

# THE FUTURE OF FOOD SECURITY IN THE WAKE OF COVID-19

## Background

The COVID-19 pandemic has reversed development progress around the world, with available data indicating increases in extreme poverty, undernourishment, and child stunting. How long and under what circumstances will these effects persist? What will be the consequences of COVID-19 on food security over the next two decades?

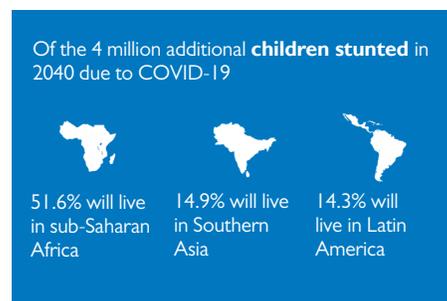
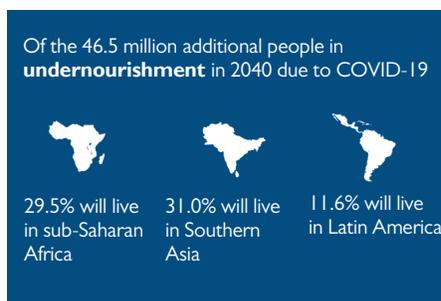
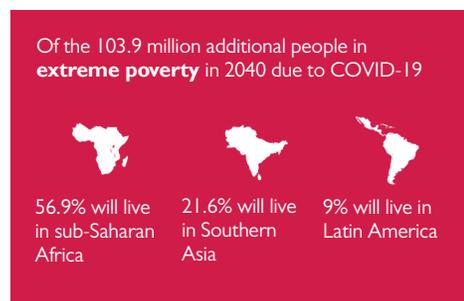
To explore these questions, we use the International Futures model to develop three scenarios to understand the pandemic's effects on economic growth, rising inequality, rising government debt, and education losses from school closures in 2020-2025, and to explore the long-term impact of these effects on extreme poverty, undernourishment, and child stunting. The scenarios are:

- ✓ A baseline COVID-19 **Current Path scenario**, which uses existing data and trends to project the effects of COVID-19 on 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.

## Key Findings

- In both COVID-19 scenarios, the pandemic primarily affects food security through changes in food access due to persistently lower household income and higher inequality relative to a no-COVID scenario.
- COVID-19 is expected to further impact food security through changes in dietary diversity, reduced access to safe water and sanitation, and slightly lower agricultural investments in sub-Saharan Africa and Southern Asia.
- All scenarios suggest that gradual global progress on indicators of extreme poverty, undernourishment, and child stunting will continue between now and 2040, but that COVID-19 will slow this progress.
- However, this progress is relative. Rapid population growth in some of the most food insecure regions may result in no progress in the absolute number of affected individuals. For instance, in the Unequal Paths scenario more people are projected to live in extreme poverty and suffer from undernourishment in 2040 than in 2019.
- The pandemic will disproportionately affect food security in regions already suffering from high levels of extreme poverty, undernourishment, and child stunting, such as Southern Asia and sub-Saharan Africa.

### The effects of COVID-19 on poverty, undernourishment, and child stunting across the developing world.



## COVID-19 and Poverty

In both COVID-19 scenarios, the pandemic is projected to increase extreme poverty through reductions in household consumption, with rising inequality resulting in disproportionate effects among lower-income households.

COVID-19 increased extreme poverty in 2020. In 2040, between 103.9 (Current Path scenario) to 198.3 (Unequal Path scenario) million additional people are projected to live in extreme poverty, relative to a No-COVID scenario. This is equivalent to a 6 to 12-year setback<sup>1</sup> in the fight against extreme poverty.

## COVID-19 and Undernourishment

As with poverty, COVID-19 is affecting undernourishment primarily through changes in household income, which drive down country-wide caloric consumption, and through changes in the distribution of calories across households.

COVID-19 increased undernourishment in 2020. In 2040, an additional 48 (Current Path scenario) to 54 (Unequal Paths scenario) million people are projected to experience undernourishment, relative to a No-COVID scenario. This is equivalent to a 4 to 8-year setback in lowering undernourishment.

The increase in undernourishment is smaller than the increase in poverty because some households are able to shift consumption patterns towards cheaper staples and maintain access to an adequate quantity of food. However, this shift will have negative impacts on the quality of household diets.

## COVID-19 and Child Stunting

The effects of COVID-19 on child stunting are projected to increase over time<sup>2</sup>. Impacts of COVID-19 on drivers of stunting, such as education levels and access to water and sanitation, are projected to manifest not as an immediate shock but rather to slowly increase over the next two decades.

In 2040, between 4.0 (Current Path scenario) and 7.7 (Unequal Path scenario) million additional children under 5 are projected to suffer from child stunting, relative to a No-COVID scenario. This is equivalent to a 1 to 3-year setback in global progress on lowering child stunting.

## Conclusion

Many countries were not on track to meet international goals for improved food security prior to COVID-19, and the pandemic has made reaching these goals more difficult. COVID-19 further underscores the need to push for improving socioeconomic conditions in the wake of the pandemic, especially in sub-Saharan Africa and Southern Asia.

Progress toward the elimination of hunger will be multidimensional, requiring improvements in food availability, access, and utilization. Further work toward eradicating food insecurity will primarily rely on raising food access by improving household incomes and caloric demand and by reducing inequality of household income and food consumption.

If you want to know more about the long-term effects of COVID-19 on food security and the underlying causes through which it manifests, please check out the [full report](#).

Figure 1: Global extreme poverty across the three scenarios, projected out to 2040.

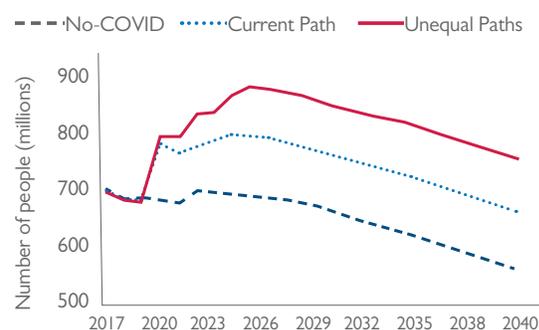


Figure 2: Global undernourishment across the three scenarios, projected out to 2040.

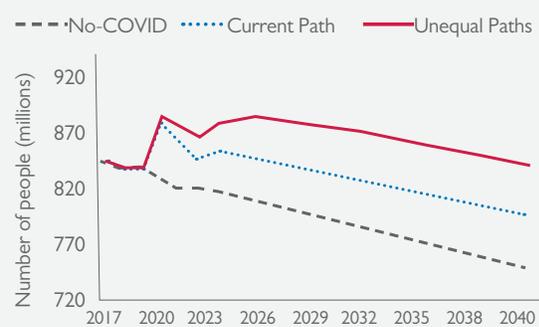
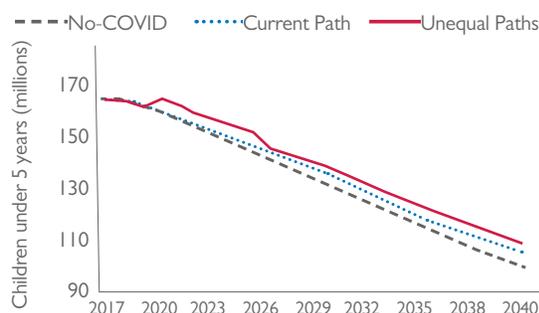


Figure 3: Global child stunting across the three scenarios, projected out to 2040.



## 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. It focuses on modelling these systems as well as the interactions between those systems. The model is [open source](#) with all [documentation](#) publicly available.

Our conceptualization of food security includes aspects of food availability, food access, and food utilization.

<sup>1</sup> A setback is measured in % of the population. The % of the population living in extreme poverty in the COVID-19 baseline scenario would have been reached 6 years earlier in a No-COVID scenario.

<sup>2</sup> Stunting is the impaired growth and development that children experience from poor nutrition, repeated infection, and inadequate psychosocial stimulation. Children are defined as stunted if their height-for-age is more than two standard deviations below the WHO Child Growth Standards median.