“The Impacts of Prime-age Mortality on Rural Household Income, Assets, and Poverty in Mozambique”

Cynthia Donovan
Dept. of Agricultural, Food, and Resource Economics
Michigan State University

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Results of research: Rural households and loss of prime age adults

- When a man dies, a household is less likely to bring in a new adult member than when a woman dies
- Households with a male death face a significant losses of land, livestock, and all types of income
- Households with a female: often not significant, but varies by region and asset or income type
Background

- +/- 55% of population below poverty line
- 62% of women-headed HHs below poverty line
- +70% of population in rural areas
- 75% rural HH income from agriculture
- 2004 Adult HIV prevalence: est. 16%

Research Objective

What are the impacts of HIV/AIDS and other life-threatening diseases on the households directly affected with the loss of adults?

Research Document:
“Impacts of Prime-age Adult Mortality on Rural Household Income, Assets, and Poverty in Mozambique”
by David Mather and Cynthia Donovan
**Vocabulary**

- **“Prime age” (PA) adults**
  - 15-59 years of age
- **“Affected” Households (HHs)**
  - Households that suffered the loss of a PA adult due to illness in the period 2002-2005, as identified by family members
- **Panel data (longitudinal)**
  - Households interviewed in 2002 were re-interviewed in 2005
- **TIA**
  - Trabalho do Inquérito Agrícola (rural household survey)

**Methodology**

- Identify panel households (HHs) and adjust the analyses for the attrition of HHs
- Calculate the HH-level changes from TIA 2002 to TIA 2005 for key factors (income, land, livestock, demographics, etc.):
  - Differences at HH level
- Comparing the differences between HHs: use regression analysis on the differences in the differences to determine the impacts of an adult illness death
Methodological Challenges

- Adjust the analyses for the attrition of HHs
  - 17% of HHs from TIA 2002 were not available for the panel in 2005
  - Use of Inverse Probability Weighting

- Relatively small number of cases
  - 6% of HHs experienced deaths in period
  - Data analysis disaggregated only to broad geographic areas (South vs Center North)

- Causal attribution difficult
  - Panel data helps to control for some aspects
  - Not a structural analysis of income and assets
  - Complications of illness effects and observation

Result on Number of Prime Age Adults

- Differentiated Demographic Impact during the panel period
  - Gender of person who died
  - Role in HH of person who died
  - Location (region)
Figure 1: Simple change in Number of PA adults in rural HHs, between 2002 and 2005

Table 1. Impacts of prime-age adult mortality on rural household number of adults

<table>
<thead>
<tr>
<th>Covariates</th>
<th>National (A)</th>
<th>(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prime-age Adult Mortality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male adult</td>
<td>-1.049**</td>
<td></td>
</tr>
<tr>
<td>Female adult</td>
<td>-0.254+</td>
<td></td>
</tr>
<tr>
<td>Male heads/spouse</td>
<td>-0.935**</td>
<td></td>
</tr>
<tr>
<td>Female heads/spouse</td>
<td>-0.361*</td>
<td></td>
</tr>
<tr>
<td>Other adult male</td>
<td>-1.273**</td>
<td></td>
</tr>
<tr>
<td>Other adult female</td>
<td>-0.109</td>
<td></td>
</tr>
<tr>
<td>2 or more PA deaths</td>
<td>-0.753**</td>
<td>-0.755**</td>
</tr>
<tr>
<td><strong>Elderly mortality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elderly male</td>
<td>-0.858**</td>
<td>-0.868**</td>
</tr>
<tr>
<td>Elderly female</td>
<td>-1.085**</td>
<td>-1.081**</td>
</tr>
<tr>
<td>Chronically ill PA male adults (≥1)</td>
<td>0.482**</td>
<td>0.480**</td>
</tr>
<tr>
<td>Chronically ill PA female adults (≥1)</td>
<td>0.104</td>
<td>0.098</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.059**</td>
<td>-0.059**</td>
</tr>
<tr>
<td>Village X time dummies</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>F-test on PA mortality</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.21</td>
<td>0.21</td>
</tr>
<tr>
<td>Number of observations</td>
<td>4042</td>
<td>4042</td>
</tr>
</tbody>
</table>
Demographic Changes based on Econometric Estimations

- Death of a PA man:
  - Overall loss of adults: 1.05

- Death of a PA woman:
  - Loss of adults: 0.25

- Impact is strongest when head/spouse dies
- Regional effects are variable

Results on other aspects

- Demographics
  - Number of adults

- Assets
  - Land
  - Livestock

- Income
  - Crop
  - Nonfarm
  - Total
Table 2: Impact of a Death on PA Adults across the Nation

<table>
<thead>
<tr>
<th></th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PA male</td>
</tr>
<tr>
<td>No. of adults</td>
<td>-1.049 ***</td>
</tr>
<tr>
<td>Landholding</td>
<td>-20.5% **</td>
</tr>
<tr>
<td>Livestock</td>
<td>-34.3% **</td>
</tr>
<tr>
<td>Crop income</td>
<td>-41.5% **</td>
</tr>
<tr>
<td>Non-farm income</td>
<td>-72.9% **</td>
</tr>
<tr>
<td>Total income</td>
<td>-25.2% **</td>
</tr>
<tr>
<td>Total income/AE</td>
<td>3.8% ns</td>
</tr>
</tbody>
</table>

Implications for Agricultural Policy

- Loss of land and other assets
  - Increased vulnerability
  - Need to ensure women’s access to HH assets: land use rights and rights to HH assets

- Loss of adults
  - HH labor loss with longer term effects, especially in HHs with male death
  - Need to develop and diffuse technologies and investments that reduce women’s labor demand
  - (Not necessarily in agriculture)

- Income
  - Increase income opportunities for women
Additional Implications

- Poverty in Mozambique is a general problem in rural areas, not just a problem due to HIV/AIDS
  - Agricultural productivity growth of key staples critical for broad-based poverty reduction
  - Non-farm income sources important, and women generally do not have access to the higher return activities

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