STUNTING

ABOUT EXEMPLARS IN GLOBAL HEALTH

The Exemplars in Global Health (EGH) program is a global coalition of partners including researchers, academics, experts, funders, country stakeholders, and implementers. Our mission is to identify positive global health outliers, analyze what makes countries successful, and disseminate core lessons so they can be adapted in comparable settings. We aim to help country-level decision makers, global partners, and funders make strategic decisions, allocate resources, and craft evidence-based policies. A small, core team supporting EGH is based at Gates Ventures, the private office of Bill Gates, and closely collaborates with the Bill & Melinda Gates Foundation.

COUNTRY SELECTION PROCESS

We selected Exemplar countries based on their reduction in stunting rate relative to economic improvement over the 2000–2015 period. Using this method, the countries that have been selected as Exemplars are Ethiopia, Ghana, Kyrgyz Republic, Nepal, Peru, Senegal, Uganda, and select states in India. In addition, we are studying additional countries, including Nigeria, Pakistan, and Sierra Leone, to understand their progress and identify opportunities for impact based on our research.

ETHIOPIA
GHANA
INDIA
KRYGZ REPUBLIC
NEPAL
PERU
SENEGAL
UGANDA

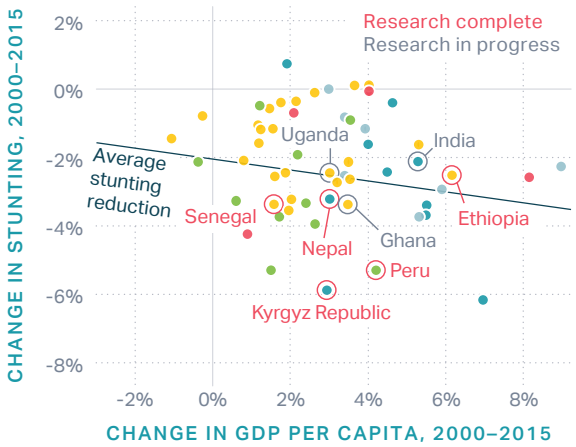
TOPIC OVERVIEW

Childhood stunting is the result of a child's inability to reach their full growth potential as a result of poor long-term diet, health, and/or care. It is identified and measured based on a child's height for their age. Stunting is caused by factors throughout childhood, but primarily during the "first 1,000 days," or the period just before conception (when the mother's nutritional status is of paramount importance) to a child's second birthday. Stunting itself largely cannot be treated, only prevented. An estimated 22% of children under five (149 million children) were identified as stunted in 2020. About 91% of these stunted children are clustered in low- and lower middle-income countries. While stunting prevalence has declined in every region since 2000, progress has been uneven, and the absolute burden remains high.

TECHNICAL ADVISORY GROUP

Research for every Exemplars in Global Health topic is guided by a Technical Advisory Group (TAG), consisting of a diverse range of topic-specific experts.

Dr. Zulfiqar Bhutta (Co-director of the Center for Global Child Health, The Hospital for Sick Children (SickKids)), **Shawn Baker** (Formerly Chief Nutritionist, United States Agency for International Development (USAID)), **Dr. Robert Black** (Director, Department of International Health, Johns Hopkins University), **Dr. Sue Horton** (Professor, School of Public Health and Health Systems, University of Waterloo), **Dr. Rasa Izadnegahdar** (Director, MNCH Discovery and Tools, Bill & Melinda Gates Foundation), **Dr. Joanne Katz** (Director of Academic Programs, Department of International Health, Johns Hopkins University), **Dr. Purnima Menon** (Senior Research Fellow, International Food Policy Research Institute (IFPRI)), **Dr. Meera Shekar** (Global Lead for Nutrition, Lead HNP Specialist, Health, Nutrition, and Population Global Practice, World Bank), **Dr. Cesar Victora** (Emeritus Professor of Epidemiology, Federal University of Pelotas)



	Population	Urban	GDP per capita	Human Capital Index (HCI)
ETHIOPIA	109.2M	21%	$772	0.38
GHANA	32.8M	56%	$2,363	0.45
KYRGYZ REPUBLIC	6.3M	47%	$1,281	0.58
NEPAL	28.1M	20%	$1,034	0.49
PERU	32.0M	78%	$6,941	0.59
SENEGAL	15.9M	47%	$1,522	0.42
UGANDA	45.9M	25%	$884	0.38

Stunted children are 2–4 times as likely to die before age five as their peers.

Stunting is associated with delayed cognitive development and up to an 11-point reduction in expected adult IQ.

At the societal level, stunting reflects limitations in a country's ability to compete in the knowledge economy; it correlates with costs of as much as 11% of expected annual GDP.

EXEMPLARS
IN GLOBAL HEALTH

STUNTING

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RESEARCH PARTNERS

Our consortium of research partners includes researchers from the Hospital for Sick Children (SickKids), Universidad Peruana Cayetano Heredia, Nepal Public Health Foundation, University of Central Asia, Université Cheikh Anta Diop de Dakar, Agence Nationale de la Statistique et de la Démographie (ANSD) du Sénégal, The Aga Khan University, The Univeristy of Ibadan, Makerere University, The University of Ghana, Helen Keller International, International Aids Vaccine Initiative (IAVI), and Addis Ababa University.

METHODOLOGY

We took a holistic approach to analyze the stunting story in each Exemplar country, adapting our methods based on data available. Our learnings were synthesized from four methods of inquiry:

i. **Literature Review**
ii. **Quantitative Analysis**
iii. **Qualitative Analysis**
iv. **Policy / Program Review and Financing Analysis**

CONTEXT-SPECIFIC OPPORTUNITIES

Phase I: Diagnosis

SUPPORT AND MONITORING

1. Stakeholder consultation
2. Robust situational analysis

Phase II: Prioritized strategies at scale

INDIRECT HEALTH SECTOR STRATEGIES TO:

1. Increase access to family planning and reduce high-risk pregnancies

DIRECT HEALTH SECTOR STRATEGIES TO:

1. Improve maternal nutrition and access to high-quality maternal and newborn health care
2. Promote early and exclusive breastfeeding
3. Improve complementary feeding, including dietary diversification and micronutrient supplementation/ fortification strategies

SECTORS OUTSIDE OF HEALTH TO:

1. Address food insecurity and reach marginalized populations
2. Invest in education, for girls specifically
3. Address gender disparities and empower girls and women
4. Improve living conditions, especially water, sanitation, and hygiene

RECOMMENDATIONS

Our work has demonstrated that no single intervention can eliminate stunting in any country. Furthermore, the precise mix of policies needed to address stunting is dependent on context, varying from one country to another. Each of the Exemplar countries we studied took a different path to reduce its stunting burden.

Nevertheless, we identified key themes across all the Exemplar countries that are relevant to any country prioritizing efforts to reduce stunting, and helped assemble a robust framework for supporting stunting reduction at scale:

Address food security: Improvements in agricultural yield and investments to address food insecure populations—despite climate/ conflict headwinds—were critical.

Reduce poverty: An increase in wealth, and an improved distribution of resources available—especially to the most vulnerable populations —were key contributors to progress.

Improve equitable access to quality education: In the majority of countries we studied, investments in education, for both boys and girls, emerged as pivotal.

Scale up reproductive, maternal, and child health and nutrition interventions: Improvements in maternal and child health care, access to health services, family planning, and nutrition counseling were critical to achieving progress in all countries studied.

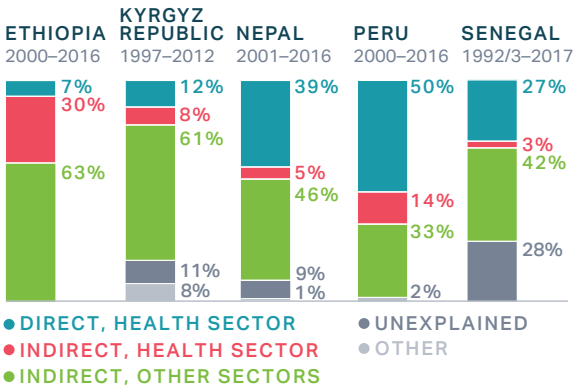
Promote universal access to water and sanitation services and hygiene: Examination of the independent contribution of water, sanitation, and hygiene improvements to stunting declines over the ~10-year study period shows meaningful significance in many countries.

It matters how a country invests, not just what it invests in. The absence or presence of enabling factors helps determine whether investments fail or succeed. We identified three key factors in our Exemplar countries:

Political will with financial commitments: Leadership that prioritizes nutrition-relevant investments and sets clear, specific targets tends to secure the financial commitments and cross-sector buy-in to excel.

Scale up evidence-based, data driven interventions: Where robust data systems exist, the design and delivery of interventions are more likely to be based on evidence, with clear links between investment and impact to drive financing at scale.

Efficient service delivery mechanisms targeted towards vulnerable populations: Governments that work to identify the most vulnerable populations and meet their specific needs increase their odds of making equitable and overall progress.



STUNTING INTERVENTION DECOMPOSITION

One way of analyzing these commonalities is to break down stunting interventions into categories, including those within the health sector that have a direct effect on child nutrition, those within the health sector that have an indirect effect on child nutrition, and those in other sectors. The average split among these three categories is just under one-third health/direct, just over one-tenth health/indirect, and approximately one-half other sectors, although each country's split is different (see left). This categorization underscores that no single intervention can solve stunting on its own; indeed, one half of the impact, on average, comes from investments outside the health sector. Effective impact on population-level stunting requires an integrated set of investments that are strategically planned and adequately resourced. With the right buy-in, information, and means of execution, stunting can be reduced at scale.