

**ECONOMIST
IMPACT**

Breaking the cycle of chronic child malnutrition in Sub-Saharan Africa



Sponsored by



Contents

- 3** About this research
- 5** Executive summary
- 8** The scale of the malnutrition challenge: why chronic malnutrition persists in Sub-Saharan Africa
- 12** A focus on malnutrition in Ethiopia, Kenya and Nigeria
- 18** The path forward: interventions and policy measures that scale
- 24** Conclusion
- 25** References

About this research

Breaking the cycle of chronic child malnutrition in Sub-Saharan Africa is an Economist Impact report, sponsored by Abbott. The report explores the health, social and economic impact of child malnutrition and stunting, and considerations for the implementation of interventions in the pursuit of global nutrition targets. The research takes a regional view of Sub-Saharan Africa with a focus on three countries: Ethiopia, Kenya and Nigeria.

As part of our research, we conducted a pragmatic literature review and convened an expert advisory panel to assess the scale of the challenge of stunting in Sub-Saharan Africa and opportunities and barriers for action at a regional, country and local level. We would like to thank the following individuals (listed alphabetically) who served as our expert panellists on the topic and provided guidance on the research:

- **Abeba Ayele**, manager, Child Health, Children's Investment Fund Foundation
- **Elizabeth Kamau**, senior lecturer, Department of Human Nutrition, Egerton University
- **Hajir Maalim**, regional director of the Horn and Eastern Africa, Action Against Hunger
- **Joyce Njoro**, lead technical specialist, nutrition and social inclusion, at the International Fund for Agricultural Development
- **Kelechi Ohiri**, ceo, Health Strategy and Delivery Foundation (HSDF) (former senior advisor to the ministers of health and finance in Nigeria)
- **Martha Nyagaya**, country director, Kenya, Nutrition International; chair, SUN Civil Society Alliance

We would also like to thank the following individuals who contributed their views and insights for this report via interviews:

- **Elaine Borghi**, unit head, Monitoring Nutrition Status and Food Safety Events Unit, Department of Nutrition and Food Safety, World Health Organisation (WHO)
- **Eric Schneider**, professor, Department of Economic History, London School of Economics
- **Francis Aminu**, director of health and nutrition, Aliko Dangote Foundation, Nigeria

This report is written by **Clare Roche** and edited by **Paul Tucker**.

The views of interviewees are their own and not necessarily those of their affiliated institutions. Although every effort has been taken to verify the accuracy of this information, Economist Impact cannot accept any responsibility or liability for reliance by any person on this report or any of the information, opinions or conclusions set out within it. The findings and views expressed in the report do not necessarily reflect the views of the sponsor.

Executive summary

Reducing child malnutrition is a major target set by leading multilaterals—goal 2.2 of the UN Sustainable Development Goals (SDGs) aims “to end all forms of malnutrition by 2030”.¹ A decline in malnutrition is also important to the achievement of other SDGs, especially SDG 1, “end poverty in all its forms everywhere”, and SDG 3, “ensure healthy lives, and promote wellbeing for all at all ages”. Child stunting is also an indicator for one of the nutrition goals endorsed by the World Health Assembly in 2012, which targets a 40% reduction in the number of children under five who are stunted by 2025 and a 50% reduction by 2030.²

Child malnutrition has a lifelong compounding impact on health, society and economies.

A well-established risk marker of poor child development, malnourished children are subject to physical and cognitive delays, often impeding them from reaching their complete developmental potential with significant and lifelong health, social and economic implications. Malnourished children are also more susceptible to infectious and chronic diseases and achieve lower levels of education and reduced adult income.³ Chronic malnutrition perpetuates poverty and curtails social and economic development in affected regions. To break its vicious cycle requires sustainable

and transformational solutions, long-term commitment, and investment of resources.

Undernutrition is estimated to cost the global economy upwards of US\$3trn per year, ranging from 3% to 16% of GDP in low-income settings.^{4,5} These immense costs result from foregone economic gains and lost investments in human capital associated with preventable child deaths and premature adult mortality linked to diet-related non-communicable diseases. Africa loses an estimated US\$25bn per year in costs attributed to child morbidity and mortality and impaired cognitive, physical and economic development due to malnutrition.⁶

The mirror image of this is the investment case—the potential gains to be derived from reducing malnutrition are significant. Data from the African Development Bank indicates that every US\$1 invested in nutrition interventions generates as much as US\$138 in improved health and increased productivity.⁶

The prevalence of undernutrition is highest in Sub-Saharan Africa, with sparse progress and even regression over the past decade.

Although stunting in children under five years of age is declining globally, in Africa the number of stunted children has increased, rising from 54.4m in 2000 to 61.4m in 2020; the number is

estimated to reach 61m by 2025.^{7,8} For countries in the region that are making progress in reducing the prevalence of stunting, the current trajectory is not fast enough to keep pace with population growth in children under five. It is estimated that the region is reducing stunting at a rate of 1.5% per year, compared with the 5.5% required to meet the global target set at the World Health Assembly in 2012.⁹

There is also large variation within regions and countries. While taking a regional view of Sub-Saharan Africa this paper focuses on the malnutrition challenge in Ethiopia, Kenya and Nigeria. Kenya and Nigeria are among the 20 countries with highest absolute burden of stunting.¹⁰ Ethiopia and Nigeria are not on track to meet global nutrition targets, and Kenya is one of the leaders in stunting reduction in the region.

The covid-19 pandemic and war in Ukraine, combined with ongoing conflict and climate change, have hindered recent progress and exacerbated ongoing malnutrition challenges.

The covid-19 pandemic has caused mass disruptions to global supply chains, while the war in Ukraine is causing further surges in food prices

and contributing to food insecurity. It is estimated that covid-19 led to an additional 130,000 deaths globally in children under five owing to diminished access to healthcare and food supplementation, with 52% of deaths occurring in Sub-Saharan Africa.¹¹ Climate change also poses a significant threat to the health and wellbeing of poor and vulnerable populations and will have a significant impact on food production and food security. According to the World Food Programme, an estimated 22m people are facing hunger as prolonged drought drives up food insecurity in the Horn of Africa.¹²

Growing populations, persistent health and economic challenges and the risk of adverse events such as climate breakdown and conflict mean that the goalposts in the quest to end child malnutrition are constantly moving, both in terms of the size of the target and the investment required. According to the 2021 Global Nutrition Report, the financial costs of addressing poor diets and malnutrition are rising as resources are falling. An additional US\$10.8bn is needed annually until 2030 to meet global nutrition targets.²

KEY POLICY TAKEAWAYS

Accelerating action against all forms of undernutrition is an economic necessity as much as a moral imperative. In an environment of constrained resources, investment should be directed towards a subset of interventions that target the drivers of stunting at a country, regional and community level; are appropriate to the local context; and maximise existing resources and capabilities. No single intervention will eliminate child malnutrition; however, a number of integrated policy actions and interventions can help to move the needle forward with far-reaching benefits for children's health, their communities, wider society and the economy:

1. Focus on the first 1,000 days while not leaving behind the children who are already stunted

Although the first 1,000 days is the most critical period for interventions against stunting and a crucial stage for future growth and development, accelerated linear growth in children can occur at later ages that might reverse stunting. Adolescence represents an important window for interventions after the first 1,000 days. Interventions that improve the nutritional status of adolescent girls, a group especially susceptible to the consequences of undernutrition, could potentially break the intergenerational cycle of poor growth and development.¹³ School-based interventions can also be particularly impactful in improving the nutritional status of already stunted children.¹⁴

2. Improve maternal health and education, and empower women and mothers

Mothers with a lower level of education and lower income are more likely to have malnourished and stunted children.³ Children born to young mothers are also more likely to experience adverse nutritional outcomes compared to children with older mothers. In Nigeria 37% of girls aged 15-19 have begun childbearing, and the figure is also above 20% in Kenya and Ethiopia.^{15,16} Policymakers should focus on improving maternal education and nutrition while also expanding and implementing nutrition interventions in antenatal, maternal and new-born care through interventions integrated into community healthcare.¹⁵

3. Favour policies that alleviate the burden of high food prices while supporting sustainable economic growth and development

Reducing stunting prevalence and improving nutrition status in Sub-Saharan Africa requires intense efforts to alleviate poverty at individual, household and community levels.¹⁵ Financial interventions such as tax exemptions and cash transfers that prioritise vulnerable households should be directed to support access to food and nutrition and boost local economies. Social protection such as cash transfer programmes can positively impact child nutrition status; however, such programmes should also be linked to outcomes in stunting and malnutrition.¹⁷

4. Enhance the role of community health workers while supporting cross-sector integration and resource sharing at local and community levels

Community health workers are an underutilised and often underfunded resource that can have a significant and sustainable impact on malnutrition and stunting.¹⁸ In Kenya, stunting has been introduced into the Community Health Strategy with efforts to combine work across sectors.¹⁹ Although we may never reach a point where we have optimal resources to tackle nutrition, optimising existing resources and improving collaboration, particularly at community and local levels, can help to manage risks and create a level of resilience.

5. Improve access to timely and relevant data to support smart allocation of national budgets

Choosing the right actions to resolve malnutrition and reduce stunting requires an understanding of the drivers of stunting at local, regional and national levels, as well as evidence of what works in policy terms, and details of the cost-effectiveness of immediate actions and future accrued costs if appropriate actions are delayed. There is a need for better financial management, budget execution and transparency. Strengthening the quality of surveillance data and building robust data collection systems for estimating current investments in nutrition are also required to improve the efficiency of nutrition spending.¹⁰

6. Advancing progress on child malnutrition requires coordinated, nutrition-sensitive and nutrition-specific interventions from the health and non-health sectors

Undernutrition is positioned as a health problem but it impacts—and is impacted by—various sectors ranging from agriculture, the economy, education, community development, social protection and the environment. Involvement and action from each sector is needed, from planning and implementation to monitoring and evaluation. Although many sectors have indicated that nutrition is a priority, there is a lack of understanding of the scale and complexity of the issue, and tangible action that transcends committing to global targets.

The scale of the malnutrition challenge: why chronic malnutrition persists in Sub-Saharan Africa

The World Health Organisation (WHO) defines malnutrition as “deficiencies, excesses or imbalances in a person’s intake of energy and/or nutrients”.²⁰ Malnutrition comprises undernutrition—which includes wasting (low weight for height), stunting (low height for age), underweight (low weight for age) and micronutrient deficiencies—and overweight, obesity and diet-related non-communicable diseases (NCDs).²⁰ Acute malnutrition or wasting, the most visible, severe and potentially life-threatening form of malnutrition, typically results from natural disaster, famine or war. It demands immediate response, usually through food distribution programmes. Chronic hunger, in the form of stunting and micronutrient deficiencies, is far more widespread yet often less visible.

Stunting refers to “being too short for one’s age”, defined as height for age more than two standard deviations below the WHO Child Growth Standards median.²¹ Micronutrient deficiencies (often referred to as “hidden hunger”) occur when the intake or absorption of vitamins and minerals is inadequate to sustain optimal health and development. Vitamin A, iron and iodine are among the most critical micronutrients whose deficiencies result in adverse health consequences.²²

Although the factors contributing to chronic malnutrition are complex and multifaceted, stunting and hidden hunger are slow and cumulative, broadly resulting from the failure to receive required nutrition over an extended time.²¹ Both stunting and hidden hunger are well-established risk markers of poor child development and adverse health and social consequences. Malnourished children are also more susceptible to infectious and chronic diseases and achieve lower levels of education and reduced adult income.³ Chronic malnutrition perpetuates poverty and curtails social and economic development in affected regions. Breaking this vicious cycle requires sustainable and transformational solutions, long-term commitment, and investment of resources.

The burden of child malnutrition is highest in Sub-Saharan Africa, and the region is not on track to reach global nutrition targets

Stunting and hidden hunger are recognised in the UN Sustainable Development Goals (SDGs) under Goal 2.2, which seeks “to end all forms of malnutrition by 2030”.¹ A decline in malnutrition is also important to achieve other SDGs, especially SDG 1, “end poverty in all its forms everywhere”, and SDG 3, “ensure healthy lives, and promote wellbeing for all at all ages”. Child stunting is

Breaking the cycle of chronic child malnutrition in Sub-Saharan Africa

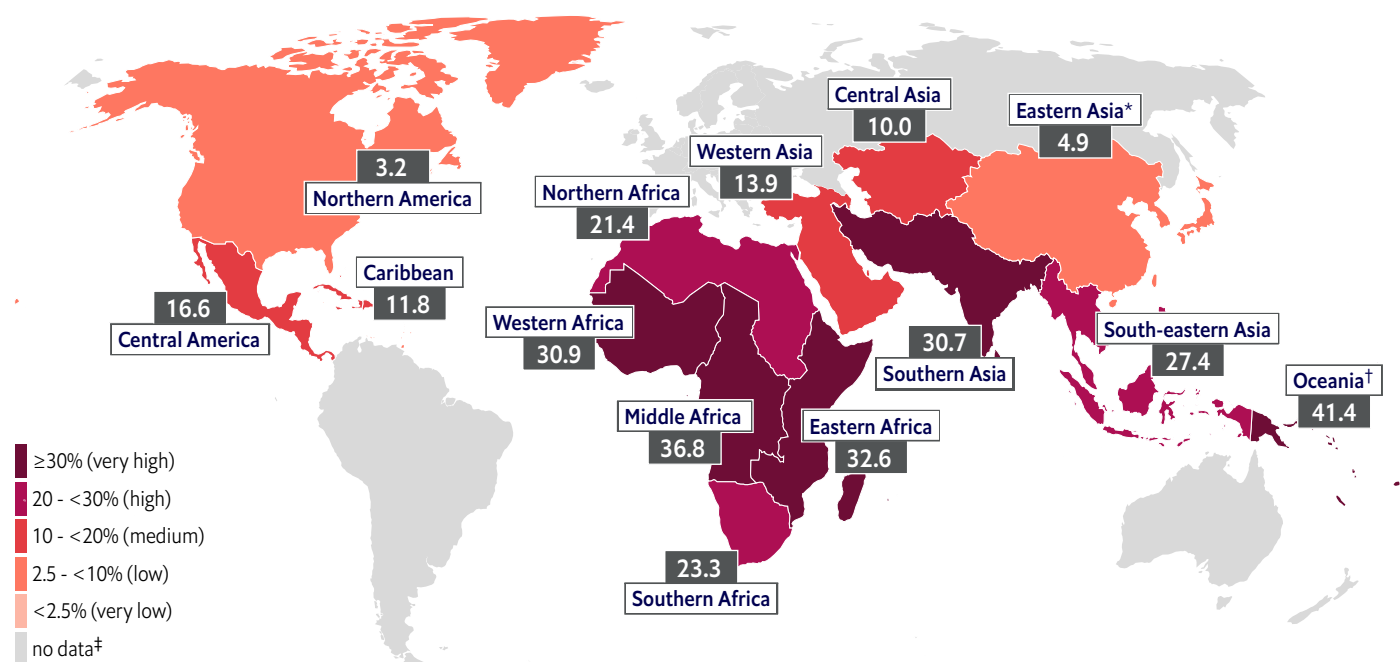
also an indicator for one of the nutrition goals endorsed by the World Health Assembly in 2012, which targets a 40% reduction in the number of children under five who are stunted by 2025 and a 50% reduction in the number of children under five who are stunted by 2030. There are currently no global targets to address micronutrient deficiencies (with the exception of anaemia, for which there is a World Health Assembly target of a 50% reduction of the condition in women of reproductive age by 2030).²

The prevalence of undernutrition is highest in Sub-Saharan Africa, with sparse progress and even regression over the past decade. Some 19.1% of the African population are malnourished, more than double the rate in Asia of 8.3%.²³ Stunting in children under five years of age is declining globally. While the prevalence of stunting declined from 41.5% in 2000 to 30.7% in 2020, Africa is the only region where the overall

number of stunted children has increased, from 54.4m in 2000 to 61.4m in 2020; the number is estimated to reach 61m by 2025.^{7,8} Over one-third of the world's stunted children are in Sub-Saharan Africa.²⁴ According to 2019 data from the African Development Bank, the prevalence of stunting is above 30% in half of African countries and only seven African countries have a prevalence below 19%.⁶ These figures do not consider the immediate and potential long-term impacts of covid-19 and the ongoing global food crisis prompted by the war in Ukraine.

For countries in the region that are making progress in reducing the prevalence of stunting, the current trajectory is not steep enough to keep pace with population growth in children under five and meet a global target set at the World Health Assembly in 2012. It is estimated that the region is reducing stunting at a rate of 1.5% per year, compared with the required 5.5%.⁹

Figure 1: Percentage of stunted children under 5 years of age, by UN sub-region, 2020



Source: UNICEF, WHO, World Bank Group joint malnutrition estimates, 2022 edition
Graphic insight: Economist Impact

*Eastern Asia including Japan;

†Oceania excluding Australia and New Zealand;

‡No estimate provided for South America, Europe, or Australia and New Zealand due to insufficient population coverage.

“Although there is a decrease [in the prevalence of stunting], the under-five population is growing, so the progress is not in proportion to the growth in the number of people who are stunted.”

Elaine Borghi, unit head, Monitoring Nutrition Status and Food Safety Events Unit, Department of Nutrition and Food Safety, World Health Organisation

Child malnutrition has a lifelong compounding impact on health, society and economies

Undernutrition is estimated to cost the global economy upwards of US\$3trn per year, ranging from 3% to 16% of GDP in low-income settings.⁴ These immense costs result from foregone economic gains and lost investments in human capital associated with preventable child deaths and premature adult mortality linked to diet-related NCDs. Further costs are incurred through impaired learning potential, poor school performance, compromised adult labour productivity and increased healthcare costs. Africa loses an estimated US\$25bn per year in costs attributed to child morbidity and mortality and impaired cognitive, physical and economic development due to malnutrition.⁵

The lifelong and compounding effects of malnourishment and stunting begin in early childhood. Stunted and malnourished children usually belong to the most socioeconomically disadvantaged population groups. They often start school later than other children, progress more slowly across grades and perform poorly.

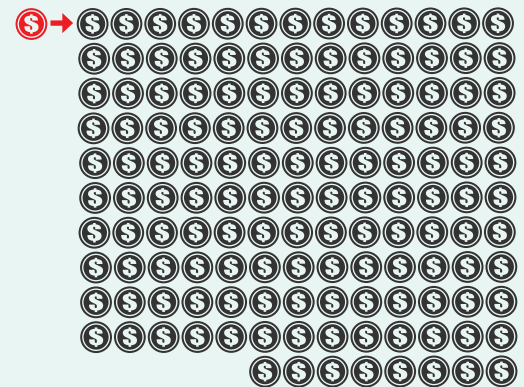


Undernutrition is estimated to cost the global economy upwards of **US\$3trn per year**⁴

These deficits are carried into adulthood, with stunted children earning 20% less as adults than their non-stunted counterparts.²⁵ The impact is transgenerational—mothers affected by stunting are more likely to have children who suffer from stunting, perpetuating the cycle of undernutrition and poverty.

The potential gains derived from reducing malnutrition are significant. Data from the African Development Bank indicates that every US\$1 invested in nutrition interventions generates as much as US\$138 in improved health and increased productivity.⁶

Every US\$1 invested in nutrition interventions generates as much as **US\$138** in improved health and increased productivity.⁶



Growing populations and persistent health and economic challenges, including covid-19 and the risk of adverse events such as climate breakdown and conflict, mean that the goalposts that must be aimed at to end child malnutrition are constantly moving, both in terms of the size of the target and the investment required. According to the 2021 Global Nutrition Report, the financial costs of addressing poor diets and malnutrition are rising as resources are falling. An additional US\$10.8bn is needed annually until 2030 to meet

global nutrition targets on stunting, wasting, maternal anaemia and breastfeeding.²

The covid-19 pandemic and war in Ukraine, combined with other ongoing conflicts and climate change, have hindered recent progress and exacerbated ongoing malnutrition challenges

It is estimated that covid-19 led to an additional 130,000 deaths globally in children under five owing to diminished access to healthcare and food supplementation, with 52% of deaths occurring in Sub-Saharan Africa.¹¹ Reports

“Many countries have very fragile economies, and there is insecurity across the whole region, associated with the rising costs of living, and inability to have access to nutritious foods.”

Francis Aminu, director of health and nutrition, Aliko Dangote Foundation, Nigeria

indicate that the pandemic adversely affected development on 43% of country commitment goals, primarily owing to the diversion of essential resources. Humanitarian aid, social protection and nutrition services faced disruption as many countries in Sub-Saharan Africa were forced to reallocate scarce health and social resources to prevent and treat covid-19.²

The indirect health and socioeconomic effects of the covid-19 pandemic will have a lasting impact on malnutrition and child stunting. Partly this is because of the impairment of public health programmes to address malnutrition, as well as

HIV, malaria and other health crises. In addition, disruption to household and family income and supply chains and transportation have limited access to nutrient-rich foods.

Climate change also poses a significant threat to the health and wellbeing of poor and vulnerable populations and will have a significant impact on food production and food security. According to the World Food Programme, an estimated 22m people are facing hunger as prolonged drought drives up food insecurity in the Horn of Africa.¹² The East Africa region is currently experiencing its most severe drought in four decades, with extreme weather impacting eastern Ethiopia and northern Kenya in particular.²⁶ Other broader geopolitical factors, such as trade policies, the disruption to global supply chains during covid-19 and the war in Ukraine, further heighten the risk of food insecurity, a significant determinant for malnutrition and stunting.

Although progress against the reduction of child malnutrition has been slower in Africa than in other regions, there is also large variation within countries and regions. Kenya and Nigeria are among the 20 countries with the highest absolute burden of stunting.¹⁰ Ethiopia and Nigeria are not on track to meet global nutrition targets, and Kenya is one of the leaders in stunting reduction in the region.

Regional and global factors hindering progress against child malnutrition

1. Covid-19 pandemic
2. War in Ukraine
3. Ongoing conflict
4. Climate change
5. Global food, energy and economic crisis



A focus on malnutrition in Ethiopia, Kenya and Nigeria

Ethiopia

Ethiopia is making progress towards reducing child malnutrition; however, the rate of progress is insufficient to meet global targets

The prevalence of stunting in children under five in Ethiopia has been declining steadily, with a reduction from 47.5% in 2000 to 35.3% in 2020.⁷ However, at the current rate, this is insufficient to meet the global target of a 40% reduction in the number of children under five who are stunted. The national average annual reduction rate of stunting was estimated at 2.3% in 2020, against a target of 5.3%.²⁷

The transgenerational social and economic impacts of child malnutrition are visible in Ethiopia today—it is estimated that child

mortality associated with undernutrition has reduced Ethiopia's workforce by 8%, and 67% of the adult population in Ethiopia suffered from stunting as children.²⁸

Ongoing conflict in Ethiopia's northern regions, growing food insecurity, climate vulnerabilities and contextual factors pertaining to maternal health, poverty and access to healthcare threaten to reverse recent progress

Although stunting prevalence at the national level is declining, regional variations remain. The prevalence of stunting varies from 13.9% in Addis Ababa, the capital, to 48.7% in the northern Tigray region.²⁷ The northern regions of Amhara, Afar and Tigray face ongoing conflict, with over 13m people requiring humanitarian food assistance. The war in Ukraine has also exacerbated food insecurity with three quarters of World Food Programme and government wheat coming from Ukraine. The country is particularly vulnerable to climate shocks with flooding, drought, temperature changes and earthquakes dramatically affecting malnutrition levels.²⁹

Poor maternal nutrition and a low childbearing age contribute to the cycle of undernutrition and stunting. Some 22% of women of reproductive age in Ethiopia are undernourished, and their



children are consequently predisposed to low birth weight, short stature and low resistance to infection.³⁰ Other key contributing factors and predictors of undernutrition include large family size, poor wealth status (47.7% of the population live below the US\$3.20/day poverty line), inadequate healthcare utilisation, and low access to safe drinking water, sanitation and hygiene (WASH).⁸

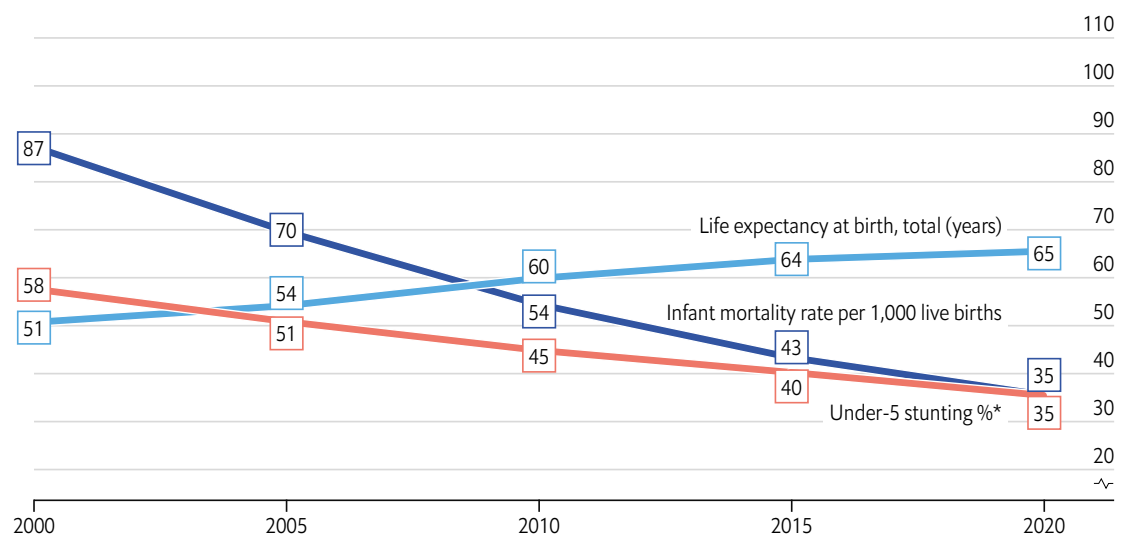
Driving progress towards child malnutrition targets in Ethiopia

The decline in child stunting over the past decade in Ethiopia is partly due to action and collaboration among nutrition-specific and nutrition-sensitive sectors, including the health, agriculture and education sectors. In addition, the decline has also been driven by improved access to healthcare (including the integration of maternal health interventions such as delivery by a skilled birth attendant and antenatal care), WASH and sanitation interventions (including improvements in water source access and

reductions in open defecation) and education (including the scale-up of universal primary education).²⁷

National commitment to improving nutrition in Ethiopia is strong, with several national, multi-stakeholder policies and plans to push progress towards 2030 targets. The Seqota Declaration Implementation Plan, a multi-year, multisector plan introduced in 2015, aims to end undernutrition, the underlying causes of undernutrition and stunting in children under two years by 2030.³³ A 2022 assessment reported that the plan had contributed to a 3% reduction in the stunting of children under two years, with improvements in complementary feeding identified as the primary driver.³⁴ The National Food and Nutrition Policy (NFNP) 2019-29 promotes a coordinated and comprehensive approach to food and nutrition security and stresses the importance of access to nutritious foods and evidence-based decision-making to address child stunting.³⁰

Figure 2: Stunting, life expectancy and infant mortality in Ethiopia, 2000-2020



Sources: UNICEF, WHO, World Bank Group Joint Malnutrition Estimates, May 2022 Edition⁷; World Bank (life expectancy and infant mortality rate per 1,000 live births)^{31,32}
Graphic insight: Economist Impact

*Percentage of children aged 0–59 months who are more than two standard deviations below median height for age of the WHO Child Growth Standards

Although the Seqota Declaration and the NFNP represent a welcome commitment towards multistakeholder collaboration on nutrition, the level of prioritisation among stakeholders may vary. “[Nutrition] is seen as a priority by the health sector but is it seen as a priority by the other ten or eleven signatories of the National Nutrition Plan? I don’t know,” says Abeba Ayele, manager for Child Health at the Children’s Investment Fund Foundation. However, she adds that “Ethiopia has had a positive experience bringing two sectors—health and agriculture—to meaningfully join hands to implement interventions, the lessons of which can be expanded to the other sectors.”

Recommended interventions to scale up action on child malnutrition in Ethiopia include promoting access to and the utilisation of nutrition-sensitive health services, continuing scale-up of complementary feeding practices and local food processing, improving the education of mothers and young girls, and exploring further opportunities in bio-fortification (breeding crops to make them more nutritious).³⁵ Nutrition strategies should also take more targeted approaches that focus on disadvantaged and vulnerable groups such as poorer households in rural areas and the country’s north.

“Kenya is one of the champions in promoting stunting reduction, and this is reflected in its progress. The government promotes universal health coverage, and its commitment to improving nutrition is included in national policies. The government also continues to increase the budget for nutrition.”

Elaine Borghi, Department of Nutrition and Food Safety, World Health Organisation.

Kenya

Kenya is on course to meet the 2025 and 2030 global targets for stunting reduction, despite reports of stalled progress in recent years

The prevalence of stunting in Kenya has declined from 38.9% in 2000 to 19.4% in 2020. Kenya is below the average for the Africa region (30.7%).³⁶ The latest 2022 Kenya Demographic and Health Survey, which is currently being conducted, should provide a clearer picture of the trajectory of child malnutrition and stunting.³⁷ Elizabeth Kamau, a senior lecturer at Egerton University in Kenya, comments that we should “expect a loss of some of the malnutrition gains—somewhat as a result of covid-19.”

According to the 2019 Cost of Hunger in Africa (COHA) study, Kenya loses an estimated 6.9% of its GDP owing to undernutrition.²¹ The study also estimated that undernutrition will cost Kenya approximately US\$38.3bn in lost GDP owing to losses in workforce productivity in 2010-30 (not including additional losses due to the covid-19 pandemic).³⁸ The COHA study estimated that almost one in five child deaths in Kenya is associated with undernutrition, which is also associated with over 90% of illnesses in children.²¹

National progress against child malnutrition in Kenya masks regional disparities, and the current economic crisis threaten food insecurity, particularly in vulnerable regions

There is a significant disparity in the prevalence of stunting across Kenya. The highest prevalence of stunting in children under five, recorded in West Pokot and Kitui, is 46%, and the lowest, in the capital, Nairobi, at less than 16%.³⁹

Kenya continues to face severe food insecurity, which is exacerbated by the current economic crisis and war in Ukraine—more than 2m people in Kenya require food aid, according to recent estimates.²⁶ In December 2022, analysis by the Integrated Food Security Phase Classification

(IPC) estimated that 884,464 children aged 6-59 months in Kenya's arid and semi-arid lands (ASAL), were acutely malnourished and 29% of the region's population, or 4.4m people, were facing high levels of acute food insecurity.⁴⁰ Agriculture is the backbone of the economy in Kenya, employing more than 75% of the workforce and accounting for over a quarter of GDP. Agricultural productivity is stagnating as a result of climate change and frequent drought, aggravating food insecurity and contributing to rising poverty and malnutrition.³⁸

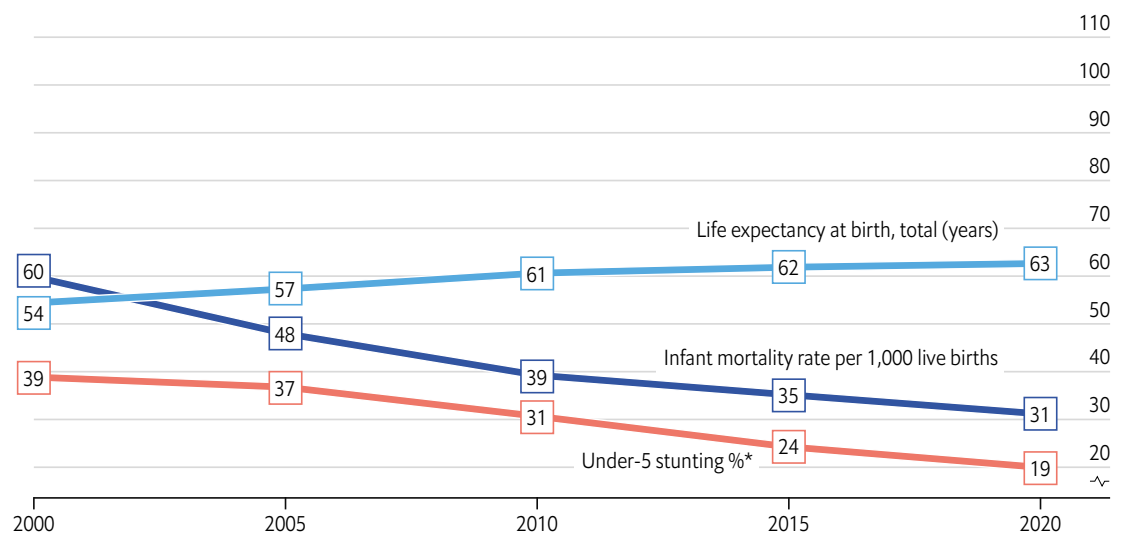
Driving progress towards child malnutrition targets in Kenya

The nutrition-related interventions of Kenya Vision 2030, a national development programme launched in 2008, are expected to reduce child mortality by 30% and increase GDP by 3% if implemented to scale by 2030.²¹ The Kenya Nutrition Action Plan 2018-22 (KNAP) aims to accelerate and scale-up efforts towards the elimination of malnutrition as a public health

problem in Kenya by 2030.^{21,38} Although the KNAP provides a framework and guidance to support the development of country level plans, translating "policies to action at a household, individual and community level is a big challenge," says Dr Kamau, adding that funding is also "among our biggest challenge—we have 47 small [county-level] governments. Most don't consider nutrition a priority."

The progress in stunting reduction in Kenya is linked to improvements in a number of areas, including enhanced nutrition services, nutrition governance legislation, supportive economic policies and community health initiatives.³⁸ Kenya also performs well in terms of gender equity and women's empowerment.⁴³ Priorities to drive further reduction in stunting prevalence include addressing disparities among vulnerable regions and targeting resources to communities with the highest burden and risk factors for malnutrition and stunting.

Figure 3: Stunting, life expectancy and infant mortality in Kenya, 2000-2020



Sources: UNICEF, WHO, World Bank Group Joint Malnutrition Estimates, May 2022 Edition⁷; World Bank (life expectancy and infant mortality rate per 1,000 live births)^{41,42}
Graphic insight: Economist Impact

*Percentage of children aged 0-59 months who are more than two standard deviations below median height for age of the WHO Child Growth Standards

Nigeria

Progress against nutrition targets in Nigeria is not keeping pace with rapid population growth

While Nigeria has made some progress towards achieving the global target of a 40% reduction in the prevalence of stunting in children under five, the current prevalence rate of 35.3% is still slightly above the average for the Africa region (30.7%).^{7,44} Approximately 2m children suffer from severe acute malnutrition, of which only 20% have access to treatment. Acute malnutrition also effects about 7% of women of childbearing age.⁴⁵

High rates of malnutrition pose significant public health and development challenges for Nigeria. Stunting and the related factors of poor cognitive development, lower performance in education and low productivity in adulthood all contribute to estimated economic losses of 11% of GDP.⁴⁵

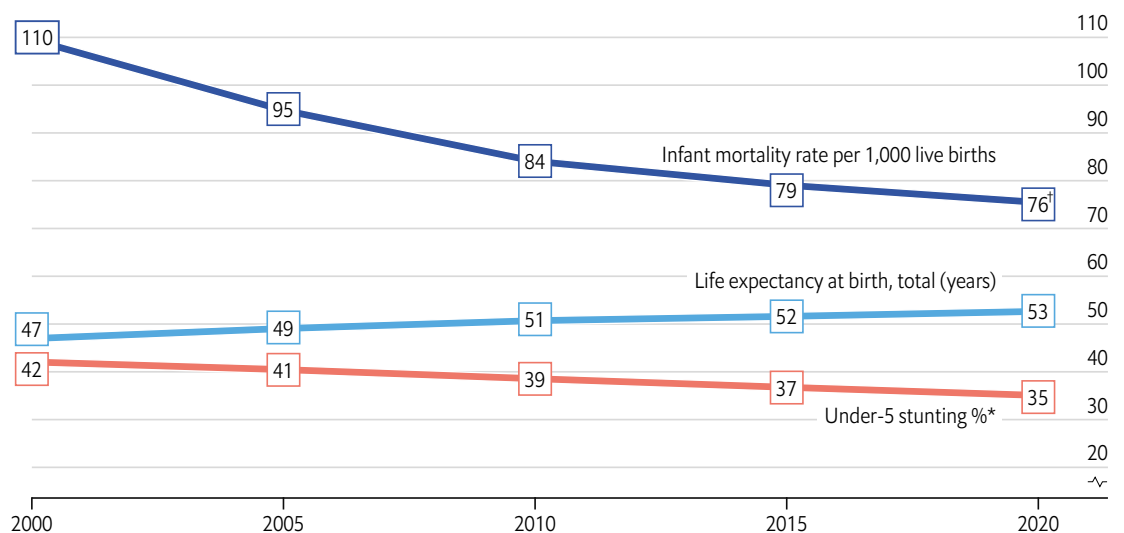
Nigeria is the most populous nation in Africa. With a high fertility rate of 5.4 children per woman, the

population is also growing at an annual rate of 2.6% and is expected to reach 401m by 2050.¹⁶ If the country fails to contain the prevalence of stunting and malnutrition, particularly amid the current economic and political climate, there is a risk of compounding social and economic challenges and holding back economic growth.

Ongoing conflict, food insecurity and economic uncertainty may push more of Nigeria's population into poverty, deepening the cycle of child malnutrition

Conflict in north-eastern Nigeria, where the prevalence of stunting in children under 5 is over 40% in many states, has displaced more than 1.8m people within the country and forced almost 240,000 people to flee into neighbouring Cameroon, Chad, and Niger, further straining food resources and aggravating the risk of malnutrition in the wider region.⁴⁶ The conflict has also disrupted agricultural and income-generating activities, reducing household purchasing power, resulting in famine in some areas.¹⁶

Figure 4: Stunting, life expectancy and infant mortality in Nigeria, 2000–2020



Sources: UNICEF, WHO, World Bank Group Joint Malnutrition Estimates, May 2022 Edition⁷; World Bank (life expectancy and infant mortality rate per 1,000 live births)^{47,48}
Graphic insight: Economist Impact

*Percentage of children aged 0–59 months who are more than two standard deviations below median height for age of the WHO Child Growth Standards
†2018 data

Among the other compounding factors associated with food insecurity and malnutrition in Nigeria are inadequate diet, poor infant and young child feeding practices, high rates of illness, lack of access to healthcare and WASH, irregular rainfall, high unemployment, and poverty. Food prices have been rising while GDP is falling. In recent years, diet-related NCDs such as obesity and diabetes have also risen as a result of increased globalisation, urbanisation, lifestyle transition and other socio-cultural factors.¹⁶

Driving progress towards child malnutrition targets in Nigeria

Although there has been a reduction in the prevalence of stunting over the past few decades, progress has been slow and uneven, and Nigeria is not on track to meet global stunting reduction targets. There is significant disparity across the country, with some states seeing an increase

in stunting rates.⁴⁹ The causes of stunting and drivers of stunting reduction also vary across rural and urban areas, geopolitical zones, and among different age groups, meaning that understanding the contextual determinants at a local level is essential to prioritising and targeting interventions.⁴⁹

The country's National Multi-Sectoral Plan of Action for Food and Nutrition 2021-25 aims to reduce the stunting rate among under five year olds to 18% by 2025 by scaling-up high-impact nutrition-specific and nutrition-sensitive interventions. The National Food and Nutrition Policy aims to attain optimal nutritional status for all Nigerians by 2024, with an emphasis on vulnerable groups including infants, children, adolescents, women of reproductive age and vulnerable populations such as those who are living with HIV or have been internally displaced.⁵⁰ To date, national plans have largely concentrated on alleviating the burden of severe childhood wasting—this declined from 18% in 2013 to 7% in 2018—with interventions focused on directly distributing nutrient-dense food through community initiatives.⁵¹ Further efforts are needed to expedite progress against stunting, including addressing the underlying causes of malnutrition and socioeconomic inequalities and improving multisector coordination efforts.

“Nigeria practices full fiscal devolution, [and] there are pockets of the country that bear a disproportionate burden of stunting compared to others. In some parts of the country, stunting rates are above 50% while in other parts stunting is below 17%.

National level averages can sometimes mask the severity of the problem.”

Kelechi Ohiri, ceo at HSDF, a not-for-profit in Nigeria, and former senior advisor to the ministers of health and finance of Nigeria.

The path forward: interventions and policy measures that scale



In an environment of constrained resources, the world may not be able to afford the US\$97bn needed to achieve the global nutrition targets by 2030—a conservative estimate that does not include additional costs for mitigating covid-19 and the impact of the war in Ukraine.⁵² Investment should be directed towards a subset of interventions that target the drivers of child malnutrition at a country, regional and community level, are appropriate to the local context and maximize existing resources and capabilities.⁵³

“The drivers will be different at country level, at regional level and zonal levels and we need to tailor interventions to what is really driving stunting in these areas,” says Martha Nyagaya, Kenya country director for Nutrition International and the Chair of the SUN Civil Society Alliance.

Between and within countries, intervention priorities will differ based on baseline nutrition indicators and the resources available. “It is a broad range of factors, and it is probably going to be country-specific,” says Eric Schneider, professor in the Department of Economic History at London School of Economics, outlining the challenge in identifying the country-specific determining factors for reducing stunting. “This makes it difficult to come up with very general trends and generic recommendations of what policymakers should do.” For example, he adds, “studies have found that in Zambia bed nets are really important in determining the reduction in stunting, whereas in Senegal, healthcare is more important.”

No single intervention will eliminate child malnutrition; however, a number of integrated policy actions and interventions can help to move the needle forward with far-reaching benefits for children’s health, their communities, and the wider society and economy.

Focus on the first 1,000 days while not leaving behind children who are already stunted

The 1,000 days that approximately span a child's conception and second birthday are cited as the most crucial window of opportunity for nutrition interventions.⁵⁴ Often this results in a strong policy focus on preventing stunting in young children and less on treating children who are already stunted.

Although this first 1,000 days is the most critical period for interventions against stunting and a crucial stage for future growth and development, accelerated linear growth in children can occur at later ages that might reverse stunting. A recent study looking at the impact of the Second World War on Japanese children challenges the consensus that children exposed to nutritional shocks early in life cannot recover and also suggests that exposure to nutrition shocks in late childhood and adolescence can negatively impact growth.⁵⁵ Adolescence represents an important window for interventions, for example. Interventions that improve the nutritional status of adolescent girls, a group especially susceptible to the consequences of undernutrition, could potentially break the intergenerational cycle of poor growth and development.¹³



School-based interventions can be particularly impactful in improving the nutritional status of already stunted children.¹⁴ “In Nigeria, school feeding programmes have a lot of impact, not just on nutrition but also on keeping children in school,” says Kelechi Ohiri, ceo at HSDF and a former senior advisor to the ministers of health and finance in Nigeria. Dr Ohiri also notes that while school-based programmes are among the more expensive nutrition interventions, they are “a critical part of the national social safety-net programme”.

Whether improvements beyond the first 1,000 days can overcome deficits in cognitive development, in addition to physical growth, remains an important question and area of research.⁵⁶ However, it is important that nutrition interventions do not leave these children behind. “Don’t give up on these kids who are already stunted,” says Dr Schneider. “Even if we cannot precisely predict the extent that these factors matter, they can make a really big difference in terms of [children’s] growth and overall health.”

Although efforts should not replace the emphasis on preventing stunting and targeting children in their first 1,000 days, policymakers should incorporate older-age interventions to reduce the burden on the 61.4m children who are stunted in Africa today.⁷

Improve maternal health and education and empower women and mothers

Given that critical risk factors for stunting begin in utero and continue for the first two years of life, interventions targeting maternal health are fundamental to improvements in stunting and undernutrition.⁵⁷ Mothers with a lower level of education and with lower income are more likely to have stunted children, often as a result of not being able to obtain specific information related to child stunting, as well as experiencing more difficulty affording adequate food to provide a nutritious and diverse diet.³

“Children should have the right to grow to their full potential irrespective of where they live or their gender. Improving the diets of all children and strengthening the status of women, improving sanitation and reducing poverty and inequities is certainly the right path to positively impact human capital and break the vicious cycle of inequality.”

Elaine Borghi, Department of Nutrition and Food Safety,
World Health Organisation



Children born to young mothers are also more likely to experience adverse nutritional outcomes than children with older mothers.¹⁵ Young or adolescent girls are more likely to be malnourished and have a low-birth-weight baby who is consequently more likely to become a malnourished child. In Kenya, almost 20% of girls aged 15-19 have either had a live birth or are pregnant with their first child.⁵⁸ In Ethiopia over 27% of girls have a child by age 19 (this has decreased from 33.6% in 2011).³⁰ In Nigeria this figure is significantly higher, with 37% of girls beginning childbearing by age 19.¹⁶

Policymakers should focus on improving maternal education and nutrition while also expanding and implementing nutrition interventions in antenatal, maternal and new-born care through interventions integrated into community healthcare.¹⁵

Empowering women positively impacts human development, labour supply, productivity, and economic growth and development.⁵⁹ Promoting female education and women’s educational attainment is essential not only to improving nutrition outcomes but also to boosting wider socioeconomic growth and resilience. There

is also a strong association between women’s empowerment and children’s nutritional status. “Empowering women and girls will increase community resilience,” says Hajir Maalim, regional director of the Horn and Eastern Africa for Action Against Hunger.

Favour policies that alleviate the burden of high food prices while supporting sustainable economic growth and development

Sub-Saharan Africa is particularly vulnerable to food insecurity—adverse climate events are disproportionately common in the region (it is subject to one-third of the world’s droughts).⁶⁰ The war in Ukraine and the pandemic are also adding to food shortages and high prices, the former as a result of mass disruptions to supply chains, and the latter through surging food prices and increased food insecurity. According to the UN, 44% of the wheat imported by African counties in 2018-20 came from Ukraine and Russia,¹¹ and reports from the African Development Bank indicate that wheat prices increased by 45% in the first three months of the war.⁶¹

The pandemic caused a sizable shock to the economies of Sub-Saharan Africa. The informal sector, which accounts for over 80% of the

region's jobs, has been severely impacted, making it impossible for large parts of the population to earn a secure income.^{11,62} Reducing stunting prevalence and improving nutrition status will require intense efforts to alleviate poverty at household and community levels.¹⁵

Financial interventions such as tax exemptions and cash transfers that prioritise vulnerable households should be directed to support access to food and nutrition and boost local economies. Cash-transfer programmes should also be linked to outcomes in stunting and malnutrition.⁶³ For example, Ethiopia's Productive Safety Net Programme, a government social protection programme targeting food-insecure households introduced in 2015, was redesigned to include a nutrition-sensitive goal directly related to improving the quality of diets of children aged 6-24 months, following findings that the programme was effective at reducing food security but had no measurable impact on stunting and wasting.¹⁷

The role of international aid must also be complementary to national and local efforts to strengthen, build capacity and empower communities to support growth and sustainability and take ownership in driving progress against malnutrition and stunting. According to Joyce Njoro, lead technical specialist on nutrition and social inclusion at the International Fund for Agricultural Development, the agriculture sector provides increasing opportunities to involve women and young people while supporting prospects for economic growth. "Expanding employment opportunities in the food sector can support food security, affordability and economic growth, contributing to the reduction and prevention of stunting."

Enhance the role of community health workers while supporting cross-sector integration and resource sharing at local and community levels

Community health workers are an underutilised and often underfunded resource that can have a significant and sustainable impact on malnutrition and stunting.¹⁸ "We have neglected empowering communities. We need to empower communities with knowledge and with resources when we talk about stunting and undernutrition" says Dr Ayele.

In Kenya, stunting has been introduced into the Community Health Strategy with efforts to combine work across sectors.^{19,38} Dr Kamau provides one example of successful integration, a programme in which community health workers worked with agriculture extension workers to improve dietary diversity. In another programme, she adds, "health workers are working with the fisheries department, trying to bring different sectors together at the ground level where they can meet households, talk to individuals and work together on the complexity of the nutrition issue." But Dr Kamau also states that, while Kenya's community health workers programme is performing well, funding is needed to scale the programme. There is also a need for consistent



data collection using technology in place of manual forms. “This data could provide more specific insights into the drivers [of] stunting”.

Although we may never reach a point where we have optimal resources to tackle nutrition, optimising existing resources and improving collaboration, particularly at community and local levels, can help to manage risks and create a level of resilience. “Political support for nutrition at all levels has to be in place to guarantee adequate coordination structures,” says Francis Aminu, director of health and nutrition at Aliko Dangote Foundation in Nigeria. “However, at the community level people don’t live their lives in sectors; but live in families and villages, where all the issues of everyday life converge.” Understanding communities and working with local community actors, says Dr Aminu, “is when we apply systems thinking to link efforts that improve household resources and maximize the use of resources for education, food, health, WASH, and other nutrition needs in an integrated manner.”

Improve access to timely and relevant data to support smart allocation of national budgets

Choosing the right set of actions to resolve malnutrition and reduce stunting requires an understanding of the drivers for stunting (at national, regional and local levels), evidence of what works in policy terms, and details of the cost-effectiveness of immediate actions and future accrued costs if appropriate actions are delayed.

One of the main barriers to progress against child malnutrition and the successful implementation of proven interventions is the underutilisation of allocated budgets. Spending and allocation are often not tracked accurately, meaning that we do not know which investments are having the largest impact. “Budget execution is a good reflection of how we plan, implement and use resources,” says Dr Ohiri. “Even when the money

is raised the budget is 60-70% executed, and that is consistent across states.” In a study from Kenya, programme management costs, which include capacity building, monitoring and evaluation and general programme overheads, accounted for 60% of the direct service delivery cost of nutrition programmes.¹⁰ There is a need for better financial management, budget execution and transparency. Strengthening the quality of surveillance data and building robust data collection systems for estimating current investments in nutrition are also required to improve the technical efficiency of nutrition spending.¹⁰

Accurate and timely data can also help policymakers to direct interventions to where they are most needed, avoid duplication and support layering interventions for maximum impact. “Timely, relevant and reliable data is very important. We have data at the country level but the analysis at the regional level and building the synergy between different country programmes is lacking” says Mr Maalim.

What data is collected and how progress is measured is also important. “We need to be consistent on the metrics we want to measure,” says Ms Njoro. “If we have a whole suite of metrics, it takes time and is expensive. Agreeing on the type of metrics we want to measure brings in efficiency.”

Advancing progress on child malnutrition requires coordinated, nutrition-sensitive and nutrition-specific interventions from the health and non-health sectors

Undernutrition is positioned as a health problem but it impacts and is impacted by various sectors, spanning agriculture, economy, education, community development, social protection and the environment. Involvement and action from each sector is needed, from planning and implementation to monitoring and evaluation. “There are many factors outside of health that impact nutrition,” says Dr Ohiri. “To understand

which interventions should be prioritised and where investments should be made, we need to take an expanded view.”

It is now widely acknowledged that tackling child malnutrition at scale requires coordinated actions from multiple sectors. “Child malnutrition is an enormous problem, but it is solvable. It is a multifaceted, multisectoral, and far-reaching problem—and the movement to end it should be, too.” says Dr Aminu, adding that “We have all the knowledge, resources, and talent we need—what we lack is leadership to build the public and political will to make sure it happens in our lifetime.”

“Nutrition falls through the cracks because it is the business of everyone but the main business of no one .”

Martha Nyagaya, country director, Kenya, Nutrition International, and Chair of the SUN Civil Society Alliance.

Nutrition falls through the cracks because it is the business of everyone but the main business of no one,” says Ms Nyagaya, “the funding allocated to nutrition falls through the cracks as it’s not a sectoral priority. [Non-health] sectors are not obliged to include nutrition in their annual work plans and budgets, and when reductions are required, it’s easy to remove it.

While many sectors have indicated that nutrition is a priority, there is a lack of understanding of the scale and complexity of the issue, and the tangible action needed to transcend simply committing to global targets. Integration and coordination are also a challenge. “There are a lot of opportunities for integration, but many of these opportunities are missed due to failure to act in a coordinated way and make the best use and allocation of funding and other resources,” says Dr Ayele.

Conclusion



The response to the covid-19 pandemic has shown what can be done when countries mobilise and focus resources on one singular issue. Adopting a similar approach to malnutrition could move the needle much faster. “There are lessons from covid-19, particularly in terms of local partnerships, use of technology and resource mobilisation,” says Mr Maalim.

Accelerating action against stunting and all forms of undernutrition is an economic necessity as much as it is a moral imperative. Investments in nutrition, particularly those designed to prevent and reduce the burden of child stunting, are necessary for economic development. Africa’s future economic success relies on increasing human capital.

Stemming the tide of child malnutrition at a sufficient scale to reach global nutrition targets will not be easy, particularly in the face of current headwinds. Challenges posed by ongoing conflict, climate change, extreme weather events, economic shocks and the lingering consequences of the covid-19 pandemic will continue. However, these challenges can be overcome with the sufficient and targeted allocation of resources, the right policies and investment, and commitment from both health and non-health sectors.

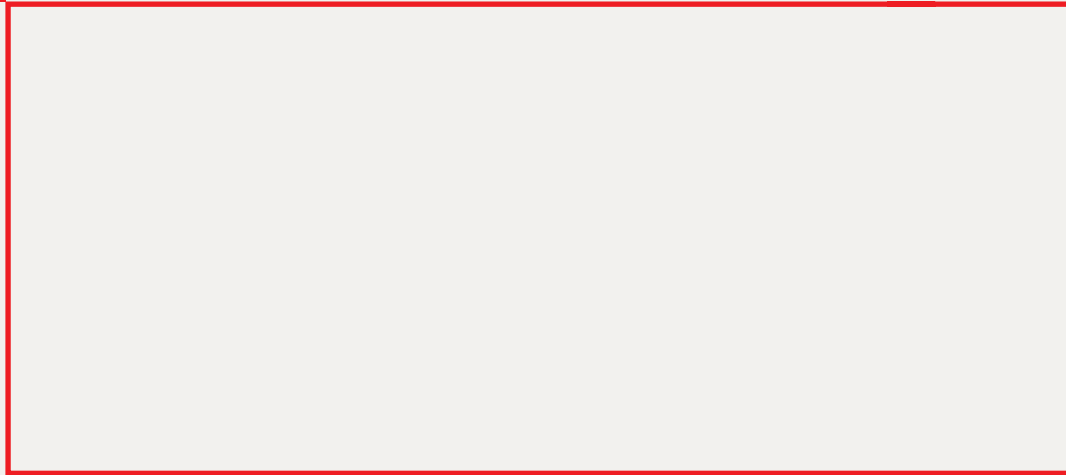
References

1. United Nations. Decade of Action on Nutrition 2016-2025. Available from: <https://www.un.org/nutrition/>.
2. Global Nutrition Report. 2021 Global Nutrition Report 2021. Available from: <https://globalnutritionreport.org/>.
3. WHO. Reducing Stunting in Children: Equity considerations for achieving the Global Nutrition Targets 2025. Geneva: World Health Organization 2018.
4. The World Bank. The World Bank and Nutrition: The World Bank; 2021 [updated 2021]. Available from: <https://www.worldbank.org/en/topic/nutrition/overview>.
5. The Power of Nutrition. The impact of stunting 2021. Available from: <https://www.powerofnutrition.org/the-impact-of-stunting/>.
6. African Development Bank Group. African Development Bank and partners unite in major push against malnutrition – ‘the silent killer’ 2019. Available from: <https://www.afdb.org/ar/news-and-events/african-development-bank-and-partners-unite-in-major-push-against-malnutrition-the-silent-killer-19022>.
7. UNICEF, WHO, World Bank Group Joint Malnutrition Estimates, May 2022 Edition. Available from: <https://data.unicef.org/resources/dataset/malnutrition-data/>.
8. Muhe A, Gezie LD, Baraki AG-e, Amsalu ET. Predictors of stunting among children age 6–59 months in Ethiopia using Bayesian multi-level analysis. *Scientific Reports*. 2021;11(1):3759.
9. WHO. Global Nutrition Targets Tracking Tool. Available from: <https://extranet.who.int/nhdtargets>.
10. World Bank Group. An Investment Framework for Nutrition Reaching the Global Targets for Stunting, Anemia, Breastfeeding, and Wasting. Washington DC; 2017.
11. Sestito P, Velásquez SR, Orel E, Keiser O. The COVID-19 pandemic and child malnutrition in sub-Saharan Africa: A scoping review. *medRxiv*. 2021:2021.07.21.21260929.
12. United Nations. Horn of Africa: Extreme drought deepens hunger in a region facing conflict. November 2022. Available from: <https://www.un.org/africarenewal/magazine/november-2022/horn-africa-extreme-drought-deepens-hunger-region-facing-conflict>.
13. Georgiadis A, Penny ME. Child undernutrition: opportunities beyond the first 1000 days. *The Lancet Public Health*. 2017;2(9):e399.

14. FAO. Improving Nutrition of School Age Kids Through Nutrition-Sensitive Food System Approach: Technical Brief. Cairo: Food and Agriculture Organization of the United Nations; 2021. 2021.
15. Adedokun ST, Yaya S. Factors associated with adverse nutritional status of children in sub-Saharan Africa: Evidence from the Demographic and Health Surveys from 31 countries. *Maternal & Child Nutrition*. 2021;17(3):e13198.
16. USAID. Nigeria: Nutrition Profile 2021 Available from: https://www.usaid.gov/sites/default/files/documents/Copy_of_tagged_Nigeria-Nutrition-Profile.pdf.
17. Feyisa MN. The Effect of Productive Safety Net Programme on Household Food Consumption and Dietary Diversity in Ethiopia. *Frontiers in Sustainable Food Systems*. 2022;6.
18. López-Ejeda N, Charle Cuellar P, Vargas A, Guerrero S. Can community health workers manage uncomplicated severe acute malnutrition? A review of operational experiences in delivering severe acute malnutrition treatment through community health platforms. *Matern Child Nutr*. 2019;15(2):e12719.
19. Ministry of Health Kenya. Kenya Community Health Strategy 2020-2025.
20. WHO. Malnutrition 2020. Available from: <https://www.who.int/news-room/questions-and-answers/item/malnutrition#:~:text=Malnutrition%20refers%20to%20deficiencies%2C%20excesses,2%20broad%20groups%20of%20conditions.&text=The%20other%20is%20overweight%2C%20obesity,%2C%20diabetes%2C%20and%20cancer>.
21. World Food Programme. The Cost of Hunger in Africa: Social and Economic Impact of Child Undernutrition, Kenya. 2019.
22. Ekholuenetale M, Tudeme G, Onikan A, Ekholuenetale CE. Socioeconomic inequalities in hidden hunger, undernutrition, and overweight among under-five children in 35 sub-Saharan Africa countries. *Journal of the Egyptian Public Health Association*. 2020;95(1):9.
23. WHO. As more go hungry and malnutrition persists, achieving Zero Hunger by 2030 in doubt, UN report warns 2020. Available from: <https://www.who.int/news/item/13-07-2020-as-more-go-hungry-and-malnutrition-persists-achieving-zero-hunger-by-2030-in-doubt-un-report-warns>.
24. Quamme SH, Iversen PO. Prevalence of child stunting in Sub-Saharan Africa and its risk factors. *Clinical Nutrition Open Science*. 2022;42:49-61.
25. WHO. Global Nutrition Targets 2025: Stunting Policy Brief 2014.
26. Relief Web. Up to 600,000 children under the age of five are suffering from acute malnutrition in Kenya and Somalia 2022. Available from: <https://reliefweb.int/report/somalia/600000-children-under-age-five-are-suffering-acute-malnutrition-kenya-and-somalia>.
27. Amaha ND. Ethiopian progress towards achieving the global nutrition targets of 2025: analysis of sub-national trends and progress inequalities. *BMC Research Notes*. 2020;13(1):559.
28. Roba AA, Assefa N, Dessie Y, Tolera A, Teji K, Elena H, et al. Prevalence and determinants of concurrent wasting and stunting and other indicators of malnutrition among children 6–59 months old in Kersa, Ethiopia. *Maternal & Child Nutrition*. 2021;17(3):e13172.
29. United Nations. Conflict, drought, dwindling food support, threatens lives of 20 million in Ethiopia 2022. Available from: <https://news.un.org/en/story/2022/06/1121132>.
30. USAID. Ethiopia: Nutrition Profile. 2021.

31. The World Bank. Life expectancy at birth, total (years) - Ethiopia. 2022.
32. The World Bank. Mortality rate, infant (per 1,000 live births) - Ethiopia 2022. Available from: <https://data.worldbank.org/indicator/SP.DYN.IMRT.IN?locations=ET>.
33. Scaling Up Nutrition. Ethiopia commits to ending undernutrition by 2030 with the Seqota Declaration 2015. Available from: <https://scalingupnutrition.org/news/ethiopia-commits-to-ending-under-nutrition-by-2030-with-the-seqota-declaration/>.
34. Walta Media. The assessment report stated that improved complementary feeding was the primary driver in reducing stunting 2022. Available from: <https://waltainfo.com/seqota-declaration-registering-promising-results-in-reducing-stunting-dpm-demeke/>.
35. World Food Programme. The Cost of Hunger in Africa: Implications for the Growth and Transformation in Ethiopia. 2013.
36. Global Nutrition Report. Country Nutrition Profiles: Kenya 2021. Available from: <https://globalnutritionreport.org/resources/nutrition-profiles/africa/eastern-africa/kenya/>.
37. Kenya National Bureau of Statistics. THE 2022 KENYA DEMOGRAPHIC AND HEALTH SURVEY (2022 KDHS) 2022. Available from: https://www.knbs.or.ke/wp-content/uploads/2022/02/2022-KDHS-Brochure_ENG.pdf.
38. USAID. Kenya: Nutrition Profile. 2018.
39. Abuya TaWNaa. Getting it Right! Improving Kenya's Human Capital by Reducing Stunting—A Household Account. Nairobi; 2021. 2021.
40. IPC. Kenya: IPC Acute Food Insecurity and Acute Malnutrition Analysis (July-December 2022). December 2022. Available from: https://www.ipcinfo.org/fileadmin/user_upload/ipcinfo/docs/IPC_Kenya_Acute_Food_Insecurity_Malnutrition_2022JulDec_Report.pdf.
41. The World Bank. Life expectancy at birth, total (years) - Kenya 2022. Available from: <https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=KE>.
42. The World Bank. Mortality rate, infant (per 1,000 live births) - Kenya 2022. Available from: <https://data.worldbank.org/indicator/SP.DYN.IMRT.IN?locations=KE>.
43. USAID. KENYA: GENDER EQUALITY & FEMALE EMPOWERMENT 2022 [cited 2022]. Available from: https://www.usaid.gov/sites/default/files/documents/Gender_Fact_Sheet_for_Kenya.pdf.
44. Global Nutrition Report. Country Nutrition Profiles: Nigeria 2021. Available from: <https://globalnutritionreport.org/resources/nutrition-profiles/africa/western-africa/nigeria/>.
45. UNICEF. Nutrition, Nigeria. Available from: <https://www.unicef.org/nigeria/nutrition>.
46. Nigeria Federal Ministry of Health. NATIONAL NUTRITION AND HEALTH SURVEY (NNHS) 2018. 2018.
47. The World Bank. Life expectancy at birth, total (years) - Nigeria 2022. Available from: <https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=NG>.
48. The World Bank. Mortality rate, infant (per 1,000 live births) - Nigeria 2022. Available from: <https://data.worldbank.org/indicator/SP.DYN.IMRT.IN?locations=NG>.
49. Adeyemi O, Toure M, Covic N, van den Bold M, Nisbett N, Headey D. Understanding drivers of stunting reduction in Nigeria from 2003 to 2018: a regression analysis. Food Security. 2022.

50. Scaling Up Nutrition. National Council on Nutrition approves a five-year nutrition action plan for Nigeria 2021. Available from: <https://scalingupnutrition.org/news/national-council-on-nutrition-approves-a-five-year-nutrition-action-plan-for-nigeria/>.
51. Relief Web. Why many Nigerian children still aren't getting proper nutrition: The Conversation; 2020. Available from: <https://reliefweb.int/report/nigeria/why-many-nigerian-children-still-aren-t-getting-proper-nutrition>.
52. Global Nutrition Report. More money for nutrition, more nutrition for the money: Financing nutrition; 2021. 2021.
53. Scott N, Delpont D, Hainsworth S, Pearson R, Morgan C, Huang S, et al. Ending malnutrition in all its forms requires scaling up proven nutrition interventions and much more: a 129-country analysis. *BMC Medicine*. 2020;18(1):356.
54. UNICEF. The first 1,000 days of life: The brain's window of opportunity 2013 cited 2013. Available from: <https://www.unicef-irc.org/article/958-the-first-1000-days-of-life-the-brains-window-of-opportunity.html>.
55. Schneider EB, Ogasawara K, Cole TJ. Health Shocks, Recovery, and the First Thousand Days: The Effect of the Second World War on Height Growth in Japanese Children. *Population and Development Review*. 2021;47(4):1075-105.
56. Sudfeld CR, McCoy DC, Danaei G, Fink G, Ezzati M, Andrews KG, et al. Linear growth and child development in low- and middle-income countries: a meta-analysis. *Pediatrics*. 2015;135(5):e1266-75.
57. Amaha ND, Woldeamanuel BT. Maternal factors associated with moderate and severe stunting in Ethiopian children: analysis of some environmental factors based on 2016 demographic health survey. *Nutrition Journal*. 2021;20(1):18.
58. Emergencies I-aNfEi. INEE Community of Practice conversation: "Teenage pregnancies and early marriage in Kenya: Girls' perspectives on the effect on education" 2022. Available from: <https://inee.org/events/inee-community-practice-conversation-teenage-pregnancies-and-early-marriage-kenya-girls#:~:text=The%20teenage%20pregnancy%20and%20motherhood,40%25%20among%20girls%20aged%2019>.
59. Yaya S, Odusina EK, Uthman OA, Bishwajit G. What does women's empowerment have to do with malnutrition in Sub-Saharan Africa? Evidence from demographic and health surveys from 30 countries. *Global Health Research and Policy*. 2020;5(1):1.
60. Laurent Kemoe PM, Cedric Okou, D. Filiz Unsal. How Africa Can Escape Chronic Food Insecurity Amid Climate Change: IMF Blog; 2022. Available from: <https://www.imf.org/en/Blogs/Articles/2022/09/14/how-africa-can-escape-chronic-food-insecurity-amid-climate-change#:~:text=Climate%20change%20is%20intensifying%20food,disproportionately%20common%20in%20the%20region>.
61. African Development Bank Group. African Development Bank Board approves \$1.5 billion facility to avert food crisis: AFDB; 2022. Available from: <https://www.afdb.org/en/news-and-events/press-releases/african-development-bank-board-approves-15-billion-facility-avert-food-crisis-51716>.
62. UNDP. Informal Economy in Africa: Which Way Forward? 2022. Available from: <https://www.undp.org/africa/events/informal-economy-africa-which-way-forward>.
63. Awojobi O. Cash Transfers and Child Nutrition: Evidence from sub-Saharan Africa. *SocioEconomic Challenges*. 2021;5.



LONDON

The Adelphi
1-11 John Adam Street
London WC2N 6HT
United Kingdom
Tel: (44) 20 7830 7000
Email: london@economist.com

GENEVA

Rue de l'Athénée 32
1206 Geneva
Switzerland
Tel: (41) 22 566 2470
Fax: (41) 22 346 93 47
Email: geneva@economist.com

SÃO PAULO

Rua Joaquim Floriano,
1052, Conjunto 81
Itaim Bibi, São Paulo,
SP, 04534-004
Brasil
Tel: +5511 3073-1186
Email: americas@economist.com

NEW YORK

750 Third Avenue
5th Floor
New York, NY 10017
United States
Tel: (1.212) 554 0600
Fax: (1.212) 586 1181/2
Email: americas@economist.com

DUBAI

Office 1301a
Aurora Tower
Dubai Media City
Dubai
Tel: (971) 4 433 4202
Fax: (971) 4 438 0224
Email: dubai@economist.com

HONG KONG

1301
12 Taikoo Wan Road
Taikoo Shing
Hong Kong
Tel: (852) 2585 3888
Fax: (852) 2802 7638
Email: asia@economist.com

SINGAPORE

8 Cross Street
#23-01 Manulife Tower
Singapore
048424
Tel: (65) 6534 5177
Fax: (65) 6534 5077
Email: asia@economist.com