

Local knowledge, agroecology, and land tenure practices improve forest quality and promote community-based restoration

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Forests in local communities have multiple uses – they provide ecosystem services that households rely on for sustenance, regulate the environment, and support photosynthesis. Yet, poverty, food insecurity, unplanned urbanization, and climate change are driving the depletion of the quality of community forests and reducing community resilience. The research explored how local knowledge, agroecology, and land tenure system be leveraged to enhance forest quality in local communities in northern Malawi. The diversity of plant and animal species, computed using the Shannon Diversity Index, was used as a proxy for forest quality. The study compared forest quality in communities with nearly two decades of agroecology practice with those in non-agroecology communities. Forest inventories were conducted to assess forest quality by working with farmers in a multi-stakeholder approach using participatory geographic information systems (PGIS), photography, interviews, historical accounts, and community discussions. The studies found that integrating longstanding local knowledge of forest conditions with ecological indicators enabled the farmers to develop context-specific indicators for assessing forest quality. Using these indicators, the participants conducted a forest quality assessment which found that forest quality in agroecology communities was generally higher than in non-agroecology communities' forests. Also, quality was relatively higher in privately owned and managed forests than in communally owned forests. Farmers in the agroecology communities proposed nature-based solutions to improve forest quality. The research demonstrates that incorporating local knowledge with peasant agroecology and land tenure practices could facilitate community-based restoration and management to build community resilience.