Poultry egg production and utilization among women participating in the Nutrition Links Project in a rural district of Ghana

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Presentation Outline

What gaps informed research?/Why it is important.
Nutrition Links Project
Methods: Poultry Intervention
Findings
Challenges & lessons learned for Agriculture Nutrition and Health (ANH) research and policy in Africa
Conclusion and implications of study
**What Gaps Informed Research?/ Why It Is Important**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>National (%)</th>
<th>Eastern Region (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stunted(^1)</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Wasted(^1)</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Anaemia(^1)</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>Minimum adequate diet(^2)</td>
<td>13</td>
<td>4</td>
</tr>
</tbody>
</table>

\(^1\) Under 5 y  
\(^2\) 6-23 mo

Source: Ghana DHS, 2014
Nutrition Links Project

Objectives

- Increase vulnerable households’ access to quality services in agriculture/fisheries, nutrition and health, and finance
- Implement integrated intervention activities to improve infant and young child and adolescent nutrition outcomes

Integrated interventions
(i) women with infants 0-12mo
(ii) Adolescent girls 9-13 years

Integrated training of district staff & communities

Longitudinal data system for better planning

Educational radio intervention
Methods
Study Site

Source: http://www.mapcruzin.com/free-ghana-maps.htm

Study Design, Sampling, Data collection

- **Design**: randomized control trial
- **Population**: women with infants 0-12 mo
- **Phase 1**: 144 intervention, 89 control (Feb’15-Jan’16)
- **Phase 2** (Pass-on-the-gift): 89 intervention, 90 control (Feb’16-Jan’17)
Poultry Intervention
Integrated Intervention-Other Activities

**Home gardens**
- Green leafy vegetables
- Orange flesh sweet potatoes

**Health**
- Optimal child feeding
- Growth monitoring and promotion
- Psychosocial stimulation

**Capacity building**
- Facilitated group discussions - gender & diversity
- Nutrition Education - dietary diversity, using garden vegetables and eggs

**Delivery**
- Community-based
- Initial training: mothers and facilitators
- Weekly meetings to facilitate nutrition education
- Interactive adult learning process
Poultry

Phase I = 40
Phase II = 30
Findings
# Selected Baseline Characteristics of Participants

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Phase 1 (n=124)</th>
<th>Phase 2 (n=87)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (mo)</td>
<td>9.6 ± 4.1</td>
<td>12.7 ± 6.2</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>61 (49.2)</td>
<td>43 (49.4)</td>
<td></td>
</tr>
<tr>
<td><strong>Maternal</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Age (y)</td>
<td>29.8 ± 13.3</td>
<td>30.5 ± 16.9</td>
<td></td>
</tr>
<tr>
<td>Ga-Adangme-ethnicity</td>
<td>90 (97.8)</td>
<td>76 (87.4)</td>
<td>P&lt;0.001</td>
</tr>
<tr>
<td>Married/Cohabiting</td>
<td>95 (79.8)</td>
<td>73 (96.1)</td>
<td>0.001</td>
</tr>
<tr>
<td>Completed Primary education</td>
<td>53 (44.5)</td>
<td>10 (11.6)</td>
<td>P&lt;0.001</td>
</tr>
<tr>
<td>Completed Secondary or higher</td>
<td>37 (31.1)</td>
<td>76 (88.4)</td>
<td></td>
</tr>
<tr>
<td>Occupation-Farming</td>
<td>61 (55.0)</td>
<td>34 (46.6)</td>
<td></td>
</tr>
<tr>
<td>Occupation- Trading</td>
<td>45 (40.5)</td>
<td>36 (49.3)</td>
<td></td>
</tr>
</tbody>
</table>

Mean ± SD or n (%); p<0.001
Poultry and Egg Management in Phase I: Process Monitoring Data (Feb’15-Jan’16)

<table>
<thead>
<tr>
<th>Per household</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening stock (hens)</td>
<td>40</td>
</tr>
<tr>
<td>Average hen mortality</td>
<td>9</td>
</tr>
<tr>
<td>Average ending stock</td>
<td>35</td>
</tr>
<tr>
<td>Range of ending stock</td>
<td>(11-52)</td>
</tr>
</tbody>
</table>

Use of eggs collected (N=802,663)

- Sold: 39%
- Undeclared: 37%
- Consumed: 14%
- Damaged: 2%
- Inputs purchased: 1%
- Gifted: 4%
- POG: 3%
Poultry and Egg Management in Phase 2: Process Monitoring Data (Feb’16-Jan’17)

<table>
<thead>
<tr>
<th>Per household</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening stock (hens)</td>
<td>30</td>
</tr>
<tr>
<td>Average hen mortality</td>
<td>6</td>
</tr>
<tr>
<td>Average ending stock</td>
<td>27</td>
</tr>
<tr>
<td>Range of ending stock</td>
<td>(7-34)</td>
</tr>
</tbody>
</table>

Use of eggs collected (N=440,608)

- Sold: 49%
- Undeclared: 28%
- Consumed: 11%
- Damaged: 7%
- Inputs purchased: 2%
- Gifted: 2%
- POG: 2%
Monthly Egg Production by Phase I Households and Consumption by Children (N=124)
Monthly Egg Production by Phase 2 Households and Consumption by Children (N=87)
Child Egg Consumption in Previous 24 Hours at Baseline and Endline

P=0.02

Baseline

Endline

Phase 1

Phase 2

Phase 1

Phase 2

% children

No

Yes
Child Poultry Meat Consumption in Previous 24 Hours at Baseline and Endline

**P = 0.02**

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Legend:
- No
- Yes
Challenges

- Issues with accessibility to communities (poor road network, regular maintenance of project vehicles)
- Issues with telecommunication network coverage (participants having challenges to report distress issues)
- Working with multiple partners (supporting agric extension officers to poultry intervention due to inadequate resources)
- Group meetings - lateness, non-cohesion, leadership
- Intense supportive supervision of intervention (new to district, community, households)
- Non-adherence to good poultry management practices
- Repayment of feed and medication debt
Challenges

- Marketing of eggs (support from project staff)
- Caregivers placing greater emphasis on egg sales for income and success of their poultry enterprise rather than home consumption
- Sustainability planning
  - Long-term support for agriculture-based interventions
    - Poultry (feed production, medication and storage issues, technical knowledge setting up an independent person to maintain regular supply.)
Lesson Learnt

- The need for stakeholder engagement at all levels (especially agriculture office, district assembly) for the success and sustainability of integrated agriculture interventions
- Commitment by participants
- Need for continuous communication and information sharing among project participants and stakeholders
- Implementation of sustainability measures from the start of project
Conclusion and implications of study

- There was a non-significant increase in egg consumption as caregivers placed more emphasis on egg sales and poultry enterprise.

- In-depth evaluation is on-going to better understand caregivers’ behaviours and to determine the project effect on total egg utilization.

- There is the need for stakeholder collaboration at all levels for the success of integrated agriculture interventions.
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Institutional Partners

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Thank you