



Published in final edited form as:

Popul Environ. 2008 May 1; 29(3-5): 103–107. doi:10.1007/s11111-008-0069-6.

The environmental dimensions of the HIV/AIDS pandemic: a call for scholarship and evidence-based intervention

L. M. Hunter,

Departments of Sociology and Environmental Studies, Institute of Behavioral Science, Program on Environment and Society, University of Colorado at Boulder, Boulder, CO, USA e-mail: Lori.Hunter@colorado.edu

R.-M. De Souza, and

Sierra Club (formerly with the Population Reference Bureau), San Francisco, CA, USA

W. Twine

Centre for African Ecology, School of Animal, Plant and Environmental Sciences, University of Witwatersrand, Johannesburg, South Africa

Abstract

The HIV/AIDS pandemic has had dramatic influence on the demographic dynamics of many of the world's less economically developed regions. Today, an estimated 33 million individuals are living with HIV, and recent data suggest that, every day, over 6800 persons become HIV-infected and over 5700 persons die from AIDS (UNAIDS 2006). The age profile of HIV infection is well known, with new cases impacting primarily prime-age adults. Sub-Saharan Africa remains the world's most affected region with recent population-based surveys suggesting that adult prevalence rates (age 15–49) reaches as high as 25% in Botswana and over 23% in Lesotho (UNAIDS 2006). Still, HIV/AIDS also impacts children, with over 2 million HIV+ individuals under age 15 in sub-Saharan Africa; And the disease profile now includes many individuals over age 50 due to the positive impact on life expectancy of recent treatment advances (UNAIDS 2006).

Of course, HIV/AIDS' impacts at the individual and household levels are difficult to discern from aggregate data although ethnographic research provides insights into nuanced household survival strategies (e.g., Evans 2005; Schatz and Ogunmefun 2007). Such work reveals household efforts to maintain a sense of “normality” in response to the impacts of HIV/AIDS, otherwise known as “the disease” (Bohman et al. 2007).

Although often relatively higher in urban regions (UNAIDS 2006), high HIV/AIDS prevalence rates also characterize many rural populations (UNAIDS 2006). The ill health and mortality resultant of HIV/AIDS can present a difficult-to-manage shock to rural livelihoods (Rugalema 2000) particularly in regions characterized by high levels of dependence on collection of proximate natural resources for fuel, sustenance and/or market goods. Even so, academic scholarship on the environmental dimensions of the HIV/AIDS pandemic remains surprisingly slim; Hence the motivation for this special issue of *Population and Environment* on “*HIV/AIDS and the Natural Environment.*”

Research examining the association between HIV/AIDS impacts and the natural environment has been hampered by a shortage of HIV/AIDS data at the individual and household level. These data are difficult to obtain for a variety of reasons including the stigma that remains

associated with the disease, the difficulties inherent in collecting biological samples, and lack of knowledge of infection among some HIV+ individuals. The research presented here represents a variety of innovative efforts to draw upon different data sources to explore the environmental dimensions of HIV/AIDS. In addition, this special issue contains several articles that review policy, institutional, and programmatic contexts of this important association.

Access to land represents a critical component of well-being within many rural regions of the developing world. In *“Demarcating Forest, Containing Disease: Land and HIV/AIDS in Southern Zambia”*, Frank and Unruh provide important insight on the intersection of HIV/AIDS, land tenure, and shifts in rural livelihood decisions. Drawing upon both survey and ethnographic evidence, the authors outline the process by which widows within the study region are purposefully invoking AIDS as a strategy to retain or gain control over land resources. Frank and Unruh further link these processes with forest conservation through illustrative case studies. Frank and Unruh’s interesting insights emerge from an innovative merging of two separate, but related, research efforts through which the connections between deforestation and HIV/AIDS at the household level become clear.

Access to land is clearly important in the maintenance of food security, and next within this issue, Murphy offers examination of this link through her detailed analyses presented within *“AIDS, Kitchen Gardens, and Natural Resource Management: Insights from a Village in Western Kenya.”* Murphy focuses on the ways in which HIV/AIDS is reshaping indigenous farming and natural resource management systems such as traditional, intensive, women’s “kitchen gardens.” Drawing on qualitative evidence as well as a village census, she outlines subtle changes in crops and techniques resultant of HIV-positive status, AIDS-related illness and mortality, widowhood, orphan care, as well as information disseminated through HIV/AIDS support groups. She weaves together insights on these processes to tell the broader story of HIV/AIDS as an epidemic infectious disease burdening rural communities, and as a social and economic phenomenon shaping local institutions and landscapes. Murphy’s research makes important contributions to understanding micro-level dimensions of garden reliance (e.g., a detailed categorization of kitchen garden crops), while also shedding light on the more macro political ecological context of HIV/AIDS.

Moving from kitchen gardens to wild foods as a component of food security, Kaschula’s contribution presents results of food security assessments in three sites in rural South Africa. In *“Wild Food Use in Household Food Security Responses to HIV/AIDS,”* Kaschula examines dietary diversity and food quantity, partly measured through food diaries and particularly as related to household experience with HIV/AIDS. Also drawing on both qualitative and quantitative data, she presents a nuanced examination of rural households’ reliance on wild foods, finding that poor households exhibit greater dietary dependence on this form of natural capital. Even so, Kaschula finds that households afflicted by AIDS may curtail wild food use due to household labor shortages and stigma and she offers discussion of the important cultural and policy dimensions of this association.

The continuing stigma associated with HIV/AIDS, as noted by Kaschula, is central to discussion of appropriate intervention and outreach. Next within this special issue, DeMotts offers analyses of a potential fruitful avenue for outreach, informed by consideration of stigma, in *“Mitigating an Elephantine Epidemic: Gendered Space for HIV/AIDS Outreach through Namibian Conservancies.”* Using data from participant observation and participatory discussions, DeMotts argues that there are benefits to be realized from approaching HIV/AIDS mitigation through familiar, existing structures such as those of community conservancies in Namibia. A central benefit, she argues, is the enhanced ability to circumvent heavy local stigma. In this way, DeMotts offers a different perspective on the environmental dimensions of HIV/AIDS, by commenting on the ability of natural resource management institutions to provide a

conduit for discussion of HIV/AIDS, while incorporating important issues related to gender and household coping strategies.

Building on DeMott's review of intervention potential through conservation organizations, De Souza and colleagues present details of several specific mitigation efforts in "*Using Innovation to Address HIV/AIDS and Environment Links: Intervention Case Studies from Zimbabwe, Uganda and Malawi.*" This contribution offers a brief look at three specific programmatic responses to HIV/AIDS, each with environmental dimensions: (1) In Zimbabwe, Catholic Relief Services and collaborators adapted the well-established Farmer Field Schools methodology to reach vulnerable children and help them meet dietary and income needs while using natural resources sustainably; (2) In rural Uganda, the International Center for Research on Women worked with various collaborators at the national, district, sub-district and village levels to provide information to registered farmers' groups on agriculture, nutrition, health, gender, HIV/AIDS; while (3) efforts by the Wildlife and Environmental Society of Malawi and the World Wildlife Fund helped to integrate HIV/AIDS awareness and programming into a conservation organization, providing an example for other environmental groups. In all, the authors conclude by bringing together opportunities gained, lessons learned, and continuing gaps. They argue that dynamic programming can help to simultaneously address pressures on conservation initiatives, food security/agricultural production, income generation/livelihood, and social and health care systems.

Finally, both research and interventions obviously take place in broader institutional and policy contexts. Ziervogel and Drimie offer critical exploration of these contexts in "*The Integration of Support for HIV/AIDS and Livelihood Security: District Level Institutional Analysis in Southern Africa.*" Clearly invoking consideration of the multiple scales at which HIV/AIDS' impacts are felt and interventions are pursued, Ziervogel and Drimie present an "AIDS Timeline." Using data from case studies in Malawi and South Africa, the authors apply the "AIDS Timeline" to illustrate how consideration of dominant trends in livelihood insecurities can help identify intervention gaps with the ultimate intention of better supporting individuals, households, and villages. In concluding, the authors focus specifically on the timing of environmental support such as, for example, knowledge and access as related to natural resources.

Clearly the topics covered within this special issue on "*HIV/AIDS and the Natural Environment*" are varied, timely and of policy import. Given *Population and Environment's* focus on scholarship exploring the reciprocal links between population, natural resources, and the natural environment, explicit consideration of HIV/AIDS as a factor critical in shaping contemporary demographic dynamics is most appropriate. Further, given the dramatic impacts of HIV/AIDS particularly in many regions of the world characterized by high levels of natural resource dependence, explicit consideration of the environment dimensions of HIV/AIDS is also of great policy importance.

Nonetheless, many gaps remain within our understanding of this important association. These gaps might be classified as (1) geographic, (2) substantive, and as (3) existing across the academic, policy, and applied communities. With regard to geography, much of the scholarship, such as that presented here, has focused on sub-Saharan Africa. Although logical since this region faces the largest burden, HIV/AIDS continues to dramatically shape both social and ecological well-being in other regions as well. According to recent data from UNAIDS (2006), China, Indonesia, Papua New Guinea and Vietnam are experiencing rising HIV prevalence rates and there are indications of new HIV outbreaks in Pakistan and Bangladesh. Additionally, outside of sub-Saharan Africa, the Caribbean has the world's highest HIV prevalence (USAID 2007) and research exploring HIV/AIDS links to environmental management in small developing islands is worthy of further examination.

On substantive topics, the limited, existing research has focused primarily on issues related to food security. Although clearly central to social well-being, food security is but one of many environmental dimensions of rural livelihoods. Additional analyses are needed, along the lines of that by Frank and Unruh in this volume, on land tenure as related to resource access, including the inherent and important gender dimensions. Other research should explore income-generating uses of natural resources among HIV/AIDS-impacted rural households since insight on this association would improve understanding of the ecological consequences of the HIV/AIDS pandemic. Important substitution effects are also hinted at by ongoing work (e.g., Hunter et al. 2007) suggesting that HIV/AIDS-impacted households may use collected natural resources in place of previously purchased goods.

On the gap between academic, policy and applied communities, much could be gained by building bridges between communities of scholars, decision-makers and those developing and implementing interventions. As outlined by De Souza and colleagues, little academic research has been done thus far on AIDS and conservation linkages, including the quantification of the true costs of HIV/AIDS on conservation organizations. Ultimately, the sustainability of the innovative partnerships and dynamic program models highlighted in this special issue will depend on the ability to promote socio-cultural behavior change and to deliver technical interventions to vulnerable populations in ways that are more successful than traditional single-sector service delivery or extension models. Here, too, evidence documenting the value of integration would enhance ability to expand these types of activities.

Overall, we are pleased to offer this important collection of efforts linking “*HIV/AIDS and the Natural Environment*” to *Population and Environment* readers. Combined, the articles provide documentation of several environmental dimensions of HIV/AIDS, examples of interventions aimed to ameliorate livelihood impacts, and useful considerations with regard to the institutional setting of programmatic responses. It is our hope that the collection spurs additional consideration of this association within, and across, the research, policy, and practitioner communities in order to facilitate improvements in both social and environmental well-being in rural regions hard-hit by the HIV/AIDS pandemic.

References

- Bohman DM, Vasuthevan S, van Wyk NC, Ekman SL. ‘We clean our houses, prepare for weddings and go to funerals’: Daily lives of elderly Africans in Majaneng, South Africa. *Journal of Cross-Cultural Gerontology* 2007;22:323–337. [PubMed: 17616794]
- Evans R. Social networks, migration, and care in Tanzania: caregivers’ and children’s resilience to coping with HIV/AIDS. *Journal of Children & Poverty* 2005;11:111–129.
- Hunter, LM.; Twine, W.; Johnson, A. University of Colorado, Institute of Behavioral Science, Working Paper EB2005–0004; 2007.
- Rugalema G. Coping or struggling? A journey into the impact of HIV/AIDS in southern Africa. *Review of African Political Economy* 2000;27:537–545.
- Schatz E, Ogunmefun C. Caring and contributing: The role of older women in rural South African multi-generational households in the HIV/AIDS era. *World Development* 2007;35:1390–1403.
- UNAIDS. 2006 Report on the global AIDS epidemic. UNAIDS: Geneva, Switzerland; 2006.
- USAID (US Agency for International Development). Caribbean HIV/AIDS health profile. Washington, DC: USAID; 2007.