Women’s Roles in Rice Production in Northern Peru

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Introduction

What we know about gender and rice production in LAM?

• Little literature of women’s role in rice production in the region.

• Many studies have shown the importance of women in other agricultural systems in three important aspects:
  1. Access to resources
  2. Division of labor
  3. Decision making power

• Objective: document women’s roles in rice production in Peru, specifically in terms of those aspects.
Data

• The data used comes from surveys conducted in 2012 by CIAT with small-scale rice producers.

• 497 households were selected for their involvement in the cultivation of irrigated rice on plots of land between 0.5 and 10 hectares.

• The main producing departments are Lambayeque, San Martín, Piura, La Libertad, Arequipa, Amazonas and Cajamarca.
Setting

• 93% of the grain is produced under irrigated system and the planting is done by transplant in most of the area.

• The average yield of rice production is 8.3 tons per hectare. Women’s plots have 4.5% less yield than men’s plots.
Only improved rice varieties are planted and gender differences were not found.
Landownership

• In the area, there are 617 plots of rice.
  – 85.6% owned, 9% rented and 5.4% other type of tenure.
• Women have individual property rights or joint in 23% of all plots.
• Women are less prone to management rice plots.
  – Biased in men’s favor.
  – Women participate in most of production activities and in the decision making process.
Division of labor

• Women represent approximately 31% of hired labor in production activities.

• Women are not typically involved as family laborers in rice production; they represent, on average, 12% of family labor.
  – This figure increases if we include indirect production support, which is a women’s task on 60% of farms.
## Division of labor

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hired labor</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>person/day</td>
<td></td>
<td>person/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>person/day</td>
<td></td>
</tr>
<tr>
<td>Watering</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Preparation and sowing of seeds</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Land preparation</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Seedling removal</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Transplantation</td>
<td>9</td>
<td>4</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Sowing of seeds</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Early weed control (chemical)</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Late weed control (chemical)</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Weed control by hand</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Apply chemical fertilization</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Apply organic fertilization</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Pest and disease control</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Harvesting</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Transporting the product</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Drying the product</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Husk removal</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>47</strong></td>
<td><strong>21</strong></td>
<td><strong>68</strong></td>
<td></td>
</tr>
</tbody>
</table>
Decision making

Rice income

- Men: 58%
- Women: 32%
- Couple: 9%
- Other: 1%

Income from other crops

- Men: 45%
- Women: 14%
- Couple: 41%

Income from animals

- Men: 31%
- Women: 29%
- Couple: 40%

n=83
n=52
Plots managed by women have 4.5% less yield than men’s plots.

<table>
<thead>
<tr>
<th>Group</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>men</td>
<td>394</td>
<td>8610.488</td>
<td>111.1588</td>
<td>2206.439</td>
<td>8391.948 - 8829.029</td>
</tr>
<tr>
<td>women</td>
<td>90</td>
<td>8242.094</td>
<td>172.1568</td>
<td>1633.223</td>
<td>7900.023 - 8584.166</td>
</tr>
<tr>
<td>combined</td>
<td>484</td>
<td>8541.985</td>
<td>96.1374</td>
<td>2115.023</td>
<td>8353.086 - 8730.885</td>
</tr>
<tr>
<td>diff</td>
<td></td>
<td>368.3939</td>
<td>204.925</td>
<td>-36.09915</td>
<td>772.887</td>
</tr>
</tbody>
</table>

diff = mean (men) - mean (women)

t = 1.7977

degrees of freedom = 171.912

Ha: diff < 0
Ha: diff != 0
Ha: diff > 0

Pr(T < t) = 0.9630
Pr(|T| > |t|) = 0.0740
Pr(T > t) = 0.0370
Why women’s plots have less yield than men’s plots?

**H1:** The yield gap is due to the difficulties that women face in accessing to the productive resources, markets and extension services. (FAO, 2011).

**Some evidence:**
- Of all the farmers who received extension services and credit, women represent the smallest proportion, 6% and 10% respectively.
Why women’s plots have less yield than men’s plots?

**H2:** There is a greater use of fertilizers and other inputs on plots managed by men compared to those managed by women (Udry, 1996).

**Some evidence:**

- The use of fertilizers among plots managed by men and plots managed by women does not differ significantly.
- Men use 35% more laborers than women on plots managed by them.
Why women’s plots have less yield than men’s plots?

**H3:** Women own fewer plots than men and their land sizes are smaller, which leads to lower yields (Quisumbing, 1994; Fabiyi, et al. 2007)

**Some evidence:**

- Only 23% of the rice plots are property of women and the plots managed by them are smaller, the largest being 6 hectares.
Conclusion

Even though the data show that women don’t manage many rice plots, they do play an important role in smallholder rice production. They participate in family labor, hired labor and decision making regarding spending of income (both rice and other crops).

Lesson learn:

✓ Principal producer/manager is a biased question in which both men and women often respond the man whether or not he is making most of the decisions because culturally he is the head of household and principal agriculturalist → necessary to ask for other decision regarding rice production.
Conclusion

Women produce less yield than men and according to our research, this could be due to the lack of access that they have to extension services and credit, and also the small areas that they grow and the little hired labor that they use in their plots. However, due to our limited data, a robust analysis that more clearly demonstrates these as the only variables is not possible.

Lesson learn:

✓ Robust analysis of gender in agricultural production requires that the sampling be balanced by sex → necessary to ask the same amount of men as women.
THANK YOU
GRACIAS