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Small-FRI: lessons learned from a long-term research program on forest-related livelihoods and interventions in Malawi

Since 2009, my research program in Malawi has yielded valuable insights into the linkages between local livelihoods, HIV/AIDS, forest resources, and the promising health and socio-economic impacts of forest-based interventions.

Phase I of the research brought together aspects of sustainable forest management (SFM), population health, and livelihoods to characterize how household dependence on important forest resources (IFRs) changed through three phases (pre-HIV, HIV-related morbidity, post AIDS-related mortality). It also sought to explore forest-related coping strategies and interventions for alleviating some of the burdens (both of disease and impoverishment) on households. Via sixty semi-structured interviews, it appears that dependence on IFRs corresponds closely with disease stage. Firewood was consistently ranked as the most important (regardless of HIV-affectedness), while medicinal plant use increased during morbidity, and timber use increased after mortality. Results also confirm a range of coping strategies associated with IFRs, and identify key interventions for assisting households in securing IFRs. These forest-based interventions (e.g., provisioning households with IFRs; domestication of medicinal plants/wild fruits) would broadly support rural livelihoods, mitigate demand on IFRs, and compensate for a decreased availability of household labour.

Phase II tested the health and socio-economic impacts of two Phase I interventions: (1) the earthen/clay Chitetzo mbaula improved cook stoves (ICS), and (2) planting fast-growing firewood trees on homesteads. 78 ex ante and 72 ex post questionnaires were administered at the household level. The anticipated health and socioeconomic benefits of the Chitetzo stove (e.g., reported improvements in eye/respiratory health, reduced firewood use/collection) were documented, and our study produced one unexpected and important finding: the introduction of ICS reveal a preference for slow-growing, indigenous firewood species (e.g., *Brachystegia* spp.) over fast-growing exotic alternatives (e.g., *Eucalyptus* spp., *Senna siamea*). Phase III seeks to understand this finding by planting several species of firewood and multi-purpose trees using a phased succession approach whereby faster-growing exotics would meet firewood needs in the near term (i.e., 3-8 years) while slower-growing, multi-purpose indigenous trees would meet a broader set of needs (e.g., medicinal, nutritional) in the longer term (i.e., 5-15 years). This Phase will also gauge the feasibility for producing the Chitetzo as a small business venture.

Scholarly contributions: Phase I contributed to the knowledge gap on the environmental dimensions of HIV/AIDS in particular, human health services provided by forests in general, and illuminated other areas of inquiry in the forests and health domain. Phase II contributes to scholarly literature on the health and socio-economic impacts of forest-related interventions, and brought a crucial perspective on SFM heretofore undocumented in the published literature – highlighting the unintended consequences of introducing an ICS and simultaneously revealing local preferences for indigenous hardwoods over exotic species.

Practical significance: In particular, the interventions identified in Phase I highlight the labour-saving, economic, social and nutritional coping strategies that could be fostered through policy and implemented by practitioners. Phase II identified the preferred and most widely used firewood and multi-purpose tree species, some of which will be planted in Phase III of the research program.

