

# Measurement of benefits in economic evaluations of nutrition interventions in low- and middle-income countries: a systematic review

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SELECTED FINDINGS PRESENTED BY CHLOE PUETT, PHD

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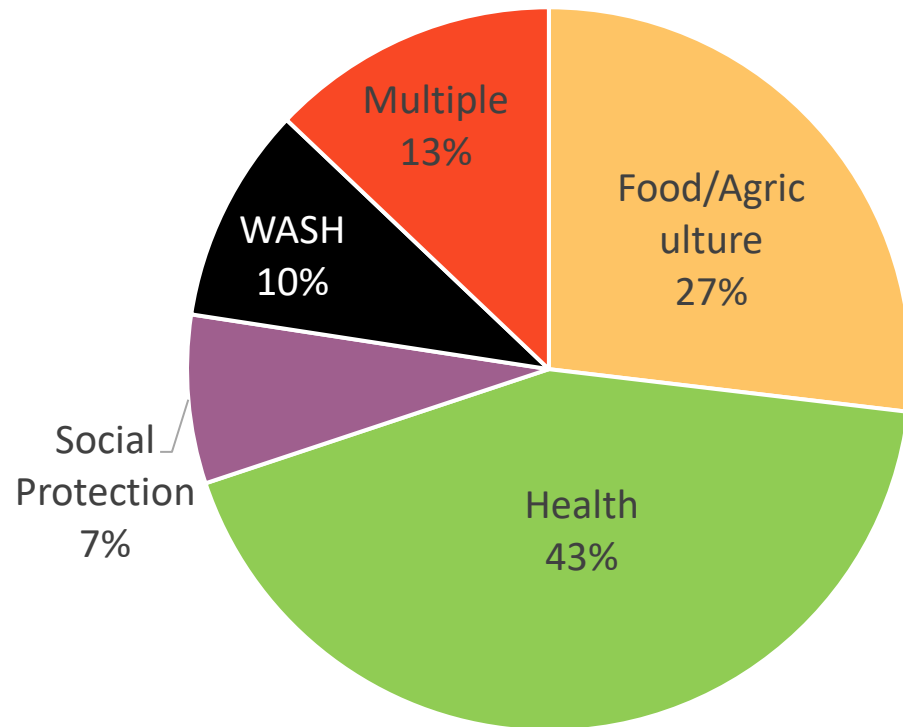
# Defining economic terms

- **Benefit:** all tangible and intangible outcomes of multi-sectoral nutrition interventions having value to individuals, households and communities
- **Cost-effectiveness analysis:** economic analysis comparing cost to one benefit at a time in a cost-effectiveness ratio
- **Cost-utility analysis:** compares costs to (multiple) health-related benefits in terms of “utility”, e.g. DALYs
- **Benefit-cost analysis:** compares costs to (multiple) monetized intervention benefits, assess if \$ value of benefits > costs

# Study overview

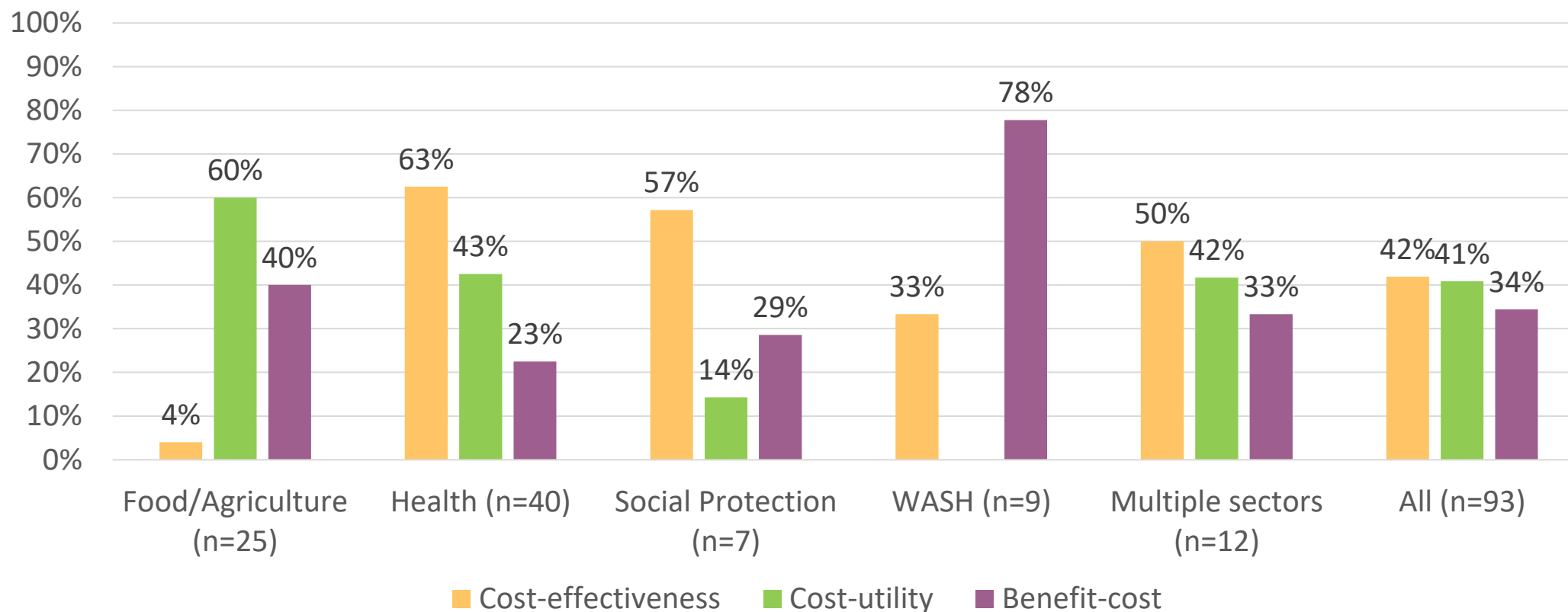
- Aims:
  - Characterize the types of nutrition-specific and nutrition-sensitive interventions included in recent economic evaluations
  - Assess the range of terminology and methodological approaches used to value the benefits of these interventions
- Study inclusion criteria:
  - English, peer-reviewed studies published in 2010 or later
  - Assesses a nutrition-specific or -sensitive intervention included in the UN/REACH *Compendium of Actions for Nutrition* in a LMIC (78 potential interventions)
  - Reports an economic evaluation (cost-effectiveness, cost-utility, or benefit-cost) ratio
  - Ratio includes at least one nutrition-related benefit (↑ nutritional status, income, food security, dietary diversity, nutrition-related knowledge/attitudes/practices, women's empowerment; ↓ diarrheal incidence, spending related to nutritional disorders)

# Studies by sector (N=93)



- Only 8 studies (9%) evaluated multi-sector programs
- Most frequently-studied interventions in each sector:
  - Health: management of SAM, zinc supplementation (12 studies each)
  - Food/ag: mass fortification (9 studies), biofortification (7 studies)
  - Social protection: food vouchers (4 studies), unconditional cash transfers (3 studies)
  - WASH: household water treatment/storage (5 studies), sanitation access (4 studies)

# Type of economic evaluation conducted, by sector



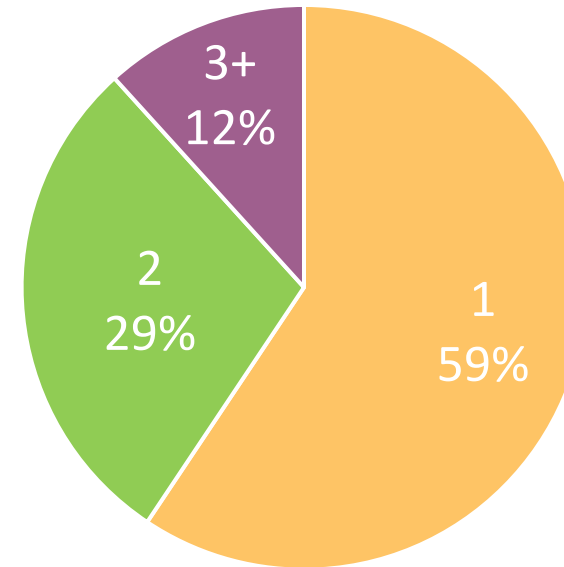
## Benefits included in CEA, CUA, and BCA ratios (N=128)

|   | All        | Food/<br>Agriculture | Health    | Social<br>Protection | WASH      | Multiple  |
|---|------------|----------------------|-----------|----------------------|-----------|-----------|
| <b>Total # of economic evaluation ratios</b>          | <b>128</b> | <b>27</b>            | <b>54</b> | <b>16</b>            | <b>14</b> | <b>17</b> |
| <b>Nutrition status improved</b>                      | 56%        | 56%                  | 72%       | 31%                  | 7%        | 71%       |
| <b>Other health status improved</b>                   | 6%         | 0%                   | 9%        | 0%                   | 0%        | 18%       |
| <b>Monetization of health status<br/>improvements</b> | 8%         | 11%                  | 4%        | 0%                   | 29%       | 6%        |
| <b>Productivity gain</b>                              | 12%        | 11%                  | 11%       | 0%                   | 29%       | 12%       |
| <b>Cognitive/education gain</b>                       | 2%         | 0%                   | 0%        | 19%                  | 0%        | 0%        |
| <b>Cost savings: health system</b>                    | 13%        | 0%                   | 19%       | 0%                   | 21%       | 24%       |
| <b>Cost savings: beneficiary</b>                      | 22%        | 4%                   | 28%       | 0%                   | 57%       | 24%       |
| <b>Dietary diversity</b>                              | 2%         | 4%                   | 0%        | 13%                  | 0%        | 0%        |
| <b>Knowledge/attitude/practice</b>                    | 7%         | 0%                   | 6%        | 0%                   | 43%       | 0%        |
| <b>Food security</b>                                  | 5%         | 4%                   | 0%        | 25%                  | 0%        | 6%        |
| <b>Income</b>   | 9%         | 33%                  | 0%        | 13%                  | 0%        | 6%        |

# Trends in benefit inclusion

- For nutrition status improvements, 60% of ratios use just 5 conditions:
  - Wasting
  - Stunting
  - Diarrhea
  - Anemia
  - Vitamin A deficiency

- 60% of ratios included just 1 benefit



# Conclusions

- Choice of the type of economic evaluation and which benefits are included are strongly related to the intervention's sector
- Economic evaluation of more non-health sector and multisectoral interventions are needed
- Several benefits (including women's empowerment and mental/social benefits) are often omitted, regardless of sector
- Cost savings (indirect and direct) should be included in more economic evaluations, regardless of evaluation type



Thank you!

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