Measuring Health and Economic Impacts of Micronutrient Fortification and the Role of Industry

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GLOBAL

To improve maternal, infant and young child nutrition

TARGETS 2025
Why is Health Economics Important for Nutrition?
How could the world prioritise the spending of $75 billion?

<table>
<thead>
<tr>
<th>Top 10 Worthy Investments</th>
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<td>1. Bundled micronutrient interventions to fight hunger and improve education</td>
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<td>2. Expanding the subsidy for malaria combination treatment</td>
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<td>3. Expanded childhood immunization coverage</td>
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<td>4. Deworming of schoolchildren to improve educational outcomes</td>
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<td>5. Expanding tuberculosis treatment</td>
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<td>6. R&amp;D to increase crop yields, to decrease hunger, fight biodiversity destruction, and lessen the impacts of climate change</td>
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<td>7. Investing in effective early warning systems to protect populations against natural disaster</td>
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<td>8. Hepatitis B immunization</td>
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<td>9. Using low-cost drugs in the case of acute heart attacks in poorer nations</td>
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<td>10. Salt reduction campaign to reduce chronic diseases</td>
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Return On Investment of 3:1 to 50:1
Health Economics for Nutrition Interventions

Unmet Health Need

- Micronutrient Needs
- Food Habits
- Taste
- Food Science & Technology

Societal Impact

- Improved nutrition status
- Increased productivity

Health Data

Impact Data

Health & Economic Benefits

- Is the intervention effective?
- If the intervention is effective, what are the economic gains for society and business?
Micronutrients in the Daily Filipino Diet

% per group not meeting daily requirement

- **0-5 y.o.**
  - Iron: 75
  - Vitamin A: 74
  - Vitamin C: 70
  - Calcium: 76

- **6-12 y.o.**
  - Iron: 83
  - Vitamin A: 80
  - Vitamin C: 70
  - Calcium: 93

- **13-19 y.o.**
  - Iron: 88
  - Vitamin A: 84
  - Vitamin C: 80
  - Calcium: 97

- **20-59 y.o.**
  - Iron: 74
  - Vitamin A: 81
  - Vitamin C: 76
  - Calcium: 90

- **> 60 y.o.**
  - Iron: 78
  - Vitamin A: 76
  - Vitamin C: 76
  - Calcium: 92

- **Pregnant**
  - Iron: 99
  - Vitamin A: 90
  - Vitamin C: 72
  - Calcium: 88

- **Lactating**
  - Iron: 92
  - Vitamin A: 92
  - Vitamin C: 83
  - Calcium: 90

Source: 2008 National Nutrition Survey, Food and Nutrition Research Institute-Department of Science and Technology
Micronutrient deficiencies (0.5-5 years) account for 0.38% of GDP loss

Wieser et al., submitted for publication
Efficacy of Micronutrient Fortification

Das et al. Systematic Reviews 2013, 2:67
http://www.systematicreviewsjournal.com/content/2/1/67

Micronutrient fortification of food and its impact on woman and child health: a systematic review
Jai K Das, Rehana A Salam, Rohail Kumar and Zulfiqar A Bhutta

Eichler et al. BMC Public Health 2012, 12:506
http://www.biomedcentral.com/1471-2458/12/506

Effects of micronutrient fortified milk and cereal food for infants and children: a systematic review
Klaus Eichler, Simon Wieser, Isabelle Rüthemann and Urs Brügger
The Challenge of Iron Fortification

To provide safe, efficient and cost-effective products

To guarantee consumer satisfaction

To deliver the nutritional benefits

Good Taste

Stability & Homogeneity in Products
(e.g., color, taste, flavors, etc)

Bioavailability
1800 households surveyed
2/3 of the households buy milk for their children

Would you buy more milk if it cost less?

- Yes: 983
- No: 50
Price Elasticity of Demand

- Price elasticity of demand for fortified milk is relatively inelastic across all SES.
- The strongest response to price changes clearly show the lowest two SES.

S. Wieser, personal communication, submitted for publication.
Consumer Awareness about Iron Deficiency

- Heard of iron in food: 65% (n = 1800)
- Weakness: 35%
- Anemia: 12%
- Cognitive Development: 5% (95 units)
“The growth of modern retailing and food processing can facilitate the use of fortification to combat malnutrition, but the increased availability of highly-processed, packaged goods may contribute to overweight and obesity.”

…”

For many countries …continued high rates of food insecurity and undernutrition, combined with increased prevalence of overweight and associated non-communicable diseases, are resulting in a “double burden” of malnutrition. However, not all nutrition transition effects are negative. Increased consumption of total energy and of animal-source foods are positive trends for food insecure populations with monotonous diets.”
Why Market Driven Fortification?

- Consumer Acceptance
  - Food Habits
  - Taste

- Quality & Safety

- Sustainable Business Model

Public Private Partnership