Introduction

- HIV/AIDS prevalence is very high in many parts of Africa
  - A major concern especially for rural livelihoods
- Three broad categories of responses
  - Prevention (vaccines, behaviour change)
  - Treatment (ARV therapy)
  - Mitigation (food aid)
- Food aid has become a central mitigation strategy of some NGOs
Introduction (2)

- Few rigorous studies on the payoffs of these interventions
  - Recent panel data evidence indicates some significant adverse effects of HIV/AIDS
  - Effects of food aid on rural livelihoods still an empirical issue
- Policy and programming could benefit from empirical evidence

Objectives of the study

- Identify household community characteristics relevant for explaining food aid allocations and prime-age mortality
- Measure the impact of food aid on households that have suffered prime-age mortality and morbidity
Data

- The study uses three period panel surveys by CSO and FSRP
  - 2001 -- > 6,922 complete interviews
    - Two-stage cluster sampling
  - 2004 -- > 5,420 re-interviewed
  - 2008 -- > 4,340 re-interviewed
- Present an opportunity to measure impact
Methods and procedures

- Three major empirical issues
  - Attrition among the three surveys
  - Selectivity bias
    - HIV/AIDS-afflicted households not randomly selected
    - Food-aid recipients not randomly selected
    - HIV/AIDS and Food aid intervention cannot be argued to be mutually exclusive!
  - Complex surveys involving clustering and stratification

Attrition and sample design

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>6,922</td>
<td>1,503</td>
<td>5,419</td>
</tr>
<tr>
<td></td>
<td>(21.7)</td>
<td></td>
<td>(19.9)</td>
</tr>
</tbody>
</table>
Attrition and sample design (2)

- Those not re-interviewed had
  - Younger heads
  - Smaller household sizes
  - Less landholding and assets
- Estimation strategy corrects for these and other sources of bias

Estimation strategy

\[
\begin{align*}
\text{II(a)} & \quad \text{Impact of HIV/AIDS} \\
& \quad E(Y^r - Y^c | x, w = s) \\
& \quad c = w_{00} \\
& \quad \text{Not HIV/AIDS-afflicted, not receiving food aid} \\
& \quad \text{(Control treatment)} \\
\text{II(b)} & \quad \text{Impact of HIV/AIDS among food aid recipients} \\
& \quad E(Y^t - Y^s | x, w = t) \\
& \quad r = w_{01} \\
& \quad \text{Not HIV/AIDS-afflicted, receiving food aid} \\
& \quad s = w_{10} \\
& \quad \text{HIV/AIDS-afflicted, not receiving food aid} \\
& \quad t = w_{11} \\
& \quad \text{HIV/AIDS-afflicted, receiving food aid} \\
\end{align*}
\]
### Estimation strategy (2)

<table>
<thead>
<tr>
<th></th>
<th>Non-recipients</th>
<th>Recipients</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-afflicted</td>
<td>2,978</td>
<td>595</td>
<td>3,573</td>
</tr>
<tr>
<td>HIV-afflicted</td>
<td>617</td>
<td>150</td>
<td>767</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,595</strong></td>
<td><strong>745</strong></td>
<td><strong>4,340</strong></td>
</tr>
</tbody>
</table>

### Estimation strategy (3)

\[
\ln(y) = \gamma + \lambda_1 w_1 + \lambda_2 w_2 + \lambda_3 (w_1 \times w_2) \\
+ \phi_1 PS_1 + \phi_2 PS_2 + \phi_3 (PS_1 \times PS_2) + \mu
\]

\(\hat{\lambda}_3\) = Impact of food aid on HIV/AIDS- afflicted households
Results – Descriptives

- Food aid recipients are more likely to
  - Be less educated
  - Have higher dependency ratios
  - Live in densely populated areas
  - Live in areas with lower HIV prevalence
  - Be in regions 2 and 3

Results – Descriptives (2)

- Households with adult mortality are more likely to
  - Have uneducated heads
  - Have chronically ill children
  - Be located closer to main roads
  - Be located in regions 2 and 3
  - To be male headed
### Results – Impact crop production

<table>
<thead>
<tr>
<th>Variable</th>
<th>Crop prod</th>
<th>Cereal prod</th>
<th>Cultivated area</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA Death (W1)</td>
<td>-0.25***</td>
<td>-0.20***</td>
<td>-0.01</td>
</tr>
<tr>
<td>Food Aid (W2)</td>
<td>0.08</td>
<td>0.13*</td>
<td>-0.04***</td>
</tr>
<tr>
<td>W1 * W2</td>
<td>-0.37**</td>
<td>-0.46***</td>
<td>0.05***</td>
</tr>
</tbody>
</table>

### Results – Assets, livestock and income

<table>
<thead>
<tr>
<th>Variable</th>
<th>Assets</th>
<th>Livestock income</th>
<th>Off-farm income</th>
<th>HH income</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA Death (W1)</td>
<td>-0.19***</td>
<td>-0.012</td>
<td>-0.05</td>
<td>-0.21***</td>
</tr>
<tr>
<td>Food Aid (W2)</td>
<td>0.07</td>
<td>0.14*</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>W1 * W2</td>
<td>-0.35**</td>
<td>-0.40**</td>
<td>-0.35*</td>
<td>-0.39**</td>
</tr>
</tbody>
</table>
Concluding remarks

- The results confirm the -ve impact of prime-age adult mortality
  - Significant for crop production, assets & income
- Food aid has positive effects
  - Significant for cereal production and livestock
- However, this is not enough to mitigate the effects adult mortality
  - Cultivated land area the only exception
  - Productivity???