



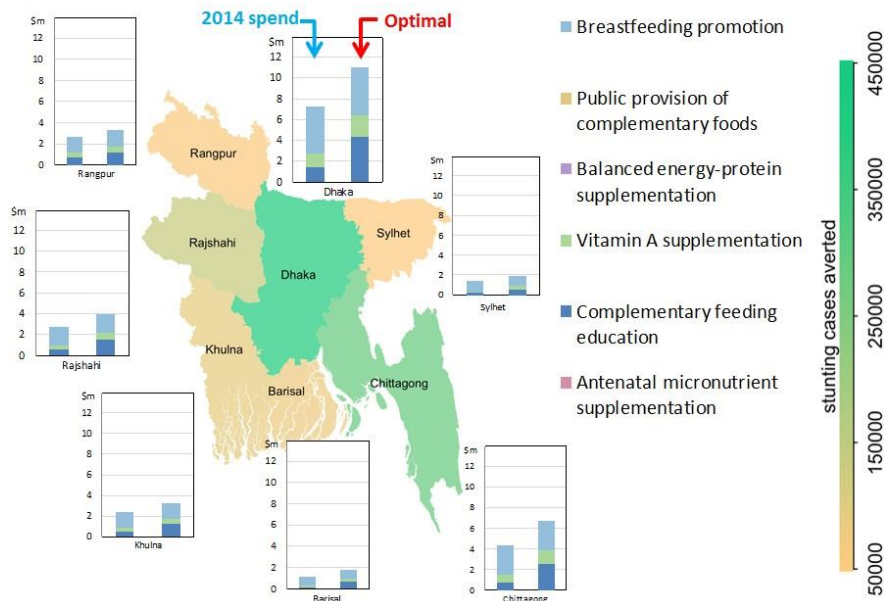
Optima Nutrition is a quantitative tool that can provide practical advice to governments to assist with the allocation of current or projected budgets across nutrition programs. The model contains a geospatial component to determine funding allocations that minimize stunting, wasting, anemia or under-five mortality at both the national and regional levels.

The model has a flexible intervention set that includes a variety of micronutrient supplementation programs, infant and young child feeding education, treatment of severe acute malnutrition, treatment and prevention of diarrhoea, fortification of foods, family planning and malaria prevention interventions.

Key questions addressed:

- How can a given budget be allocated across programs and/or geographic regions to minimize malnutrition and associated conditions?
- If additional funding is or will be available, which programs and geographical regions should be prioritized to receive it?
- How might trends in undernutrition change under different funding scenarios?
- How close is a country likely to get to its nutrition targets?
 - with the current funding, allocated accordingly to current expenditure?
 - with the current volume of funding, reallocated optimally?
 - with increased funding?
- What is the minimum funding required, if allocated optimally, to meet the nutrition targets?

Figure 1: A Bangladesh example of how an additional US\$10 million can be optimally allocated across regions and programs to minimize stunting



How does this help nutrition decision making?

The Optima Nutrition model can be of value to country stakeholders in several ways:

- Determining the optimal allocation of nutrition budgets for different levels of total funding.
- Projecting medium- to long-term impacts of current investments.
- Providing confidence among donors and stakeholders that funding is being used in a way that maximizes impact.
- Through its integrated analysis of long-term financial implications, the Optima Nutrition tool can help make the case for appropriate domestic investment.

What are the data needs?

The model requires country-specific data on stunting, wasting, anemia, diarrhea, exclusive breastfeeding, causes of maternal and child death, and demographics (population sizes, poverty), all of which are generally available from standard surveys (e.g. DHS, MICS) or online sources (e.g. UN Population Division). Additional data that typically need to be collected are the coverage and cost of each program being considered in an analysis.

How long does it take?

Data availability varies between countries and there is flexibility for shortening or extending the process in line with requirements and availability of key in-country participants. Time and technical assistance needs can range from one to four months depending on the level of stakeholder engagement.

What are the strengths/limitations, or advantages/disadvantages of this tool?

Strengths: Optima Nutrition can provide objective quantitative information for the prioritization of nutrition programs in the context of limited funding. The model can also assist with national planning and policy development processes. The model evolves to incorporate new interventions update effect sizes and impact pathways as new evidence becomes available.

Limitations: The model is influenced by the effect size estimates of each program, which are obtained from the sparse (but growing) academic literature and are not always setting-specific. Analyses also require estimates on the costs of scaling up interventions, which have inherent uncertainty.

Country and subnational analyses

The World Bank has supported and completed country level analyses have been completed in Burundi, DRC, Pakistan (national), Pakistan (Sindh Province), Sierra Leone, Tajikistan, and Vietnam. There are ongoing analyses in Benin, Burundi, Burkina Faso, Chad, Nigeria, and Togo.

What training opportunities are available?

Three regional trainings were completed in 2018 in Bucharest, Bangkok and Pretoria. In 2019, trainings were conducted in India for central and state government staff; in Pakistan for central and provincial government staff; in the Sindh Province of Pakistan to improve capacity for provincial and district level analysis being led by the Government of Sindh's Bureau of Statistics; during The World Bank's Human Development Week; and on the sidelines of the SUN Global Gathering in Kathmandu, Nepal. While the COVID-19 pandemic has significantly constrained our planned trainings, we have provided trainings through virtual platforms to government staff and development partners in Burkina Faso, Togo, and Nigeria in 2020 and 2021. We are

developing interactive training modules that can support self-guided learning as well as hybrid trainings engaging both self-paced theoretical sessions and hands-on, activity-based sessions with facilitators.

Some frequently asked questions about the Optima Nutrition modeling tool

1. What is the source of evidence for the intervention impacts?

Evidence for the impact of interventions modeled in the tool are derived from meta-analyses and systematic reviews of randomized controlled efficacy and effectiveness studies. These interventions are included in WHO guidelines and have been identified as effective interventions in the Lancet series on child and maternal malnutrition (2008, 2013, and 2019).

2. Since much of the evidence is based on global studies that may not include data from a specific country or region, can the evidence on intervention efficacy be changed to country-specific values?

The Optima Nutrition model has been specifically designed to be flexible and responsive to the evolving evidence base for interventions and to the introduction of new interventions that have been rigorously evaluated to be effective. In principle, if there is robust source of evidence for modifying effect sizes, this can easily be done by the analyst. Such changes and other assumptions should be clearly communicated when interpreting and disseminating the results.

3. Can new interventions be added in the model, and what would be needed to do so?

Yes, interventions can be added to the model. This requires that the efficacy/effectiveness of the intervention has been rigorously evaluated, and the effect size for impact on specific risk factors and/or outcomes can be clearly quantified.

4. The model includes mostly nutrition-specific interventions. Why are nutrition-sensitive interventions, such as those in agriculture, largely excluded from the model?

The model requires specific and quantified evidence of the impact of interventions on risk factors and outcomes. Currently, this evidence is emerging in agriculture and other nutrition-sensitive sectors, and the model will accommodate such new evidence and interventions once they are available.

5. How is the evidence in the model updated?

The Optima Nutrition modeling tool is governed by a technical advisory group (TAG) of experts who, among other duties, provide guidance for updating the global evidence base for the model. When new or updated evidence is identified through periodic reviews of the literature, an expert group (including some TAG members) reviews and makes recommendations on whether the evidence base needs to be updated. After consultations, the TAG then decides on which recommendations to implement in the model.

6. How long does it take to do an analysis?

Several factors determine the length of time needed to complete an analysis: will the work require extensive stakeholder engagement? Is there a recent source of health and demographic data? Are intervention unit cost and coverage data readily available? Is the collection of primary data needed, particularly to estimate cost and coverage of interventions? Depending on the responses to these questions, an analysis could take from a few days to a few months to complete.

7. If you don't have values for certain indicators, can you still run the analysis?

Yes. Sometimes, some country-specific data (health and demographic variables, intervention unit costs, etc.) may not be available, or the available data are too old to be useful. In some cases, data on other variables from the same country can be used as proxy, or regional or global averages may be used.

8. How quickly can the optimized scale-up allocation/coverages be achieved?

In the current implementation of the Optima Nutrition tool, the model assumes that an optimized coverage of interventions can be achieved within the first year of implementation. This is meant to provide guidance for the target coverage to achieve across the set of interventions, with the time required to achieve the optimal allocation being context dependent. The decision on whether and how quickly to scale up or scale down interventions may depend on ethical, political, and practical considerations.

9. When you want to model multiple objectives simultaneously, how do you determine the weights for each outcome objective?

The Optima Nutrition tool can accommodate modeling scenarios to achieve multiple objectives simultaneously. For example, a country nutrition strategy might prioritize achieving reductions in both child stunting and child anemia, and the model will need to determine the optimal mix of interventions to have impact on both outcomes. While there is no definite way to determine how to weigh each objective, the usual approach is to consider both the relative importance of each objective and the relative cost-effectiveness ratios for achieving each of the objectives (e.g., consider that it may be significantly more costly to avert one case of stunting than one case of anemia).

10. The efficacy studies that underlie the model assume a certain level of quality that is achieved and maintained when implementing an intervention. How does one account for the quality of interventions in an analysis for a specific country?

The model does not explicitly account for the quality of implementation of interventions. Invariably, the quality of implementation will significantly influence the potential impact of an intervention. Uptake of results from an analysis should incorporate efforts to ensure and improve the quality of implementation of interventions.

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