

# Implications of rising levels of HIV/AIDS for the management of common property resources

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## Introduction

- Two important population and environment trends in rural sub-Saharan Africa:
  - HIV/AIDS
  - Environmental change
- Important implications for rural livelihoods and natural resource management
- Relationship between impacts of HIV/AIDS and the environment is under studied.

## 1) Natural resources and rural livelihoods

- Common property natural resources play important role in rural livelihoods
  - Domestic provisioning (e.g. edible herbs & fruit)
  - Cost savings (e.g. fuelwood vs. electricity)
  - Generating income (e.g. sale of *marula* beer)
- Supplement complex livelihood strategies
- Act as buffer against extreme poverty and household shocks
- Important “safety net” function (Shackleton & Shackleton 2004)

Table 1. Household utilisation of natural resources in Bushbuckridge\*

Resources	% of households	
	% of households	kg / household / year
Wild edible herbs	92	18
Fuelwood	92	3,395
Wild fruit	81	328
Edible insects	77	-
Medicinal plants	49	-

\*Hansen (1998), Shackleton & Shackleton (2000)



- Unsustainable resource use threatens livelihood security

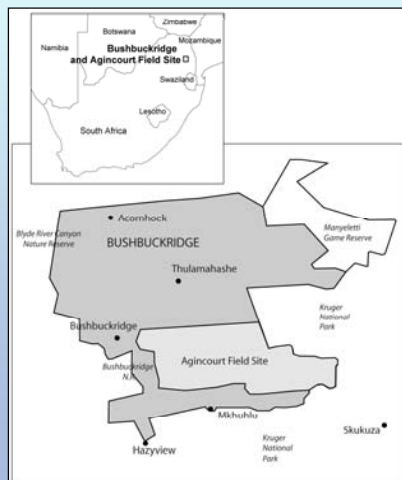
## 2) HIV/AIDS and prime-age adult mortality

- Sub-Saharan Africa is home to 70% of all HIV-infected people – 2 mill new infections per year (UNAIDS 2004)
- Southern Africa is referred to as the “epicenter” of the AIDS pandemic (UN 2004)
- 27.9% prevalence in antenatal clinic attendees in 2003
- 25% prevalence in antenatal clinics in rural sub district in Mpumalanga Province

- AIDS is leading cause of mortality of productive (prime-age) age adults (15-49 years) in Africa
- AIDS is a “long-wave” household shock, which threatens livelihood & food security (Barnett 2006)
- Anecdotal evidence of impacts on conservation:
  - erosion of human capital in conservation organisations
  - erosion of social capital e.g. local institutions involved in management of communal resources

## Study area

- South Africa
  - Mpumalanga Province
  - Bushbuckridge district
  - Former “homeland”
  - Agincourt Health Demographic Surveillance Site (DSS)
  - 21 villages



## Methods

Three studies addressed different aspects of the over-arching question:

What are the associations between adult mortality (stratified by cause of death), household use of natural resources and household food security?

## Research design

- Three data sources:
  - 1) MRC/WITS Agincourt Health & Population Unit DSS: sample selection, modeling & food security module (2004)
  - 2) Survey (stratified by household experience of prime-age adult mortality in last 2 years)
    - Study#1: n=248 (adult mortality; no adult mortality)
    - Study #2: n=305 (Aids adult mortality; Non-AIDS quick adult mortality; no adult mortality)
    - Study #3: n=12,000 (2004 food security module)
  - 3) Qualitative Interviews (n = 30 & 15; “mortality” households)

## Survey questionnaires

- Quantify use of natural resources (study #1 & #2)
- Quantify household food security (study #2 & 3)

## Interviews

- Impact of the loss of an adult member on household food security and general use of natural resources in coping strategies

## Results

1. **Qualitative descriptions:** impacts of adult mortality on household resource use
2. **Quantitative models:** household characteristics, adult mortality & household use of natural resources

## From interviews

- Shifts in household resource use strategies varied by **role of the deceased** in the household economy.
  - Loss of resource collector
  - Loss of wage earner

*\*Note: Pseudonyms are used when quoting responses*



## Loss of Resource Collector

- Impacts primarily on time allocation
- Children often bear increased burden



..... *“instead of studying the child would have to collect fuelwood after school.”*

## Loss of Wage Earner

1. Affected household ability to **buy food & energy**
2. Collection often substituted for previously purchased goods: *Fuelwood, crops & wild foods*

The death of an income earner brought *“a lot of changes”* to Ntombi’s\* household. *“The first being changes on the diet and the second thing is that we are no longer able to buy fuelwood and water, so it requires us to do that by our own hands”.*

Since the passing of Elliot’s\* wife, who had a job, his household *“stopped purchasing because you only do that when you have money...sometimes we buy [food] but most of the time we rely on the garden.”*

*“I used to buy some wood, but now I must do that with my own hands”*

*“there is a big change now because we no longer have food, we just get assisted by the relatives... and we depend more now in the field [for collecting wild vegetables]”*

Triza explained that since the passing of her husband who had sent remittances home, it was *“very hard because we had nothing to keep us surviving...we relied [on guxe – edible wild herb] on a day-to-day basis because in the past we used to buy chicken, sausage and fish.”*



**“Locusts are now our beef.”**

## Model coefficients (z values) for study #1

Household variable	Use fuelwood	Male head harvests wood	NOT enough food in last month	Gather wild edible herbs
HH size	-	0.18***	-	0.13**
Socio-Economic Status (SES)	-	-	-0.29***	-
Adult mortality	3.39**	2.84**	1.43*	-
Adult mort. x SES	-0.83**	-	-	-
Mortality x Years since mortality	-	-0.89***	-	0.51*

(\*p<0.1; \*\*p<0.05, \*\*\*p<0.01; - ns)

## Model coefficients (z values) for study # 2

Household variable	Have electricity but use fuelwood for cooking	Use fuelwood to save money	Consumed edible insects in last 12 months	Use edible insects to save money	Used edible wild herbs OFTEN in last 12 months	Use edible wild herbs to save money	Use edible wild fruit to save money
HH size	3.34***	-	1.70*	-	2.76***	1.81*	-
Aids adult mortality	1.94*	3.80***	-1.71*	32.89***	-3.37***	2.55***	2.42**
Non-AIDS adult mortality	-	3.99***	-1.78*	-	-	3.33***	2.60***

(\*p<0.1; \*\*p<0.05, \*\*\*p<0.01; - ns)

## Summary of food security results: study #3

- Households experiencing *adult death* – particularly of the household head – were *significantly less food secure*.
- BUT no significant difference in food security between AIDS mortality-affected and non-AIDS mortality-affected households.
- Where households did *not produce enough food*, it was more often due to *labour shortages* in mortality-affected households.

## Conclusion

- HIV/AIDS & environment interact in complex ways via changes in household **livelihood strategies** in response to **loss of human & financial capital** due to adult mortality
- Natural resources buffer households impacted by AIDS, particularly **poorer** households
  - Food & energy security
  - Cost savings

## Implications for environment

- HIV/AIDS: ↓ population growth **BUT** potential ↑ in household use of resources
- Biomass energy will remain primary energy source in an era of HIV/AIDS
- Increased economic burden could stimulate unsustainable commercial exploitation
- HIV/AIDS could increase burden on common property natural resources, especially in context of weakened institutions

An integrated response to HIV/AIDS in rural communities needs to include policy and support for rural communities to use and manage their natural resources sustainably

THANK YOU