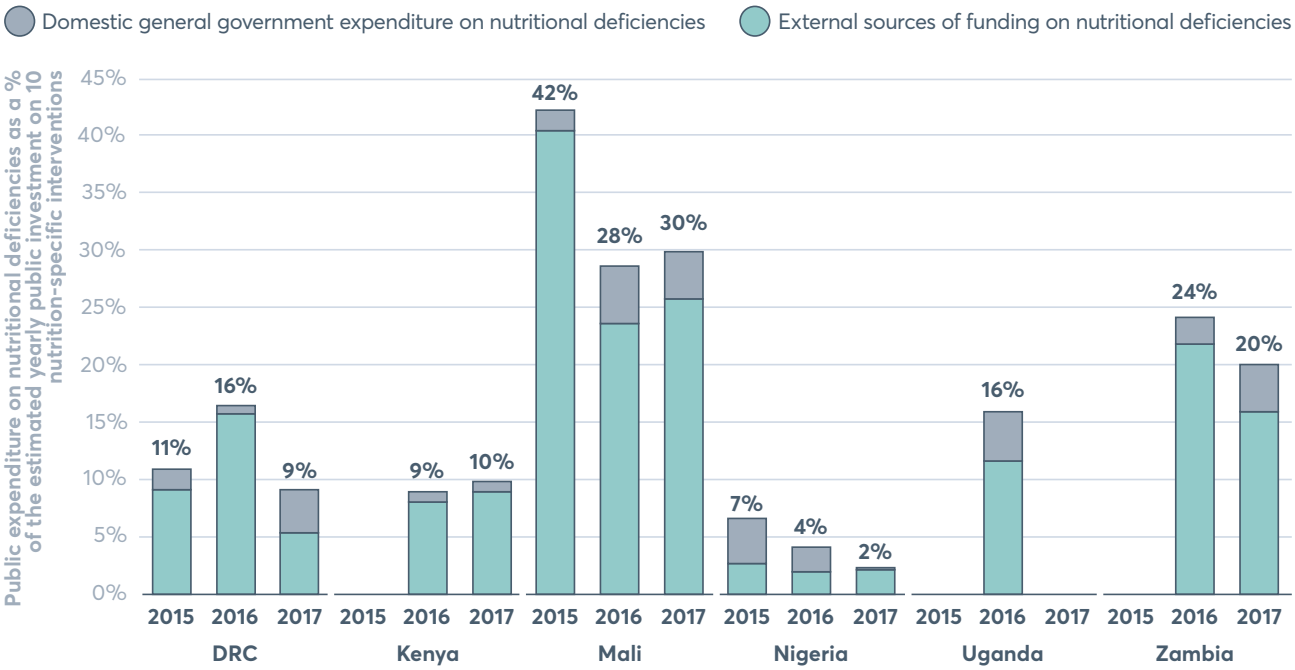
Evidencing the current funding gap for nutrition

There is not enough available data to quantify the global national financing gap in a way that brings together costed needs with national and international public investments. This is equally challenging to assess at the country level. An assessment by the World Bank demonstrates how trends in national funding gaps can be determined if information related to country needs and investments is available. By mapping costed plans of 10 nutrition-specific interventions against annual financing within the health sector in six African countries, the assessment finds a significant gap between the estimated requirement and current levels of domestic and donor resources (Figure 5.9). It also shows minimal increases over the three-year period from 2015 to 2017, with some countries, such as Nigeria, seeing year-on-year falls in spending.[33]

The combined evidence above suggests that domestic spending on high-impact nutrition interventions is not on track to meet levels required under the Investment Framework. Therefore, we need renewed efforts to mobilise both domestic and international resources. The funding gap cannot currently be quantified but national spending remains low, with some countries increasing marginally while others are moving in the opposite direction. Donors have increased spending within the range of the IFN's priority package. However, countries still face a gap that will widen unless they scale up domestic funding substantially.

FIGURE 5.9

Nutrition-specific public financing as a percentage of investment needs within the health sector in six African countries



Source: WHO global health expenditure database; Scaling Up Nutrition: What Will it Cost? – World Bank 6 country case studies.
Note: Although health expenditure on nutritional deficiencies covers the majority of the nutrition-specific interventions within the nutrition framework, there may be elements that are included within other sectors (e.g. child feeding). Therefore, the funding gap should be treated as an estimate rather than a direct comparison of progress.

Strategies for nutrition financing

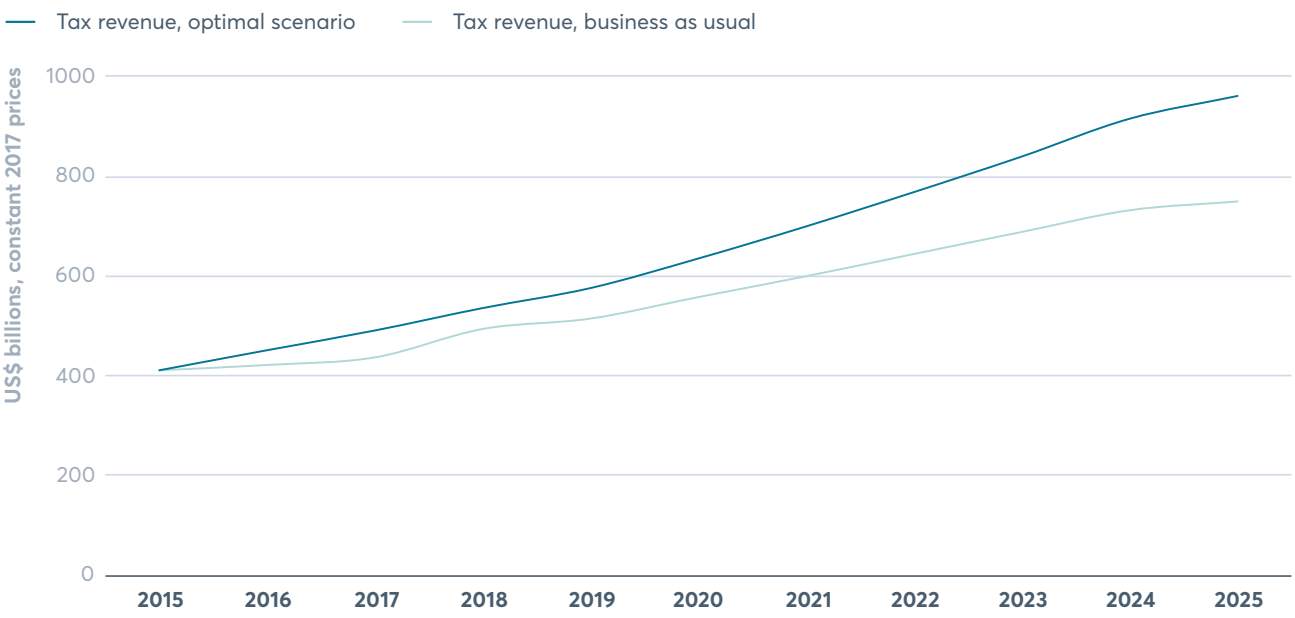
We know that current funding increases are falling short of targets. However, the data to assess financing needs and track investments is far from adequate, undermining efforts to target resources where they are most needed. Addressing the global nutrition challenge and the inequitable distribution of nutrition outcomes, in particular, requires:

- Scaling up financing from domestic and external sources
- Supporting investments in nutrition and nutrition-sensitive actions across sectors
- Using an equity lens to better target existing resources to those most in need
- Prioritising contextually relevant, evidence-based interventions based on improved data
- Developing innovative financing options.

Scaling up financing from domestic and external sources

Based on past growth trends, real-term growth in tax revenues from 2015 to 2025 is projected in most of the 61 SUN countries. If tax revenues grow at the rate of current estimates, an additional US$337.3 billion will be available to governments by 2025 (Figure 5.10). However, if governments made extra efforts to maximise tax revenue, this could increase even further, to US$551.8 billion.

FIGURE 5.10
Projected and optimal scenarios for tax revenue in SUN countries to 2025



Source: IMF article IV staff reports.
Note: Estimates for 61 SUN countries.

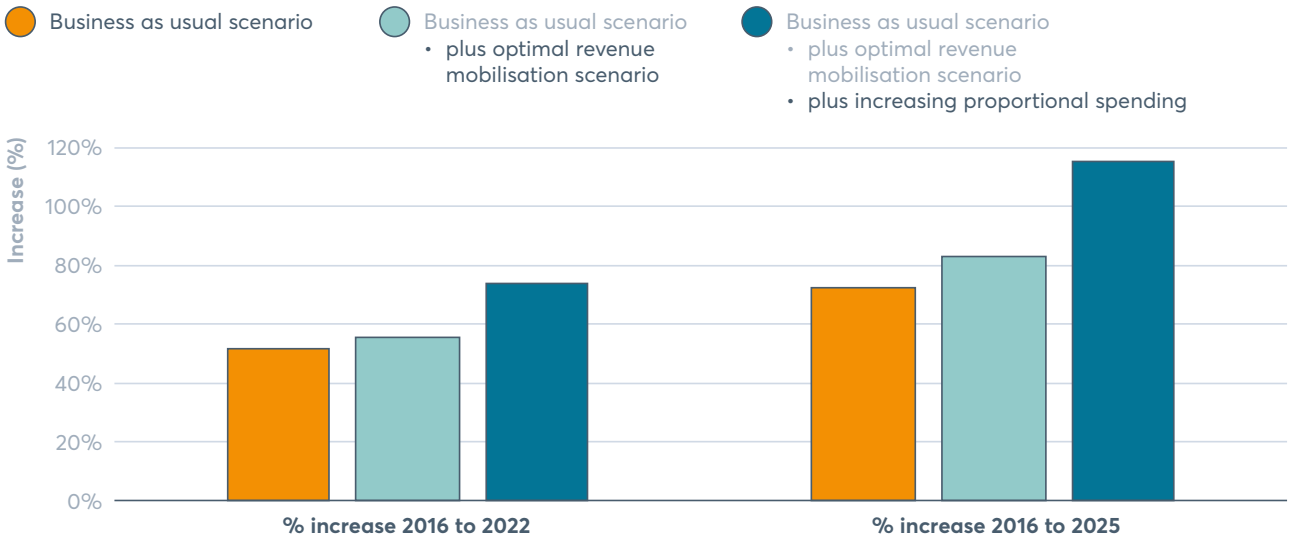
Translating this growth in tax revenues up to 2025 into domestic health spending on nutritional deficiencies in 33 SUN countries, with available data, shows significant increases. Maintaining the current percentage of resources allocated to nutritional deficiencies would lead to an increase of 72.5% over the 2016–2025 decade under the business-as-usual scenario, and of 83.0% if revenue-raising potential was optimised (Figure 5.11).[34] Further, if countries among the 33 with proportions of domestic public expenditure on nutritional deficiencies to total health lower than the median value moved to meet the median by 2025, without jeopardising other health areas, then this would lead to an additional 32.4% increase, or a total increase of 115.4%. This shows that both increasing domestic public resources and higher prioritisation of funding towards nutrition could lead to significant additional financing.

However, an important consideration is the potential impact that domestic revenue mobilisation may have for the poorest and most vulnerable. Governments need to consider the nature of revenue collection to ensure that tax regimes and user fees do not disproportionately or adversely affect the incomes of the poorest and most vulnerable citizens and exclude them from accessing services.

Furthermore, the World Bank analysis of six SUN countries outlined above (Figure 5.9) demonstrates that, in some countries, despite the potential increase in resources to nutrition through increased revenues, the scale-up would still be insufficient. In such cases, it will be necessary for governments to increase the proportion of available resources to nutrition-specific and nutrition-sensitive action to meet financing targets.

The potential to increase domestic revenues is not uniform across countries. Some countries do not expect to see significant growth in revenue due to other constraining factors. Therefore, external resources must be prioritised for these countries to ensure equitable allocation of global nutrition resources and improvements in domestic resource mobilisation so that marginalised and hard-to-reach people are not left behind.

FIGURE 5.11
Projected government health spending on nutritional deficiencies based on three scenarios (2016–2025)



Source: IMF article IV staff reports; WHO global health expenditure database.
Notes: Estimates for 33 SUN countries. Median values for the proportion of health funding on nutritional deficiencies calculated by income groups.

Investing in nutrition-sensitive actions across sectors

Given that the determinants of malnutrition are complex and that financing targets for nutrition-specific interventions are off-track, it is becoming increasingly important to address nutrition through broader, multisectoral approaches. This requires coordinated efforts across sectors, supported by strong political will and adequate funding to scale up productive investments.

National leadership for nutrition needs to be located at the highest levels of government to convene different line ministries and facilitate joint agreement on a multisectoral plan and funding priorities to address malnutrition. The Global Nutrition Policy Review 2016–2017 (GNPR2)[35] reports an increase in the number of countries where the coordination body for nutrition is located within the office of the president or prime minister, from 17% of 90 countries (in the Global Nutrition Policy Review GNPR1 conducted over 2009 and 2010) to 30% of 105 countries (in the GNPR2, conducted over 2016 and 2017). This is a significant achievement, as high-level political leadership has been proven to facilitate coordination and cooperation across the multiple sectors and levels involved in the nutrition system and improve capacity, which in turn can lead to improved investment in nutrition-sensitive approaches. According to GNPR2, African countries have made significant progress in this area, but nearly all countries in the Americas or the Eastern Mediterranean lack such high-level governance mechanisms for nutrition, and need to accelerate efforts to secure high-level commitment.

Despite some recent progress on improved resource tracking for nutrition-sensitive programmes (as described in Spotlight 5.2), there are still significant data gaps within sectors critical to transforming nutrition – including health, agriculture, social protection, water, sanitation and hygiene, and education. This is mostly due to a lack of global consensus on a prioritised package of nutrition-sensitive investments for governments and partners.

Agreeing on this is not simple, as there is a limited evidence base on the impact of nutrition-sensitive actions on nutrition outcomes, and on intermediate outcomes for improved nutrition. Also, the package of nutrition-sensitive actions is likely to be context-specific and would vary for rural and urban settings. Data on intervention costs, cost-effectiveness and return on investment is also limited. Spotlight 5.3 describes some current efforts to develop the evidence-base, but other assessments could also help to determine what to do in each sector. For example: within agriculture, which nutrition-sensitive actions have evidence of impact? How much will it cost to scale up these interventions to achieve SDG targets? Who will pay for this – what is needed from national governments, businesses and external partners? Finally, what are the expected impact and economic rationale for this investment?

Answers to such questions can help orient governments, partners and funders towards a common goal of making each sector more nutrition-sensitive by strengthening advocacy, policy and resource mobilisation. Various actors can help fill the information gap by supporting economic analyses for nutrition across sectors. For example, funders can finance economic evaluations of the programmes they support (such as adding costing modules to the evaluation of programme effectiveness), and implementers/researchers can use a common approach to ensure that outputs are comparable.

SPOTLIGHT 5.3

Building the evidence base on multisectoral nutrition programming

Carol Levin, Dale Davis, Aulo Gelli, Mary D'Alimonte and Augustin Flory

Evidence on the costs and benefits of multisectoral actions for nutrition is limited. This impedes the ability of budget holders to make informed decisions about which interventions to prioritise in resource-constrained settings. However, The Agriculture, Nutrition and Health Academy has developed a framework to measure the costs and benefits of multisectoral nutrition programmes.[36] This opens the door for more economic evaluations of nutrition-sensitive programmes and, importantly, evaluations that follow the same overarching principles to allow for standardisation and comparison.

The Department of Global Health at the University of Washington is leading a new initiative called Strengthening Economic Evaluation for Multisectoral Strategies for Nutrition (SEEMS-Nutrition). The initiative is conducting economic evaluations of six programmes spanning nutrition-sensitive agriculture and food-systems interventions, market-based approaches to improve access to nutritious foods, and other multisectoral nutrition actions. Evidence from these cases will bring us a step closer to documenting the economic rationale for scaling up nutrition interventions across these sectors. SEEMS-Nutrition will also provide a guidance document tailored for programmes working across sectors to improve nutrition. The guidance on methods will focus on principles and best practices for costing, study design, measurement of quantities of resources and outputs, valuation of costs and benefits, and reporting cost and benefit estimates. Members of the nutrition community are encouraged to contribute additional evidence beyond these six cases. This could provide the grounds for an investment framework of smarter and more systematic investments in nutrition across sectors.

Equity-focused nutrition financing: targeting those most in need

As outlined in Chapter 1, there are nutrition inequities driven by a range of political, economic, geographic and social factors that shape the range of opportunities available. Addressing such inequities may not be limited to financing, but who has access to what resources is a significant contributor. To ensure nutrition equity, resources should be targeted preferentially to those who need it most – the poorest and most malnourished people.[37]

While targeting the very poorest does not always have to cost more, achieving equitable outcomes in challenging or remote contexts will require a scale-up of investment and, in some cases, higher per capita costs. This is something governments must accept if they intend to close the gap equitably.

However, case study evidence demonstrates that it can be cost-effective to target the poorest, while other assessments now suggest that achieving outcomes in challenging contexts, such as fragile states, may not be as ineffective as once thought.[38] For example, a recent study shows that an equity-focused strategy prioritising good-quality healthcare and nutrition for the poorest and most deprived people can save almost twice as many lives as equivalent investments in non-poor groups (see Spotlight 5.4 below). Another recent modelling study conducted across 24 countries demonstrates that, with the same level of investment, an equity-focused approach is more cost-effective and results in sharper declines in child mortality.[39]

There is limited literature on what an equity-focused investment strategy for nutrition looks like. However, applying lessons from financing universal health coverage (UHC),[40] an equitable nutrition investment strategy should: provide support to all who need it; give access to all, taking into consideration location and timing of services; and remove the requirement to pay for the right to use services (particularly relevant for nutrition services that rely on out-of-pocket payments). Definitions of 'support' and 'needs' in nutrition may vary between sectors but the concept can be applied to financing for the full range of nutrition activities.

Improved targeting is necessary at global, national and subnational levels. At the global level, exploratory analyses looking at total nutrition-specific aid aligned with the Investment Framework for Nutrition suggest that such assistance is currently targeted towards lower-income countries. However, there is little additional targeting based on the burden of malnutrition, and some countries consistently receive very little support relative to their need.[41] An equitable pattern of nutrition finance would ideally see more development finance, of all kinds, directed towards countries with a higher burden of malnutrition and those with less ability to mobilise domestic resources for programmes. This could be further supported indirectly by a scale-up of international investments in domestic resource mobilisation, particularly in those countries that demonstrate development strategies that prioritise the poorest.

Addressing inequities is even more vital at the subnational level. Despite significant limitations in finance data at this level, studies of public finance – both subnational allocations of ODA and national government transfers within countries – suggest that funding for social services such as health and education is not actively targeted towards more impoverished regions.[42] And in many cases, poorer regions receive lower amounts of funding per capita. A review of World Bank and African Development Bank funding to human capital in 27 countries from 2005 to 2011 found that regions with higher infant mortality did not get more project funding.[43]

While it is difficult to assess subnational equity specifically for nutrition, more data is becoming available. A public expenditure review in Tanzania, for example, found that nutrition-related spending per child in Local Government Areas increased with stunting prevalence. But, with substantial variation, most government transfers were not allocated to Local Government Areas using any equity-sensitive assessment.[44] Through the SUN budget exercises, some countries are also starting to scrutinise subnational allocations for nutrition, which provides useful data on equity.

An equitable nutrition investment strategy should prioritise funding to populations most in need. This requires information systems capable of identifying the most deprived and marginalised groups and communities – where is the burden of malnutrition the greatest, who is most affected and why? Also required is information on coverage levels of existing interventions, and about the nature and scale of investments being directed to different regions.

However, data on what is currently spent on nutrition programmes, from both domestic and external sources, is often not available. Additionally, analyses of equity in nutrition finance by target group, such as financing according to sex, are not currently available. There is, therefore, considerable need for more action to develop better data and information systems that adequately disaggregate data at the subnational level.

Once the data is available, it is vital that financial decisions for nutrition also take place at subnational levels. This is where there is better understanding of priorities and needs of the most vulnerable and marginalised groups, and also where final decisions are taken around local-level spending. Several modelling tools for advocacy, decision-making, and costing are available to help decision-makers.[45] The Optima Nutrition tool aims to provide support on how to target nutrition investments across multiple interventions to achieve greater impact under a known budget envelope (Spotlight 5.4).[46] In parallel with developing disaggregated data systems, the nutrition community can also build on relevant sectoral efforts towards equity, such as efforts to improve gender equity in health financing, which substantially affect nutrition.

SPOTLIGHT 5.4

Optima Nutrition to reduce childhood stunting through better targeting

Meera Shekar, Jonathan Kweku Akuoku and Jean Sebastien Kouassi

Background and context

The Global Investment Framework for Nutrition (2017) estimated that an additional US$7 billion per year would be needed for 2016–2025 to reach four global nutrition targets. To achieve this aim requires improvement in the efficiency of spending through the use of better nutrition cost estimations, cost-effectiveness analyses and benefit–cost analyses. However, many questions remain unanswered to date:

- What is the optimal allocation of resources across interventions, given a government's budget for nutrition?
- How can these analytics help generate more national political commitments for nutrition?
- How can these analytics support judicious/informed subnational financial allocations responsive to local nutrition priorities and for those most in need?

Optima Nutrition, an allocative efficiency tool to reduce malnutrition

Optima Nutrition is a tool created in 2017 for impact and economic analyses for nutrition. For different funding levels, Optima Nutrition helps to estimate resources to be allocated across a mix of nutrition interventions, and the associated achievable impact. For example, considering an overall public health budget available for nutrition, Optima Nutrition will provide to policymakers the investment combination leading to optimal outcomes. Optima Nutrition can be used to inform:

- key policy documents such as SUN countries' national nutrition plans
- new nutrition investments
- budget allocations within existing nutrition programmes or projects at the national and subnational levels.

How can Optima Nutrition be useful for SUN countries?

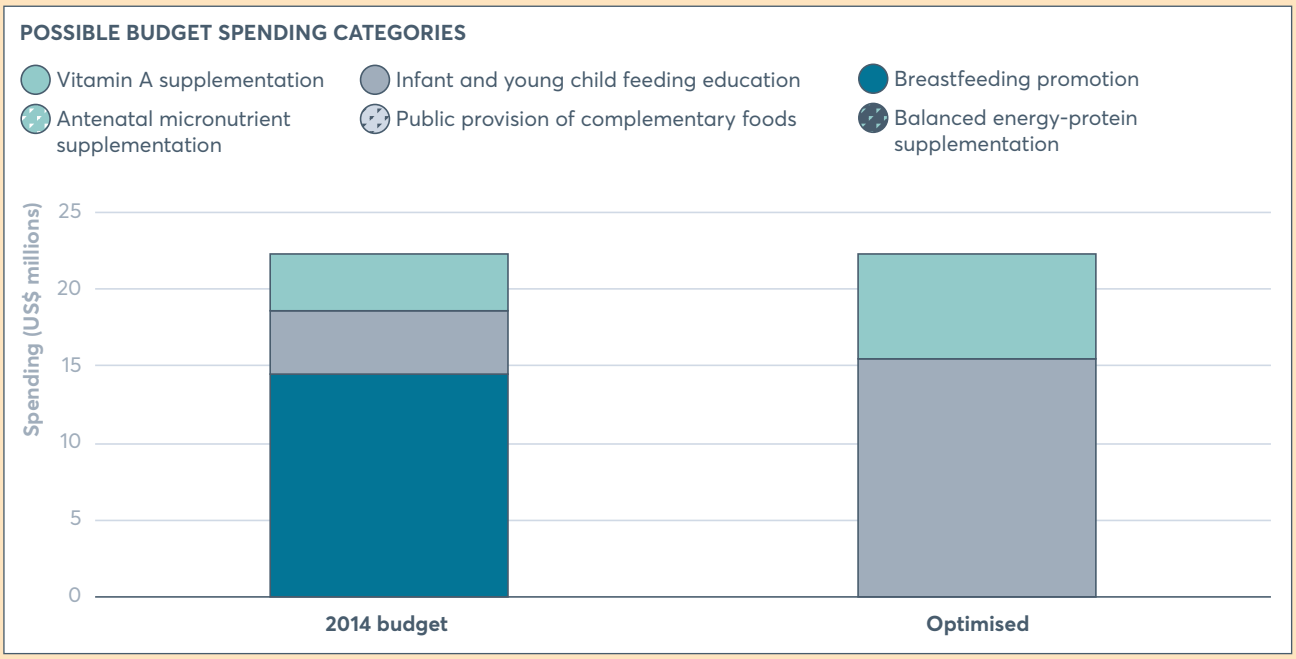
Every SUN country can use this modelling tool to assess the impact of its interventions on multiple malnutrition conditions: stunting, wasting, anaemia in children and in women of reproductive age, child and maternal deaths. In preparation for the next N4G summit, Optima Nutrition can help SUN countries to:

- better allocate a fixed budget across interventions to minimise malnutrition
- efficiently prioritise interventions and geographical regions if additional funding is available
- estimate the potential achievements if the current allocation or current volume of financing is reallocated optimally
- estimate the minimum funding required and its optimal allocation to meet nutrition targets.

The Optima Nutrition tool was used to decide the best use of available resources across seven districts in Bangladesh through enhanced targeting of the most cost-effective interventions (Figure 5.12), to increase the number of children aged 5 years and above who are not stunted by 1.4 million by 2030 (representing an increase of 5% for the same budget). The reduction-in-stunting objective could be maximised by shifting allocations of the available resources to a combination of just two of the interventions: IYCF promotion for children aged 6–23 months and vitamin A supplementation. From an equity perspective, the analysis also enabled decision-makers to identify districts where the targeting of these interventions could achieve the greatest impact. This tool is increasingly in demand: two assessments have been completed (in the DRC and Pakistan), seven are underway (in Benin, Burkina Faso, Burundi, Rwanda, Sierra Leone, Sindh Province in Pakistan, and Tajikistan), and four more have been requested (in Indonesia, Nigeria, Tanzania and Togo). This demonstrates the need for more evidence-based guidance and improved targeting methodologies that focus on those most in need.

Currently, Optima Nutrition includes mainly nutrition-specific interventions, due to limited availability of data on cost and impact for many nutrition-sensitive interventions. Future inclusion of nutrition-sensitive actions in tools such as Optima Nutrition will require a stronger evidence-base for these interventions.

FIGURE 5.12
Optima Nutrition in Bangladesh: comparison of planned and optimised budget



Source: http://documents.worldbank.org/curated/en/859891555500406318/pdf/Optima-Nutrition-An-Allocative-Efficiency-Tool-to-Reduce-Childhood-Stunting-by-Better-Targeting-of-Nutrition-Related-Interventions.pdf
Notes: Estimated 2014 allocation and optimal annual allocation across nutrition-specific interventions with budget fixed to 2014 levels. Optimisation is with respect to maximising the number of children not stunted at 5 years of age, over the 15-year period from 2016 to 2030.

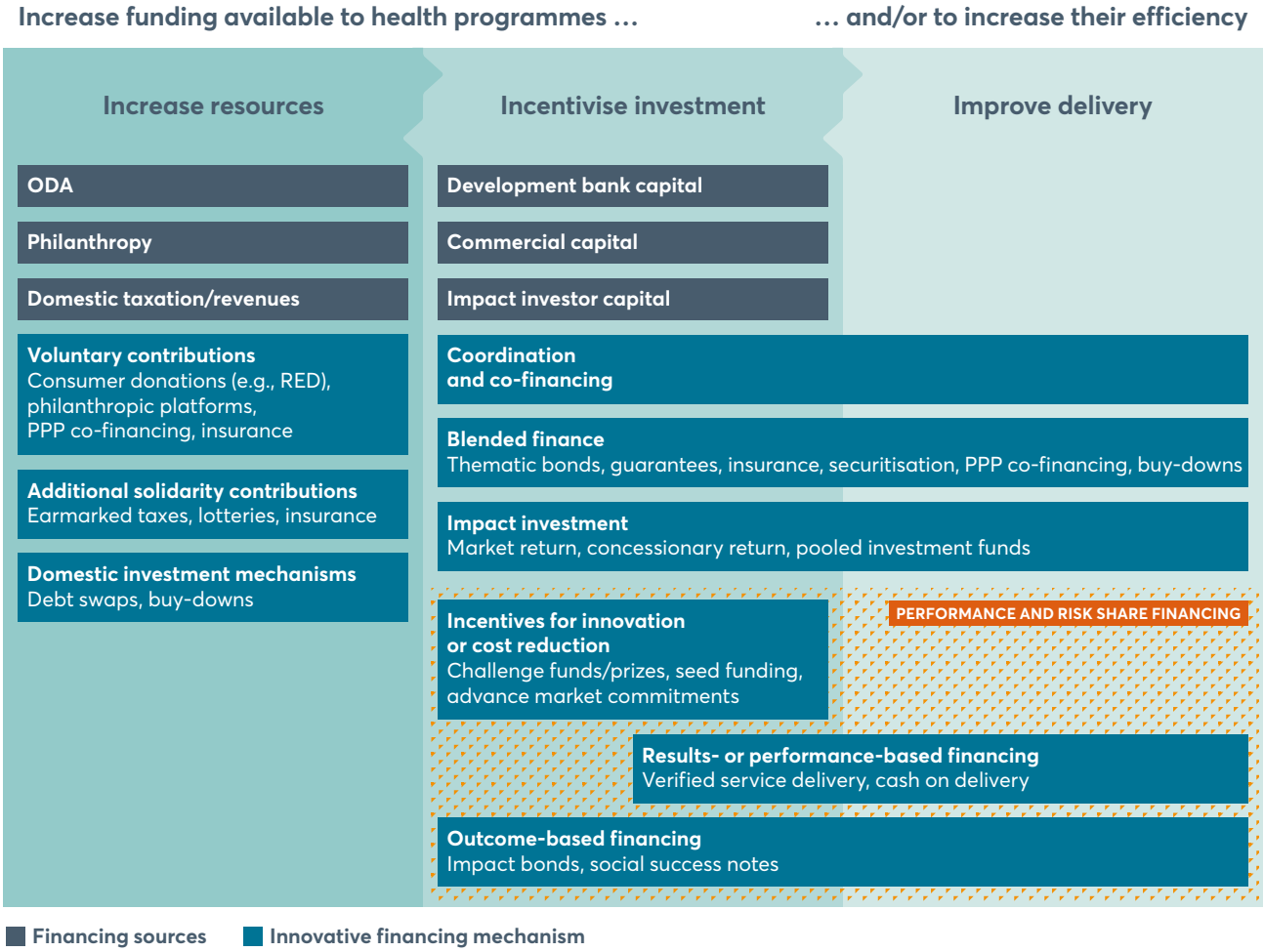
Full sources for this spotlight can be found in the notes.[47]

Innovative financing options

The bulk of new funding mobilised to scale up nutrition actions across sectors is expected to come from domestic, donor and private sources. In this mix, innovative financing can help increase available resources, catalyse private investments and incentivise efficient utilisation of development resources for nutrition. Figure 5.13 provides an overview of the main types of innovative financing mechanisms.

Many types of innovative mechanisms to increase resources for nutrition have been under consideration for more than a decade, but only two have achieved significant scale so far: The Power of Nutrition (described in Spotlight 5.4 in the *2018 Global Nutrition Report*), which has mobilised over US$430 million to nutrition programmes since 2015,[48] and the Global Financing Facility (GFF) (Spotlight 5.5).

FIGURE 5.13
An overview of innovative financing mechanisms



Source: The Global Fund, 2018. Update on innovative financing, p. 31. Available at www.theglobalfund.org/media/7435/bm39_25-innovativefinance_update_en.pdf
Notes: There are many definitions and typologies of innovative financing instruments for development and global health. This functional typology is borrowed from a Global Fund simplified landscape of innovative financing instruments.

Other examples of innovative financing mechanisms being implemented or developed to support nutrition include voluntary contributions, additional solidarity contributions, outcome-based financing and blended finance.

Voluntary contributions

In recent years, private resources have been mobilised to support nutrition programmes. Unitlife is a common, pooled and scalable fund launched in 2015 that initially planned to use income from extractive industries to invest in fighting undernutrition. Following challenges in its early years, Unitlife plans to relaunch in 2020 with a new programmatic focus on both malnutrition and closing the gender gap in climate-smart agriculture. The new revenue-generation model is based on voluntary micro-donations for payment transactions, leveraging sports events and celebrity power to drive social giving, and creative donation-matching and revenue-sharing schemes with private partners.[50]

Additional solidarity contributions

Taxes on sugar-sweetened beverages are being implemented in a fast-growing number of countries,[51] with increasing calls for a portion of the revenue to be invested in stronger health systems, as well as expanded programmes to encourage healthy diets.[52] The taxes are modelled on tobacco taxes, which have been hugely successful in reducing smoking and improving public health.

Outcome-based financing

The first Development Impact Bond (DIB)[53] with a nutrition dimension is being piloted in Cameroon, and others are being considered.[54] Pre-financed by Grand Challenges Canada, the Kangaroo Mother Care programme was launched in February 2019 in ten hospitals across Cameroon. The two-year bond worth US$2.8 million aims to reduce the number of deaths and improve health and nutrition for low birth weight and preterm infants. If the programme is successful, the Cameroonian Ministry of Public Health (drawing on funds from the Global Financing Facility) and Nutrition International will pay back the financial outlay to Grand Challenges Canada with a small return on the investment.[55]

SPOTLIGHT 5.5

The Global Financing Facility for Women, Children and Adolescents (GFF)

Leslie Elder

Launched in 2015, the Global Financing Facility (GFF) is a funding mechanism hosted by the World Bank to support governments in low- and lower-middle-income countries in financing their priority health and nutrition programmes. The GFF optimises existing resources by leveraging domestic government resources, development-bank financing (from the International Development Association (IDA) and the International Bank for Reconstruction and Development (IBRD)), external financing aligned with government plans, and private sector resources.[49] As of July 2019, the GFF had committed US$574 million from the GFF Trust Fund linked to US$5 billion from IDA/IBRD in 27 GFF-supported countries. By 2023, the GFF partnership aims to expand its support to a total of 50 countries.

Equity analysis is a critical aspect of the prioritisation process for the GFF, to enable the most vulnerable people to benefit from health and nutrition services. The focus on community-based approaches also lends itself well to allowing the countries to reach their most vulnerable populations. Furthermore, the GFF uses a gender-equity lens in the analysis of health determinants to support prioritisation. The facility also offers other innovative approaches to catalyse additional domestic resources for nutrition and health. For example, in Guatemala, a US$9 million grant from the GFF is enabling the government to access financing from IBRD at lower interest rates. The government is reinvesting the money saved from interest payments towards a conditional cash transfer programme, which aims to contribute to improving nutrition outcomes.

SPOTLIGHT 5.6

Blended finance for improved nutrition

Greg S. Garrett

Blended finance refers to the use of development finance from the public or philanthropic sector, at market rates or on concessional terms, to mobilise additional private sector investment to support projects with social and development benefits. This financing mechanism is emerging as a promising way to help fill the nutrition financing gap.

Blended financing mechanisms using public sector resources have helped to unlock commercial investments in nutritious food-value chains. Some of these are driven by the Global Alliance for Improved Nutrition (GAIN) and its partners, as in the following examples.

- The GAIN Premix Facility includes a revolving fund to provide credit for buying vitamins and minerals. This facility has now provided nearly US$80 million on extended credit to food businesses in Africa and Asia while maintaining a 1% default rate. It has reached roughly 150 million individuals a year since 2009 with fortified foods. Donors have funded the core costs of the services while the private sector funds the costs of the vitamins and minerals and the transactions.

- Grant funding through GAIN has helped to release two debt-financing deals made with companies that locally produce and distribute nutritious food in Haiti and Kenya.

- The Nutritious Foods Financing Facility (N3F) is a new blended finance fund. In 2018–2019, this facility was designed as a US$60 million direct debt fund for agri-food businesses in sub-Saharan Africa. The fund is currently in its inception phase and raising investment capital. GAIN has commissioned an assessment of companies in nutritious food value-chains in Kenya and Tanzania and is supporting the development of nutrition investment metrics. It is envisioned that the N3F can provide a demonstration effect to the sector and could be replicated many times over.

Source: Elmer and West, 2018.[56]

Blended finance

Blended finance is the blending of public/philanthropic funds with private sector funds, as well as the blending of grants and loans to improve concessionality. Loans or credit buy-downs are blended finance mechanisms championed by the World Bank and other key donors or international institutions wherein grant money from foundations or bilateral aid agencies is used to buy down the interest and sometimes the principal of loans or credits: (1) upon the delivery of specific results, (2) to increase the concessionality of loans (Spotlight 5.6), or (3) to free borrowing capacity from low- and middle-income countries for new programmes in nutrition. Blended finance for nutrition remains relatively new but could help to address the financing gap in nutrition, as outlined in Spotlight 5.6.

RECOMMENDED ACTIONS

- Governments need to increase domestic financing and understand direct funding flows for nutrition in relation to their population needs, based on disaggregated and quality representative population data on nutrition outcomes.

- Donors should increase nutrition financing and coordination, with a focus on equity by targeting countries and populations most in need, including those that are fragile or have limited options for effective mobilisation of domestic finance for nutrition.

- Governments and other stakeholders need to be supported with situational assessments to understand the bottlenecks for improved diets in the food, health, education and social protection systems. Such assessments would permit the identification of context-specific packages with a common goal of making each sector more nutrition-sensitive.

- Information systems need to be financed to: strengthen data on financial flows, improve coordination, reduce fragmentation and enable determination and alignment with national nutrition priorities.

- There is considerable interest in identifying innovations to garner more financing for nutrition or to strengthen nutrition programming in a way that optimises outcomes at less cost. To enable this, systematic evidence, as well as enhanced knowledge-sharing on mechanisms and opportunities, is needed to support decision-makers.

- The Japan N4G summit is a critical opportunity for planners and policymakers to make a strong case for renewed and expanded financial commitments for nutrition, using equitable approaches to maximise nutritional impact.

06

Ensuring equitable nutrition: a collective responsibility

2014. Cheshire, UK.
A school meal is served.
Photo: Cheshire East Council.

We need to address the persistent burden of malnutrition comprehensively

Systematic tracking by the Global Nutrition Report over the last six years shows improvements in key nutrition outcomes, but progress remains too slow to achieve the 2025 global nutrition targets. Around 149 million children under five years of age are stunted, 49.5 million are wasted, and 40.1 million are overweight, while 677.6 million adults are obese. Our world has substantially changed over the past four decades into one where far more people are overweight or obese than underweight, except in parts of sub-Saharan Africa and Asia. The unacceptably high burden of malnutrition can be attributed mainly to the hugely insufficient deployment of resources, the inadequate implementation of policies, programmes and interventions, and the lack of coherence and coordination across multiple sectors. Crop failures, reduced food production and extreme weather events that produce droughts and flooding are adding to increasing food insecurity and undernutrition among vulnerable populations.

More positively, there is increasing global recognition that malnutrition needs to be addressed comprehensively, going beyond the traditional focus on undernutrition. Several recent reports have highlighted actions to address the challenges of nutrition, food and health. The EAT–Lancet Commission's report on healthy diets from sustainable food systems links nutrition targets with environmental sustainability, climate change and a substantial shift towards healthy dietary patterns; it recommends widespread multisector, multi-level action.[1] The 2019 *State of food insecurity* (SOFI) report underscores the critical need for multisectoral policies focused on tackling inequalities at all levels.[2] The issues of food and nutrition affecting children (against a backdrop of rapid change, and the need for food systems to deliver nutritious, safe, affordable and sustainable diets) is the central theme of UNICEF's 2019 *The state of the world's children* report.[3] The Global Panel for Agriculture and Food Systems for Nutrition (GLOPAN) will also be releasing a report linking healthy diets to environmental sustainability ahead of the Tokyo Nutrition for Growth Summit.[4] Recently *The Lancet* published a series of papers on the double burden of malnutrition to explore the coexistence of all forms of malnutrition.[5] The Global Nutrition Report supports these efforts and aims to add to these perspectives to broaden the narrative – linking human potential, economic growth and environmental sustainability with equitable nutrition and health.

We need a pro-equity agenda to deliver nutrition actions

This report examines data disaggregated by key sociodemographic characteristics and evidence beyond national averages to reveal that progress over recent decades has been not only slow but also unequally distributed, resulting in widely differential outcomes. Many factors can contribute to these inequalities, including location, demography, sex, age, wealth and ethnicity. Variations exist across countries and within countries, across socioeconomic groups and within households. Recognising and promoting equity, therefore, needs to be a fundamental component of nutrition policy design, implementation, monitoring and evaluation.

The *2020 Global Nutrition Report* calls for a pro-equity agenda to design and deliver nutrition actions through healthcare, to enable food environments that support and provide healthy diets, to expand and target financing, and to prioritise systematic and continuous disaggregated data collection for informed policy setting. Building on the findings of recent reports, this publication highlights the need to address inequities embedded within the delivery of nutrition interventions and identifies demonstrable and evidence-based actions that can address nutrition inequities. It emphasises the need to integrate nutrition actions within health and food systems and a range of other sectors. These actions need to be supported by equity-sensitive environments and governance, and by resource allocation that targets those who are often missed.

We need to ensure equitable nutrition across several fronts

The world can achieve the 2025 global nutrition targets and Sustainable Development Goals (SDGs) only through a comprehensive and multifaceted approach that applies an equity lens to interventions, ensuring they reach those most in need. Such an approach should span multiple sectors supported by expanded resources and targeting, based on the following guiding principles.

A multisectoral and equitable nutrition approach

Nutrition is central to the SDGs, with 12 of the 17 SDGs containing indicators relevant to nutrition. Ending malnutrition in all its forms will catalyse improved outcomes and have powerful multiplier effects across the SDGs. Likewise, progress across the SDGs is essential to address the causes and consequences of malnutrition. Proactive consideration and inclusion of nutrition actions, goals and indicators across the SDGs will ensure that nutrition becomes a cross-cutting priority on the global development agenda and will promote engagement at all levels. In addition to the vast health and economic consequences, the global malnutrition burden has environmental impacts affecting the entire planet. Climate change and food systems are interrelated; we need to understand both the environmental consequences of poor diets and the impacts of climate change on agriculture. Future policy recommendations for optimal nutrition should include equity considerations, and be given in the context of potential environmental effects to address these issues simultaneously. This requires a more robust governance structure for nutrition – including high-level central coordination and subnational governance mechanisms. This can ensure greater participation and accountability for all key sectors, including health, education, water and sanitation, as well as food, economics, finance and planning.

Nutrition care should be an integral part of universal health coverage to address nutrition inequities reliably

At the United Nations General Assembly 2019, world leaders signed a landmark declaration on universal health coverage (UHC), which recognised that food security and food safety, adequate nutrition and sustainable, resilient and diverse nutrition-sensitive food systems are essential elements for healthier populations.[6] They stressed the need for sustained political commitment, leadership and good governance combined with capacity-building to mainstream nutrition within the health system and facilitate coordination and cooperation across multiple sectors and levels to reach those in most need.

Mainstreaming nutrition within UHC will also help to ensure equitable access to a standard package of universally available nutrition services that improve diets and reduce illness – resulting in better health outcomes for all. Specific interventions would include optimisation of electronic health records for nutritional screening and assessment, micronutrient supplementation, infant and young child feeding promotion, and counselling or treatment of acute malnutrition, where prevention fails.

An equity-sensitive approach to food systems is key to ensuring healthy, accessible and affordable food for all

An equity-sensitive approach to food systems would seek to reduce inequity in producing and delivering healthy diets through food policies – from agriculture to food assistance and fiscal policies – to help make healthy, sustainably produced foods the most accessible, affordable and convenient choice for everyone. Population-based interventions, which reach broader segments of society and require less individual effort, should benefit everyone, particularly those of lower socioeconomic status. Such 'upstream' strategies appear more effective in reducing inequalities, with the most significant impacts seen for multi-component interventions.

Governments can and should regulate to avoid inequities in the delivery of nutrition interventions. They can also offer financial and non-financial incentives to the private sector to ensure that their populations have access to healthy foods, and sufficient information and education to make informed choices. For example, fiscal policies could include taxes on sugar-sweetened beverages and ultra-processed foods, plus subsidies for healthy foods, food assistance programmes, front-of-package nutrition labels, mass media campaigns, marketing restrictions, and food reformulation to support healthier diets and hold the food industry accountable.

Resources should be expanded and preferentially targeted to where the need is greatest

Current financing of high-impact nutrition interventions is well below the level needed to achieve global nutrition targets. There is additionally a growing funding gap for addressing malnutrition related to overweight, obesity and non-communicable diseases (NCDs). It is critical to increase nutrition investments significantly, through a mix of domestic allocations from country governments combined with official development assistance and other financing mechanisms, with a focus on equity by targeting countries and populations most in need. Governments need to address the priorities and needs of the most vulnerable and marginalised groups by investing in information systems that provide disaggregated data at the subnational level and targeting funding flows at that level based on need.

In 2020, the Government of Japan was due to host the Tokyo Nutrition for Growth Summit[7] to highlight nutrition as an essential driver for sustainable development and to secure policy and financial commitments from governments, donors, the private sector and other agencies to address malnutrition in all its forms. The Summit has been postponed due to the outbreak of Covid-19, but when the event can be held, it will offer a tremendous opportunity for action on addressing inequity and securing new investments and commitments to overcome malnutrition. As part of the commitment-setting at the Tokyo Summit, it will be crucial to ensure a focus on equity by targeting countries with a higher burden of malnutrition and those with less ability to mobilise domestic resources for programmes. This includes fragile states where mobilisation of significant domestic revenues is very limited or impossible. Countries can optimise programme impact with the resources available to them by prioritising cost-effective interventions and targeting populations most in need.

Investment in data and information systems at disaggregated levels is critical

Understanding drivers of unequal diets and related health outcomes through increased investments in data and information systems at disaggregated levels is essential for informed priority setting and policy design. Public health monitoring and surveillance systems for nutrition should be established for ongoing and systematic assessment of a range of nutrition indicators at the granular level to underpin policies and prevention initiatives.

All sectors should be engaged and mobilised to act

Given that the various forms of malnutrition are intertwined throughout the life cycle and between generations, it is not possible to address the persisting high levels of undernutrition coupled with the worldwide increase of obesity and other diet-related NCDs through reliance on one system. Tackling malnutrition in all its forms requires active engagement within and across a range of sectors and systems to result in better outcomes at all levels and simultaneously support the achievement of sectoral goals.

Health: The health system can provide a platform to deliver nutrition actions to promote healthier eating and prevent and treat malnutrition – from maternal and child health outcomes to diet-related NCDs. Ensuring that high-quality nutrition services are part of the standard package of universally available health services can reliably address nutrition inequities. Increased capacity of the nutrition workforce is crucial in ensuring the delivery of equitable and quality nutrition care. Implementing effective and cost-effective nutrition interventions within our health systems would improve diets, save lives and reduce healthcare spending.

Food: An equity-sensitive approach to food systems that delivers healthy diets would seek to reduce inequities, as well as directly addressing food availability, accessibility and price in local food environments. The application of a range of different strategies and interventions is necessary to shift to healthier, environmentally sustainable and more equitable diets for all. Interventions targeting food environments should be included, along with agricultural and food-supply approaches. Moreover, stakeholders – including governments, industry, consumers and civil society – can act through different entry points of the food system.

Education and information: Better nutrition brings enormous improvements in the cognitive ability and physical performance of children, contributing to their ability to do well in school. Improved school meal programmes can reduce undernutrition, ensure that children are not unduly exposed to foods that increase their risk of obesity, provide income to farmers, and encourage children to stay in school and learn better. Schools can also educate children on the importance of healthy diets, physical activity and improved hygiene practices to help them make healthier lifestyle choices. Improving access to continued education also has long-term implications for the nutrition status of future generations. Other initiatives, such as mass media campaigns and marketing restrictions, also play an essential role in informing and educating communities.

The private sector: Given that no single action can address the complexities of the food system, all stakeholders should work in coordination through complementary and synergistic approaches to ensure that it delivers healthy and nutritious foods. Undeniably the food industry – managed mostly by the private sector – is an essential player in the food supply chain. On the one hand, there are instances where the private sector has opposed healthy food policies. Because of its scale and political power, such opposition can have a significant negative impact and must be checked. On the other hand, its strengths in innovation, problem-solving and marketing can potentially be applied to develop, produce and market healthy foods in sustainable and equitable ways. The impetus for this must come from consumer demand for such foods as well as from strong government regulation. In addition to holding the food industry accountable through strengthened mechanisms and regulatory frameworks free from conflicts of interests, governments should endorse healthy and nutritious eating practices through public messaging and campaigns, and by ensuring healthier food environments.

Governments, the private sector and civil society should work to recognise connections across the SDGs to enhance the impact of investments, commitments and actions by each sector. There is a need for greater legitimacy, space and support for civil society; for an accountable private sector; for greater transparency in the political processes led by governments towards healthier food environments; and for people across society to act on public interests and reinvest in collective action.

We need SMART commitments to ensure accountability

The Tokyo Nutrition for Growth Summit is an opportunity to streamline accountability in nutrition and pool the resources of existing initiatives for a joint output with the engagement of governments, civil society organisations and the private sector. It should highlight the trends and barriers to financing for nutrition and ensure that pledges are targeted judiciously, remaining relevant to the areas and populations in greatest need. An accountability strategy developed ahead of Tokyo should ensure that nutrition stakeholders make nutrition commitments that are ambitious and SMART (specific, measurable, achievable, relevant and timely)[8] and that stakeholders are effectively held accountable to those commitments.

We need to act now

The year 2020 marks the midpoint of the UN Decade of Action on Nutrition to eradicate hunger and prevent all forms of malnutrition worldwide. There are only five years left to achieve the global nutrition targets and just a decade remaining to realise the 2030 Agenda for Sustainable Development. Accelerating progress towards the 2025 global nutrition targets depends on:

- Improving the granularity of data, with a concerted effort to define and target specific inequities in contexts where the malnutrition burden is high
- Strengthening global nutrition governance and improving integration across players
- Holistically integrating nutrition into UHC
- Reforming food systems.

All of this must be supported by expanded funding.

World leaders must make bold nutrition commitments so that all people can survive and thrive. These commitments can be best realised through action on four key components to ensure that no one is left behind: collection, analysis and reporting of equity-sensitive nutrition data; broader equity evidence; enabling equity-sensitive environments, services and interventions to address the social determinants of malnutrition; and equity-sensitive governance and financing. Malnutrition is everyone's problem: it affects every country in one form or another. It is one of the most significant global challenges we face. But, with the combined efforts of all, it is one challenge we can overcome.

APPENDIX 1: NUTRITION INDICATORS

The Global Nutrition Report uses the following indicators to track progress on malnutrition.

Adolescent underweight	Children and adolescents aged 5–19 years who are more than one standard deviation below the median BMI for age of the WHO growth reference for school-aged children and adolescents.
Adolescent overweight	Children and adolescents aged 5–19 years who are more than one standard deviation above the median BMI for age of the WHO growth reference for school-aged children and adolescents.
Adolescent obesity	Children and adolescents aged 5–19 years who are more than two standard deviations above the median BMI for age of the WHO growth reference for school-aged children and adolescents.
Adult diabetes	Adults aged 18 and older with fasting glucose ≥7.0mmol/L, on medication for raised blood glucose or with a history of diagnosis of diabetes.
Adult underweight	Adults aged 18 and over with a BMI of 18.5kg/m^2 or lower.
Adult overweight	Adults aged 18 and over with a BMI of 25kg/m^2 or higher.
Adult obesity	Adults aged 18 and over with a BMI of 30kg/m^2 or higher.
Anaemia in women	Pregnant women with haemoglobin levels below 110 grams per litre at sea level. Non-pregnant women with haemoglobin levels below 120 grams per litre at sea level.
Childhood overweight	Children aged 0–59 months who are more than two standard deviations (moderate and severe) above the median weight-for-height of the WHO Child Growth Standards.
Childhood stunting	Children aged 0–59 months who are more than two standard deviations (moderate and severe) below the median height-for-age of the WHO Child Growth Standards.
Childhood wasting	Children aged 0–59 months who are more than two standard deviations (moderate and severe) below the median weight-for-height of the WHO Child Growth Standards.

Continued breastfeeding at 1 year	Children 12–15 months of age who are fed breast milk.
Continued breastfeeding at 2 years	Children 20–23 months of age who are fed breast milk.
Early initiation of breastfeeding	Children born in the last 24 months who were put to the breast within one hour of birth.
Exclusive breastfeeding	Infants 0–5 months of age who are fed exclusively with breast milk during the previous day.
Introduction of solid, semi-solid or soft foods	Infants 6–8 months of age who received solid, semi-solid or soft foods during the previous day.
Low birth weight	Live births weighing less than 2,500 grams.
Minimum acceptable diet	Children aged 6–23 months who received a minimum acceptable diet (apart from breastmilk) during the previous day.
Minimum dietary diversity	Children aged 6–23 months who received minimum dietary diversity during the previous day.
Minimum meal frequency	Children aged 6–23 months who received minimum meal frequency during the previous day.
Raised blood pressure	Adults aged 18 and over with raised blood pressure: systolic and/or diastolic blood pressure ≥140/90mmHg.
Salt	The mean intake of salt/sodium of adults aged 25 and over, expressed in grams per day.

APPENDIX 2: ASSESSING PROGRESS AGAINST THE GLOBAL NUTRITION TARGETS

The Global Nutrition Report tracks global and country progress against the global nutrition targets using the latest available data.

Maternal, infant and young child nutrition targets

Prevalence estimates are used alongside information about rates of change to assess whether a country is 'on course' or 'off course' to meet each maternal, infant and young child nutrition target. This is when the global target is applied at the national level, assuming the same relative reduction in all countries.[1]

Anaemia modelled estimates are produced by the WHO;[2] estimates of low birth weight are produced by the United Nations Children's Fund (UNICEF) and World Health Organization (WHO);[3] and estimates of exclusive breastfeeding are produced by UNICEF.[4] National prevalence estimates on child malnutrition are reported in the annual Joint Child Malnutrition Estimates produced by UNICEF, WHO and the World Bank.[5]

The rules to determine which countries are on or off course are established with extensive technical input from WHO and UNICEF. The Global Nutrition Report employs the monitoring rules and classification of progress towards achieving the six nutrition targets proposed by the WHO/UNICEF Technical Expert Advisory Group on Nutrition Monitoring (TEAM). The methodology and rules to track maternal, infant and young child nutrition targets were revised in 2017 by WHO and UNICEF to improve the quality of nutrition target monitoring.[6]

At the country level, as at the global level, an average relative percentage change in prevalence of an indicator is calculated using a metric called the average annual rate of reduction (AARR). There are two AARR estimates calculated: the required AARR represents the value needed for a country to achieve the global target from the baseline year to 2025, and the current AARR reflects a country's actual achievement based on the available data between the baseline year and the most recent year. The required AARR, current AARR and current prevalence are used to determine whether the country under assessment is on or off track for each indicator (Table A2).

In addition to those listed in Table A2, there are additional criteria for assessment and additional considerations.

- Stunting, wasting, overweight and exclusive breastfeeding: countries require at least two nationally representative survey data points since 2008 to assess recent progress, and one of these must have been since 2012 to reflect post-baseline status.
- If countries do not have any post-baseline status (2012) data, an assessment is reserved until estimates in the post-baseline period become available.
- Availability of nationally representative estimates approximately every three years aids effective progress-monitoring and supports reliable assessment.

TABLE A2
Methodology to track country progress on nutrition targets

INDICATOR	ON TRACK	OFF TRACK – SOME PROGRESS	OFF TRACK – NO PROGRESS OR WORSENING
Stunting	AARR ≥ required AARR* or level <5%	AARR < required AARR* but ≥0.5	AARR < required AARR* and <0.5
Anaemia	AARR ≥5.2** or level <5%	AARR <5.2 but ≥0.5	AARR <0.5
Low birth weight	AARR ≥2.74[+] or level <5%	AARR <2.74 but ≥0.5	AARR <0.5
Not exclusively breastfed	AARR ≥2.74[++] or level <30%	AARR <2.74 but ≥0.8	AARR <0.8
Wasting	Level <5%	Level ≥5% but AARR ≥2.0	Level ≥5% and AARR <2.0
	ON TRACK	**OFF TRACK – SOME PROGRESS**	
Overweight	AARR ≥-1.5	AARR <-1.5	

Source: WHO and UNICEF for the WHO-UNICEF Technical Expert Advisory Group on Nutrition Monitoring. *Methodology for monitoring progress towards the global nutrition targets for 2025: Technical report*. Geneva: WHO, UNICEF: New York, 2017.
Notes: *Required AARR based on the stunting prevalence change corresponding to a 40% reduction in number of stunted children between 2012 and 2025, considering the estimated population growth estimated (based on UN Population Prospects). **Required AARR based on a 50% reduction in prevalence of anaemia in women of reproductive age between 2012 and 2025. [+]Required AARR based on a 30% reduction in prevalence of low birth weight between 2012 and 2025. [++]Required AARR based on a 30% reduction in not exclusively breastfed rate between 2012 and 2025.

Diet-related NCD targets

The WHO Global Monitoring Framework for the Prevention and Control of Non-Communicable Diseases (NCDs) was adopted by the World Health Assembly in 2013 to effectively implement the NCD Global Action Plan and monitor progress in NCD prevention and control at the global level. The framework includes nine voluntary targets tracked by 25 indicators of NCD outcomes and risk factors. The overarching goal is to reduce premature mortality due to NCDs by 25% by 2025. The *2016 Global Nutrition Report* tracked **target 7**, 'halt the rise in diabetes and obesity'. The *2018 Global Nutrition Report* tracked additional targets on reducing salt/sodium intake by 30% at the population level (**target 4**) and reducing the prevalence of high blood pressure/hypertension by 25% (**target 6**).

Country progress towards the targets on raised blood pressure, diabetes and obesity is derived from modelled estimates and probabilities produced by the NCD Risk Factor Collaboration.[7] Progress is characterised as 'on course' if the probability of meeting that target by 2025 is at least 0.50, or 'off course' if it is less than 0.50; 'some' progress is not assessed for NCD targets. Global progress is evaluated in the same manner and the probability of the target being reached is specified.

Progress on reducing salt intake is not assessed at the country level. However, using estimates from the Global Burden of Disease (IHME),[8] the *2020 Global Nutrition Report* estimates the current AARR as 0.2%. This is substantially lower than the required AARR of 2.4%, to reach the global target on salt reduction by 2025.

APPENDIX 3: COUNTRIES ON TRACK FOR THE 2025 GLOBAL NUTRITION TARGETS

The *2020 Global Nutrition Report* reports on country-level progress towards eight of the ten 2025 global nutrition targets: anaemia, low birthweight, exclusive breastfeeding, childhood stunting, childhood wasting, childhood overweight (including obesity), adult obesity (men, women) and adult diabetes (men, women). Progress is not assessed at the country level for salt intake and raised blood pressure, due to lack of comparable projections.

Our assessment includes the best available data for 194 countries from various sources (see Appendix 2 for details of the methods and sources used to assess progress towards the different targets).

Table A3 details which countries are on track (i.e. on course) to meet either none, or at least one, two, three or four of the targets; four is the maximum number of targets any country is on track to meet. It is worth noting that data availability and quality differ across indicators because of varying methodologies and modelling approaches. It is, therefore, possible that some countries may have made progress towards the targets that is not reflected in these analyses. For instance, data for the maternal, infant and young child nutrition (MIYCN) indicators, excluding anaemia and low birth weight, is based on surveys that mostly cover low-income and lower-middle-income countries, thus the full picture is incomplete. Data for anaemia, low birth weight and the diet-related non-communicable disease (NCD) targets is available for all countries, but based on modelled estimates, which may not accurately represent actual country-level status.

TABLE A3
Countries on track to meet the global nutrition targets

ON TRACK FOR 0 TARGETS	ON TRACK FOR 1 TARGET	ON TRACK FOR 2 TARGETS	ON TRACK FOR 3 TARGETS	ON TRACK FOR 4 TARGETS
88	50	35	13	8
Afghanistan	Andorra	Australia	Chile	Albania
Algeria	Angola	Bangladesh	El Salvador	Armenia
Antigua and Barbuda	Austria	Belgium	Finland	Belize
Argentina	Azerbaijan	Bolivia (Plurinational State of)	Ghana	Democratic People's Republic of Korea
Bahamas	Bosnia and Herzegovina	Burkina Faso	Iceland	Kenya
Bahrain	Brunei Darussalam	Burundi	Kazakhstan	Mexico
Barbados	Cameroon	China	Kuwait	Sao Tome and Principe
Belarus	Canada	Côte d'Ivoire	Lesotho	Swaziland
Benin	Chad	Democratic Republic of the Congo	Peru	
Bhutan	Congo	Denmark	Rwanda	
Botswana	Dominican Republic	Egypt	Serbia	
Brazil	Ecuador	Guatemala	State of Palestine	
Bulgaria	Estonia	Guinea-Bissau	Sweden	
Cabo Verde	France	Guyana		

TABLE A3 CONTINUED

ON TRACK FOR 0 TARGETS	ON TRACK FOR 1 TARGET	ON TRACK FOR 2 TARGETS	ON TRACK FOR 3 TARGETS	ON TRACK FOR 4 TARGETS
88	50	35	13	8
Cambodia	Gambia	Haiti		
Central African Republic	Germany	Kyrgyzstan		
Colombia	Guinea	Malawi		
Comoros	Indonesia	Mongolia		
Costa Rica	Israel	Myanmar		
Croatia	Italy	Nauru		
Cuba	Jamaica	Norway		
Cyprus	Japan	Pakistan		
Czechia	Latvia	Paraguay		
Djibouti	Liberia	Sierra Leone		
Dominica	Lithuania	Singapore		
Equatorial Guinea	Luxembourg	South Africa		
Eritrea	Malaysia	Tajikistan		
Ethiopia	Mali	Thailand		
Fiji	Malta	Turkey		
Gabon	Mauritania	Turkmenistan		
Georgia	Montenegro	Uganda		
Greece	Nepal	United Republic of Tanzania		
Grenada	Netherlands	United States of America		
Honduras	Niger	Vanuatu		
Hungary	Nigeria	Zimbabwe		
India	Poland			
Iran (Islamic Republic of)	Portugal			
Iraq	Republic of Korea			
Ireland	Samoa			
Jordan	San Marino			
Kiribati	Senegal			
Lao People's Democratic Republic	Solomon Islands			
Lebanon	Spain			
Libya	Sri Lanka			
Liechtenstein	Sudan			
Madagascar	Switzerland			
Maldives	Timor-Leste			
Marshall Islands	Togo			
Mauritius	Viet Nam			
Micronesia (Federated States of)	Zambia			
Monaco				
Morocco				
Mozambique				
Namibia				
New Zealand				
Nicaragua				
Oman				
Palau				
Panama				

TABLE A3 CONTINUED

ON TRACK FOR 0 TARGETS	ON TRACK FOR 1 TARGET	ON TRACK FOR 2 TARGETS	ON TRACK FOR 3 TARGETS	ON TRACK FOR 4 TARGETS
88	50	35	13	8
Papua New Guinea				
Philippines				
Qatar				
Republic of Moldova				
Romania				
Russian Federation				
Saint Kitts and Nevis				
Saint Lucia				
Saint Vincent and the Grenadines				
Saudi Arabia				
Seychelles				
Slovakia				
Slovenia				
Somalia				
South Sudan				
Suriname				
Syrian Arab Republic				
The former Yugoslav Republic of Macedonia				
Tonga				
Trinidad and Tobago				
Tunisia				
Tuvalu				
Ukraine				
United Arab Emirates				
United Kingdom of Great Britain and Northern Ireland				
Uruguay				
Uzbekistan				
Venezuela (Bolivarian Republic of)				
Yemen				

Source: UNICEF global databases Infant and Young Child Feeding, 2019, UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight, (March 2019, New York), NCD Risk Factor Collaboration 2019, WHO Global Health Observatory 2019, UNICEF-WHO Low birthweight estimates, 2019.
Notes: Assessment based on 194 countries. Childhood is under-5, and diet-related non-communicable disease (NCD) targets are assessed for adults 18 years and over. The methodologies for tracking progress differ between targets. See Appendix 1 for definitions of indicators. See Appendix 2 for details of data and methods used to assess progress towards the global nutrition targets.

NOTES

Chapter 1

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Chapter 2

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10 Wasting reflects one form of acute malnutrition; in humanitarian emergencies, prevalence of global acute malnutrition (GAM), which includes both wasting and bilateral pitting oedema, is often reported on instead of wasting prevalence alone. However, GAM is also often referred to as wasting.

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Chapter 5

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5 The WHO released a framework of 'best buys' to combat non-communicable diseases (NCDs), where the most cost-effective strategy is to reduce unhealthy diets, with a return of almost US$13 expected for every US$1 invested. For the first time, the financing needs to tackle NCDs are clear; however, mechanisms to track funding are currently not established in order to comment on progress (https://apps.who.int/iris/bitstream/handle/10665/272534/WHO-NMH-NVI-18.8-eng.pdf).

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10 Government spending in low- and middle-income countries can come from revenue generated from their tax base along with borrowing from development partners and other means. It is often difficult to untangle the source of funding for social programmes, which should be considered when analysing domestic and flows. Some international development loans or grants may be considered as part of a government's fiscal space.

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21 The OECD maintains various code lists which are used by donors to report on and classify their aid flows to the DAC databases. Basic nutrition purpose code: 12240.

22 Nutrition aid delivered through humanitarian assistance, as identified in OCHA's Finance Tracking Service, is not correlated. The 121 basic nutrition ODA recipients have a positive correlation between basic nutrition ODA per person (as a three-year average between 2015 and 2017) and stunting prevalence of 0.51. When humanitarian assistance (also a three-year average between 2015 and 2017) is added to basic nutrition ODA and divided by population, this correlation decreases to 0.36.

23 Correlation coefficients for 2017 basic nutrition ODA and anaemia and stunting: 0.30 and 0.51, respectively. When these indicators are tested together in a t-test, stunting is shown to be a much better predictor than anaemia in terms of where basic nutrition ODA per capita is allocated, with a p value for anaemia and stunting at 0.25 and 5.47e-07, respectively.

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32 World Bank: does not submit disbursements to the Global Nutrition Report and reports only on commitments through the N4G process. For the Bank, these commitments are legally binding and can be considered disbursements. However, the reporting is not comparable to other donors' disbursement figures hence not presented in the table.
The Japan international Cooperation Agency (JICA): data on JICA's nutrition interventions was sent separately to the Global Nutrition Report and does not include figures from any other Japanese government agency.
In 2018, this was ¥487 million (US$4.4 million) for nutrition-specific interventions and ¥19,945 million (US$181 million) for nutrition-sensitive interventions. This represents an increase against 2016 for both nutrition-specific disbursements (previously ¥273 million; US$2.51 million) and nutrition-sensitive disbursements (previously ¥17,090 million; US$157 million).
Australia: disbursement figures are reported biennially to the Global Nutrition Report.
Canada methodology: 1) for nutrition-specific disbursements, used Creditor Reporting System (CRS) purpose code 12240-basic nutrition disbursements as reported to the OECD DAC; 2) for nutrition-sensitive, used a pre-identified subset of CRS codes linked to nutrition-sensitive outcomes to identify potential nutrition-sensitive projects, manually assessed each referred project according to the SUN criteria, and applied the associated proportional allocation to nutrition-sensitive CRS codes of validated projects. For the aggregate figure, it applied an annual average market exchange rate for 2016 to report in US$.
EU: At the N4G Summit, the EU committed €3.5 billion for nutrition interventions for 2014–2020. EU: 1) for nutrition-specific disbursements, identified all disbursements reported to the DAC linked to nutrition-specific commitments made so far and applied the SUN methodology of 100% of the disbursement amount; 2) for nutrition-sensitive, identified all disbursements reported to the DAC linked to nutrition-sensitive commitments made so far and applied the SUN methodology of the proportional allocation of 100% or 25% of the disbursement amount depending on whether the related commitment had been categorised as 'nutrition-sensitive dominant' or 'nutrition-sensitive partial'. A commitment corresponds to a legally binding financial agreement between the EU and a partner. The disbursement figures reported by the EU are the total amounts of commitments contracted so far. Further disbursements of funds are made according to a schedule of disbursements outlined in individual contracts, progress in implementation and rate of use of the funds by the partner.
France: reported US$4.7 million as nutrition-specific disbursements in 2015. The only difference between what France reported through the OECD DAC system and to the Global Nutrition Report is the SUN contribution, which was counted as a nutrition-specific disbursement for our reporting.
Germany: figures represent nutrition disbursements from the Federal Ministry for Economic Cooperation and Development and the Federal Ministry of Food and Agriculture.
Switzerland: does not use the basic nutrition code and thus reports 0 for nutrition-specific spending.
UK: figures represent nutrition disbursements from the Department for International Development only; 2016 figure includes US$45 million of nutrition-specific matched funding; 2017 figure includes US$89 million of nutrition-specific matched funding.
US: The nutrition-sensitive component is calculated differently from that of other countries. For nutrition-specific, the US government uses the OECD DAC CRS purpose code 12240, which includes activities implemented through the McGovern-Dole International Food for Education and Child Nutrition Program. It also includes the portion of 'emergency food aid' (CRS code 72040) and 'development food aid' (CRS code 52010) under the Title II Food for Peace Program identified as nutrition (programme element 3.1.9) in the US government's Foreign Assistance Framework. This programme element aims to reduce chronic malnutrition among children under 5 years of age. To achieve this goal, development partners use a preventive approach during the first 1,000 days – from pregnancy until the child is two. Programmes use a synergistic package of nutrition-specific and sensitive interventions that help decrease chronic and acute malnutrition by improving preventive and curative health services, including: growth monitoring and promotion; water, sanitation and hygiene; immunisation; deworming; reproductive health and family planning; and malaria prevention and treatment.

33 This assessment considers only health sector spending on nutritional deficiencies. It is possible that some (or part) of the 10 interventions could fall under other sectors. Percentages, therefore, are an estimate rather than a holistic assessment of progress on financing for the investment framework.

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Chapter 6

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Appendix 2

1 For a detailed and thorough discussion of the methodology for monitoring progress towards the global maternal, infant and young child nutrition targets for 2025, see: WHO and UNICEF, 2017. Methodology for monitoring progress towards the global nutrition targets for 2025. WHO-UNICEF Technical Expert Advisory Group on Nutrition Monitoring. Technical report. Geneva: WHO; New York: UNICEF.

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ACRONYMS AND ABBREVIATIONS

ATNI	Access to Nutrition Initiative
BMI	Body mass index
CGIAR	Consortium of International Agricultural Research Centers
CSDH	Commission on the Social Determinants of Health (WHO)
CSO	Civil society organisation
CRS	Creditor Reporting System (DAC)
DAC	Development Assistance Committee
DHS	Demographic and health survey
EML	Essential Medicines List
FOPL	Front-of-pack labelling
GFF	Global Financing Facility (for Women, Children and Adolescents)
GLOPAN	Global Panel for Agriculture and Food Systems for Nutrition
GNPR	Global Nutrition Policy Review
HIC	High-income country
IFN	Investment Framework for Nutrition
IFPRI	International Food Policy Research Institute
IYCF	Infant and young child feeding
LIC	Low-income country
LMIC/s	Lower-middle-income country
MIC	Middle-income country
MICS	Multiple indicator cluster survey
MIYCN	Maternal, infant and young child nutrition
N4G	Nutrition for Growth
NCD	Non-communicable disease
NCP	Nutrition Care Process
ODA	Official development assistance
OECD	Organisation for Economic Co-operation and Development
R4D	Results for Development
R&D	Research and development
SBN	SUN Business Network
SDG	Sustainable Development Goal
SMART	Specific, measurable, achievable, relevant and timely
SUN	Scaling Up Nutrition
UHC	Universal health coverage
UMIC	Upper-middle-income country
UN	United Nations
UNICEF	United Nations Children's Fund
US	United States
WHA	World Health Assembly
WHO	World Health Organization
WRA	Women of reproductive age

GLOSSARY

Agro-processing	Processing of agricultural produce to make it usable as food for humans or animals, fibre, fuel or raw material for further processing. This can include processing for conservation and handling, such as drying, canning or bagging.
Anaemia	Anaemia is a medical condition in which a person's red blood cell (or, more precisely, haemoglobin) level is less than normal. Anaemia is a global public health issue faced by people in both low- and high-income countries, and is a particular concern for adolescent girls and women of reproductive age. There are many forms of anaemia, with different causes and treatment. The most common causes of anaemia include nutritional deficiencies, due to inadequate (or insufficient) intake of minerals (particularly iron) and vitamins from the diet.
Biodiversity	Biodiversity refers to the variety and variability of living organisms on Earth, including plants, animals and micro-organisms like fungi and bacteria.
Development assistance and official development assistance (ODA)	'Development assistance' (commonly known as aid) refers here to the resources transferred from development agencies, including private philanthropic organisations, to low- and middle-income countries. Development assistance is therefore wider than the 'official development assistance' (ODA) which is defined by the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) as foreign (government) aid to developing countries and territories on the DAC list of ODA recipients and to multilateral development institutions designed to promote their economic development and welfare.
Diet-related non-communicable diseases (NCDs)	*See* **Non-communicable diseases (NCDs)**.
Diet-related non-communicable disease (NCD) targets	Diet- (or nutrition)-related NCD targets are four of the ten global nutrition targets adopted at the World Health Assembly in 2013, to be attained by 2025, including for salt intake, raised blood pressure, adult obesity and adult diabetes. For example, Target 4 is 'Achieve a 30% relative reduction in mean population intake of salt/sodium'.
Dietary diversity	Dietary diversity (or dietary variety) refers to the variety in the number and type of foods in a person's diet over a reference period. There is a lack of consensus on the optimal standardised measure for dietary diversity. It is also used as a proxy measure for food security, adequacy of energy/nutrient intake, and diet quality.

Double burden of malnutrition	The 'double burden' of malnutrition is a term used to characterise the coexistence of undernutrition (including stunting, wasting, underweight and micronutrient deficiencies) *alongside* overweight, obesity and other diet-related NCDs. Different forms of malnutrition can coexist (or overlap) at any population level: country, city, community, household and individual. For example, a country can have high levels of both anaemia and obesity, and a child can suffer from both stunting and overweight.
Double-duty actions	'Double duty' is a term used to characterise a nutrition action (intervention, programme or policy) with the potential to tackle *both* undernutrition *and* overweight, obesity and other diet-related NCDs. For example, effective promotion of breastfeeding can avert stunting and also reduces the chances of diet-related NCDs later in life.
Equality and inequality	Inequality refers to differences, variations and disparities in health and living conditions among people (individuals and population groups) that are the outcome (or consequence) of unjust systems and processes that structure everyday conditions (*see* **Equity and inequity**). **Nutrition inequalities** are differences in people's nutritional outcomes, such as dietary intake, nutritional status and related conditions/diseases, influenced for example by location, age, gender, ethnicity and wealth.
Equity and inequity	Equity focuses on opportunities rather than outcomes and encompasses the idea of fairness or justice. Inequity adds a moral dimension, and can be defined as 'unfairness of opportunity', or lack of equitable access to systems and processes that structure everyday conditions, leading to inequalities (or unequal outcomes/consequences). In other words, equality of opportunity, or equity, influences equality of outcome. **Nutrition equity** here focuses on opportunities and barriers within food systems and health systems that affect access to healthy, affordable food, and quality nutrition care, thus leading to unequal nutrition outcomes (or nutrition inequalities).
Equity-sensitive nutrition action	A nutrition action (intervention, programme or policy) can be considered equity-sensitive (or equitable) if it specifically considers equity and how to address potential inequalities as part of its design, monitoring and evaluation.
Equity-sensitive nutrition data	Nutrition data can be considered equity-sensitive when it is granular (or disaggregated) enough to pinpoint inequalities in opportunities or access (i.e., inequities) and inequalities in outcomes. For example, this could mean data disaggregated to the local level and by key population characteristics, such as age, sex, ethnicity, education and wealth.
Food environment	Food environments are the physical, economic, political and sociocultural contexts that affect accessibility, availability, affordability and cultural/sensory perceptions of food. This in turn influences people's food choices, such as in acquiring, preparing and eating food, and their nutritional status.

Food and livestock value chains	**Food value chains** include the whole economic process of producing food, including farming and processing, and disposal of any waste or packaging. Sustainable food value chains do this in a way that ensures broad benefits for society and considers wider environmental impacts. **Livestock value chains** are the range of activities involved in producing a product derived from animals – such as meat, milk, eggs, fibre, leather or manure. They include all the phases of production, processing and delivery to final consumers.
Food security and insecurity	Food security means that all people, at all times, have access to enough safe and nutritious food for normal growth and development, enabling them to lead an active and healthy life. Food insecurity means the opposite, and can be at the individual, household, national, regional or global level.
Food system	A food system gathers all the elements (including environment, people, inputs, processes, infrastructures and institutions) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socioeconomic and environmental outcomes.
Fragility	Fragility refers to insufficient coping capacity of the state, system and/or communities to manage, absorb or mitigate" the risks they face, leaving people vulnerable to a range of shocks. Fragility can lead to negative consequences such as violence, humanitarian crisis or other emergencies
Geospatial data	Geospatial data is information about events, objects or phenomena specific to a particular geographical location. Examples include weather forecasts, satellite navigation systems (satnavs), geotagged social media posts (or geotagging), and malnutrition rates. Location is one way of disaggregating nutrition data, alongside other dimensions such as wealth and sex. Using geospatial data can help us pinpoint where malnourished people are located.
Global nutrition targets	Global nutrition targets here collectively refer to the World Health Assembly targets on both maternal, infant and young child nutrition (MIYCN), and on diet-related NCDs. These were adopted in 2012 (MIYCN) and 2013 (NCDs) by the World Health Assembly, to be reached by 2025. The 2025 global nutrition targets include targets for six MIYCN indicators: low birth weight, stunting in children under 5 years of age, wasting in children under 5 years of age, overweight in children under 5 years of age, anaemia in women of reproductive age, and exclusive breastfeeding. They also include targets for four diet-related NCD indicators in adults: salt intake, raised blood pressure, diabetes and obesity.
Indigenous foods	Indigenous food systems include all of the land, air, water, soil and culturally important plant, animal and fungi species that have sustained Indigenous peoples over thousands of years. Indigenous food systems are best described in ecological rather than neoclassical economic terms. In this context, an Indigenous food is one that has been primarily cultivated, taken care of, harvested, prepared, preserved, shared, or traded within the boundaries of specific territories based on values of interdependency, respect, reciprocity and ecological sensibility.

Malnutrition	Malnutrition, in all its forms, refers to both undernutrition (including stunting, wasting, underweight and micronutrient deficiencies) *and* overweight, obesity and other diet-related NCDs. It includes a range of diet-related conditions caused by not having enough calories, nutrients or quality (healthy) food, or having too much low-quality (or unhealthy) food.
Maternal, infant and young child nutrition targets	The maternal, infant and young child nutrition (MIYCN) targets are six global targets adopted at the World Health Assembly in 2012, to be attained by 2025, for: low birth weight, stunting in children under 5 years of age, wasting in children under 5 years of age, overweight in children under 5 years of age, anaemia in women of reproductive age, and exclusive breastfeeding. For example, Target 1 is 'Achieve a 40% reduction in the number of children under 5 who are stunted'.
Micronutrients and micronutrient deficiency	**Micronutrients** are dietary components, commonly known as vitamins and minerals. They are critical to health, despite being required in only small amounts. They include minerals such as iron, calcium, sodium, magnesium, zinc and iodine, and vitamins such as A, B group (such as folate), C and D. **Micronutrient deficiency** is caused by inadequate (or insufficient) intake or absorption of one or more vitamins or minerals and leads to suboptimal nutrition status. Although less common than deficiencies, taking in too many of some micronutrients, usually from supplementing with excess amounts, may also lead to adverse effects (micronutrient toxicity).
Non-communicable diseases (NCDs) and diet-related NCDs	NCDs are non-infectious chronic diseases that last a long time, progress slowly, and are caused by a combination of modifiable and non-modifiable risk factors, including lifestyle/behavioural, environmental, physiological and genetic factors. There are four main types of NCDs: cardiovascular disease (e.g., coronary heart disease, stroke), diabetes, cancer and chronic respiratory disease. Obesity is both a chronic disease and a risk factor for other NCDs. We refer to NCDs related to diet (or nutrition) as '**diet-related NCDs**'. These mainly include obesity, cardiovascular disease, diabetes and specific cancer types.
Nutrition-sensitive actions	Nutrition-sensitive actions are interventions, programmes or policies in sectors other than nutrition that address the underlying determinants (referred to as social determinants in this report) of fetal and child nutrition and development, and incorporate specific nutrition goals and actions. Sectors include agriculture, health, social protection, early child development, education, and water and sanitation. The social determinants that nutrition-sensitive actions can address include poverty, food insecurity, scarcity of access to adequate care resources, inadequate services for health or water and sanitation.
Nutrition-specific actions	Nutrition-specific actions are interventions, programmes or policies intended to have a direct impact on immediate determinants of nutrition. Nutrition-specific actions include: promotion of adequate food and nutrient intake, feeding, caregiving and parenting practices; and prevention of infectious diseases. Examples are breastfeeding promotion, disease management and treatment of acute malnutrition in emergencies.

Overweight and obesity	A person is overweight or obese if they have excessive fat accumulation that poses a risk to their health". Being obese means having more excessive fat than being overweight. Depending on age, there are different methods to classify overweight or obesity. Body mass index (BMI), which is a person's weight in kilograms divided by the square of height in metres, is used as a population-level screening tool to classify overweight or obesity in adults. The World Health Organization (WHO) defines overweight in adults as a BMI greater than or equal to 25kg/m^2, and obesity as a BMI greater than or equal to 30kg/m^2. See Appendix 1 for definitions of overweight and obesity by age as used in the present report.
Population-based intervention	A population-based intervention (or approach) is delivered to a group of individuals, or an entire population, as a whole – in contrast to an individual-based intervention where the intervention is delivered on individual basis.
Purpose code	A purpose code is used by donors reporting to the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) to capture more accurately where spending is going, in greater detail than simply by sector. The 'basic nutrition' purpose code captures nutrition-specific spending in the health sector. In 2017, an improved nutrition purpose code was adopted that aligns with the Lancet definition of nutrition-specific investments and WHO essential nutrition actions.
Risk factor	A risk factor is an attribute or characteristic of a person or something they are exposed to that increases their chance of developing a disease, infection or injury. If a person has more risk factors for a given disease, they are more likely to get it. Risk factors can be classified as modifiable or non-modifiable. Modifiable risk factors can be changed, such as through lifestyle changes (like diet, smoking and physical activity) and environmental conditions. Non-modifiable factors, such as age, sex and ethnicity, cannot be changed. For example, high salt intake is a modifiable dietary risk factor for coronary heart disease.
Smallholder and subsistence farmers	Smallholder farmers refer to rural producers, predominantly in developing countries, who farm using mainly family labour and for whom the farm provides the principal source of income. Subsistence farming is a livelihood strategy where the main output is consumed directly, where there are few if any purchased inputs, and where only a minor proportion of output is sold.
Staple foods and staple grains	Staple foods are foods, either plant-based or animal-based, that are eaten regularly and in such amounts that constitute the major part of a diet, and generally supply a large fraction of caloric and nutrient needs. Although they vary across geographic locations, the overwhelming majority of global staple foods are grains, such as corn, rice and wheat.

Stunting	Stunting refers to the impaired growth and development that children experience from poor nutrition, repeated infection and inadequate psychosocial stimulation. The World Health Organization (WHO) defines childhood stunting (moderate and severe) as a length- or height-for-age z-score more than two standard deviations below the median of the WHO Child Growth Standards. Children who are stunted are also more likely to be wasted. See Appendix 1 for the definition of stunting used in the present report.
Supermarkets	A supermarket is a shop with most of its selling space dedicated to processed and fresh food, serving an expanding income group. Supermarkets may also form part of consolidated retail chains adhering to private standards for food quality and safety.
Undernutrition	Undernutrition is a diet-related condition resulting from insufficient food intake to meet needs for energy and nutrients. It includes being underweight, too short (stunted) or too thin (wasted) for age or height, or deficient in vitamins and minerals (micronutrients). Being **undernourished** means suffering from undernutrition.
Underweight	Underweight is a form of undernutrition when body weight, or weight for height, is too low for a person's age. See Appendix 1 for the definition of underweight by age used in the present report.
Universal health coverage	Universal health coverage (UHC), also known as universal healthcare, is a healthcare system in which all people are assured access to essential healthcare services without facing financial hardship. UHC is clearly included in Sustainable Development Goal 3, which calls for all countries to ensure that everyone has access to a minimum set of high-quality healthcare interventions without facing financial hardship. The 2019 United Nations General Assembly had for the first time a dedicated focus on UHC, committing to achieve UHC by 2030. The underlying principle is that optimal health and wellbeing is a human right, for everyone, and not the privilege of only the better-off.
Universality	The principle of universality in nutrition refers to an inclusive approach, ensuring that everyone has fair access to the resources and services they need to achieve optimal nutritional health.
Wasting	Children who are too thin because of undernutrition are 'wasted'. The World Health Organization (WHO) defines childhood wasting a weight-for-length or -height z-score more than two standard deviations below the median of the WHO Child Growth Standards. Children who are wasted are more likely to be stunted. See Appendix 1 for the definition of wasting used in the present report.

SUPPLEMENTARY ONLINE MATERIALS

The following materials and tools are available on the Global Nutrition Report website at:

globalnutritionreport.org/resources

Country Nutrition Profiles bring together the best available data on child, adolescent and adult nutrition as well as information on intervention coverage, determinants, nutrition financing and demography, and include:

- global overview
- 6 regions and 21 sub-regions
- 194 countries

Nutrition for Growth Commitment Tracking presents the latest data on commitments to end malnutrition made by stakeholders at Nutrition for Growth summits, including:

- governments
- donors
- businesses
- civil society organisations
- UN agencies

Case Studies and Briefings showcase examples of where progress is being made to improve nutrition outcomes and highlight what can be done to accelerate progress towards a world free from malnutrition in all its forms.

About Malnutrition provides information on the different types of malnutrition and why malnutrition matters, while also highlighting the role of advocacy in achieving a world free from malnutrition.

You can read more about the important work of organisations and groups that are making progress to improve nutrition outcomes around the world on the **Global Nutrition Report** blog at:

globalnutritionreport.org/blog

SPOTLIGHTS

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SPOTLIGHT 3.1: **Addressing equity and social justice: India's Transformation of Aspirational Districts initiative**
Alok Kumar, Rajan Sankar and Basanta Kumar Kar

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