Modeling Tools to Optimize Nutrition Policies and Programs: A Consortium Initiative

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ASN, Boston
June 2018
# Current tools in the Consortium

<table>
<thead>
<tr>
<th>TOOL</th>
<th>PARENT INSTITUTION</th>
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<tbody>
<tr>
<td>Cost of Hunger/FNG</td>
<td>WFP, Save the Children</td>
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<tr>
<td>IMAPP</td>
<td>UC Davis, Iowa State U</td>
</tr>
<tr>
<td>LiST</td>
<td>Johns Hopkins U</td>
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<tr>
<td>MiniMOD</td>
<td>UC Davis</td>
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<tr>
<td>OMNI</td>
<td>Nutrition International</td>
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<tr>
<td>Optifood</td>
<td>London School of TM&amp;H</td>
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<tr>
<td>Optima Nutrition</td>
<td>World Bank</td>
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<tr>
<td>PROFILES</td>
<td>FANTA Project</td>
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Defining Nutrition Modeling

• Mostly* refers to computer assisted optimization routines that seek to select a best solution (with regard to some nutrition criterion) among a set of available policies or program alternatives.

• *“Mostly” because not all tools follow mathematical optimization algorithms. Some are simply spreadsheet applications. But all the tools considered here share the intent of improving the use of available knowledge and data in designing nutrition policies and programs.
Are the programs effectively addressing the priorities?

What will it cost and how should it be financed?

What can other sectors (ag, health) do to help?

Why invest in nutrition?

What happens if no action is taken over the next 5, 10, 20 years?

Which nutritional issue should take priority?

What actions will best address this issue?

What will it cost and how should it be financed?

Does everyone need to benefit from this action?

Is the same approach needed everywhere?

What actions will maximize the nutritional benefits at the lowest cost possible?

What is the nutritionally ‘best’ diet at the lowest cost?

Should coverage be expanded, reduced?
Mapping nutrition modelling tools to nutrition policy cycle decisions and relevant actors

- **Policy Prioritization**: MOH, Prime Minister’s office; Chief economists, etc.
- **Funding**: MOH, MOF; Health Advocates; Economists
- **Allocative Efficiency**: MOH, Food/Nutrition partners; nutrition technical actors
- **Technical Planning**: MOH, Food/Nutrition development partners; nutrition technical actors
- **Learning, M&E**: Researchers, nutrition development partners; nutrition technical actors

Related tools:
- LiST, Optima, Minimod, NBAT
- Minimod, COD-FNG, Optima, NBAT
- Optifood, IMAPP, CoD-FNG
- Cost of Diet, Optifood

Personal Communication P. Menon
### Common strengths and limitations:

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Limitations</th>
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<tbody>
<tr>
<td>• All tools are</td>
<td>• Demanding data quality</td>
</tr>
<tr>
<td>• Strongly evidence-based</td>
<td>• LiST for instance only includes interventions with evidence for cause-specific mortality</td>
</tr>
<tr>
<td>• Oriented to decision making</td>
<td>• Some tools (Optifood, MiniMOD) require detailed dietary intake data</td>
</tr>
<tr>
<td>• Emphasize collaboration with end users</td>
<td>• Most tools require <strong>strong technical capacity</strong> to implement</td>
</tr>
<tr>
<td>• Most have</td>
<td>• Many offer training/technical assistance</td>
</tr>
<tr>
<td>• A key focus of application</td>
<td>• “All models are wrong” (but some are better than others)</td>
</tr>
<tr>
<td>• A <strong>costing component</strong> to help prioritize on the basis of cost-effectiveness</td>
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<tr>
<td>• The ability to plan long term scenarios</td>
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<td>• Results are verifiable and replicable</td>
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Role of The Nutrition Modeling Consortium

• Network, serve as information hub for modeling teams
• Bridge between modelers and end users
• Harmonize the supply of services
• Manage work packages
• Respond to future country requests for technical support
Structure of the Consortium

**Scientific Organizing Committee**

**Secretariat**
The Sackler Institute

**Key partners**
JHU, UCD, LSHTM, etc

**Nutrition Modeling Consortium**
(Invited modeling teams)

- **Oversee all activities**
- Plan meetings and agenda, select partners
- Commission Task Forces, review TF outputs
- Interface with research / policy community

- **Responds to SOC requests**
- Coordinate and support all activities (TF, work packages, communications, etc)
- Reach out to End Users, organize meetings

- **Work on TF, work packages,**
- **Contribute scientific materials,**
- **Respond to country requests**
- **Provide training, technical assistance**
CONSORTIUM IMPACT PATHWAY


Reach out to End Users → End Users Better Aware of Tools → Tools Adopted
Activities

• Three Task Forces were created
  • TF1: Building the consortium
  • TF2: Aligning data and assumptions
  • TF3: Reaching out to end-users

• New tools being identified and recruited

• Virtual networking between users and modelers

• Compendium of case studies in preparation

• Dissemination of information to broader audiences
### Three case-studies in the use of modeling tools:

<table>
<thead>
<tr>
<th>Tool used</th>
<th>Location</th>
<th>Reason for use</th>
<th>Nat’l Collaborator</th>
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</thead>
<tbody>
<tr>
<td>LiST</td>
<td>Malawi</td>
<td>Scaling up to attain SDG nutrition goals</td>
<td>Felix Phiry</td>
</tr>
<tr>
<td>Optifood</td>
<td>Guatemala</td>
<td>Establishing dietary recommendations</td>
<td>German Gonzalez</td>
</tr>
<tr>
<td>MiniMOD</td>
<td>Cameroon</td>
<td>Programming micronutrient interventions</td>
<td>Ann Tarini</td>
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Case study 1: LiST in Malawi

Key question: What impact can the scaling up of key nutrition-specific and WASH interventions have on stunting in Malawi by 2025?

<table>
<thead>
<tr>
<th>SCENARIO A</th>
<th>SCENARIO B</th>
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<tbody>
<tr>
<td>Scale interventions to reach targets proposed in the NNP</td>
<td>Scale interventions to 100% coverage to show the maximum potential benefit</td>
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Outcome of the exercise

• Revised NNSP to include additional “high impact” nutrition-specific & nutrition-sensitive interventions given gap between impact desired and LiST-projected impact

• Revised some targets that were substantially misaligned with past trends on similar/or related complementary service indicators

• Strengthened evidence for multi-sectoral nutrition advocacy and improving policy coordination with related sectors, such as Ministry of Agriculture and Food Security

• Used findings as inputs to a nutrition advocacy strategy that emphasizes the importance of nutrition and nutrition-sensitive interventions in Malawi’s development agenda

LiST analyses revealed that many targets in NNP were not realistic: e.g., meeting the 5 years stunting target would require scaling the nutrition-specific and WASH interventions to 100%
Case study 2. Optifood in Guatemala

Key questions:

• How nutritious are local diets?
• What are the key nutrient gaps?
• Can these gaps be reduced using locally available, nutritious and low-cost foods?
• Which local foods could improve diet adequacy in key target groups?
• What other strategies (supplementation, biofortification, etc) will be needed to ensure minimally adequate diets?
• What sectors should participate in this effort?
Outcome of the exercise

• Results were used to develop FBRs for
  - Children aged 6-23 months
  - Pregnant and lactating women

• The FBRs were tested using qualitative research and then incorporated into a behaviour change strategy for the Western Highlands

Optifood showed:

• That micronutrients supplements & fortified flours were needed to meet nutrient adequacy
• The real cost of a nutritious diet and who could afford it
• The need to train Ag extension workers in supporting recommended crops
• The importance of improving access to local markets to make recommended foods available

Fuente: PMA
Case study 3: MiniMOD in Cameroon
Key question: How to achieve target levels of VA Intake at scale?

Dietary Intake of VA by Children

Reach Coverage Effective Coverage

South North Large Cities South North Large Cities
Cube (0.4 µg/g) Flour (0.04 µg/g)
Outcome of the exercise

- Important cost differentials between regions in “Business as usual” model
- Geography and infrastructure matter
- A combination of approaches tailored to regional cost structure is better than BAU
- Better coverage is achieved at a reduced cost (savings of 45% at national level: $21mil vs $37.7mil)
Conclusions on the value of the Consortium

• Clarifies the space occupied by each tool
• Creates a mechanism to streamline assumptions, data sources, objectives of each tool
• Demonstrates the potential to “tag team” the provision of modeling services
• Allows to pool resources to build in-country capacity
• Provides a global mechanism of exchange between modelers and end users
• Ensures pertinence of topics through end user input and participation
Acknowledgements

• Tool modeling teams:
  • Cost of Hunger/Fill the Nutrient Gap: Saskia dePee, Frances Knight
  • IMAPP: Lindsay Allen, Alicia Carriquiry
  • LiST: Rebecca Heidkamp, Neff Walker
  • MiniMOD: Steve Vosti, Reina Engle-Stone
  • OMNI: Luz Maria de Regil, Homero Martinez
  • Optifood: Elaine Ferguson
  • Optima Nutrition: Jakub Katiekek, Nick Scott, Meera Shekar
  • PROFILES: Kavita Sethuraman, Monica Woldt

• Funding* and Collaborating Organizations
  • BMGF*: Ellen Piwoz, Rahul Rawat, Florencia Vasta
  • Micronutrient Forum*, GAIN: Lynette Neufeld
  • Sackler Institute team: Megan Bourassa, Saima Ahmed
  • Consultants to the Sackler Inst: Frances Knight, Saskia Osendarp

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THANK YOU!