The role of traditional environmental knowledge systems in land resources conservation and management in Tanzania

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The role of TEKS on land resources conservation and management on arable land, pastureland, forestland, and water resources in rural Tanzania has been less understood as well as poorly documented over time and space in relation to land resources productivity. The PRA methods and questionnaire interviews were mainly used in inventorying and analyzing TEKS at household and community levels. The PRA generated data include spatial, temporal, socio-economic and institutional data. The questionnaires were used to collect the qualitative and quantitative data basing on household activities. The findings reveal that the Kainam community through TEKS has classified land and land use depending on the nature of landscape in terms of slope and aspect. The specific land utilization types are suited only to particular ecological and management conditions tested over years, for example cropland, pastureland, forestland and water resources. On cropland, the soil fertility is being conserved and managed through farm manuring, intercroping of cereals and leguminous crops, as well as on farm preservation of good weed species that fix nitrogen into the soils. Soil-water is conserved and managed through terraces, ridges and mulching. On pastureland, the resources are conserved and managed through rotational grazing over time and space to allow for regeneration of plants and diseases control. On forestland and water resources, the resources are conserved and managed through traditional beliefs and by-laws. Furthermore, TEKS in Kainam village is guided and strengthened through traditional regulations over time and space in promoting the productivity of the village ecosystems. Indeed, local knowledge is scientific as it is being subjected to improvement through site practices over time and space. The study has also shown that, the Kainam community is ready to adopt new technologies and evaluate them scientifically before being put into practices. It is recommended that, first, research on inventorying TEKS be intensified and conducted on other parts of Mbulu district and the country at large, so that the people may be aware of the knowledge they possess and help them enrich further. Secondly, policies on land use should integrate available TEKS and hence guide planning and implementation of development programs as a basis for promoting the land resources productivity for the present and future generations.