

HIV/AIDS mortality and household reliance on natural resources in Bushbuckridge

Wayne Twine

School of Animal, Plant & Environmental Sciences

University of the Witwatersrand

Lori Hunter

Institute of Behavioral Sciences

University of Colorado (Boulder)

Introduction

- Protected areas are embedded within a larger socio-ecological matrix
- Understanding the future in a protected area
→ Understanding the future in the surrounding socio-ecological systems
- Understanding key drivers of change in human-environment interactions and their consequences

Natural resources and rural livelihoods

- Natural resources play NB role in rural livelihoods
 - Domestic provisioning (e.g. edible herbs and fruit)
 - Cost savings (e.g. fuelwood vs. electricity)
 - Generating income (e.g. sale of crafts)
- Supplement complex livelihood strategies
- Part of “rural safety net” (Shackleton et al 2001)
- Act as buffer against extreme poverty and household shocks

HIV/AIDS

- Adult mortality due to HIV/AIDS is becoming an increasingly important household shock in SSA Africa, with far-reaching impacts
 - AIDS is leading cause of mortality of productive age adults (15-49 years) in Africa
 - Southern Africa: “epicentre” of the pandemic in SSA (South Africa - 27.9% prevalence in antenatal clinic attendees in 2003).
 - Prevalence in communities adjacent to KNP: 20-25% (Pronyk pers comm)

So....given the 1) centrality of natural resources in rural livelihoods and 2) the impact of HIV/AIDS on the productive age group at a household level..

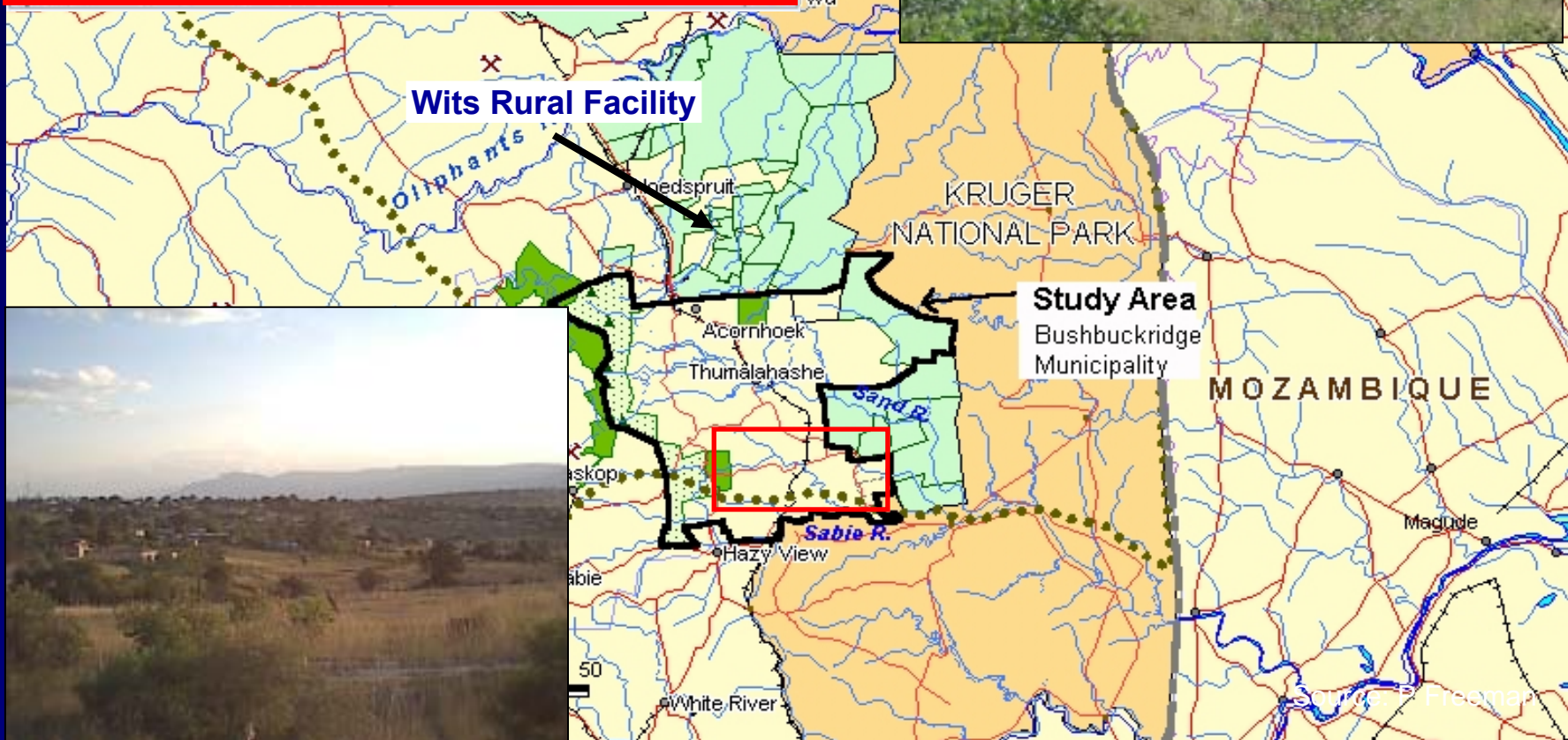
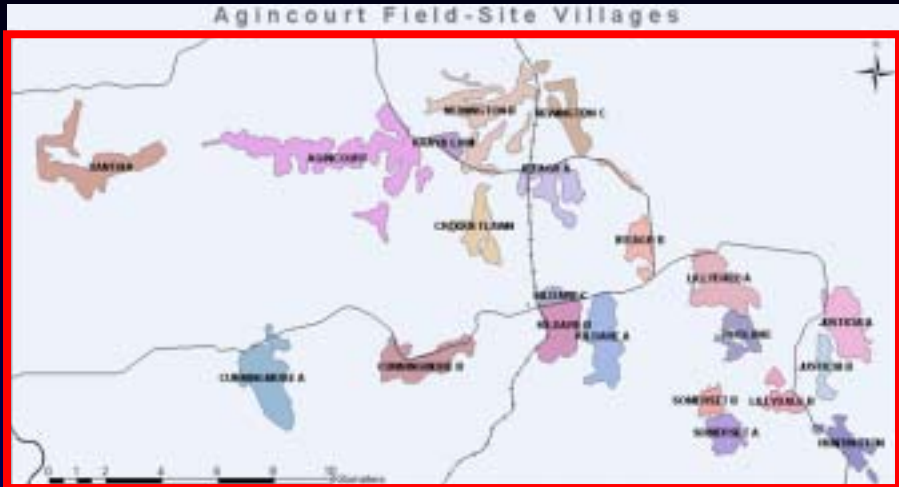
RESEARCH QUESTION

How does adult mortality shape household reliance on natural resources in rural communities?

HYPOTHESIS

Rural households experiencing the death of a productive-age adult become more reliant on key natural resources, such as fuelwood, as part of their coping strategy

Research setting



Methods

- Surveys: Random stratified sample of 246 households from AHPU database
 - 123: experienced mortality of a productive-age adult (15-49) in last 2 years
 - “mortality” group
 - 123: did not experience mortality of a productive-age adult over last 2 years
 - “control” group
- Interviews: Random sample of 31 households from “mortality” group

■ Survey:

- Household fuelwood consumption
- Use of other energy sources
- Wood acquisition strategies
- Trade in wood

■ Interviews:

- Use and acquisition of fuelwood and wild foods
- Impact of the passing of a household member on resource use strategies

Results

- Fuelwood usage (general):
 - Fuelwood was widely used (92.3%), especially for cooking, even in households which had access to electricity (economic barrier of cost of appliances and electricity)
 - High incidence of purchasing of wood (45.5%) (indicative of local shortages in some villages; local institutional control in others)



Table 2. Descriptive profile of fuelwood model variables and household characteristics

Variable	Percent or Mean	Min	Max	n
Resource use				
Use fuelwood	92.3%	-	-	246
Use electricity for cooking	31.3%	-	-	246
Use electricity for lighting	51.6%	-	-	246
Uses of fuelwood (user hh)				
Cooking	98.7%	-	-	227
Heating water	93.8%	-	-	225
Heating house	1.3%	-	-	227
Brewing beer	3.3%	-	-	243
Wood consumption				
Summer (kg/day)	9.0	1	34	176
Winter (kg/day)	10.5	1	34	176
Acquisition strategies				
Purchase wood	45.5%	-	-	246
Household characteristics				
Household size	7.7	1	29	246
Sex ratio (male:female)	0.81	0	4	246
Asset Possession Index	3.2	1	5	244

- Fuelwood usage (impact of adult mortality)
 - Analysed using multivariate logistic and least squares regression models controlling for household characteristics
 - **No significant differences in wood usage** between households which had experienced an adult mortality and those which had not (no matter what outcome variable was considered)

Table 3. Model outputs estimating household energy use strategies in relation to experience of an adult mortality (multivariate models regression models)

Outcome variable	Coefficient	R²	Significance
Resource use			
Use fuelwood (y/n)	-0.07	0.06	n.s.
Use electricity for cooking (y/n)	-0.05	0.03	n.s.
Use electricity for lighting (y/n)	-0.06	0.00	n.s.
Uses of fuelwood			
Cooking (y/n)	0.48	0.11	n.s.
Heating water (y/n)	-0.30	0.09	n.s.
Heating house (y/n)	0.44	0.07	n.s.
Brewing beer (y/n)	1.05	0.07	n.s.
Wood consumption			
Summer (kg/day)	0.35	0.03	n.s.
Winter (kg/day)	-0.17	0.05	n.s.
Acquisition strategies			
Buy wood (y/n)	-0.25	0.03	n.s.

- Hypothesised long-term impacts of mortality on household reliance on fuelwood **not supported** by data
- Short-term impact: 84% of “mortality” households used **fuelwood for catering purposes at the funeral** (mean of 1.5 bakkie-loads = at least 750kg)

■ Usage of other natural resources (“mortality” households)

- 87% made regular use of *marula* fruit for eating, making jam and brewing beer



- 97% made regular use of wild vegetables (*guxe*).



- Qualitative interviews: adult mortality had important impacts household coping strategies wrt use of natural resources, but these were:
 - Nuanced
 - Matters of degree
 - Coping strategies varied
- Patterns of change in coping strategies strongly influenced by role of the deceased in household economy

- If deceased was resource collector but not bread-winner: collection duties were taken up by other members, with opportunity costs.
- Following death of her sister Tintswalo* and her younger brother spent more time collecting resources (hh size=3, asset index=1). As a result, Tintswalo no longer has time for “*cleaning, hoeing the field, as well as going to church*”.
- Joseph* (hh size=9, asset index=5) used to tend a food garden, but since death of both parents, he had no time.

*Pseudonyms used throughout

- If deceased had contributed wages, hh lost purchasing power for food, water & energy:
 - Implications for household resource use but patterns varied



- 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”.
- Virginia* (hh size=18, asset index=4) collected *guxe* growing wild in nearby fields. Since the passing of a wage earner, whose income had been used to buy food, she collected more *guxe* because they didn’t have enough money to buy groceries.

*Pseudonyms used throughout

- Meslina's* (hh size=7, asset index=4)
deceased sister's income had been important for buying food "*We used to buy groceries ... So you find that we rely on the field or borrow money from neighbours.*" and "*I work on budget, that is why we rely on collecting [wild] vegetables.*"



- Triza* (hh size=6, asset index=5) 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 wild vegetables] on a day-to-day basis because in the past we used to buy chicken, wors [sausage] and fish.*”
- Tinyiko* “*Locusts are now our beef*”.

Loss of a bread-winner:

- Increased collection of fuelwood and wild foods (as opposed to buying fuelwood and food).
- Opportunity costs of switching from buying to collecting
- In less of a position in the future to switch from fuelwood to electricity – likely to use fuelwood for longer in the future
- Increased amounts and relative importance of wild foods in household diet

Conclusion

- Impacts of HIV/AIDS on human and financial capital have implications for household resource-use patterns.
- Relationships between adult mortality and household use of natural resources are complex and nuanced (effect of prolonged illness due to AIDS likely to have additional effects).
- Natural resources act as a buffer against the household shock of adult mortality, especially if the deceased was a bread-winner.

- **Understanding the future:** HIV/AIDS can be expected to shape household use of natural resources into the future in communities adjacent to KNP, with implications for the resource base.
- **Policy implication:** Sustainable use of communal natural resources should be regarded as a vital component of strategies aimed at mitigating against impacts of AIDS on rural households. (Additional motivation for supporting local-level management of common property resources)

■ Future research:

- More explicit focus on AIDS - investigation of use of natural resources in coping strategies (role in food security)
- How does environmental degradation influence household resilience to the impacts of HIV/AIDS?

Watch this space

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