

HIV/AIDS Mortality and Household Use of Natural Resources: Critical Linkages and Remaining Questions

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As noted by Alex de Sherbinin in the cyberseminar's background paper, two important trends in population and the environment are presently colliding to shape the sustainability of rural livelihoods in many of the "lesser developed" regions of the world. The first such trend is an alarming rise in adult mortality largely attributed to the HIV/AIDS pandemic, especially in rural sub-Saharan Africa. The second trend is a similarly troubling perpetuation of environmental degradation. Taken together, the trends of rising adult mortality and continuing environmental degradation pose severe threats to rural sub-Saharan African livelihoods, and yet despite increasing HIV/AIDS prevalence and the fact that natural resources represent a central component of rural African livelihoods, the environmental dimensions of the African HIV/AIDS pandemic have received little scholarly attention. Clearly, the loss of a productive household member severely impacts households already living on the margins. Still, the possibility of additional impact resultant of an AIDS-related mortality remains unexplored. Here, we provide additional detail regarding several ways in which HIV/AIDS mortality may shape household use of key natural resources, while concluding with questions that remain.

Generally speaking, rural households undertake many unique and nuanced changes with regard to natural resource use and collection strategies following an adult mortality experience. Following the lead of similar research in the area (i.e., ABCG 2004), the myriad possible changes a household may make are presented here as a typology of four interrelated dimensions of household strategies involving the selection, use, collection, and level of consumption of natural resources.

Natural resource selection strategies include those household decisions involving what natural resource is to be used for a given purpose. For instance, mortality-induced changes in natural resource selection have been observed as afflicted households turn to natural resources (e.g., wild foods) as alternatives to purchased items (Barany et al. 2001). More generally, mortality effects on resource selection strategies can be seen as more desirable products are replaced with those most readily available as households struggle to cope with diminished labor capacity and the resultant reallocation of money and time (Dwasi 2002). For example, women in rural India have been observed using bamboo as fuel wood despite its low sustained heat, fast burn rate, and excessive smoke due to "extreme difficulties" obtaining the preferred species of fuel wood (TERI 1994).

Closely related to selection strategies, *natural resource use strategies* are decisions regarding the purpose of the selected natural resources. As examples, household use strategies may include using dung as fuel rather than as fertilizer. Also, use strategies may entail the sale of natural resources otherwise used for household consumption in an effort to raise much needed income (Cooke 1998). Similarly, reassessment of the use of land for income-generating or subsistence

crops, as well as decisions to leave land fallow would be considered changes in natural resource use strategies (Dwasi 2002).

Natural resource collection strategies represent another important arena of potential change. More specifically, natural resource collection strategies involve those decisions regarding *where* natural resources are to be collected (including formal and informal markets), *who* (in terms of household position) will do the collecting, and the associated *costs* of collection in terms of time, money and/or bartered assets. For example, natural resource collection may take place within communal lands, within a homestead garden, and/or natural resources may be purchased or received as gifts. Filmer and Pritchett (1996) provide a particularly salient example of the importance of collection strategies. As also noted in de Sherbinin's discussion paper, the research from Pakistan suggests that fertility rates may rise in response to resource scarcity due to an increase in the relative value of children as resource collectors, for as has been noted "little hands help" (das Gupta 1995). Accordingly, the subsequent rise in population can further contribute to natural resource scarcity, in all creating a rather insidious "vicious circle" of increasing population and natural resource scarcity (Filmer and Pritchett 1996).

As related to mortality experience, the Africa Biodiversity Collaborative Group (ABCG) reports that throughout sub-Saharan Africa changes in the natural resource collection strategies frequently involve unsustainable collection practices and the de-emphasizing of stewardship in general (Dwasi 2002). Unfortunately, the death of a prime-aged adult also often represents the loss of a skilled and knowledgeable natural resource collector. In contrast, children and inexperienced natural resource collectors are more likely to employ unsustainable collection practices due to a lack of (often traditional) knowledge (Dwasi 2002).

Questions of *who* in the household collects resources unavoidably raise the issue of opportunity costs. Indeed, increases in time spent on natural resource collection as a result of an adult collector's death represent only a part of households' collection costs. Opportunity costs are also incurred as other activities are left unattended due to the reallocation of time. A summary of research from sub-Saharan Africa notes that time otherwise spent in school or studying represents significant opportunity costs associated with the use of children as natural resource collectors (DIA 2003). Similarly, the diversion of adults from income-generating activities to assist with the collection of necessary natural resources represents a significant opportunity cost (Cooke 1998).

Other aspects of change in natural resource collection strategies include the monetary and bartered costs of obtaining necessary natural resources. For example, monetary funds may be reallocated, or household assets liquidated, in order to purchase requisite natural resources when collection from the natural sources is impossible (Dwasi 2002). Additionally, research reveals increases in begging and a greater reliance on family and charitable organizations, following the death of a household member (Mutangadura et al. 1999).

Finally, *natural resource consumption strategies* refer to changes in quantities of resources consumed. Mutangadura et al. (1999) find that households generally reduce their overall level of consumption of natural resources in conjunction with related changes in natural resource selection and collection strategies. Still, it should be noted that such reduced consumption may be less of a "strategy" and more of a necessity than is suggested by the typology used here.

Also an important consideration with regard to mortality impacts is the role of natural resources in the maintenance of household food security. "Food security" is commonly defined as "access by all people at all times to enough food for an active, healthy life" (World Bank 1986). With

regard to HIV/AIDS, as aptly stated by the HSRC (2004), “All dimensions of food security – availability, stability, access and use of food – are affected where the prevalence of HIV/AIDS is high.” In general, HIV/AIDS significantly undermines a household’s ability to provide for basic needs (HSRC 2004; DeWaal and Whiteside 2004), food included. In a recent discussion of the impacts of HIV/AIDS on household livelihoods, Haddad and Gillespie (2001) bluntly state that “HIV/AIDS strips individuals, households, networks, and communities of assets.” Indeed, human, social, financial and physical capital may all be compromised by HIV/AIDS, although especially relevant to this cyberseminar, the sustainability of natural capital may also be undermined (VanLiere 2002). Research suggests that such threats may take the form of lessened ability of communities and user groups to collectively manage common property resources such as rangelands (Haddad and Gillespie 2001). Also, agricultural productivity may be compromised as a result of the loss of prime-age labor (DeWaal and Whiteside 2004). Less labor-intensive and less nutritious crops may be farmed, or land may lay fallow thereby threatening tenure (Haddad and Gillespie 2001).

Although clearly an important association, only limited empirical research has been published in academic outlets demonstrating HIV/AIDS impacts on household resource and livelihood strategies. Additionally, important questions remain as to the unique impacts resulting from AIDS morbidity and mortality, as opposed to the loss of an adult household member from other causes of mortality. With regard to HIV/AIDS, it is logical to consider that household experience with protracted adult illness may exacerbate the impacts of eventual mortality, while the stigma associated with AIDS might also lessen assistance in times of household crisis.

As a point of discussion, we presently have 2 studies underway exploring these issues. Our focus in each is specifically on the role of local environmental resources in the maintenance of food security in AIDS-impacted households. We make use of secondary data collected within a long-standing demographic surveillance site in rural South Africa, the Agincourt Health and Population Unit. We are also collecting both quantitative and qualitative data in effort to better understand the ways in which AIDS impacts might differ from other mortality “shocks.”

With regard to policy, de Sherbinin makes note of the important role of ongoing public health and poverty reduction interventions. We would expand these implications to include consideration of the important role of environmental resources in buffering households against the “shock” associated with adult mortality. As such, environmental conservation and bolstered efforts at sustainable resource management should be central components of policy measures designed to mitigate AIDS impacts.

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