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Assessment of Rural Communities' Access to Forest Resources and Degree of Community Dependence: A Case of Itale Forest Reserve

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ABSTRACT

This study assessed rural communities' access to forest resources and degree of community dependence. The study was conducted in two villages (Itale and Iwala) in Ileje District. The exploratory survey design used a structured questionnaire to capture both quantitative and qualitative information from sampled households. We administered a structured questionnaire with both closed and open-ended questions to households and key informants. Data collection also included focus group discussions, wealth ranking, transect walks, field observation, and preference ranking. The study employed systematic, random, and purposive sampling to select a sample of 94 household heads and 18 key informants. The results revealed that access to forest resources was denied to rural communities by 95.5% while 4.5% access was granted for community development activities only. Communities' dependence on forest resources varied across forest resource types, whereby dependence over firewood was 91.2%, while thatch grass dependence was 23.6%. The degree of community dependence on forest resources revealed that 57.0% of the respondents depend on forest resources for their livelihood. It is recommended that local communities should be involved in monitoring and sustainable forest management processes, as it was noted that they were not integrated into the management system.

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1.0 Introduction

Studies on the value of forests and forest resources have shown the greater importance of the resources to the livelihood of rural communities. The contribution of forests to rural livelihoods and the national economy is significant, although it is largely unrecorded and consequently unrecognised (Kaimowitz, 2003). Forests are relied upon by a majority of the population for fuel wood, building materials, fodder, climate amelioration, and water catchment, amongst other benefits (Chomitz et al., 2007). Forests and trees are also socially and culturally important, serving as temples, cultural symbols, social gathering places, and localities for social rites such as initiation ceremonies (Kaimowitz, 2003). Insisting on forests' contribution to rural livelihoods, Majule et al. (2005), working on non-wood forest products (NWFPs) in the Mtwara region, noted that NWFPs made a significant contribution to alleviating poverty among the rural poor, particularly in regards to food and income. Forests also offer many benefits to people living close to forested areas and beyond where wood fuels and other forest resources are scarce (Arnold et al., 2006; Vedeld et al., 2007). It is estimated that 90% of the world's poor depend on forests for at least a portion of their income (World Bank, 2000; USAID, 2006). For example, charcoal is one of the forest products in Tanzania, with the industry employing 10,000 people (World Bank, 2009). Beekeeping and honey harvesting are another important aspect of forest concerns through which rural households earn their living. A study of the marketing of NTFPs in Tabora District by Kessy et al. (2007) revealed that the selling of honey contributed about 40% of the household income of rural communities and posed great potential for addressing rural poverty in developing countries. Other than that, forests provide a wide range of ecosystem services, including valuable timber and non-timber forest products (NTFPs), biodiversity protection, and cultural, religious, and aesthetic values of the people (Kaimowitz, 2003). In this case, any change in forest management, including restrictions, may have significant socioeconomic impacts on community livelihoods.

In Tanzania, the Forest Act, Cap. 389, Supp. 57, Section 15, Subsections 1(I)–(X), restricts and prohibits the extraction of forests and forest products within the forest reserves (URT, 2002). This implies a lot on peoples' livelihoods dependent on forests, as it denies the harvesting of forests and the use of forest products for their subsistence needs. The Forestry Policy (1998) and Forest Act (2002) provide for community rights to manage, protect, and use forests in a sustainable manner, with the Forestry and Beekeeping Division (FBD) being responsible for forest management issues, primarily supporting the implementation of the Forestry Policy and Forest Act.

Kaimowitz (2003) put forward that greater enforcement of forestry and conservation laws has the potential to negatively affect rural livelihoods because existing legislation often prohibits forestry activities such as small-scale timber production, fuel wood collection, and hunting that millions of rural households depend on. On the one hand, restrictions on the extraction and use of forest resources aimed at regulating the harvesting of forest resources and promoting forest development are healthy for the sustainability of forest resources and natural ecosystems, but on the other hand, they may affect rural livelihoods, which are highly dependent on forest resources (Kaimowitz, 2003). However, little has been reported on the implications for rural livelihoods of the restrictions imposed on forest harvesting. This study assessed the rural community's access to forest resources and the degree of community dependence on forest resources.

2.0 Materials and Methods

2.1. Study Area Description

The researcher conducted this study in two villages in Ileje District, specifically Iwala and Itale. Ileje District lies between latitudes $9^0$14'00'' and $9^0$37'00''S and $33^0$20'00'' and $33^0$45'00''E. The two villages in Itale Ward surrounded the Itale Forest Reserve. The study focused on the two villages due to their proximity to the forest reserve. Itale Forest Reserve is a Local Authority Forest Reserve (LAFR).

2.2. Research Design

This study used an exploratory survey design (Kothari, 2004) to gather information on restrictions on forest harvesting and the implications they have on rural livelihoods. Both quantitative and qualitative data were collected.

2.3. Population, Sample and Sampling Techniques

2.3.1. Sample Population

The target population in this study was the local community around forest reserves in Ileje District. At the ward and district levels, village leaders, village natural resource committee members, and district forest officers are all involved. The study included household heads to gain insights into their livelihood experiences and activities. Data on community compliance with forestry laws and enforcement practices was collected through the purposeful sampling of various officials, including Village Natural Resource Committee members (VNRCs), Village Chairpersons (VCs), Village Executive Officers (VEOs), Ward Councillors, Ward Forest Officers (VFOs), and District Forest Officers (DFOs).

The Environmental Management Act 2004 Section 40 (URT, 2004) designated the VNRCs, VCs, and VEOs as custodians of the environment, hence their inclusion in the sample.

2.3.2. Sample Size

A sample size of 7.2% of the households in the two municipalities was chosen. Boyd et al. (1981) recommended that for a random sample to be representative, it should constitute at least 5–10% of the total population.

2.3.3. Sampling Techniques

A combination of purposive and random sampling methods were employed to select the sample from the intended population. By employing random sampling, it was guaranteed that every household within the target population had an equitable opportunity of being selected as a sample. Village Natural Resource Committee Members, Village Chairpersons, Village Executive Officers, Ward Councillors, Ward Forest Officers, and District Forest Officers were selected via purposeful sampling.

2.4. Data Collection Methods

This study collected both primary and secondary data, including socio-economic status, accessibility of rural communities to forest resources, degree of community dependence on forest resources, types of forest products harvested, and data on the impacts of permits and restrictions on community livelihoods. In order to establish connections between different research methods and validate the data obtained from each method, triangulation was employed. Triangulation was employed as a means of verifying the integrity of the data collected through the study's methodologies (Punch, 2003).

2.4.1. Primary Data

This study collected primary data using key informant interviews, household surveys, Participatory Rural Appraisal (PRA) including wealth ranking, focus group discussions, and direct observation.

2.4.1.1. Household Survey

To ensure population representation, a random sampling of households was undertaken from the localities of Itale to Iwala. As shown in Table 2.1, 94 households were chosen, which accounts for 7.2% of the total 1,307 households in the two municipalities. The survey was executed utilising a structured questionnaire in order to collect data of both qualitative and quantitative nature.

Table 2.1
Households Sampled and Surveyed in the Study Area

Villages	Number of Households	Sample size (n=94)	Percent (%)
Itale	783	56	59.6
Iwala	524	38	40.4
Total	**1307**	**94**	**100**

Source: Field Survey (2013)

2.4.1.2. Participatory Rural Appraisal (PRA)

The PRA methods were used to gather qualitative data in order to complement quantitative data and gain a gain a better understanding of access needs. The methods used included wealth ranking, transect walks, field observation, and focused group discussion. A total of 24 participants were involved, mainly village leaders, village natural resource committee members, and selected household heads.

2.4.2. Secondary Data

Secondary data was collected through a documentary search, where policy documents, guidelines, by-laws, various government reports, and other publications relevant to this study were reviewed.

2.5. Data Analysis and Presentation

Data processing involved editing the schedules and interview responses, coding and classification, entering data, and processing using the Statistical Package for Social Sciences (SPSS). Further, SPSS was used for descriptive analysis and cross-tabulation of field data. Tables and narrative summaries were used to present the findings. Qualitative data from the focus group discussion and key informants were transcribed to see what understanding respondents had of restrictions.

3.0 Results and Discussion

3.1. Access to Harvest Forest Resources

To examine the accessibility of rural communities to forest resources, a household survey and participatory rural appraisal were conducted, whereby focus group discussions and key informant interviews were used. On the accessibility of rural communities around the forest reserve to forest resources, results showed that only 4.5% of respondents had access to forest resources, while 95.5% of respondents had no access. This observation showed that communities in the study area had limited access to forest resources, with a small proportion of communities having permits to harvest forest resources, mainly timber, for community development projects. This was noticed during field observation, where community members from Itale and Iwala villages were found at the site building a ward secondary school. It was reported that permits were issued to a few individuals for harvesting timber for community development projects, as confirmed by the VEO, VNRC, and WFO during the interview and discussion. Table 3.1 presents the responses regarding the reasons limiting the harvesting of forest products in the Itale Forest Reserve. A total of 26.0% of respondents reported that access to harvesting forest resources was restricted, while 39.1% of respondents reported that access was denied because the forest was a reserve. About 13.8% of respondents reported that there was no permit to harvest forest resources, while 12.6% indicated that harvesting forest resources was restricted since the forest was government property. A total of 8.4% of respondents indicated that the limitation was not relevant to them because they could meet their livelihood needs through purchases.

Table 3.1
Percentage Response on Factors Limiting Forest Harvesting in Itale and Iwala Villages

Factors limiting accessibility of forest resources	**Itale n=56**	**Iwala n=38**	**Total (N=94)**
Restriction	27.7	24.4	26.0
Reserve	36.2	42.1	39.1
No permit	11.7	16.0	13.8
Government property	15.1	9.1	12.7
Not affected	8.4	8.4	8.4
Total	**100**	**100**	**100**

Source: Field Survey (2013)

Overall, the study showed that communities in the two villages were aware of the restrictions imposed over harvesting forest resources, although they differed in terms of understanding the reasons for restrictions. Under these restrictions, communities were neither allowed to cut down trees, make charcoal, or collect fuel wood, nor to graze animals in the forest reserve. Communities were not only prohibited from harvesting forest resources, but also from engaging in cultivation within the reserve.

3.2. Degree of Community Dependence on Forest Resources

To establish the degree of community dependence on forest resources, the study used the following methods: household survey, participatory rural appraisal (seasonal calendars, transect walks, preference ranking, focused group discussion, wealth ranking, key informant interviews, historical timelines), and literature review. This study showed that the rural community dependence on forest resources from both villages was above average (57.0%). The degree of dependence differed across the types of forest resources found, with firewood being the most dependent resource by 91.2% and honey being the most dependent resource by 77.3%. Edible wild fruit dependence was 71.2%, while fodder dependence was 66.3%. Medicinal plant dependence was 68%, poles

was 62.6%, thatch grass was 23.6%, vegetable dependence was 28.7%, and mushroom dependence was 28.4%.

Table 3.2
Percentage Response on Degree of Community Dependence on Forest Resources in Itale and Iwala Villages

Forest resources	Most dependent		Least dependent		Not dependent		Total
	Itale (n=56)	Iwala (n=38)	Itale (n=56)	Iwala (n=38)	Itale (n=56	Iwala (n=38)	(N=94)
Firewood	92.9	89.5	7.1	10.5	0	0	33.3
Honey	62.5	92.1	37.5	7.9	0	0	33.3
Edible wild fruits	68.9	73.4	25.6	21.1	5.5	5.5	33.3
Fodder	71.9	60.6	22.5	24.5	5.6	14.9	33.3
Medicinal plants	66.1	69.8	16	13	17.9	17.2	33.3
Poles	66.1	59.1	19.6	28.6	14.3	12.3	33.3
Thatch grass	28.6	18.6	53.6	53.6	17.8	27.8	33.3
Vegetable	27.3	30.1	37	36.3	35.7	33.6	33.3
Mushroom	28.9	27.9	19.5	30.5	51.6	41.6	33.3

Source: Field Survey (2013)

On the basis of the findings above, the community around the Itale Forest Reserve is most dependent on the forest resources available, whose limitations to access affected their livelihood. Poschen (1997) supports the fact that restricting forestry activities and forest-related operations affects rural communities' livelihoods. Further, since forests are recognised as a 'poverty trap' and a'safety net' for the rural dwellers that use their resources for subsistence and as a source of income and employment (Angelsen and Wunder, 2003), this opportunity has been missed.

4.0 Conclusion and Recommendations

4.1. Conclusion

Forests are vital to the daily lives of communities, especially in rural areas. For generations, forests have been a dependable source of rural livelihood. Fuel wood, fodder, edible wild fruits, wild vegetables, medicinal plants, poles, fodder, and other NTFPs were among the important forest products on which rural communities depended for their daily subsistence. However, with the limited access to forest resources by communities around the forest reserve, such resources were increasingly becoming an undependable source of rural livelihoods. The limited access to Itale Forest Reserve has led to a limited expansion of land for cultivation, grazing, and the limited availability of timber for construction, petty timber businesses, and fuel wood.

4.2. Recommendations

For enhanced sustainability of the forest reserves, communities need to be fully involved in all matters related to forest conservation and decision-making regarding the use and sharing of benefits accrued from the forests. In this case forest resources would serve as a catalyst of economic development to communities adjacent to forest reserves and the nation at large. This could be achieved through the implementation of the following recommendations:

i. The government should integrate local knowledge into conventional approaches of forest resources management in order to enhance community's capability to monitor, use and manage forest resources sustainably.
ii. Tenure systems should be restructured to harmonise the environmental requirements of the ecosystem and community needs to minimise pressure for resources and complaints from communities adjacent to forest resources.
iii. Further studies should be conducted to figure out how to balance community needs with forest management plans. This would guarantee the satisfaction of community needs and the sustainable management of forest resources.

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