Women’s Empowerment in Livestock Focused Livelihoods: Pathways to Maternal and Child Nutrition

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Conflict of Interest Disclosure

I have no conflict of interest to report in relation to this presentation.

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Outline

• Background
• Objectives and Methods
• Results
  – DHS Analysis
  – Qualitative Research
  – WELI in Tanzania
• Summary of Findings
• Measurement Implications
Background

- WE is a key pathway in the agriculture to nutrition framework
- Select WE indicators linked to positive maternal and child health and nutrition
- WE is complex, debates over meaningful measurement continue;
- Tools and metrics are needed to monitor / evaluate programs and SDGs
Objectives

- Identify how WE in general and WE achieved through livestock interventions may influence maternal and child nutrition
- Validate and refine as needed existing WE tools to ensure relevance for livestock and maternal and child nutrition
Methods

• **Analysis of DHS data** from East Africa to identify relevant domains of empowerment for maternal and child nutrition

• **Qualitative research** to explore domains of empowerment relevant for [livestock focused] agriculture and maternal and child nutrition in: Ethiopia, Northern Kenya, Tanzania

• **Analysis of HH survey data** from livestock focused livelihoods project in Tanzania (dairy value chain) that used the Women’s Empowerment in Livestock Index (WELI)

• Refinement of empowerment indices

• Approaches and learnings applied to similar work in **Bihar, India**
DHS Analysis

Ethiopia, Kenya, Tanzania, Rwanda, Uganda: 2010-14

22 items explored in EFA/CFA with random split half sample
- 9 EC
- 5 IA
- 8 AA

Estimated standardized measurement model across countries
3 factor, 12 item model invariant across contexts

<table>
<thead>
<tr>
<th>Latent factor</th>
<th>Measurement item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enabling Conditions (Human/social assets)</td>
<td>1. Age at first sex</td>
</tr>
<tr>
<td></td>
<td>2. Age at first cohabitation</td>
</tr>
<tr>
<td></td>
<td>3. Age at first birth</td>
</tr>
<tr>
<td>2. Attitudinal Agency (Gendered attitudes and beliefs)</td>
<td>Extent to which one agrees that wife beating is justified under the following conditions:</td>
</tr>
<tr>
<td></td>
<td>1. Wife goes out without telling her husband</td>
</tr>
<tr>
<td></td>
<td>2. Wife neglects the children</td>
</tr>
<tr>
<td></td>
<td>3. Wife argues with her husband</td>
</tr>
<tr>
<td></td>
<td>4. Wife burns the food</td>
</tr>
<tr>
<td></td>
<td>5. Wife refuses to have sex with her husband</td>
</tr>
<tr>
<td>3. Instrumental Agency (Household decision-making)</td>
<td>Extent to which woman males, or both husband and wife make, decisions on the following household activities:</td>
</tr>
<tr>
<td></td>
<td>1. Use of woman’s earnings</td>
</tr>
<tr>
<td></td>
<td>2. Woman’s health</td>
</tr>
<tr>
<td></td>
<td>3. Large household purchases</td>
</tr>
<tr>
<td></td>
<td>4. Visits to family and/ friends</td>
</tr>
</tbody>
</table>

Contextually specific items included
- Women’s schooling achievement in Tanzania and Uganda
- Attitudes towards abuse if wife has an affair in Rwanda
- Difference in spousal earnings in Uganda
Effects of empowerment domains on maternal nutrition increased with increasing wealth

**Note:**

- Model fit statistics: $\chi^2 = 322.7$; df=231; RMSEA=0.005; and CFI=0.986
- Wealth tertiles based upon Demographic and Health Surveys household wealth index
- Hemoglobin model excludes Kenya (n=7989)
- All significant at $p < 0.01$ unless specified; $^* p < 0.05$

**Poster:** Monday, 11.30 - 12.30; TS 6; 14/11/2011

Women's Empowerment: Pathways towards Maternal and Child Nutritional Outcomes
Qualitative Research in Tanzania, Ethiopia and Kenya

- Community members universally associated empowerment with income earning opportunities and control over income.
- Domestic violence a key potential adverse/unintended consequence of empowerment efforts.
- Women decide what to buy and how much but men decide how much money to allocate to food purchases, hence importance of income for women.
  - "If the woman is empowered, she will probably have enough earnings and so she will be able to better manage the issue of nutrition at home. But if a woman is not empowered, there will be serious challenges in the issue of nutrition in the family." (young woman, Wami Sokoine, Tanzania)
- Time allocation raised as significant indicator of women’s empowerment in Ethiopia but less so in Kenya, Tanzania.
  - The disempowered [woman], she cannot manage her time. She can’t plan. She doesn’t manage herself or her time. “– (young woman, Nekemte, Oromia, Ethiopia)
## Tanzania: WELI

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Indicator Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Decisions about livestock production</strong></td>
<td>a. Input into productive decisions</td>
</tr>
<tr>
<td></td>
<td>b. Autonomy in production</td>
</tr>
<tr>
<td><strong>2. Decisions related to nutrition</strong></td>
<td>a. Input into nutrition decisions</td>
</tr>
<tr>
<td></td>
<td>b. Autonomy in nutrition</td>
</tr>
<tr>
<td><strong>3. Access to and control over resources</strong></td>
<td>a. Access to and control of livestock assets</td>
</tr>
<tr>
<td></td>
<td>b. Access to and control of land and crop assets</td>
</tr>
<tr>
<td></td>
<td>c. Credit access</td>
</tr>
<tr>
<td><strong>4. Control and use of income</strong></td>
<td>a. Control over farm income</td>
</tr>
<tr>
<td></td>
<td>b. Control over non-farm income</td>
</tr>
<tr>
<td></td>
<td>c. Control over expenses</td>
</tr>
<tr>
<td><strong>5. Access to and control of opportunities</strong></td>
<td>a. Access to markets</td>
</tr>
<tr>
<td></td>
<td>b. Access to non-farm income opportunities</td>
</tr>
<tr>
<td></td>
<td>c. Access to information, training, groups</td>
</tr>
<tr>
<td><strong>6. Extent and control of work time</strong></td>
<td>a. Total workload</td>
</tr>
<tr>
<td></td>
<td>b. Proportion of revenue generating workload</td>
</tr>
<tr>
<td></td>
<td>c. Control over own time</td>
</tr>
</tbody>
</table>
Tanzania – WELI Findings

- Maternal and child diet diversity, diet diversity adequacy and consumption of meat, fish and eggs positively associated with WELI score overall and the following domains:
  - Production-related decision making
  - Control over non-income resources
  - Control over income
  - Access to opportunities

- Nutrition domain and time use domain NOT associated with food security or maternal and child diet indicators.

- No associations with household food security (FIES)
## Tanzania WELI – reduced form

### 4 Dimensions, 32 items

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Production-related decision making (12 items)</strong></td>
<td>Animal species / breeding, Animal shelter and cleaning, Vet services, Crop production</td>
</tr>
<tr>
<td><strong>Assets-related decision making (6 items)</strong></td>
<td>Animal sales, Land use, Crop sales</td>
</tr>
<tr>
<td><strong>Access to and control over Income (10 items)</strong></td>
<td>Use of Income, Types of Expenditures, School fees</td>
</tr>
<tr>
<td><strong>Access to and control over Opportunities (4 items)</strong></td>
<td>Selling and Buying in the market, Business / employment</td>
</tr>
</tbody>
</table>
Summary and Implications

• Important domains for inclusion in WE assessment:
  – Access to and control income, assets and opportunities
  – Attitudes towards / experiences with domestic violence
  – Participation in decision-making on livestock production and products, household economic decisions

• Time use modules require additional consideration in terms of assessment method and inclusion

• Nutrition specific items may need to focus on decision making around how much money is spent on food

• Minimum wealth threshold may exist before empowerment can translate into improved maternal and child nutrition
IUNS Presentations

Jones, R. Women's Empowerment: Pathways towards Maternal and Child Nutritional Outcomes (144/2031). Mon, Oct 16, 11.30 - 12.30; Screen 6;

Dominguez-Salas, P. Empowerment in Pastoralist Women, and the Association with Maternal and Child Diets and Household Food Security (144/1367). Mon Oct 16, 15.00 - 16.30, Retiro C
Manuscripts, Presentations, Theses,


*graduate students
Agriculture and Nutrition

- Food Availability and Access
- Food Prices

Gender Sensitive

Production

- Retain in HH
- Processing / Storage
- Food
- Food Access
- Food Expenditures
- NonFood Expenditures
- Women's Empowerment
- Time / Labor Saving

Care Giving

- Diet and Feeding
- WASH
- Health Seeking

Utilization

- Intake
- Illness

Child nutrition

Maternal nutrition

Adapted from Headey 2011; Gillespie, S. et al. 2012; Herforth et al. 2015
Agriculture and Nutrition

HQF Availability and Access
HQF Prices

Nutrition Sensitive

Retention HQF in HH
Improved Processing / Storage
HGF Access
Improved Diet and Feeding
WASH
Health Seeking
Intake
Illness
Utilization

NonFood Expenditures
Health Access
WASH Access

Gender Sensitive

Women’s Empowerment
Time / Labor Saving
Energy Expenditures

Exposure to feces / disease / mycotoxins

Environmental Enteropathy

Sell for Income
Expenditures

What do we mean by women’s empowerment (WE)?

Enabling Resources
- Social
- Physical
- Financial
- Natural
- Human

Agency
- Voice viewpoints
- Mobility
- Influence in decisions

Achievement
- Own health and nutrition
- Child’s health and nutrition

Adapted from van den Bold, 2013; Yount et al., 2014 and Kabeer, 2010
## WELI, Food Security and Diets

<table>
<thead>
<tr>
<th>Household Food Security Category</th>
<th>WELI Score</th>
<th>Product Domain</th>
<th>Nutrition Domain</th>
<th>Assets Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mildly food insecure</td>
<td>0.8 (0.4, 5.4)</td>
<td>1.2 (0.7, 7.5)</td>
<td>2.4 (0.05, 3.5)</td>
<td>0.9 (0.2, 8.2)</td>
</tr>
<tr>
<td>Moderately food insecure</td>
<td>1.1 (0.2, 3.8)</td>
<td>0.7 (0.7, 3.8)</td>
<td>0.2 (0.8, 1.4)</td>
<td>0.6 (0.4, 6.1)</td>
</tr>
<tr>
<td>Severely food insecure</td>
<td>1.3 (0.7, 4.5)</td>
<td>1.2 (0.2, 7.2)</td>
<td>1.6 (0.5, 2.4)</td>
<td>0.2 (0.1, 6.1)</td>
</tr>
</tbody>
</table>

### Maternal Diet in previous 24 h

| Diet diversity score | 1.4** (1.2, 3.3) | 1.7** (1.2, 4.5) | 1.4 (0.4, 2.1) | 1.9** (1.5, 2.7) |
| Adequate diet diversity  | 1.8** (1.3, 2.8) | 1.6 ** (1.3, 2.4) | 0.8 (0.7, 1.8) | 2.6 ** (1.9, 4.7) |
| Consumed meat, fish, eggs   | 2.0** (1.5, 3.0) | 2.9 (0.7, 4.5) | 1.4 (0.9, 2.0) | 3.1 ** (1.7, 4.7) |

### Child Diet in previous 24 h

| Diet diversity score | 1.2** (1.1, 1.9) | 1.8 (0.4, 2.5) | 1.3 (0.4, 1.7) | 2.4** (1.1, 4.5) |
| Adequate diet diversity  | 5.4** (3.0, 13.3) | 2.0** (1.8, 6.5) | 1.2 (0.2, 3.1) | 5.4 ** (2.8, 8.0) |
| Consumed meat, fish, eggs   | 4.2** (1.6, 10.7) | 2.3 ** (0.8, 3.7) | 1.1 (0.2, 1.7) | 4.6 ** (1.5, 7.8) |

Presented as Odds Ratios; **p<0.05; *p<0.1; Adjusted for tribe, household size, maternal age, and household income from other sources.
WELI, Food Security and Diets

<table>
<thead>
<tr>
<th>Household Food Security Category</th>
<th>Opportunities Domain</th>
<th>Income Domain</th>
<th>Time Use Domain</th>
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<tbody>
<tr>
<td>Mildly food insecure</td>
<td>0.9 (0.4, 5.4)</td>
<td>0.2 (0.05, 8.0)</td>
<td>0.4 (0.2, 2.1)</td>
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<tr>
<td>Moderately food insecure</td>
<td>0.6 (0.4, 3.1)</td>
<td>6.1 (0.7, 7.6)</td>
<td>0.3 (0.2, 3.6)</td>
</tr>
<tr>
<td>Severely food insecure</td>
<td>1.1 (0.2, 4.3)</td>
<td>1.1 (0.5, 9.0)</td>
<td>1.1 (0.7, 3.6)</td>
</tr>
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<th>Maternal Diet in previous 24 h</th>
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Presented as Odds Ratios; ** p<0.05; * p<0.1; Adjusted for tribe, household size, maternal age, and household income from other sources.
Tanzania WELI

• Current form burdensome
  – 92 items / questions
  – 2 hours to administer

• Qualitative research and CFA using a priori domains informed reduced version

• Rerun reduced form with food security and dietary outcomes (in progress)