

Article

Perceived Non Carbon Benefits from Community Based Forest Management and Lessons for REDD+: Insights from Northern Tanzania

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Abstract: As REDD+ unfold on the ground in pilot countries, attention has focused primarily on financial benefits that forest dependent communities and countries will receive for selling carbon credits. However, benefits from REDD+ are more than just financial revenues associated with carbon storage or sequestration. There is a need to clarify non-carbon benefits and their contributions to the wellbeing of forest dependent communities. In this paper, I explore perceived non-carbon benefits from Duru-Haitemba Villages Land Forest Reserve, a CBFM site which is getting ready to embrace in the REDD+ mechanism. Both quantitative and qualitative methods were used for data collection. They included household interviews using a structured questionnaire; key informant interviews, transect walks, observations, and focus group discussions. The results suggest that, communities currently benefits from a wide range of non-carbon benefits ranging from tangible forest products, environmental/ecosystem services and social benefits which are related to governance, trainings and political empowerment as well as issues of connectedness and networks among villagers. I argue that there is a need to consider these benefits broadly instead of focusing mainly on financial benefits from carbon credits and for REDD+ to deliver climate change mitigation, non-carbon benefits are must be taken on board and incentivized.

Keywords: Community Based Forest Management, Non-Carbon Benefits, REDD+

1. Introduction

Many countries in the tropics have recognized the potential for forests to mitigate climate change and generate multiple benefits to forest dependent communities. Community based forest management (CBFM) is also seen as an effective tool where community-owned forest can play a significant role in global efforts to mitigate climate change through REDD+ (Reducing Emission From Deforestation and Forest Degradation, Enhancements of Forest Carbon Stocks and Sustainable Management of Forests) (Murdiyarso and Skutsch 2006: blurb; Skutsch and Ba 2010).

There is an increasing evidence that CBFM can deliver on multiple outcomes including; carbon storage, livelihood benefits and biodiversity conservation (Angelsen, 2008). CBFM can also help sequester and store carbon without adversely affecting the livelihood and equity benefits that community forests generate (Chhatre and Agrawal, 2009). Thus community involvement has the potential to improve effectiveness, efficiency and equity and provide more co-benefits (the 3Es+) from REDD+ projects (*ibid*). Under the Kyoto Think Global Act Local project (K:TGAL), (Zahabu, 2006), has also demonstrated in a case study from Tanzania with empirical data the extent to which carbon stock in the forest under CBFM is increasing as a result of management practices by the villagers.

Various initiatives to promote REDD+ through support and finance of pilot projects are underway in over 15 countries worldwide. Bilateral and multilateral donors have contributed and pledged funding to fast-track REDD+ activities on the ground. Key donors include the Norwegian government, the World Bank, and various nations including Finland, Sweden, Denmark, UK and the US. Most of the funds have been disbursed to support REDD readiness initiatives in various tropical countries including Tanzania.

This article explores the contributions of non-carbon benefits under community-owned forests and its significance for REDD+. The paper also explore ways in which these benefits can be maximized and also the challenges of unequal benefits due to lack of specific criteria for benefit sharing. The paper start with an introduction to forests role in climate change mitigation, benefits accrued from forest resources and some background to the study site. Then I present the methods used and results before examining their significance.

My main argument is, despite of various financial mechanism and cash-based incentives associated with carbon sequestration under REDD+, non-carbon benefits plays a greater role in influencing dynamic relationships between people and forest resources. Non carbon benefits should be highly prioritized in the design and institutionalization of future REDD+ projects. This is likely to reduce community resistance to REDD+ projects

2. Materials and Methods

2.1. The Study Site

The study was carried out in Ayasanda and Riroda villages which are part of the Duru-Haitemba Villages Land Forest Reserve (DHVLFR). This forest reserve is located in Babati District, northern Tanzania (fig. 1). The forest (DHVLFR), is under the management of the nine villages which surround them namely Sangara, Ayasanda, Riroda, Duru, Hoshan, Endanachan, Bubu, Gidas and Endagwe. The Forest has a total area of 9045ha and has been under CBFM arrangement since 1994. For management purposes, each of the nine villages has its forest portion. These portions appear in patches and in most cases are not continuous (Malimbwi, 2003).

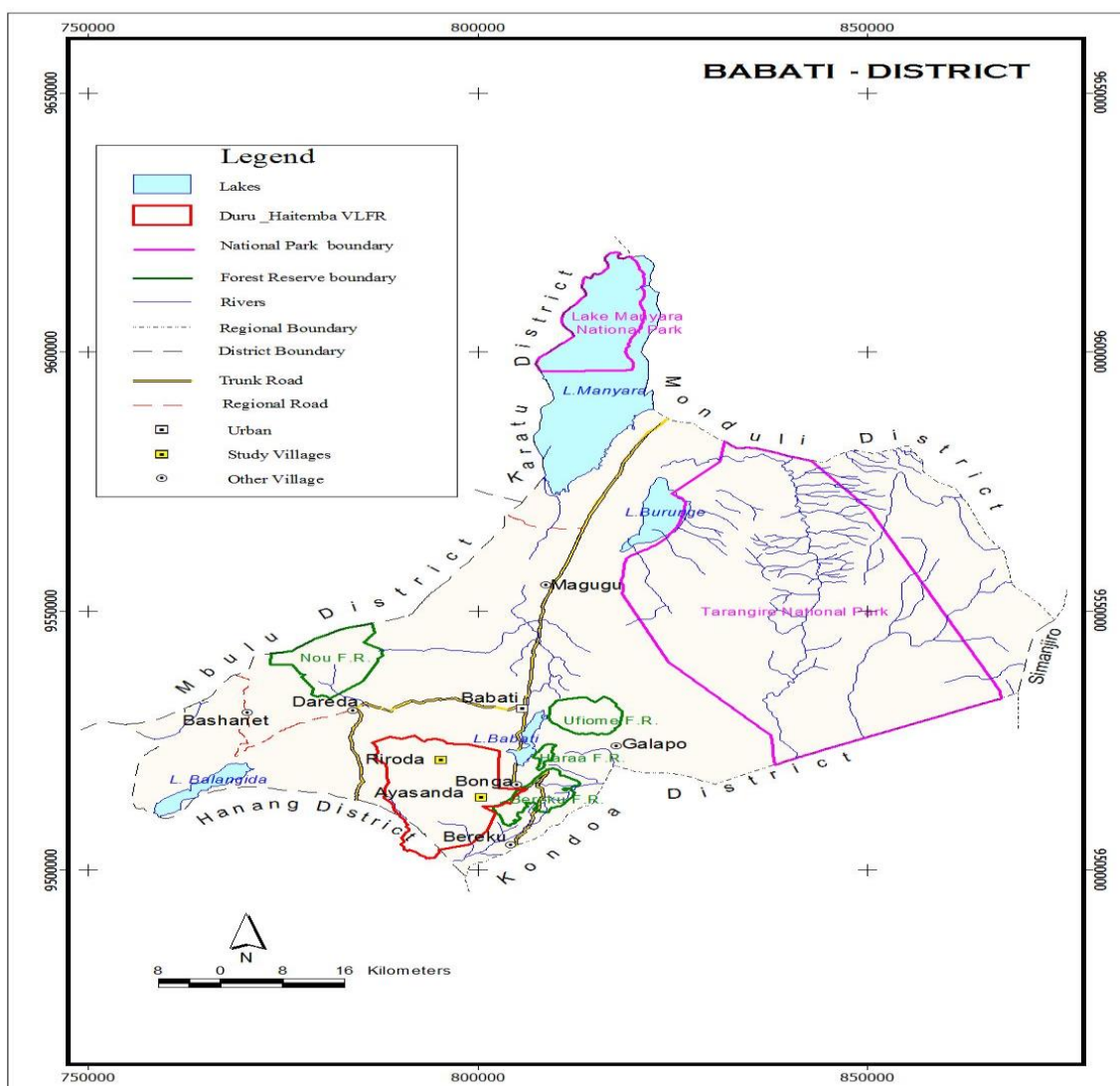


Fig. 1: Map of Babati District showing study villages and other physical features

In each village, there is an established village natural resources committee (VNRC), which is responsible for village forest management. The members of the VNRC are selected from among the villagers with equal representation from each sub-village in each village. The VNRC is thereafter recognized as forest manager, working under the supervision of the village government.

Ayasanda which is one of the study villages is located in Gorowa division and it is composed of the Haitemba-Warib Forests which are a part of the larger Duru-Haitemba Forest in Babati District. Haitemba has 500 hectares (ha), and Warib has only 50 ha. Haitemba-Warib forests were part of the participatory forest management (PFM) regime which took part of the pioneering project of the mid 1990's and has been described as a successful one (Wily, 2001; Malimbwi, 2003). The second study village Riroda is also located in Gorowa division. About 899 ha of the forest is on land that belongs to the village.

2.2. Data Collection

A mixed approach involving both qualitative and quantitative methods was used in data collection. The reason for adopting the approach was for triangulation purposes and also for credibility and completeness. As noted by Bryman (2006), the researcher can bring together a more comprehensive account of the area of enquiry in which he or she is interested if both quantitative and qualitative research techniques are employed. He further suggests that employing both approaches enhances the integrity of findings.

Both primary and secondary data were collected based on their applicability and usefulness towards achieving the research objectives in the case study villages. Secondary data were collected through documentary review. This was due to the fact that despite presence of some quantitative data, most of the data was not recent. Again qualitative data was expected to suffer from biases because some respondents had larger interest in the benefits from CBFM and REDD+. Therefore, the justification for mixed methods was an attempt to minimize the biases of any particular approach by combining both approaches to triangulate the most accurate answer to the questions (Creswell, 2003).

Qualitative data was collected using participatory methods, which involved key informant interviews, focus group discussion (FGD), transect walks and field observations. Household questionnaires were used in the collection of quantitative data.

2.2.1. Key informant interviews

Key informants were selected based on their knowledge and experience on issues of interest for the study. A semi-structured checklist was used to interview district council staffs, ward leaders, village and sub-village leaders, VNRC members, MJUMITA representatives (Federation of Community Forest Conservation Networks in Tanzania/ Shirikisho la Mtandao wa Jamii wa

Usimamizi Misitu Tanzania) and Tanzania Social Action Fund (TASAF) representatives to assess, among others, benefits accrued from CBFM and potentially REDD+ scheme, criteria for benefit sharing and threats that might hinder realization of such benefits. A special checklist interview was conducted specific forest users such as pastoralists, farmers, charcoal-makers, timber dealers, and firewood collectors. In all a total of twenty seven (27) informants interviews were conducted.

2.2.2. Focus group discussions

Focus group discussion was used to investigate diverse perception among participants on benefit sharing issues under CBFM and the expected REDD+ scheme. The researcher was able to conduct four FGD sessions of which two were carried out in each selected village consisting of 8 participants both male and females. The number of participants (eight) was considered convenient for effective management of the discussion. Open ended questions were posed on a wide range of issues including among others current and expected benefits from the forest reserve, mechanism for sharing benefits, criteria for benefit sharing, the REDD+ scheme and the likely benefit sharing mechanism and so on. Each session took approximately 90 minutes. FGD was conducted mainly to validate most of the information gathered by the earlier methods, and gather comprehensive information that was impossible to get through other techniques. A checklist of semi-structured questions was used to guide the discussions and a tape recorder was deployed during the discussions and notes were taken by with the aid of flip charts.

2.2.3. Household questionnaires

Open ended questionnaires were developed and administered face to face to the respondents in both study villages. This approach was used to get responses from household heads. A total of 101 questionnaires were administered in Riroda and Ayasanda respectively. The questionnaires were open ended and provided space for clarification of more detailed and wide-ranging explanations given by respondents regarding their perceptions towards benefits sharing.

Efforts were made to capture all different aspects of the four study objectives, where this was not possible information was left to be collected using other techniques. The questionnaires were designed in advance; but a preliminary visit to the study site helped in improving them to a great deal. It was also used as a major tool for primary data collection.

2.2.4. Transect walk and field observations

Transect walks and field observations were undertaken after having had in-depth discussions with key informants and focus group discussion (FGD) participants. A walk from the village to the forest was done accompanied by 2 people nominated from within the FGD participants. Field

observation in DHVLFR was focused on the village forest reserves on the one hand, their current state and patterns of forest resources use.

The method of transect walk and observation is known to be an effective supportive technique in the in-depth research methodologies as it allows one to reach an area, observe, ask question and learn and also be an eye-witness of an environmental issue (Nichols, 2002). During the walk around Haitemba-Warib forest in Ayasanda, the researcher observed various tree species, selling of forest products (fuelwood edible wild products) and evidence of encroachment in the forest.

3. Results and Discussion

3.1. Perceived Non-Carbon Benefits under CBFM and REDD+ Related Activities

Duru-Haitemba villages manage their village forest reserves according to the agreed management plans and have also developed regulations (by-laws) for forest protection. These regulations offer several opportunities for obtaining various benefits from the forest reserve. Information gathered from interviews revealed a wide range of non-carbon benefits accrued to the villages from CBFM at the moment. The benefits have been categorized into four groups; tangible or direct benefits, environmental non-carbon benefits and also social benefits which are related to improved decision making process at the local level (governance), issues of trust and levels of connectedness and networking existing in the villages, capacity building and political empowerment.



Fig. 2: Part of the Ayasanda Village Forest Reserve

3.1.1. Tangible benefits

Tangible or direct non-carbon benefits provided by the DHVLFR include firewood collection given that all community members are allowed to collect deadwood from the forest reserve. Other tangible benefits include poles for construction activities such as building houses, furniture for household use, and agricultural implements. Villagers also get thatching grass for roofing, and bush

meat which is illegal but some villagers are taking advantage of weak patrols to engage in poaching related activities¹. They also gather fodder from the forest borders to feed their livestock, timber for subsistence use only, medicinal herbs which are no longer widely used due to slight improvement in health services delivery. Other benefits include Non-Timber Forest Products such as wild fruits, wild vegetables and honey since villagers are allowed to place beehives in the forest. Fodder/grazing is partially allowed although grazing throughout the year is strictly prohibited and it's only done during dry season (June to December)². Other tangible non- carbon benefits were not mentioned by the villagers but were observed in use and they include ropes and stones for construction.

Respondents were asked to rank (fig. 3) the level of importance for each tangible non-carbon benefit and at the end of the exercise, forest products such as firewood, timber and building poles were perceived to be more important while benefits such as game meat, and fodder/grazing land were less important. Since villagers have been told they are not allowed to access the reserve for grazing and hunting of wild animals; this may account for the lower rankings of the two items.

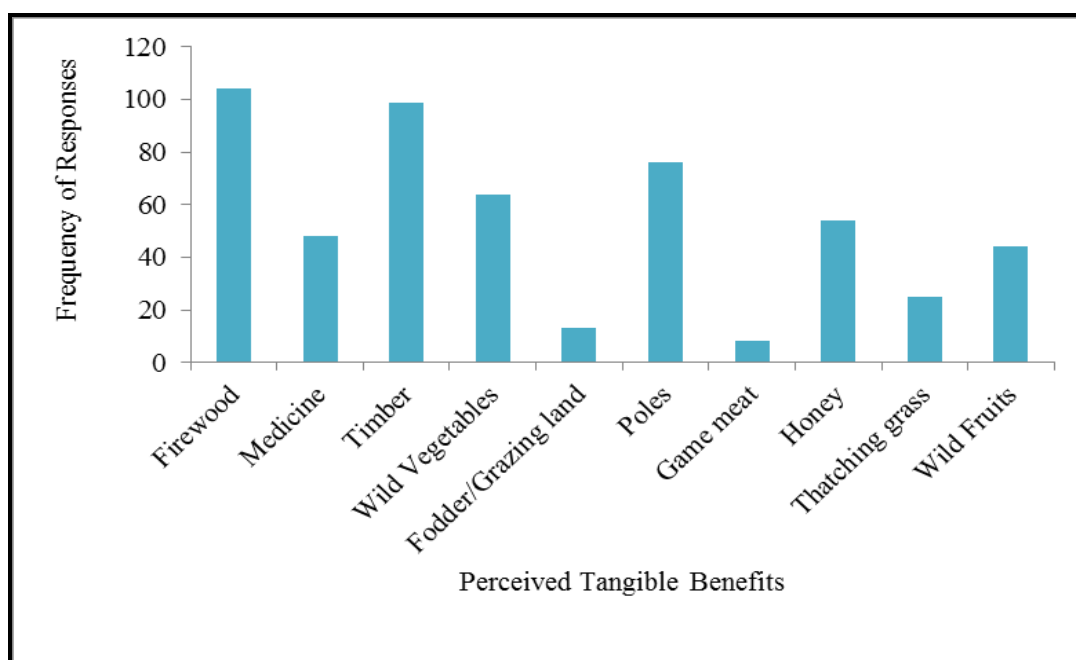


Fig. 3: Perceived Importance of Tangible Non-Carbon Forest Benefits

3.1.2. Environmental non-carbon benefits

Another category of non-carbon benefits obtained from the forest reserves is environmental services. From the interviews conducted, environmental values were also considered to be very

¹ Narrations provided by discussants at the FGD in Ayasanda

² Key informant interview with a cattle keeper in Riroda

important. The most frequent response provided by respondents for why their forest reserve is important was that, forests regulate climatic conditions and are source of rainfall and fresh water supply. Local narratives also pointed out the role of forest in erosion control, Aesthetic values and watershed protection. One of the key informants stated that “water for the cultivation is more important than the forest products we obtain from the forest”³.

The role of forest in controlling soil erosion was also among frequent responses by villagers with most of them claiming that soil erosion in the villages around DHVLFR was severe before the start of CBFM initiative in the mid 1990’s. When villagers were asked to rank the importance of environmental service benefits; local (micro) climatic regulation was perceived to be the most important followed by rainfall and fresh water supply (fig. 4). In most of the accounts given, the assumption of a connection between rainfall and the existence of the forest reserve was evident. Rainfall was conceived as important, because availability of rain was a key condition for cultivation. With regard to aesthetic values, some villagers in Ayasanda and Riroda cited increasing greenery in their surroundings which they associated with improved biological diversity in their localities.

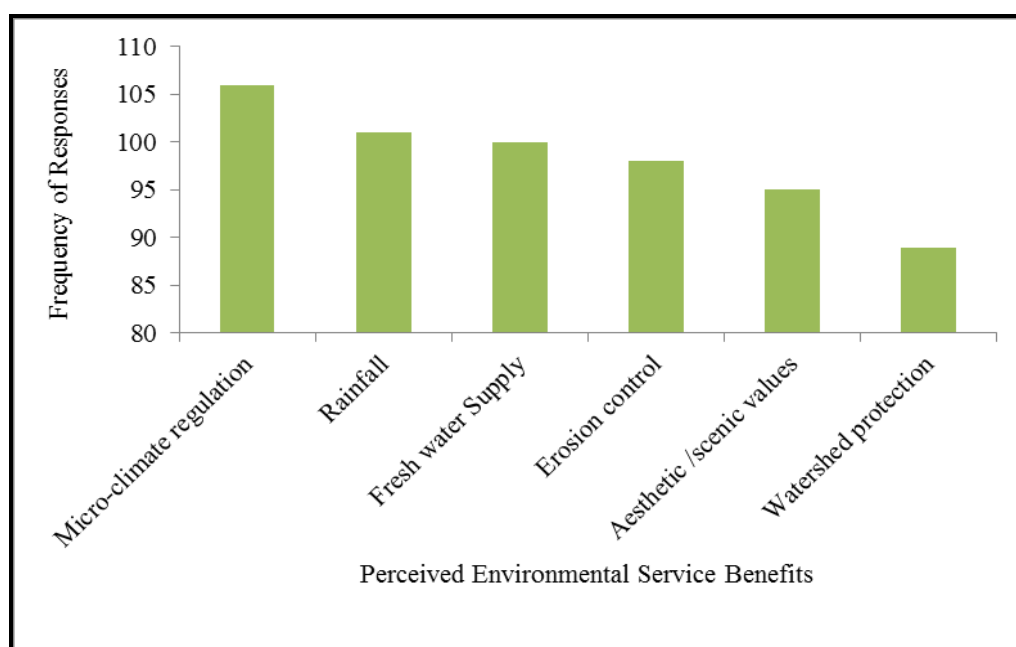


Fig. 4: Perceived importance of Environmental Non-Carbon Service benefits

3.1.3. Social non-carbon benefits

Duru-Haitemba villages have also benefited as a result of the CBFM initiative due to improved relationships and networks in the villages, political empowerment which includes training and skills and also strengthened local governance mechanism. All these kind of benefits are collectively referred

³ Interview with an informant in Riroda

as social non-carbon benefits. With regard to improved relationships and networks; in both Riroda and Ayasanda, some NGOs (MJUMITA) has brought together a network of forest dependent groups and is working to empower them by promoting their involvement in the decision making process through advocacy. Such networks have provided members with an opportunity to interact and learn from other forest user groups across Tanzania and in neighboring countries like Kenya and Uganda⁴. The networks have also facilitated borrowing and financial assistance among network members. These are part political and social capital benefits and are particularly important in terms of empowering the poor to voice their needs in the new forum provided by MJUMITA.

Another social benefit that communities get from CBFM is training. However from the interviews conducted, it was revealed that members of village government and the VNRC had received considerably more training than other ordinary community members⁵. Many village government officials have built their capacity through training and workshops linked to CBFM.

According to the interviews, diverse training were offered by a wide range of actors such as the local LAMP project, the District Forest Office, World Vision International, MJUMITA and the K; TGAL project. Of the 101 households sampled, 11 had sent at least one member to be trained in issues such as simple forest resource assessment (inventories), good governance and advocacy, income generating activities (IGAs) such as beekeeping, nursery establishment, mushroom farming, and carbon stock measurements and monitoring.

There have also been few capacity-building activities which aimed to foster good governance practice (participation, transparency and accountability) among the villagers. Both in Riroda and Ayasanda villagers feel that village government officials and the VNRC should receive the training first so that they could train other villagers. However, some villagers think that everybody should receive the training at the same time. Villagers were also asked to rank the importance of the current social non-carbon benefits and the results are illustrated in fig. 5 below. Results indicate that most people have benefited more from improved relationships and networking due to existence of various networks in the villages including forest-related networks such as those coordinated by MJUMITA and those facilitated by World Vision International. Strengthening of local governance mechanism was ranked the lowest because many villagers expressed their mistrust towards the village council, the VEO and the VNRC. They claimed that, there are lots of unresolved governance challenges in the village.

Villagers were again asked to rate the level of importance for each of the training they have received since the start of the CBFM scheme in DHVLFR and the results of the ranking are indicated

⁴ Interview with MJUMITA member in Ayasanda

⁵ Narration from FGD with villagers in Riroda and Ayasanda

in fig. 6. Training in income generating activities and simple forest assessment inventories were considered very important overall. This is partly due to the efforts of the defunct LAMP project and NGOs that have promoted IGAs projects in both villages. In Ayasanda training in carbon stock measurement and monitoring was also perceived important due to the training provided by the K: TGAL project.

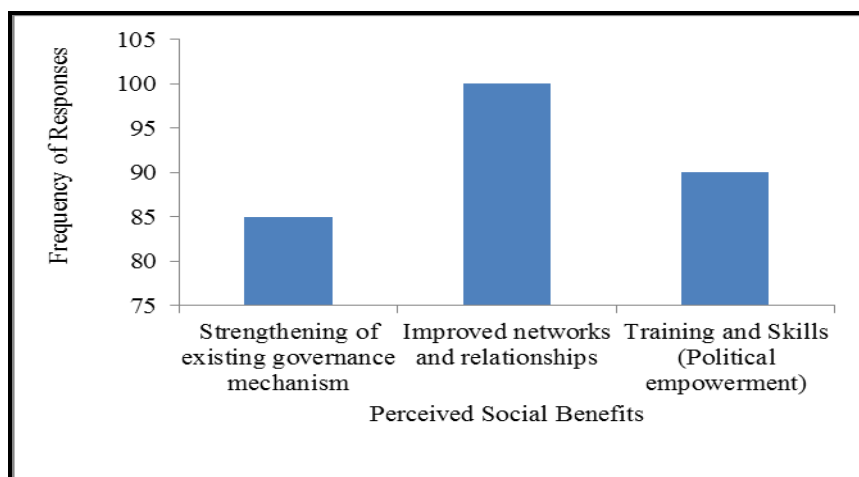


Fig. 5: Perceived importance of social non-carbon benefits

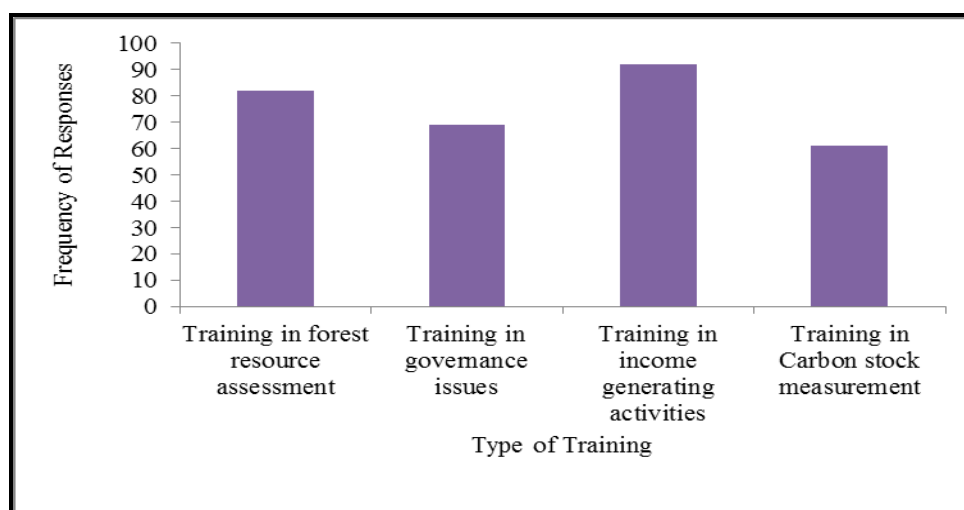


Fig. 6: Perceived importance of various training provided

In two of the four FGD carried out with ordinary villagers, it was interesting to find out that financial benefits from the forest reserve are not a major concern while non-carbon benefits such as water provided by the forest emerged as the most important priority⁶. This can be attributed partly to the water crisis that is being experienced in the villages especially in Riroda. As a result of water

⁶ Accounts given by members at the FGD in Riroda and Ayasanda

shortage, there is a growing awareness of the benefits of sustainable management of the forest reserve not just for the revenue related benefits but also for the other environmental service benefits such as water, biodiversity and micro climate regulation that it provides. There was general agreement that it was important for communities and other actors to consider these benefits (ecosystem services, tangible forest products and social benefits) broadly rather than focusing just on financial and revenues related benefits as a reason for engaging in CBFM and the REDD+ scheme.

Generally it was observed that despite the lack of significant financial benefits related to carbon sequestration, communities in both Rirorda and Ayasanda are interested in forest conservation and they understand various non-carbon benefits that it brings, something that suggests that REDD+ has a chance to succeed in village land forest reserves.

4. Conclusions

Communities are currently benefiting from mainly non-carbon benefits due to limited financial benefits flowing to the communities from the forest reserve. This is basically due to the fact that many of the Village forest reserves in Duru-Haitemba are relatively small forest patches and they don't generate significant revenues to be shared amongst all villagers. Nevertheless, there is hope that these reserves will generate income from carbon payments in the future. Village members anticipate REDD+ payments to improve their livelihoods but they think this can only be achieved if fair and clear benefits sharing mechanisms are in place. However, for REDD+ to succeed, it must enhance and prioritize non-carbon benefits which have been enjoyed by communities for years. Revenues from carbon credits should be seen as a supplement to existing non-carbon benefits

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