From growing food to growing cash: the impact of agrarian transitions on diets and nutrition in rural Indonesia

Presenter: Amy Ickowitz, Center for International Forestry Research
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Drivers of Food Choice Grant

• Donors:
  o UK Government’s Department for International Development
  o Bill & Melinda Gates Foundation

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  o University of South Carolina, Arnold School of Public Health, USA
Project Partners:

- CIFOR
- University of Brawijaya
- Penn State University
- Poltekkes Pontianak
- Poltekkes Jayapura
Project Background

• Indonesian nutritional context
  o High stunting; nutrition transition; major increases in diabetes & CVD

• Rapid landscape change

• Idea: shift from mixed smallholder landscapes could impact rural food environment and food choice
  o Investigate role of land conversion to oil palm (OP) as an underlying driver of food choice in rural Indonesia.
How might change of land use to OP affect diets?

Land Use
- Oil Palm
- Swidden
- Hunting & collecting

Food Environment/Food Access
- Higher income
- Better infrastructure/markets
- Higher diversity of crops grown
- Access to wild foods
- Time?

Food Choice
- Diets → Nutritional Status
Study Sites:
Kapuas Hulu, West Kalimantan
Merauke & Jayapura, Papua
Methods & Design

• Sample selection:
  o In each site indigenous residents with half mother-child pairs (250) traditional lifestyle & half (250) oil palm

• Total sample
  o Approx 500 pairs per site and 1000 in total

• FGDs men & women

• 24 hr recall for pair; pre-harvest & post-harvest in WK; one season only in Papua (2017 & 2018)

• Anthropometry & hemoglobin assessments
Findings
West Kalimantan Children Under 5 (pre & post harvest seasons) nutritional status
* indicates statistical significance

<table>
<thead>
<tr>
<th>Stunting</th>
<th>Underweight</th>
<th>Wasting (WHZ)</th>
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<tbody>
<tr>
<td>Post Harvest (n=520)</td>
<td>50.8</td>
<td>42.4</td>
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<tr>
<td></td>
<td>49.8</td>
<td>41.4</td>
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<tr>
<td>Pre Harvest (n=435)</td>
<td>50.2</td>
<td>35.7</td>
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<td>47.9</td>
<td>42.3</td>
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FC: | OP: 

CIFOR

CENTER FOR INTERNATIONAL FOREST RESEARCH
Findings:
Nutritional Status of children under 5 in Papuan sites

- Underweight: 16.8% (Traditional Papuan household), 11.1% (Oil Palm household)
- Stunting: 19% (Traditional Papuan household), 18% (Oil Palm household)
- Wasting (WHZ): 6% (Traditional Papuan household), 4.4% (Oil Palm household)
Findings: Papuan women
(* : statistically significant)

Underweight: 8.3% (Traditional) 9.3% (Oil palm)
Normal: 45% (Traditional) 50.2% (Oil palm)
Overweight: 26.7% (Traditional) 25.8% (Oil palm)
Obese: 20% (Traditional) 14.7% (Oil palm)
Anemia: 69.5% (Traditional) 77.7%* (Oil palm)
## Food Group Intake Differences for Children under 5 across sites

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Other Differences

• OP households in both sites were wealthier

• Not just food groups, but foods within groups differ
  ○ In WK site, traditional hhs ate more wild meats; OP hhs ate mostly chicken & sausage

• Staples differed in Papua
  ○ Traditional hhs ate much more sago; OP hhs mostly ate rice
Wrap Up

• Oil Palm/cash crop production is associated with both negative and positive dietary changes
  - But not nutritional status in our sample;
• Donors, projects, governments, communities need to be aware of both sides to limit the unintended negative consequences of policies/projects
How to maintain the positive aspects of traditional diets and take advantage of opportunities brought by commercialization?
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THANKS VERY MUCH!