AIDS, Agriculture, and Food Security: Challenges for the Next 25 Years

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Major Research & Policy Question:

• If Donors Provided an Additional $10 billion to Combat AIDS, how should it be allocated?
  – To ARV treatment?
  – To improved nutrition programs?
  – To agricultural & rural development?
  – To investment in vaccines?
  – To community-driven development programs?

……NO ONE REALLY KNOWS
Outline

• PART I:
  – context
  – what do we know about how households respond to prime-age death

• PART II:
  – what are the major economic and social challenges for addressing HIV/AIDS in Africa

Overview of Main Points

• HIV/AIDS and poverty are mutually reinforcing
  – AIDS exacerbates poverty
  – factors associated with poverty worsen the spread of AIDS

• Therefore, the most effective programmatic responses will be two-pronged:
  i. Health-oriented programs for treatment / prevention
  ii. strategies that promote rural economic growth
    • Will be kick-started by broad-based agricultural development
### Characteristics of MSU household surveys

<table>
<thead>
<tr>
<th>Country</th>
<th>Sample size</th>
<th>Year(s) of surveys</th>
<th>Panel or cross-sectional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malawi</td>
<td>n=420 / n=372</td>
<td>1990, 2002</td>
<td>Panel</td>
</tr>
<tr>
<td>Mozambique</td>
<td>n=4908</td>
<td>2002</td>
<td>Cross-section</td>
</tr>
<tr>
<td>Rwanda</td>
<td>n=1395</td>
<td>2002</td>
<td>Cross-section</td>
</tr>
<tr>
<td>Zambia</td>
<td>n=6922</td>
<td>2001, 2004</td>
<td>Panel</td>
</tr>
</tbody>
</table>

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### Finding #1

Afflicted households/individuals are not random

- Early 1990s: positively correlated with
  - income
  - wealth
  - education
  - mobility
- Some argue now increasingly concentrated among the poor (e.g., Malawi, South Africa)
  - Limited evidence of this
### Income Status (2000) of Households Incurring a Prime-age Death between 2000-2003, Rural Zambia

<table>
<thead>
<tr>
<th></th>
<th>Deceased prime-age males</th>
<th>Deceased prime-age females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poorest 25%</td>
<td>17.0</td>
<td>22.7</td>
</tr>
<tr>
<td>2nd quartile</td>
<td>20.9</td>
<td>20.4</td>
</tr>
<tr>
<td>3rd quartile</td>
<td>32.2</td>
<td>29.6</td>
</tr>
<tr>
<td>Wealthiest 25%</td>
<td>29.9</td>
<td>27.3</td>
</tr>
</tbody>
</table>

### Finding #2: 60% of PA mortality is women

Prevalence of PA mortality, by sex and income, Zambia, 2001-2004
Finding #3:
HIV Prevalence Rates generally lower than what we thought they were 10 years ago:

<table>
<thead>
<tr>
<th>Country</th>
<th>2001 estimates</th>
<th>2004 estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zimbabwe</td>
<td>33.9</td>
<td>24.6</td>
</tr>
<tr>
<td>Zambia</td>
<td>21.6</td>
<td>16.5</td>
</tr>
<tr>
<td>Kenya</td>
<td>15.1</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Finding #4

• Magnitude of impacts depend on:
  - Initial level of household vulnerability (assets, wealth)
  - Sex of the deceased
  - Position in household of deceased
  - Ability of household to attract new members
  - Community characteristics:
    • Population density
    • Levels of wealth
Gender Effects of Mortality on Crop Cultivation

• In Kenya:
  – Death of male head ➔ 0.9 acre to cash crops (e.g., sugarcane, horticulture)
  – Death of female head ➔ 1.8 acre to cereals, tubers

Finding #5: What are we learning about “community effects”:

• What determines community “resilience”?  
  – Currently very few local institutions to help  
  – The load is almost fully borne by households themselves
• Local institutions/traditions influence resilience  
  – Rules governing women’s rights and access to resources  
    • e.g. can widows retain land and other productive assets after husband’s death?
Finding #6

• Effects on agric. production and non-farm income most severe among the poor

Finding #7

• Among afflicted households, cash constraints often become the limiting factor in agric. production
  – Drawing non-resident members back to the farm can sever off-farm income sources
  – Kenya: death of head or spouse associated with $120 and $260 per year reduction in off-farm income
Projected Population in the 7 Most Highly Affected Countries, "With AIDS" vs. No-AIDS Scenario, by Sex and Age Group, 2025.

Population Size, 2000 vs. 2025 (projected)
Seven Most Highly Afflicted Countries
Is the Cassava Boom Related to AIDS-related Labor Shortages?

Finding #8

- Spread of AIDS is co-factored with:
  - STDs: elevates risk of contraction 5-10x
  - Nutritional status
  - Parasite load and other diseases that degrade human immune response
  - Quality of basic health services
  - Male violence, alcoholism
- All associated with poverty
Implications - I

• Agricultural production and income growth in Southern Africa will be adversely affected
  – Smaller effects in West Africa
• Increased vulnerability in the region
  – increased likelihood of rural food crises
• Less purchasing power, slower economic growth
• ARV treatment challenges
  – only 15% of HIV+ people in Southern Africa will have access even after PEPFAR is in full swing
  – Need much more resources devoted to expanding reliable drug supply chains
  – Likelihood of mutation

Implications - II

• Reduce the potential for drug resistance:
• This depends on “adherence”
  – Avoid disruptions in supply chain
  – Traditional supply chain challenges: financing, reliable distributors, matching supply with need
  – Expiration of “old drugs”
  – very little “adherence” monitoring
• Most areas are not equipped for second-line drugs
Where from Here? Major Challenges

- ARV therapy – how to deal with probable breakthroughs?
- Aggressively combat STDs
- Sexual risk behavior education
- Condoms
- Access to basic health care
- Basic education
- Broad-based agricultural development

Low agricultural incomes are generally correlated with high poverty rates

- Ethiopia
- Tanzania
- Madagascar
- Kenya
- Burundi
- Rwanda
- Uganda
- Rwanda

$0 $50 $100 $150 $200 $250 $300 $350 $400

20 40 60 80 100

Per Capita Ag GDP (US$/person), 2002

National Poverty Rates (various years)

Source: O. Badiane
Where from Here? Major Challenges

1. Given the link between poverty and AIDS transmission and severity of impacts, improving livelihoods is crucial
2. Agricultural development is pre-condition for sustained and rapid growth in living standards
3. So, focus public resources on investments that catalyze agricultural development (pro-poor)

Major Challenges (continued)

• Focus Public Resources on:
  – Crop science
  – Viable extension programs
  – Investment in rural infrastructure
  – Irrigation, where potential exists
  – Access to land
• Policy Environment
  – Marketing and trade policies to catalyze smallholder productivity growth
  – WTO and food aid issues
Major Challenges (continued)

- Lobby forcefully for more level playing field in international trade
  - OECD dev. assistance for Africa: $50 bill./yr
  - OECD ag. subsidies: $350 bill./yr
  - Reassess developed country policy of dumping free food in Africa under guise of “food for development”

Budget allocation to Agricultural Sector in Zambia:

- Fertilizer Support Program: 37%
- Food Reserve Agency Maize Marketing: 15%
- Food Security Pack & EDRP: 12%
- Operational funds: 11%
- Personnel Emoluments: 20%
- Infrastructure: 2%
- Irrigation Development: 3%
Where from Here? Specific Proposals

1. Massive increase in crop science
2. Rehabilitation of farm extension systems
3. Rural infrastructure
4. Improved “enabling environment” for smallholder productivity growth
   – Reliable input, output marketing systems
   – Viable credit arrangements

5. Assist in creation of *capital assets* in agricultural production
   – Loss of cash will be major threat to improving agricultural productivity
   – Contracts with private agents to provide veterinary, dipping, insemination services, and draft equipment to farmers in smallholder areas
6. Modify rules governing women’s rights and access to resources
   • e.g. work with communities to recognize that it is in the communities’ interest for widows to retain access to land after husband’s death
   • Will require shifts in consciousness
   • Recognition that communities’ resilience to AIDS will require more equality for vulnerable groups.

Counsel of Three “Wise Men”

• “You can make a difference”

• “Globalization is making all of us inter-dependent on each other”

• “Compassion”
Thank you

• Slides for potential questions and background
**Need for appropriate balance between:**

- Investing in long-term productivity growth (education, infrastructure, markets, agricultural productivity, health) versus
- Targeted assistance to affected HHs
- Poverty and HIV/AIDS are mutually reinforcing → hence pro-poor productivity growth is crucial
- Resources are scarce: which investments provide greatest benefits?

**REVERSING THE CURRENT TRENDS REQUIRES THE IMPLEMENTATION OF THE MAPUTO COMMITMENT**

**Agriculture Expenditure Shares**

- Mozambique
- Ghana
- Guinea-Bissau
- Burundi
- Rwanda
- Niger
- Uganda
- Tanzania
- Zimbabwe
- Kenya
- Nigeria
- Gambia, The
- Benin
- Senegal
- Cameroon
- Cote d'Ivoire
- Zambia
- Guinea
- Ethiopia
- Malawi
- Mali
- Chad
- Madagascar
- Burkina Faso

Maputo Declaration for 2008
HIV Prevalence Rates – 2001 estimates

Michigan State University, Dept. of Agricultural Economics