Priority, Viability and Spatial accessibility of livelihood: an empirical analysis in rural Ghana

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1. Introduction - operational definitions

- **Livelihood**: assets and activities required for making a living
- **Livelihood viability**: a livelihood is viable when it generates enough income to sustain its long term operation
- **Priority/preference**: the importance that households attach to their livelihood
- **Spatial accessibility**: commuting distance to livelihood destination
- **Livelihood diversity**: “the process by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standards of living” (Ellis 1998).
Livelihood

“Comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base (Chambers & Conway 1992).

Central element in definition

Resilience: to stress and shocks (Morse and McNamara 2009).
Sustainable Livelihood Approach (SLA)

• Evidenced based approach for understanding and facilitating development intervention (Dorward et al. 2001, Morse and McNamara 2009).

• SLA values the priorities and the interests of the poor (DfID 1999)

• Committed to all dimensions of sustainability: environmental, economic, social and institutional (DfID 1999)

• Integrated (non-sectoral) approach to development (DfID 1999)
Cross-sectoral application of SLA

• Water resources  (Nicol 2000)
• Forestry  (Anderson 2003)
• Urban development  (Farrington et al. 2002)
• Fisheries  (Allison and Ellis 2001)
• Natural resource management  (Pound 2003)
• Agriculture  (Carswell 1987)
Livelihood research focus

- **Conflict and disaster** (Cannon et al. 2003, Longley and Maxwell 2003)
- **Livelihood and health** (Loevinshon and Gillespie 2003)
- **Assets** (Chen et al. 2013; Boateng 2013; Diniz et al. 2013)
- **Adaptation strategies** (Diniz et al. 2013)
- **Vulnerability** (Hahn et al. 2013; Can et al. 2013)

The issue of priority, viability and spatial accessibility of community livelihood is yet to be investigated.
Why priority, viability and spatial accessibility?

- Community needs priority is crucial for realizing the intended expectations of development and conservation projects (Hussein and Ashley 2000)
- Understanding the spatiality of livelihood is critical for understanding the dynamics of rural livelihood (Ellis 2000)
- Spatiality offer insights to appreciate the processes that create and recreate livelihood opportunities for the marginalized (Bebbington 2000; McSweeney 2004; King 2010)
- Viability is crucial for long term community livelihood sustenance (Bebbington 1999)

Direct assessment of priority, viability and spatial access is not available
2. Study objective

To set the agenda for new livelihood research by empirically analysing priority, viability and spatial accessibility of household and community livelihood

Specific objectives

• Explore the priority-viability nexus of household livelihood
• Investigate the linkage between livelihood commuting distance and household income

Hypothesis

Current household livelihood preference does not necessarily connotes economic viability as preference could result from factors other than economic incentives.
3. Study area

Community population

**Ehiamankyne**: approx. 2000 with 333 households (110/333)

**Ahomahomaso**: 1600 with 320 households (90/320)

Sample size = (200/553)

Technique = stratification & random

Ahanta 2006
Study community
Community livelihood strategies
Data collection methods

Rapid rural appraisal

• Key informant interviews
• Household questionnaire survey (n=200)
• Participant observation
• Focus group discussion
Priority and viability scale design

0 - 1.24 = not a preference
1.25 – 2.4 = least preference
2.5 – 3.74 = moderate preference
3.75 – 5 = preference

\[ v = \frac{\sum_{i} iw}{N} \]
## 4. Results and discussion

### Livelihood participation (1)

#### Current household livelihood participation

<table>
<thead>
<tr>
<th>Activity</th>
<th>Male headed (n=110)</th>
<th>Female headed (n=90)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming (n=163)</td>
<td>97</td>
<td>66</td>
</tr>
<tr>
<td>Soap making (n=44)</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Petty trading (n=86)</td>
<td>35</td>
<td>19</td>
</tr>
<tr>
<td>Gari processing (n=93)</td>
<td>60</td>
<td>51</td>
</tr>
<tr>
<td>Labor work (n=31)</td>
<td>60</td>
<td>51</td>
</tr>
<tr>
<td>Migration (n=88)</td>
<td>48</td>
<td>40</td>
</tr>
<tr>
<td>Other (n=24)</td>
<td>13</td>
<td>13</td>
</tr>
</tbody>
</table>

#### Household perceived future livelihood participation

<table>
<thead>
<tr>
<th>Activity</th>
<th>Male headed (n=110)</th>
<th>Female headed (n=90)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming (n=10)</td>
<td>52</td>
<td>40</td>
</tr>
<tr>
<td>Soap making (n=92)</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>Petty trading (n=86)</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Gari processing (n=95)</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Labor work (n=3)</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Migration (n=94)</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Other (n=40)</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

### Graphs

- **Left graph**: Bar chart showing current household livelihood participation by gender and activity.
- **Right graph**: Bar chart showing household perceived future livelihood participation by gender and activity.
Drivers of future livelihood participation

- High returns: Female headed 28%, Male headed 50%, All 78%
- Year round activity: Female headed 33%, Male headed 36%, All 69%
- Knowledgable of operation: Female headed 15%, Male headed 25%, All 40%
- Little capital start up: Female headed 10%, Male headed 20%, All 30%
- Less environmental impact: Female headed 9.5%, Male headed 20%, All 29.5%
- No restriction: Female headed 10%, Male headed 14.5%, All 24.5%
- Other: Female headed 1%, Male headed 2%, All 3%
Household livelihood diversity

Number of engaged livelihood activities

- 1=not diversified
- 2=least diversified
- 3=diversified
- 4=more diversified
- 5=extremely diversified

- Participation based on gender

<table>
<thead>
<tr>
<th>Number of activities</th>
<th>Male (n=110)</th>
<th>Female (n=90)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>32</td>
</tr>
<tr>
<td>3</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>
Livelihood contribution to household income (2012-2014)

- Farming (n=163) 17%
- Soap making (n=44) 13%
- Petty trading (n=86) 16%
- Gari processing (n=93) 16%
- Labor work (n=31) 8%
- Migration (n=163) 17%
- Other (n=24) 14%

Legend:
- Brown: Farming (n=163)
- Green: Soap making (n=44)
- Pink: Petty trading (n=86)
- Dark Green: Gari processing (n=93)
- Light Green: Labor work (n=31)
- Black: Migration (n=163)
- Grey: Other (n=24)
# Number of activities and income linkage

<table>
<thead>
<tr>
<th>Male headed household</th>
<th>Female headed household</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No. activities</strong></td>
<td><strong>Average income (GHS)</strong></td>
</tr>
<tr>
<td>1 (n=17)</td>
<td>2396.39</td>
</tr>
<tr>
<td></td>
<td>(n=12)</td>
</tr>
<tr>
<td>2 (n=78)</td>
<td>2578.65</td>
</tr>
<tr>
<td></td>
<td>(n=32)</td>
</tr>
<tr>
<td>3 (n=80)</td>
<td>3869.74</td>
</tr>
<tr>
<td></td>
<td>(n=50)</td>
</tr>
<tr>
<td>4 (n=19)</td>
<td>4532.03</td>
</tr>
<tr>
<td></td>
<td>(n=11)</td>
</tr>
<tr>
<td>5 (n=5)</td>
<td>4758.33</td>
</tr>
<tr>
<td></td>
<td>(n=5)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>13,376.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>81</strong></td>
</tr>
</tbody>
</table>
Household livelihood preference (2)

- Soap making (n=44): 3.2551
- Gari processing (n=93): 3.1
- Petty trading (n=86): 3.2
- Farming (n=163): 4.43
- Labor work (n=31): 2.36
- Other (n=24): 0

0-1.24 = not preference
1.25-2.4 = least preference
2.5-3.74 = moderate preference
3.75-5 = preference
Livelihood viability

- Farming (n=163)
- Petty trading (n=86)
- Gari processing (n=93)
- Other (n=24)
- Soap making (n=44)
- Labor work (n=31)

0 - 1.24 = not viable
1.25 - 2.4 = least viable
2.5 - 3.74 = moderately viable
3.75 - 5 = viable
Priority-viability nexus

- Soap making (n=44)
- Gari processing (n=93)
- Petty trading (n=86)
- Farming (n=163)
- Labor work (n=31)
- Other (n=24)

\[ X^2 = 0.081^{**} \]
Priority-viability nexus factors

- Household immediate food security needs
- Non-restricted entry to prioritized activities
- Limited options due to barriers to more profitable ventures
Spatial accessibility of livelihood (3)

<table>
<thead>
<tr>
<th>Travelled distance (in minutes)</th>
<th>Number of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 20 min</td>
<td>34</td>
</tr>
<tr>
<td>20 - 39 min</td>
<td>43</td>
</tr>
<tr>
<td>40 - 59 min</td>
<td>28</td>
</tr>
<tr>
<td>60 - 79 min</td>
<td>28</td>
</tr>
<tr>
<td>80 - 99 min</td>
<td>10</td>
</tr>
<tr>
<td>100 - 119 min</td>
<td>10</td>
</tr>
<tr>
<td>120 - 139 min</td>
<td>10</td>
</tr>
<tr>
<td>140 + min</td>
<td>2</td>
</tr>
</tbody>
</table>

- **Farming** (n=163)
- **Soap making** (n=44)
- **Petty trading** (n=86)
- **Gari processing** (n=93)
- **Labor work** (n=31)
- **Other** (n=24)
Livelihood distance and household income

<table>
<thead>
<tr>
<th>Livelihood</th>
<th>Soap making</th>
<th>Petty trading</th>
<th>Gari processing</th>
<th>Labour work</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good (&lt; 40min)</td>
<td>1417.9</td>
<td>1564.8</td>
<td>1393.3</td>
<td>1606.8</td>
<td>2007.4</td>
</tr>
<tr>
<td>Bad (40+min)</td>
<td>1237.7</td>
<td>1161.9</td>
<td>1272.9</td>
<td>699.7</td>
<td>1570.7</td>
</tr>
</tbody>
</table>

P-value: (0.339) P-value: (0.092*) P-value: (0.028**) P-value: (0.006***) P-value: (0.040*)

***, ** and * indicate statistical significance at 1%, 5% and 10% level respectively. Income figures in Ghana cedi (GHS).
5. Conclusion & study contribution

• There is a gap between current and future livelihood participation among households.

• Provided evidence to show that household livelihood preference does not mean economic viability as preference results from non-economic incentives.

• Established that distance has significant influence on household income.
  - The longer the distance, the lower the income and vice versa.
6. Study implication

Results suggest that policy aimed to improve rural and community livelihood has to clearly distinguish between priority and viability. Treating the two as homogenous could be dangerous and likely to defeat the aim of any policy meant for enhancing economic resilience of household and community members.
References

• Ellis, F. Rural Livelihoods and Diversity in Developing Countries; Oxford University Press: Oxford, UK, 2000.
Thank you very much for your attention!!
## Priority and viability score matching

<table>
<thead>
<tr>
<th>Livelihood activity</th>
<th>Preference (rank order)</th>
<th>Livelihood activity</th>
<th>Viability (rank order)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>4.4 (1)</td>
<td>Other activities</td>
<td>4.5 (1)</td>
</tr>
<tr>
<td>Gari processing</td>
<td>3.9 (2)</td>
<td>Soap making</td>
<td>4.1 (2)</td>
</tr>
<tr>
<td>Petty trading</td>
<td>3.3 (3)</td>
<td>Gari processing</td>
<td>3.9 (3)</td>
</tr>
<tr>
<td>Soap making</td>
<td>3.2 (4)</td>
<td>Petty trading</td>
<td>3.5 (4)</td>
</tr>
<tr>
<td>Other activities</td>
<td>3 (5)</td>
<td>Farming</td>
<td>2.7 (5)</td>
</tr>
<tr>
<td>Labour work</td>
<td>2.4 (6)</td>
<td>Labour work</td>
<td>2.6 (6)</td>
</tr>
</tbody>
</table>