USAID/ENGINE Research and Learning Agenda
Planning and Implementation of Birth Cohort Study and Agriculture Nutrition Panel Study
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Jennifer Coates, PhD
U.S. GOVERNMENT PARTNERS
PRESENTATION OVERVIEW

• Introduction
• USAID ENGINE Research and Learning Agenda
• Research Agenda Development
• Key Thematic Areas and Research Questions
• Birth Cohort study
  Design
  Methodology
  Data collection processes
• Agriculture Nutrition Panel Study
  Design
  Methodology
  Data collection processes
Figure 1: Framework for actions to achieve optimum fetal and child nutrition and development

Benefits during the life course
- Morbidity and mortality in childhood
- Cognitive, motor, socioemotional development
- School performance and learning capacity
- Adult stature
- Obesity and NCDs
- Work capacity and productivity

Optimum fetal and child nutrition and development
- Breastfeeding, nutrient-rich foods, and eating routine
- Feeding and caregiving practices, parenting, stimulation
- Low burden of infectious diseases

Nutrition specific interventions and programmes
- Adolescent health and preconception nutrition
- Maternal dietary supplementation
- Micronutrient supplementation or fortification
- Breastfeeding and complementary feeding
- Dietary supplementation for children
- Dietary diversification
- Feeding behaviours and stimulation
- Treatment of severe acute malnutrition
- Disease prevention and management
- Nutrition interventions in emergencies

Nutrition sensitive programmes and approaches
- Agriculture and food security
- Social safety nets
- Early child development
- Maternal mental health
- Women's empowerment
- Child protection
- Classroom education
- Water and sanitation
- Health and family planning services

Knowledge and evidence
- Politics and governance
- Leadership, capacity, and financial resources
- Social, economic, political, and environmental context (national and global)

Building an enabling environment
- Rigorous evaluations
- Advocacy strategies
- Horizontal and vertical coordination
- Accountability, incentives regulation, legislation
- Leadership programmes
- Capacity investments
- Domestic resource mobilisation

Lancet 2013
**Strategic Objective**
Improved nutritional status of women and young children through sustainable, comprehensive, coordinated, and evidence-based interventions

- **IR 1**: Capacity for and institutionalization of nutrition programs and policies
- **1R2**: Quality and delivery of nutrition and health care services improved
- **IR3**: Prevention of undernutrition through community-based nutrition care practices improved
- **IR4**: Rigorous and innovative learning agenda adopted
USAID/ENGINE RESEARCH AND LEARNING AGENDA

• Tufts University leads the objective of the development and implementation of a rigorous and innovative research and learning agenda

• Partnering with local institutions in research and capacity development, including: Jimma University, Hawassa University and the Ethiopian Public Health Institute (EPHI).

• This research component affords ENGINE the unique opportunity to provide policy makers with information to enable decision making around programs, on key nutrition concerns and their management and alleviation at a population level.
PARTICIPATORY RESEARCH AGENDA DEVELOPMENT PROCESS

• March 2012: Multi-institutional (donor, government, NGO, university) stakeholder workshop and research prioritization process:
  – Joint development of priority research agenda
  – Nineteen research questions were jointly agreed upon
    • *Secondary data*
    • *Primary data*
  – Partners solidified
    • *Jimma University, Hawassa University, EPHI*
RESEARCH QUESTIONS SPAN 3 MAIN THEMATIC AREAS

• Policy Drivers, Service Delivery and Provision

• Outcomes Research within the context of intervention strategies and approaches

• Effectiveness research to understand program implementation and impact (coverage, exposure, adherence in relation to expected outcomes, and impact assessment)
LEARNING AGENDA OBJECTIVES

• To inform USAID’s Feed the Future evaluation and learning agenda

• To provide evidence to inform Ethiopian Government policy and programming
  • Sharing of research findings
  • Sharing of data
To examine the interactions of nutrition specific and nutrition sensitive actions and maternal and infant health and nutrition outcomes

- A quasi-experimental observational birth cohort study on households with three study arms following pregnant women and their child from birth until 12 months of age.

- Annual institutional interviews of health service delivery workers including Health Extension workers (HEW) and health workers (HW) and agricultural extension/education agents called Development agents (DA).
### ENGINE Woredas in the different regions in Ethiopia

<table>
<thead>
<tr>
<th>Region</th>
<th>AGP</th>
<th>Non AGP</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tigray</td>
<td>8</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Amara</td>
<td>22</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Oromia</td>
<td>34</td>
<td>9</td>
<td>43</td>
</tr>
<tr>
<td>SNNPR</td>
<td>19</td>
<td>6</td>
<td>25</td>
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<tr>
<td>Somali Region</td>
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<td>16</td>
<td>16</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>83</strong></td>
<td><strong>33</strong></td>
<td><strong>116</strong></td>
</tr>
</tbody>
</table>

### Selected Woredas for Birth Cohort study and Sample size

<table>
<thead>
<tr>
<th>Name of woreda</th>
<th>Sample size of Women</th>
<th>Sample size of Frontline Workers</th>
<th>Number of kebeles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woliso</td>
<td>1559</td>
<td>222</td>
<td>31</td>
</tr>
<tr>
<td>Gomma</td>
<td>1560</td>
<td>226</td>
<td>31</td>
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<tr>
<td>Tiro-Afeta</td>
<td>1561</td>
<td>112</td>
<td>16</td>
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<tr>
<td>Time point</td>
<td>Description</td>
<td>Interviewee</td>
<td>Sample size</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------</td>
<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>1</td>
<td>Prenatal 1 (enrollment)</td>
<td>Woman/household head</td>
<td>4680</td>
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<tr>
<td>2</td>
<td>Prenatal 2 (if applicable)</td>
<td>Woman</td>
<td>902</td>
</tr>
<tr>
<td>3</td>
<td>Immediately after birth through 3 days after birth</td>
<td>Woman</td>
<td>4658</td>
</tr>
<tr>
<td>4</td>
<td>Infant is 3 months (+/- 2 weeks)</td>
<td>Woman</td>
<td>4289</td>
</tr>
<tr>
<td>5</td>
<td>Infant is 6 months (+/- 2 weeks)</td>
<td>Woman</td>
<td>4179</td>
</tr>
<tr>
<td>6</td>
<td>Infant is 9 months (+/- 2 weeks)</td>
<td>Woman</td>
<td>4115</td>
</tr>
<tr>
<td>7</td>
<td>Infant is 12 months (+/- 2 weeks)</td>
<td>Woman/household head</td>
<td>3728</td>
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<tr>
<td>Module Name</td>
<td>Prenatal 1</td>
<td>Prenatal 2</td>
<td>Birth</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------</td>
<td>------------</td>
<td>-------</td>
</tr>
<tr>
<td>Women</td>
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<td></td>
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<td>Household Information and Characteristics</td>
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<td>Water, Hygiene and Sanitation</td>
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<td>Diet and Food Security (Woman)</td>
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<td>Health Status and Pregnancy</td>
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<td>Psychosocial Stress Measurement</td>
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<tr>
<td>Birth Event</td>
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<tr>
<td>Infant Health</td>
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<td>x</td>
<td>x</td>
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<tr>
<td>IYCF</td>
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<tr>
<td>Nutrition Knowledge Assessment</td>
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<tr>
<td>Gender and Decision Making</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Participation and Access to Information</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Other Income &amp; Expenditure</td>
<td>x</td>
<td></td>
<td></td>
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<tr>
<td>Laboratory Tests and Anthropometric Measurements</td>
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<td></td>
<td>x</td>
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<tr>
<td>Men</td>
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<tr>
<td>Household Information &amp; Characteristics</td>
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<tr>
<td>Household Food Security</td>
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</tr>
<tr>
<td>Gender and Decision Making</td>
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<td></td>
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<tr>
<td>Social Participation and Access to Information</td>
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<tr>
<td>Agricultural Production</td>
<td>x</td>
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<tr>
<td>Other Income &amp; Expenditure</td>
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</table>
ANALYSES THUS FAR

• Factors associated with Low MUAC in pregnant women in three woredas of Oromia, Ethiopia
• Factors associated with birth weight, length and length for age in three woredas of Oromia, Ethiopia
• Factors associated with anemia in pregnant women in three woredas of Oromia, Ethiopia
• Understanding Service Provision around Health and Nutrition in Select Woredas of Oromia Region in Ethiopia
• +2 PhD manuscripts
ACKNOWLEDGEMENTS

• All Supervisors and Enumerators
• Dr. Jeffrey K. Griffiths, Co-PI (Tufts University)
• Dr. Tefera Belachew, Co-PI (Jimma University)
• Debebe Moges, Co-PI and PHD Candidate (Hawassa University)
• Meghan Loraditch, Tufts Program Manager
• Kidane Ayele, Tufts Birth Cohort Study Manager
• Yitbarek Woldentensay, Tufts ENGINE Representative and Researcher and PHD Candidate
• Addisalem Fikre, Tufts Agriculture-Nutrition Study Manager
• Abdul Halik Workicho (PHD Candidate, Jimma University)
• Alemzewed Roba (PhD Candidate, Jimma University)
ACKNOWLEDGEMENTS

• Yared Hailu, Data Manager, (Jimma University)
• Yesufe Getu, Data Manager (Jimma University)
• Kathryn Spielman (Data Analyst)
• Leslie Wentworth and Krista Zilmer (Data Analyst/Student Researchers, Tufts)
• Other Jimma and Hawassa and EPHI colleagues assisting with training, logistics, and other study implementation
• Vasken Sissian, Communications and Logistics Coordinator
• Nigat Ayele, Project Administrator
• Meghan Davis, Project Administrator (Tufts)
• Dr. Habtamu Fekadu (CoP) and Dan Abbott (Deputy CoP)
• Study participants
Agriculture Nutrition Panel Study
Oromiya and SNNPR
Cluster random sampling of:

10 Woredas

2 Kebeles *per* Woreda:
  1 Nut Specific
  1 Nut Specific + Sens.

1200 Households:
  600 Nut Specific
  600 Nut Specific + Sensitive
## DATA COLLECTION TIMELINE

<table>
<thead>
<tr>
<th>Round</th>
<th>Seasonality</th>
<th>Start Date</th>
<th>Completion Date</th>
</tr>
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<tbody>
<tr>
<td>One</td>
<td>Post Harvest</td>
<td>Feb, 2014</td>
<td>April, 2014</td>
</tr>
<tr>
<td>Two</td>
<td>Pre Harvest</td>
<td>Sept, 2014</td>
<td>Nov 19, 2015</td>
</tr>
<tr>
<td>Three</td>
<td>Post Harvest</td>
<td>March, 2015</td>
<td>April, 2015</td>
</tr>
<tr>
<td>Four</td>
<td>Pre Harvest</td>
<td>Sept, 2015</td>
<td>Nov, 2015</td>
</tr>
</tbody>
</table>
COMPREHENSIVE QUESTIONNAIRES

- **Adult Female**: water and sanitation, household diet, food security, social networks, female empowerment in agriculture, program exposure and uptake, livestock product production, time allocation, homestead garden production, food expenditures, anthropometry

- **Adult Male**: time allocation, sanitation, asset ownership, farmer association participation, program exposure and uptake, ag production and marketing, labor allocation, ag technology and management practices, income, expenditure, savings, shocks, anthropometry.

- **Mother/Caretaker of child <5 yrs**: women’s and child health status, illness episodes, infant and child feeding practices, nutrition knowledge, mother and child anthropometry
ANALYSES THUS FAR

1. Determinants of Participation in the “Nutrition-sensitive” Agricultural Activities of a Large-scale Integrated Nutrition Program in Ethiopia
2. Predictors of participation in nutrition-specific activities
3. Production Diversity, Agricultural Commercialization, Women’s Empowerment, and Dietary Diversity
4. Filling a dietary data gap? Validating the Adult Male Equivalent method of estimating individual nutrient intakes from household-level data in Ethiopia and Bangladesh
5. Nutrient intensity of production and expenditure
6. Predictors of Intra-household food and nutrient allocation inequity in Ethiopia
7. Predictors of ‘diet diversity smoothing’ during the lean season in Ethiopia

+ Manuscript from PhD students: Ethiopia based (2), US (1)
ACKNOWLEDGEMENTS

• All Supervisors and Enumerators
• Dr. Beyene Wondafrash, Co-PI (Jimma University)
• Alemzewed Roba, Co-PI (Hawassa University)
• Meghan Kershaw, Tufts Program Manager
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