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THE IMPACT OF COVID-19 ON THE REDUCTION OF CHILD STUNTING OVER THE NEXT TWO DECADES

The problem

Child stunting is a major development challenge

Child stunting[1] is the most prevalent form of child undernourishment. In 2019, it affected 161.7 million children under the age of five around the globe. Its impacts on children are often far reaching, resulting in direct health issues and loss of life. In 2015, the international community set a target to end child stunting by 2030, through Sustainable Development Goal 2.

Our analysis projects that between 2020 and 2022, the COVID-19 pandemic will increase the number of children experiencing stunting by 1.6 million globally.[2] While we have begun to understand the short-term consequences of the pandemic on child stunting, limited insights are available with respect to its long-term impacts. This work increases the understanding of how COVID-19 may affect long-term trends in child stunting and can serve as a baseline for future research to measure the effectiveness of policies designed to accelerate progress on the reduction of child stunting. With this information, policy makers can be better equipped to assess the challenges ahead.

Our approach

Using the International Futures model, we combined information on caloric intake with broader human development characteristics, such as maternal education levels and access to water and sanitation, to develop our own child stunting model which projects trends in child stunting over time across 186 countries. We then developed three scenarios to project the effects of COVID-19 on child stunting:

✔ A baseline *COVID-19 Current Path* scenario, which uses existing data and trends to simulate the impacts of COVID-19 through changes in economic growth, inequality, education loss, and rises in government debt.

✔ A more pessimistic *COVID-19 Unequal Paths* scenario, which describes a world in which the effects of the COVID-19 pandemic worsen and inequalities between countries rise, with additional negative effects primarily falling to low- and middle-income countries.

✔ A counterfactual *No-COVID* scenario, which projects long-term development trends in the world had the COVID-19 pandemic not occurred.

PHOTO: USAID/CAMBODIA HARVEST

< Children eat enriched rice porridge at a nutrition training event in Siem Reap province in Cambodia.

A young Guatemalan > girl stands on a scale to have her weight recorded for the Western Highlands Integrated Program Evaluation baseline survey in 2013.
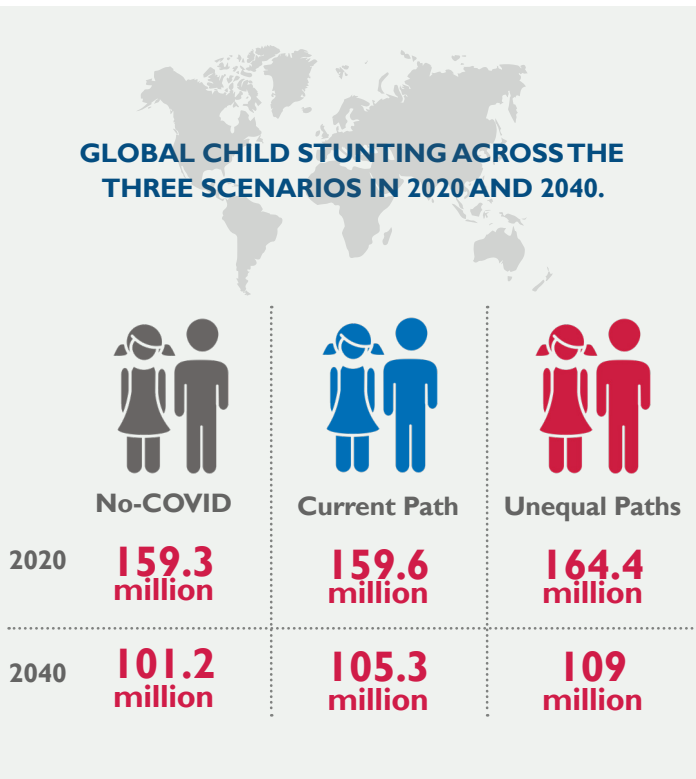
PHOTO: TORY TAYLOR

[1] The population in a country under the age of 59 months with a low height-for-age ratio, more than two standard deviations (<-2 SD) below the WHO Child Growth Standards median. https://www.fao.org/3/cb4474en/cb4474en.pdf.
[2] Analysis conducted by the Fredrick S. Pardee Center for International Futures; refer to Our Approach at the end of this brief for information on the International Futures model.

What we find

## The world is not on target to end child stunting by 2040

All three scenarios project global progress towards reducing child stunting by 2040. However, child stunting will remain a major development challenge in the years to come. In fact, we estimate that under the *Current Path* scenario an estimated 101.2 million children will suffer from child stunting in 2040. Under the *Unequal Paths* scenario our estimate rises to 109 million children.

GLOBAL CHILD STUNTING ACROSS THE THREE SCENARIOS IN 2020 AND 2040.

	No-COVID	Current Path	Unequal Paths
2020	**159.3** million	**159.6** million	**164.4** million
2040	**101.2** million	**105.3** million	**109** million

Child stunting primarily affects children in Southern Asia, Southeast Asia, and Sub-Saharan Africa. In 2019, child stunting affected 57.3 million children both in Sub-Saharan Africa and Southern Asia, accounting for more than 70 percent of all stunted children globally. In Southern Asia, 34 percent of children under five years of age were stunted in 2019, making it the most affected region in the world. However, it is also in Southern Asia where the most progress is anticipated, with much of that driven by advances against child stunting in India. Overall, the region's rate of child stunting is projected to drop to 18.1 percent by 2040.

Over time, child stunting will become increasingly concentrated in Sub-Saharan Africa. Progress on alleviating child stunting in the region is less pronounced than in Southern Asia, with rates projected to decrease from 33.3 percent in 2019 to 20.2 percent in 2040. Due to rapid population growth and slower progress on child stunting compared to other regions, by 2040 more stunted children will live in Sub-Saharan Africa than in Southern and Southeast Asia combined.

## Rates of child stunting among world regions under the *Current Path* scenario.
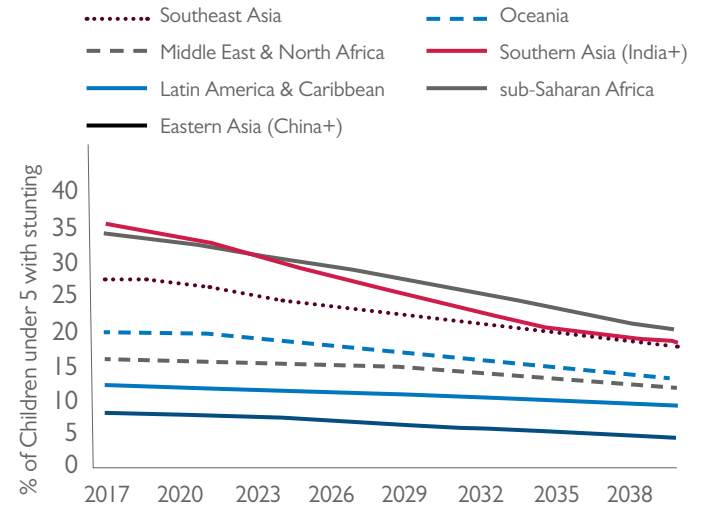
Note: World regions with child stunting rates below five percent are not depicted.
Source: Authors' calculations.

COVID-19 will slow progress on child stunting for the next two decades

Between 2020 and 2022, the pandemic is estimated to increase the levels of child stunting by 1.6 million cases. This level is close to the optimistic scenario (1.5 million cases) of other forecasts. In our pessimistic *Unequal Paths* scenario, an additional 14 million children are projected to be stunted by 2040 relative to a *No-COVID* scenario, a bleaker estimate than projections from other groups. In the near term, COVID-19 primarily drives increased child stunting through reduced food consumption related to rising food prices and lower household income.

Global child stunting in millions for the three scenarios, projected to 2040.
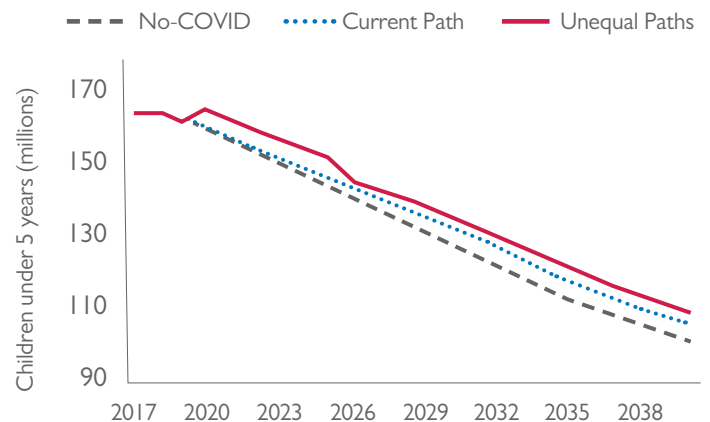
However, these effects are not subsiding. Relative to a *No-COVID* scenario, child stunting numbers in the *Current Path* scenario will remain elevated. While household incomes and economic growth are projected to recover in 2022 and 2023, they do not reach the same levels as in the *No-COVID* scenario. In addition, COVID-19's impacts on maternal education and access to water and sanitation are expected to become more important drivers. For example, recent COVID-19 school closures may result in persistent learning losses that over time affect adult female education levels, and by extension caring behaviors and incomes in the coming years. This combination of direct and indirect effects of COVID-19 means that by 2040 progress on lowering child stunting will be slower in a *Current Path* scenario than in a world without COVID-19.

Most importantly, our analysis suggests that the long-term effects of COVID-19 on child stunting could exceed the short-term increase of 1.6 million stunted children. By 2040, an additional 4 million (*Current Path*) to 7.8 million (*Unequal Paths*) children are projected to be stunted, relative to a *No-COVID* scenario. For context, this increase is roughly equivalent to the level of childhood stunting recorded in Indonesia in 2019 (7.6 million children), which was ranked 9th in the world for child stunting rates.

Analysis of long-term trends can assist strategic decision making to achieve targets and realize better outcomes for future generations. We recommend interpreting these projections as the long-term effects of COVID-19 that could potentially arise without additional policy efforts. To better understand the future of child stunting and identify effective policies, future research efforts on undernourishment should further examine long-term trends in dietary quality and diversity while quantifying the associated economic losses and consequences to human development from failing to make progress on eradicating child stunting.

Policy Implications and Directions

Ending child stunting by 2040 requires an integrated policy approach that targets five key areas: 1) increasing the quantity and quality of food consumption, 2) raising economic growth and household incomes, especially for the poorest households, 3) accelerating progress on education, especially of girls, 4) access to health care, and 5) access to water and sanitation.

Implementing such a strategy is likely to create multiple synergies with other human development goals. Raising household income, education levels, and access to water and sanitation not only help to combat child stunting, but also to decrease extreme poverty and undernourishment. There is a strong economic case for these policies because child stunting can lead to preventable, long-term losses in economic growth.[3]

While ending the pandemic should be the primary focus of current efforts, the effects of the pandemic on child stunting will persist after the virus has been contained. Even worse, our projections suggest that in the absence of deliberate action, the effects of COVID-19 on child stunting could increase over time. Investments in education to minimize long-term learning losses, especially of girls, and maintaining government finances and investments in infrastructure, education, and other social services is critical to ensuring inclusive economic growth reaches, at a minimum, pre-pandemic projections.

The more uneven the recovery, the more children in the most vulnerable countries will be at greater risk of stunting. Recent IMF projections on economic impacts of COVID-19 suggest that the average economic recovery in Sub-Saharan Africa may be slower than in countries that are members of the Organisation for Economic Cooperation and Development (OECD). Our projections suggest that if vulnerable countries recover at a slower pace

Children in Lebanon attend a summer catch up program after school closures during the COVID-19 pandemic.

(*Unequal Paths* scenario), the long-term effects on child stunting from COVID-19 will roughly double. Given those projections, we recommend the international community focuses on promoting stronger economic recovery in low- and middle-income countries by investing in targeted economic and human development.

The primary focus of policy efforts should be in Southern Asia, Southeast Asia, and Sub-Saharan Africa, where most child stunting occurs. By 2040, the share of child stunting concentrated in Sub-Saharan Africa will be even more pronounced than it is today. Any global progress on child stunting requires accelerated progress in these regions.

Our approach

International Futures is a global integrated assessment model that produces long-term projections of economic and human development for 186 countries. The model integrates sub-models representing agriculture, demography, economy, governance, education, infrastructure, health, and climate change, and focuses on modelling these systems as well as the interactions between them. The model is open source and underlying documentation can be found here.

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[3] See: https://www.nature.com/articles/s43016-021-00319-4