

Appendix: Interventions in the SDG Push Scenario

This Appendix supports the Policy Note: *Potential long-term effects of COVID-19 on economic and human development in Uganda* (Hanna et al., 2022). It provides a more detailed list of the interventions included in the SDG Push scenario assessed in the report. Table 1 lists the individual interventions in the SDG Push scenario. The original interventions for the SDG Push global scenario from Hughes et al. (2021) are categorized according to four pillars of COVID recovery support outlined by the United Nations Development Programme (UNDP, 2020).

Note that the intervention descriptions specify the parameterizations used to construct the scenarios in the IFs model. These parameterized interventions do not override the values of variables but rather affect underlying endogenous variable calculations within IFs. The actual change in the outcome variable may be greater than the parameterization, in cases where synergies occur across interventions, or it may be less than the parameterization, in the case of tradeoffs.

Table 1 List of interventions included in the SDG Push scenario

INTERVENTION	PARAMETERIZATION
SOCIAL PROTECTION	
Calorie allocation	Improved diets via additional calorie allocation to those most in need.
Cookstoves	Increased numbers of improved modern cookstoves by 500 million units over a 12-year period.
Public health spending	A targeted doubling of the public health budget.
Welfare transfers	Increase welfare transfers from governments to households for unskilled workers by 50% in a 13-year period for the whole world; and doubling government to household welfare transfers for unskilled workers in the WB low-income group over a 13-year period.
Safe water access	Percentage of population with access to piped water sources increases by 20% and the percentage of population with access to other improved water sources increases by 20% over 10 years.
Sanitation access	Percentage of population with access to improved sanitation sources increases by 20% and the percentage of population with access to shared sanitation sources increases by 20% over 10 years.
Gender wage parity	Ratio of female to male wages by country reaches 1 by 2050 (simulates all countries reaching wage parity over 30 years; ratio left alone if it already exceeds 1).
Total fertility rate	The fertility rate is lowered 20% over 10 years.
GOVERNANCE	
Government participation	The scenario simulates improved governance participation by 30% over a 13-year period via Polity project index.
Government effectiveness	Improves governance effectiveness (quality) by 30% over 13-year period - World Bank's governance effectiveness index.
Government transparency	Reduces government corruption by 30% over 15-year period - Transparency International index.
GREEN ECONOMY	
Water demand	Water demand is reduced by 30% over 32 years in the world.
Electricity loss	Electricity transmission and distribution loss (as a percent of production) drops by 40% over 13 years in the world.
Urban air pollution	Reduction of particulate matter in urban air (urban air pollution) of 30% over 35 years in the world.
Reforestation	Increase in forested land area- simulating impact of reforestation in the world.
Carbon tax	A carbon tax is introduced at \$200 per ton over 13 years for OECD countries; and at \$50 per ton for non-OECD countries in a 13-year period.
Energy intensity	Energy demand per unit of GDP decreases by 1.4% annually, slowly declining to a rate of 1.3% by 2050, reducing the energy intensity of the economy. Energy demand in OECD countries falls a further 10% over 68 years, relative to endogenous calculation. Energy demand in non-OECD countries falls a further 38% over 78 years, relative to endogenous calculation.

INTERVENTION	PARAMETERIZATION
Cleaner energy production	Simulating increased cleaner and more sustainable energy production sources by: Annual rate of energy production cost reduction for coal set to 0.002, reflecting recognition of the external costs of coal in its true total cost Annual rate of energy production cost reduction for nuclear set at 0.0035, assuming new and safer nuclear technologies will continue to emerge Annual rate of energy production cost reduction for other renewable energy set to 0.01 (continued encouragement of technological progress)
Electricity access	Increased electricity access, tripling the upward push in the percentage of the world population with access to electricity over a 12-year period. Increasing electricity access in low income countries by 50% over a 12-year period.
Agriculture loss	World agricultural production loss of crops, meat, ocean fish catch, and aquaculture is reduced by 30% over 30 years. World agricultural transportation and processing loss is reduced by 30% over 30 years. World agricultural food loss at the consumption stage is reduced by 30% over 30 years.
Agricultural yields	High-income economies increase their agricultural yields by 20% over 15 years. Upper-middle-income economies increase their agricultural yields by 20% over 15 years. Lower-middle-income economies increase agricultural yields by 50% over 50 years. Low-income economies double agricultural yields over 50 years. This intervention results in yields that follow historical patterns. This, in combination with improved diets/calories intervention (incentive), results in yields that grow more rapidly.
Lowered fish catch	Countries currently catching more than 2 mmt of fish annually reduce their fish catch by 25% over 50 years.
DIGITAL DISRUPTION/INNOVATION	
Lower secondary graduation	Lower secondary graduation rates are tripled in a 12-year period starting in 2021. Targets a 5% annual increase in lower secondary graduation starting in 2021.
Science and engineering graduates	The rate of science and engineering graduates is increased by 10 percentage points over a 13-year period.
Education spending	Targeting a doubling of budgetary allocation to education.
R&D spending	Targeting a doubling of budgetary allocation to research and development.
Infrastructure spending	Targeting a doubling of budgetary allocation to infrastructure.
Private R&D spending	Private research and development spending as a percent of GDP increased by 20% over 13-year period.
Broadband access	Access to broadband grows 50% over 19 years.
Mobile access	Access to mobile broadband grows 50% over 19 years.
Informal employment	The informal share of the labor force decreases by 20% over 10 years.

Bibliography

- Hanna, T., Sahadevan, D., Mwesigye, F., Lakuma, P., & Nakato, L. (2022). *Potential long-term effects of COVID-19 on economic and human development in Uganda* (Policy Note No. 9). Economic Policy Research Centre and Frederick S. Pardee Center for International Futures.
- Hughes, B. B., Hanna, T., Bohl, D. K., & Moyer, J. D. (2021). *Pursuing the sustainable development goals in a world reshaped by COVID-19*.

- United Nations Development Programme and Frederick S. Pardee Center for International Futures. https://sdgintegration.undp.org/sites/default/files/Foundational_research_report.pdf
- UNDP. (2020). *Beyond Recovery: Towards 2030*. United Nations Development Programme. <https://www.undp.org/publications/beyond-recovery-towards-2030>