

## **Community Perception towards Equity in Community Based Forest Management (CBFM): A Case of Duru-Haitemba Forest Reserve in Tanzania**

*\*Anatory B. Bunduki*

\*Tengeru Institute of Community Development (TICD),  
Box 1006, Arusha – Tanzania

**ABSTRACT:** Community Based Forest Management (CBFM), among types of Participatory Forest Management (PFM), plays a great role in conserving forest resources as most of governments in the world lack proper resources management. CBFM is also important as local communities feel themselves that the forest resources are part of their livelihoods. Equity in CBFM is an important aspect in sustaining the model. However, this aspect has not been largely researched. This paper intended to provide more information on perception towards equity in CBFM, which is scantily available. Duru-Haitemba Forest Reserve has been taken as a case study whereby a sample of 240 households was randomly drawn for this study. Household surveys using focus group discussion, transect walk, stakeholders' analysis and key informants methods were used to collect data. Qualitative data were collected through focus group discussion and key informant interviews. The collected data were analysed using content and related analysis. Based on perceptions of villagers, equity is a situation of accessing or utilizing forest resources, participation in decision making and implementation of various responsibilities according to the appropriate agreements and deliberations of the community. The study concludes that the level of equity in CBFM was high at Duru-Haitemba. The study recommends stakeholders to sensitize and mobilize the local communities to enhance management of their forests.

**Keywords:** *Perception, CBFM, livelihoods, content analysis, Duru-Haitemba Forest Reserve*

## 1.0 INTRODUCTION

During the colonial era, natural resources conservation policies were introduced, which involved taking large tracts of land away from rural people for the establishment of protected areas (Murphree, 2000). After independence, the management of forests in Tanzania was in the full responsibility of the government (WRM, 2002). In the early 1990s forest management has taken a new paradigm from being state forest to what is known as community forest. The paradigm shift entails a transfer of ownership and management of forest from the central or local government to the local communities. This shift of power is being adopted worldwide by both developing and developed countries. It emphasizes change of command and control from the state to participatory conservation and management with the communities.

Participatory Forest Management (PFM) is a general term describing community involvement in the management of forests. The policy and legal reforms following the new forest management system in Tanzania resulted into development of two approaches namely the Community Based Forest Management (CBFM) approach and the Joint Forest Management (JFM) approach. The former approach transfers power of ownership and management to the local communities letting them be both owners and duty bearers while the later approach entails government ownership but shares duty and benefits with the communities (Willy, 1997).

Besides the achievements attained so far in various forest reserve in Tanzania, there is no clear answer to the question of whether CBFM being implemented has promoted equity in the community. Equity in this study is defined as a situation where everyone has an opportunity to participate in decision making processes regarding their forest reserve and thus access resources and benefits with their full potential. Jacobs (1989) categorized two types of equity namely: economic and political equity. Economic equity refers to the allocation of costs and benefits amongst stakeholders as a result of policy or resource management decisions. Political equity on the other hand depicts access to decision-making and the ability of stakeholders to have their ideas and concerns expressed and heard (Poteete, 2004).

### 1.1 Problem Statement

Certainly, as the result of adopting CBFM in Tanzania there have been several successes. For example, there has been restoration of the deteriorated forests from 40% to about 80% for Duru-Haitemba and Uluguru National Forest Reserves (Blomley and Iddi, 2009). Similarly, communities have begun to manage the forest themselves through introducing good governance of forest resources at local levels. These communities have successfully maintained some pillars of governance namely participation, transparency and accountability; follow the rule of law, responsibilities and equity (Chingonikaya, 2010). Many studies have been done on CBFM in Tanzania (e.g. Kajembe *et al.*, 2003; Kajembe *et al.*, 2004; Chingonikaya, 2010). However, most of them worked much on assessing the level of conservation of forest resources and contribution of CBFM to livelihoods of local communities. Some studies were conducted to assess the level of equity in CBFM (Meshack *et al.*, 2006; Chingonikaya, 2010). Chingonikaya (2010) assessed the level of equity in establishing governance of forest reserves, while Meshack *et al.*, (2006) looked at cost and benefit to be undertaken in Joint Forest Management but perceptions of community on equity in CBFM information has remained not well established. This paper has been set to assess the community perception towards CBFM particularly at Duru-Haitemba Forest Reserve.

### 2.0 METHODOLOGY

Duru-Haitemba Village Forest Reserves are located between 4°15' south and 35°45' east, and between 1300 meters to 1800 meters above sea level, in Babati District in Manyara Region in the northern part of Tanzania. The village forests are about 25 Kilometres from Babati town in the Southwest of the district. Rainfall in the area is characterised by bi-modal pattern and irregular rains ranging from 300 to 1200 mm per year. Rains of short duration occur during October to January while there are rains of long duration from February to May. Temperature on another hand ranges between 25°C and 30°C on average while in some instances it raises to 33°C during the hot season.

Duru-Haitemba Forest Reserve is estimated to have a total area of 8995 ha and is divided by eight village reserves (Kajembe and Mgoo, 1999).



Each village owns and manages a well defined forest area which is called after the village name as well (Table 2). During establishment of CBFM at Duru-Haitemba there were 36 sub villages with 8212 households. The total land area of villages surrounding Duru-Haitemba forest reserve was 27 450 ha.

The population of Duru-Haitemba is estimated at 38,447 in 2012 (National Population Census of 2012). The main ethnic groups include the Gorowa and Iraqw. Other ethnic groups include the Mbugwe, Maasai, Barabaig, and Sandawe. The researcher was not able to access current disaggregated population statistics according to village due to inaccessibility of data.

Like many forest reserves, Duru-Haitemba has both woody and non woody forest resources. Woody forest resources include fuel wood and housing construction materials like poles and wood for brick burning. Other woody resources include grasses for livestock keeping and thatching; and medicinal trees (barks, roots and leaves). The main non woody forest resources in Duru-Haitemba are forest vegetables, wild fruits, honey, forest bush meat and mushroom.

The most prevalent production system among the smallholders, who constitute the majority of the population, is agro-pastoralism. Both men and women participate in agricultural production. Many of the smallholder farmers use traditional hand hoe, while very few ones use farm machineries such as ox-plough and tractor in tilling land. A variety of crops are grown. Among them include maize, sunflower, beans, sorghum, millet, pigeon peas, banana, groundnuts and ladlad beans. The average household farm size was two acres. Domestic animals mainly consisted of cattle, sheep and goats and chicken.

The study adopted a cross-sectional research design in order to collect empirical data for investigating equity in Community-Based Forest Management at Duru-Haitemba Forest Reserve in Babati District. It was chosen because it is appropriate for collection of valid information about the population under study in a uniform and reliable manner at a single point in time. The design is recommended by several studies (e.g. De Vaas, 1993; Bailey, 1998). With this, the adoption of the research design is appropriate



as the study objectives dictate such a choice as they require data to be collected at once in a single point and time.

A total sample size of 240 households was used for this study from eight villages surrounding Duru-Haitemba Forest Reserve. The villages were purposively selected. In each village, three sub villages were randomly selected. A simple random sampling technique was used to select the households from the selected sub villages. It was expected that the sampling of households would had been 10 from each sub village. However, during the field survey, the households were sampled as Riroda (29), Sangara (30), Hoshan (31), Endagwe (30), Duru (30), Endanachan (31), Gida (30) and Bubu (29).

During the first phase participants were asked to give priority components of equity and rank them accordingly. In the development of the matrix, scoring was proposed. In scoring, the strongly agree was given a score of 5, while agree 4, undecided 3, disagree 2 and strongly disagree 1. The scoring led to development of Likert scale statements which were incorporated in a questionnaire. The exercise used to establish level of equity in CBFM at Duru-Haitemba Forest Reserve. The exercise was also done during focus group discussions.

During the second phase of data collection focus group discussions and stakeholders' analysis exercises were conducted, participants were first asked to clearly describe various definitions of equity. Different definitions were given, however, they were further asked to merge some of the definitions, based on the merged definitions from different focus discussions conducted in different villages then the researcher came up with four distinct definitions. Further, participants were also asked to set various criteria for assessing the extent of equity in CBFM at Duru-Haitemba Village Forest Reserves. Based on the criteria from different discussions the researcher summarised them in eleven statements used to develop a Likert scale, which were later incorporated in the questionnaire for establishing the level of equity in CBFM. The statements were then used to develop an index for equity in CBFM.

Data collected through transect walk were analysed while in the field. Mostly, the exercise intended to note the availability of the resources on the

extent of their abundance and coverage. On the other hand, the Venn diagram exercise assisted the researcher to identify the most important stakeholders. This was mostly used for answering the research question related with the analysis of the stakeholders in CBFM at Duru-Haitemba Forest Reserve.

Qualitatively, the matrix ranking was used to assess the extent of fairness to access resources and benefits of the reserve by villages, age, sex, education level and income of individuals at Duru-Haitemba Forest Reserve. The exercise was also used to provide various levels of community control over resources and benefits by village, sex, education level and income of the individuals. Therefore, with the help of the community, the stakeholder analysis was conducted and analysed together with Venn diagram.

### **3.0 RESULTS AND DISCUSSION**

#### **3.1 Socio-Economic and Demographic Characteristics of Respondents**

Socio economic characteristics considered in this study were age, sex, educational level, marital status, source of income, position in the family and originality. Age of respondents involved in this study ranged from 18 to 71 years with a mean age of 39 and standard deviation of 10.7 years. However, three age categories were established in the analysis as shown in Table 1. Majority of respondents (52.1%) were at age category 30 – 44 years. This was followed by age category 45 years and above, which accounted for 28.3% and 18 -29 years, which accounted for 28.3%.

**Table 1: Percentage of respondents by socio economic characteristics**

Categories	Frequency	Percent
<b>Age group (years)</b>		
18 – 29	47	19.6
30 – 44	125	52.1
45 and above	68	28.3
<b>Education level</b>		
Primary	185	77.1
Never gone to school	34	14.2
Secondary	18	7.5
Tertiary	3	1.2
<b>Marital status</b>		
Single	20	8.3
Married	209	87.1
Widowed/widower	3	1.2
Separated	11	3.4
<b>Source of income</b>		
Crop farming	248	95.0
Livestock keeping	146	60.8
Business	10	4.2
Formal employment	9	3.8

The age categories obtained at villages surrounding Duru-Haitemba Forest Reserve may provide an impression that majority of the population was at the age between 30 and 44 years. This age group is likely participating much in CBFM at the reserve. Many studies show that participation of individuals in CBFM is based on age (e.g. Meshack *et al.*, 2006; Chingonikaya, 2010). Most of these studies indicate that the middle age classes ranging from 25 to 45 years participate more than other age classes.

Out of 240 respondents, 61.7% were male and female accounted for 38.3%. That means males represented the larger part of the respondents. In many occasions, especially when it comes to CBFM, there is an assumption that



females participate less than males (Mershack *et al.*, 2006). This is due to the nature of activities involved in forest conservations and management. The finding noted here may be explained that possibly, the study targeted to collect household information through administering the questionnaire to heads of households, which in African context most of households are headed by males; however, females represented their counterparts at their absence.

Table 1 above reveals that majority of respondents (77.1%) had primary education, while the respondents who had never gone to school accounted for 14.2% and very few respondents (1.2%) had tertiary education. The standard deviation as regards to number of years in schooling was 2.7. It is important to understand educational level of the individuals in the community as it might influence their wellbeing as well as their contribution to improving CBFM.

At first, this study had a notion that level of education among respondents might influence level of participation in CBFM at Duru-Haitemba. In a way that the higher the level of education the higher the level of participation in implementation of CBFM. However, this assumption was not tied with level of equity in CBFM.

Table 1 presents distribution of respondents by marital status. About 87% of the respondents were married while singles accounted for only 8.3%. High number of married respondents is probably explained by the fact that in many rural areas people marry at early ages. The rest of respondents were widowed/widower (1.2%), while separated accounted for 3.4% of the respondents. Marital status may influence equity in CBFM in different ways. Different researchers such as Chingonikaya (2010) give scenarios when a married household wants to involve in CBFM activities, it has to decide who to participate between a husband and wife. There is also an assumption that activities to be undertaken may differ based on the nature of the activity. Benefits also may be distributed based on type of household heads. In addition, it is assumed that households with married couples may have more manpower than single, divorced and widow households that distribution of labour may also favour activities to be undertaken in CBFM.

Marital status in CBFM is important in various scenarios, for example provision of labour. In a married couples, labour may be divided in a way that one may participate in forest conservation related activities, while the other participate in socio-economic activities for the household. The study therefore, had an assumption that married couples could participate more in CBFM related activities than singles, widows, divorced and separated ones. However, the assumption was not as anticipated when relating equity in CBFM and marital status.

Many respondents (95.0%) involved in this study earned their income through farming only, while 60.8% earned their income through both farming and livestock keeping, the remaining 4.2% and 3.8% earned their income through farming and business, and formal employment respectively (Table 1). This is an indication that most people tend to conserve the forest as it is crucial for their agricultural production. Being aware of sources of income of the community is crucial as it may determine the extent to which the population depends on forest resources.

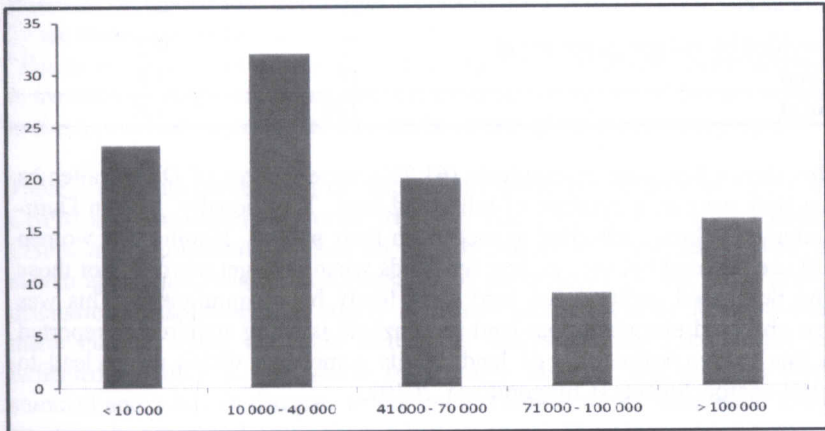
As regards to household labour it was found that family members did most of farming activities such as farm preparations, sowing, weeding and harvesting. However, in few households (14.7%) labourers were also hired for some farming activities especially in weeding and harvesting. All activities regarding livestock keeping had involved household members only.

Household size ranged from one person to twelve people. On average, each household had 5.7 members. However, majority of households (about 60%) had three to six people. This household size is supported by secondary review in which the average household size in Babati District, where Duru-Haitemba is located was estimated at 4.9 (URT, 2004).

Figure 1 revealed that majority of households (32%) has an average monthly income of TShs. 10 000 to 40 000. However, a substantial number of households (23.2%) had an average monthly income below 10 000 TShs. These findings are within the average per capita income for Babati District of TShs. 313 894 per person (URT, 2006). Further, Ngaga *et al.*, (2009) reported an average income of Ayasanda village, which is one of the villages forming the Duru-Haitemba Forest Reserve to be Tshs. 940 000, out of it,

Tshs. 10 000 was from forest, which accounted for only 9%. The big share of the income was from livestock (36%) and agriculture (33%).

**Figure 1: Income levels for villagers in Duru-Haitemba**



In a study undertaken by CARE Tanzania, together with the Overseas Development Institute (UK), it was suggested that unless preventive measures are taken, there is a strong risk of the poorer members of a given community losing out from the direct benefits of CBFM (Vyamana *et al.*, 2008). Deliberate exclusion of the poor, fuelled by the widespread belief that the poor are responsible for forest destruction as well as a belief that says the poor are unable to contribute in a useful or constructive manner (Blomley and Iddi, 2009).

Furthermore, it was learnt that majority of households own total farm areas of two acres and above (70%). In most households (61.7%) owned land through inheriting from parents, while 5.8% of the households hired land for farming activities. Other households purchased or used land provided by their respective village governments as indicated in Table 2.



Marital status in CBFM is important in various scenarios, for example provision of labour. In a married couples, labour may be divided in a way that one may participate in forest conservation related activities, while the other participate in socio-economic activities for the household. The study therefore, had an assumption that married couples could participate more in CBFM related activities than singles, widows, divorced and separated ones. However, the assumption was not as anticipated when relating equity in CBFM and marital status.

Many respondents (95.0%) involved in this study earned their income through farming only, while 60.8% earned their income through both farming and livestock keeping, the remaining 4.2% and 3.8% earned their income through farming and business, and formal employment respectively (Table 1). This is an indication that most people tend to conserve the forest as it is crucial for their agricultural production. Being aware of sources of income of the community is crucial as it may determine the extent to which the population depends on forest resources.

As regards to household labour it was found that family members did most of farming activities such as farm preparations, sowing, weeding and harvesting. However, in few households (14.7%) labourers were also hired for some farming activities especially in weeding and harvesting. All activities regarding livestock keeping had involved household members only.

Household size ranged from one person to twelve people. On average, each household had 5.7 members. However, majority of households (about 60%) had three to six people. This household size is supported by secondary review in which the average household size in Babati District, where Duru-Haitemba is located was estimated at 4.9 (URT, 2004).

Figure 1 revealed that majority of households (32%) has an average monthly income of TShs. 10 000 to 40 000. However, a substantial number of households (23.2%) had an average monthly income below 10 000 TShs. These findings are within the average per capita income for Babati District of TShs. 313 894 per person (URT, 2006). Further, Ngaga *et al.*, (2009) reported an average income of Ayasanda village, which is one of the villages forming the Duru-Haitemba Forest Reserve to be Tshs. 940 000, out of it,

**Table 2: Land ownership type**

<b>Ownership</b>	<b>Frequency</b>	<b>Percentage</b>
Inherited	148	61.7
Purchased	56	23.3
Provided by village government	22	9.2
Hired	14	5.8
<b>Total</b>	<b>240</b>	<b>100</b>

This shows that most respondents (61.7%) were natives of Duru-Haitemba that they were in a position of inheriting land. Traditionally, land in Duru-Haitemba is being inherited to men from their parents. Hoping that women will use the land belongs to their husbands when they get married. For those who purchased and/or hired land were likely being immigrants. This was also observed elsewhere that land in Tanzania is being acquired as reported in this study. Acquisition of land entails something which might lead to forest encroachments (Chingonikaya, 2010).

### **3.2 Perception of Equity in CBFM at Duru-Haitemba**

Based on Focus Group Discussion (FGD) conducted at villages around Duru-Haitemba Forest Reserve, there were various definitions established by the participants. The following were the definitions:

*“Equity is the situation of acquiring and utilizing of forest resources (like thatching grass) and fulfilling several responsibilities in accordance to the appropriate agreements (e.g. set places for traditional rituals) and deliberations regarding the community based forest management project (men group).”*

*“Equity is to receive or give out something agreed upon or promised e.g. women access to fire wood, medicinal herbs, vegetables, etc. (women group).”*

*“Equity is a condition which involves benefiting from forest resources (e.g. building poles, honey, etc.), and income accrued from forest resources (fines from forest encroachers); and participation in forest activities (e.g. patrol) in order to achieve the intended goals (youth).”*

*“Equity is a situation whereby the community members have access to benefits; participate in decision making (e.g. formulation of bylaws) and implementation of community forest plans (village government).”*

Based on the above four definitions a consolidated definition was developed by the researcher as follows:

*“Equity is situation of accessing or utilizing forest resources, participation in decision making and implementation of various responsibilities according to the appropriate agreements and deliberations of the community forest.”*

Table 3 presents perceptions of respondents towards existence of equity in CBFM at Duru-Haitemba Forest Reserve. The perception of equity under CBFM at Duru-Haitemba relied on various definitions presented as well as eleven attitudinal statements formulated by participants during focus group discussions. Assessment of equity at Duru-Haitemba Forest Reserve was made through using ten main statements analysed using Likert scale as indicated in Table 3. The scores on strongly disagree and disagree were summed and taken as disagree in the interpretations of the data while those on strongly agree and agree were taken as agree. Therefore, about 66% of the villagers agreed on the statement that “there is adequate participation of all stakeholders in implementation of different responsibilities”, while only 11.7% disagreed on the statement and 22.1% were undecided. This indicates that at Duru-Haitemba Forest Reserve, various stakeholders were involved in implementation of CBFM.



**Table 3: Assessment of community perception on equity in CBFM**

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
There is an adequate participation of all stakeholders in implementation of different responsibilities	5 (2.5)	22 (9.2)	53 (22.1)	110 (45.5)	50 (20.8)
There is fair participation of all community members in decision making	2 (0.8)	29 (12.1)	25 (10.4)	122 (50.8)	62 (25.8)
Community members being able to access and utilize forest resources like fuel wood, building poles and fruits	9 (3.8)	28 (11.7)	31 (12.9)	116 (48.3)	56 (23.3)
There is absence of discrimination of marginalized groups e.g disabled, women and children in different committees	32 (13.3)	40 (16.7)	62 (25.8)	89 (37.1)	17 (7.1)
Village leaders and environmental committee members favour business people in accessing forest resources	10 (4.2)	62 (25.8)	51 (21.2)	97 (40.4)	20 (8.3)
Fair presence of the criteria in high equity	20 (8.3)	48 (20.0)	55 (22.9)	97 (40.4)	20 (8.3)
There is unfair distribution and access to forest resources	17 (7.1)	133 (55.4)	54 (22.5)	28 (11.2)	9 (3.8)

There is unjust ruling of encroachers: the influential people are favored while the poor are immediately fined	143 (59.6)	40 (16.7)	39 (16.2)	10 (4.2)	8 (3.3)
There is lack of transparency in meetings and in issues related to forest resources	109 (45.4)	38 (15.8)	8 (3.3)	44 (18.3)	41 (17.1)
There is unclear procedure of selection of committee members	117 (48.8)	26 (10.8)	28 (11.7)	50 (20.8)	19 (1.9)

*(Values in brackets are percentages of response)*

With regards to fair participation of community members in decision making in practicing CBFM, about 77% of the respondents agreed on the statement, while 12.9% disagreed and 10.4% of the respondents were undecided. The statement of "Community members being able to access and utilize forest resources like fuel wood, building poles and fruits" was accepted by 71.6% of the community members. This provides an impression that in Duru-Haitemba Forest Reserve, the villagers assessed that there was equity in implementation of CBFM.

About 44% of the respondents agreed on the statement that "there is an absence of discrimination of marginalized groups like disabled, women and children in different committees". The statement that says "Village leaders, environmental committee members and some opinion leaders and business people are favored in accessing forest resources" was scored as follows: strongly disagree (4.2%), disagree (25.8%), undecided (21.2%), agree (40.4%) and strongly agree (8.3%). This indicates that 51.2% of the respondents rated not to agree as well as they did not know anything about the statement. About 49% of the respondents agreed on the statement that there was fair presence of the criteria in high equity. About 63% of the

respondents disagreed that there was unfair distribution and access to forest resources in Duru-Haitemba forest Reserve. About 60% of the respondents strongly disagreed that there was unjust ruling of encroachers especially those with influential power to favoured, while the poor to be immediately fined. There was 61.2% of the respondents disagreed that there was lack of transparency in meetings and in issues related to forest resources. There was also about 49% of respondents strongly disagreed on the statement that there was unclear procedure of selection of committee members.

Based on the criteria made by the participants during FGDs, it can be noted in this study that there was a high level of equity at Duru-Haitemba Forest Reserve in implementation of CBFM. However, there were some villagers who did not know anything about equity in implementation of CBFM at Duru-Haitemba Forest Reserve. Similar observation was made by Carig (2012) when she assessed the impact of CBFM in Philippines. Further, the author observed that perception of community members in assessing various pillars of equity differ with level of education, gender, age and wealth status of respondents. Meshack *et al.*, (2006) assessed the distribution of Joint Forest Management (JFM) on costs and benefits in four villages in the East Usambara Mountains and established that the relative balance between costs and benefits varies between income groups. Further, Schreckenber (2010) observes that the poor in CBFM do not benefit from the paradigm as they have no power and voices in various decision making meetings.

It had been clearly noted that in Duru-Haitemba there was adequate participation of all stakeholders in implementation of different roles e.g. patrol of forest encroachers and access of forest resources such as fuel woods, building poles, vegetables and fruits. Moreover, the respondents commended presence of transparency in different meetings, absence of discrimination among different groups i.e. disabled children and women groups. Similarly, there was clear process in accessing permits for different forest products and freedom of expression of their ideas. Additionally, the respondents applauded equal involvement of females and males in different committees.

The perceived level of equity is said to be contributed by unequal distribution of resources and benefits in which village leaders, and committee members are more favored compared to other community



members. Similarly there is low involvement of stakeholders in decisions concerning the forest project. It was also revealed that the costs of harvesting different forest products were expensive for low income earners. For example the cost for pruning one tree was Tshs. 3 000, which was claimed to be expensive for poor people and even the use of the amount collected was not transparent to the community. Similar observation was reported by Blomley and Iddi (2009) when they were trying to summarize various reports related with PFM. Further this situation is aggravated by how natural resource and environmental committee members are selected. The process is said to be unfair since these particular committee members are appointed by the village leaders only to be approved by the village assembly. This was revealed during focus group discussions. Correspondingly, community members grumbled over the long time the leaders stayed on their positions and the time taken to process different permits for different forest products.

From household interviews as well as focus group discussions and individual in-depth interviews, it was unfold that aspects of equity in Duru-Haitemba included but not limited to the following: participation of community members in implementation of different responsibilities; involvement in development of bylaws; participation in planning and monitoring of village forest activities; access to reports on revenue and expenditures; involvement in decision making; involvement of marginalized groups in forest issues; fair allocation of forest resources, benefits and costs; transparency in meetings; and clear procedure of selection of committee members.

### **3.3 Participation of Community Members in Various Activities**

In order to safeguard the forest some bylaws were set including: a fine of Tshs. 15 000 against any caught encroacher; an imposed fee of Tshs. 20 000 for institutions and individuals conducting studies in any village forest; and a fee of Tshs. 3000 for cutting trees or poles for construction of houses, or for cutting logs for brick burning. It seems villagers are not very much involved in developing bylaws as majority of them (64.6%) indicated that they were not involved in developing the bylaws (Table 4). Indeed information gathered through focus group discussions and in depth interviews indicated that bylaws are developed by village governments in collaboration with their respective committees while the villagers are involved in endorsing the developed bylaws during the village assembly.

**Table 4: Community members' participating in various CBFM activities**

Activities	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Development of by law	85	35.6	155	64.6
Planning of village forest activities	78	32.5	162	67.5
Decision making	82	34.1	158	65.9
Accessing information on revenue and expenditure	195	81.2	45	18.8

Usually the annual village forest implementation and monitoring plans are developed at the beginning of each year by village environmental committees and approved by respective village government. Prior developments of such plan environmental committee members are supposed to collect opinion and suggestions from community members and finally they are the ones to endorse the plans during village assembly. Through household interviews it was revealed that only 32.5% of respondents participated in the planning process (Table 4). The findings proved that in some instance community members' opinion was not sought before planning. Focus group discussions further supported this finding as villagers from Ayasanda, Riroda, Duru and Sangara claimed not to be involved in the planning process.

One important aspect of CBFM is involvement of all stakeholders in decision making. During household interviews respondents were asked if they were involved in making decision on issues related with their forests. Out of 240 respondents, 65.9% indicated not to be involved in decision making (Table 4). As a cross check for responses obtained, another question was asked on who is having a final decision as regards village forest issues. Certainly, as a support for obtained responses, it was unfold during focus group discussions that decision on forest issues are made by the village government jointly with the respective environmental committee. Villagers

are simply involved through endorsement of the decisions made. This is usually done during village assembly meetings.

Revenues and expenditures are issues that are sensitive not only in CBFM but also in other programmes. This study was also interested to unfold if Duru-Haitemba community members had access to information on revenues and expenditures from their forest project. For household interviews, an overwhelming majority of the respondents (81.2%) pointed out that they had access to information on revenues and expenditures when needed (Table 4). Usually during village assembly the villagers are supposed to be informed on the revenue accrued from the community forest project and the expenditures incurred. However, during focus group discussions (in Riroda village) it was revealed that the village government was not transparent on revenues and expenditures accrued from fines from encroachers and fees from researchers. Villagers were also not informed on the amount of money donated by Land Management Programme (LAMP).

For smooth running of the project it is inevitable to have well documented procedures for selection of environmental committee members. During focus group discussions, it was gathered that there were clear procedures of selection of environmental committee members. Usually each sub village appoints two members (a man and a woman) who are later on approved by village assembly. Besides clear procedures the study found out some irregularities. For instance, in some villages (e.g. Riroda and Endanachan) the appointed members have been in the committee for more than two terms which is against their constitution; in few sub villages (e.g. Hommam and Qatadium) only men were appointed in the environmental committee; and in some sub villages environmental committee members were appointed without the consent of community members.

Blomley and Iddi (2009) assert that the villagers within their community forest have to be involved in developing the management plan, the bylaws, the minutes and membership details of the VNRC before being forwarded to the district for ratification by the District Council. The villagers, therefore, can enforce rules and bylaws to protect the forest, levy fines and retain them at village level, harvest forest produce for their own use (in line with management plan) and sell forest produce to outsiders and retain 100% of revenue at village level.



The findings reported in this study adhere with the conditions prompted by many governments in crafting new laws and policies to improve forest management and respond to the needs of local communities (Carig, 2012). However, the study by Carig (2012) indicated that in Nueva Vizcaya, equity in CBFM, the local communities did not have any participation in the management and development of forests. Involvement of communities in developing by-laws and plans has similar arrangement elsewhere (Cruz and Acay, 2004; Chingonikaya, 2010). High participation of local communities in setting by-laws and plans has indicated to influence sustainable CBFM (Sepp and Mansur, 2006). According to O'Hara and Pulhin (2006), such participation creates responsiveness in management of forest resources. However, these studies did not link with existence of equity in CBFM. Importance of disclosing information on revenues and expenditure in CBFM has also observed to be similarly important in enhancing sustainability in CBFM development. Participatory approaches in the forest sector have been well developed and applied in villages throughout the world. Most of these approaches major on improving and sustaining CBFM.

Committees formulation observed at Duru-Haitemba Forest Reserve is similar to the formulation of various committees in CBFM in the world as well as in Tanzania. Chingonikaya (2010) shows the same as it has been reported in this study. Members forming the various demographic features are as well as be considered as it has been in this study. This plausibly may influence

equity in CBFM. This is following selection of members in various members considered age, sex, education and income levels, which in one way or another can be considered as the elements of equity.

#### **4.0 CONCLUSIONS AND RECOMMENDATIONS**

The study concludes that equity is situation of accessing or utilizing forest resources, participation in decision making and implementation of various responsibilities according to the appropriate agreements and deliberations of the community forest. As the study noted, there is participation of all stakeholders in implementation of different responsibilities. The study also concludes that community members are able to access and utilize forest resources like fuel wood, building poles and fruits. Based on the assessment

of attitudinal perceptions of the villagers, the study concludes that there was equity at Duru-Haitemba Forest Reserve in implementation of Community Based Forest Management (CBFM).

Based on the study conclusion drawn above the researcher recommends that a clear definition of equity should be harmonise and strengthen as local communities in CBFM areas fail to establish key word for equity. As the study noted that the local communities mentioned only participation of individuals in utilisation of the resources as the main key word for the equity in CBFM.

## REFERENCES

- Bailey, K.D. (1998). *Methods of social research*. 4<sup>th</sup> Edition. The Free Press, New York, USA, 587pp.
- Blomley, T. and Iddi, S. (2009). *Participatory Forest Management in Tanzania: 1993 – 2009: Lessons learned and experiences to date*. Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania.
- Carig, E.T. (2012). *Impact Assessment of Community-Based Forest Management in the Philippines: A Case Study of CBFM Sites in Nueva Vizcaya*. A paper presented in International Conference on Management and Social Sciences (ICMSS'2012), 19-20 May 2012, Penang, Malaysia. 18pp.
- Chingonikaya, E. E. (2010). *Prospects of Community Based Forest Management in Sustaining Forest Resource Base and Socio Economies of Local Communities in Tanzania*. Thesis for Award of PhD Degree at Sokoine University of Agriculture, Morogoro, Tanzania. 257pp.
- Cruz, F. A. and Acay, F. T. (2004). *People's organization attributes and institutional viability of selected community-based forest management projects in region 2, Philippines*. A paper submitted to the Environmental Education Network of the Philippines, Inc.

- (EENP) Secretariat, SESAM, UPLB, College, Laguna for oral presentation to the National Conference and Scientific Meeting, Leyte State University, ViSCA, Baybay, Leyte, 26- 28 May 2004. 10pp.
- Jacobs, H. M. (1989). Social equity in agricultural land protection. *Landscape and Urban Planning* 17: 21 – 33.
- Kajembe, G. C. and Mgoo, J. S. (1999). *Evaluation of Community-Based Forest Management Approach in Babati District: A case of Duru-Haitemba village forest reserves*. Dar es Salaam, Tanzania, Orgut Consulting AB. 56pp.
- Kajembe, G. C., Monela, G. C. and Mvena, Z. S. K. (2003). Making Community-Based Forest Management Work: A Case Study From Duru-Haitemba Village Forest Reserve, Babati, Tanzania. In: Kowero, G., Campbell, B. M. and Sumaila, U.R. (Eds.), *Policies and Governance Structures in Woodlands of Southern Africa*. The Centre for International Forestry Research (CIFOR), Jakarta, Indonesia. pp. 16 – 27.
- Kajembe, G.C., Namubiru, E.L., Shemwetta, D.T.K Luoga, E.J and Mwaipopo, C.S. (2004a). The impact of rules in forest conservation in Tanzania: Case of Kwizu forest reserve, Same District, Kilimanjaro. In: *Institutions incentives and conflicts in forest management: A perspective, Proceedings of the IFRI East African Regional Conference*. (Edited by Shemwetta, D.T.K, Luoga, E.J., Kajembe, G.C. and Madoffe, S.S), 12 – 13 January 2004, Moshi, Tanzania. pp. 92 – 107.
- Kajembe, G.C., Shemwetta, D.T.K. and Luoga, E.J. (2004b). IFRI country report: Tanzania. In: Shemwetta, D.T.K, Luoga, E.J., Kajembe, G.C. and Madoffe, S.S.(eds.) *Institutions incentives and conflicts in forest management: A perspective, Proceedings of the IFRI East African Regional Conference*. (Edited by Shemwetta, D.T.K, Luoga, E.J., Kajembe, G.C. and Madoffe, S.S), 12 – 13 January 2004, Moshi, Tanzania. pp. 1 – 8.



- Meshack, C. K., Adhikari, B., Doggart, N. and Lovett, J. C. (2006). Transaction Costs of community based forest management: Empirical evidence from Tanzania. *African Journal of Ecology* 44: 468 – 477.
- Murphree, M. W. (2000). Community based conservation: Old ways, new myths and enduring. In: *Experiences with Community Based Wildlife Conservation in Tanzania*, (Edited by Bldus, R. D. and Siege, L.), Dar es Salaam, Tanzania. pp. 5 – 16.
- Ngaga, Y. M., G. C. Kajembe, S.A.O. Chamshama, T. Treue, H. Meilby, J. F. Lund, N. Burgess and D. Brockington., 2009. *Brief Midterm Report Applied Research in Participatory Forest Management (PFM): Assessing under which conditions PFM contribute to the goals of Poverty reduction, Sustainable forest management and improved local governance in Tanzania*. Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar es Salaam, Tanzania. 160pp.
- O'Hara, P. and Pulhin, J. (2006). Taking participation of villagers beyond the villages to national forest policy processes in the Philippines. *Unasyuva* 57 (3): 23-29.
- Poteete, A. (2004). *Is Decentralization a Reliable Means of Increasing Equity?* Paper presented at the Tenth Biannual Conference of the International Association for the Study of Common Property (IASCP), 9 – 13 August 2004, Oaxaca, Mexico. 20pp.
- Schreckenber, K. (2010). *Equity in Community Forestry: How do the Poor Benefit?* Centre for Underutilized Crops, Division of Environmental Sciences, University of Southampton, Oxford Centre for Tropical Forests Seminar series. 16pp.
- Sepp, C. and Mansur, E. (2006). National Forest Programmes – A comprehensive framework for participatory planning. *Unasyuva* 57 (3): 6 – 12.

- URT, (2013). 2012 Population and Housing Census: Population Distribution by Administrative Areas. National Bureau of Statistics, Ministry of Finance, Dar es Salaam, Tanzania. 264pp.
- Vyamana, V.G., A.B. Chonya, F. V. Sasu, F. Rilagonya, F.N. Gwassa, S. Kivamba, I. Mpressa and E. A. Ndowo., 2008. *Participatory Forest Management in the Eastern Arc Mountains area of Tanzania: Who is benefiting?* 12th Biennial Conference of the International Association for the Study of Commons, Cheltenham England, July 14-18, 2008. Digital Library of the Commons.31pp.
- Wily, L. A. (1997). *Villagers as Forest Managers and Government Learning to let go: The case of Duru-Haitemba and Mgori Forests in Tanzania.* Institute of International Development, London. 24pp.
- World Rainforest Movement (WRM). (2002). Tanzania: Improving Forest Management through Joint Management with Communities. WRM Bulletin No. 64.