REDD+ PILOTING PROCESS IN THE ZANZIBAR ISLANDS, TANZANIA: THE ASSESSMENT OF THE COMMUNITY'S PERCEPTIONS AND ATTITUDES

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Abstract
Introduction of REDD+ initiatives in Tanzania underwent a series of preparation activities including launching and implementation the National REDD+ pilot projects. While the piloting have now lasted for four years the local communities' awareness, perceptions and their attitudes towards these initiatives have not been adequately studied in Tanzania. This study therefore was carried out to assess the community perception and determine social sustainability of REDD+ initiatives in Zanzibar Islands. Specifically the study aims to determine the levels of community awareness, perception, participation and attitudes towards this initiative. Five Shehia (Villages) which are Kumbaurembo, Muyuni C, Mtende, Chuchumile and Hanyegwamchana were involved in the study. Data were collected through key informant interviews, focus group discussions and household questionnaire survey. Content analysis was used to analyse qualitative information from focus group discussions and in depth interviews, while indexes were used to determine the levels of community participation, awareness and attitudes. Findings revealed a high level of community awareness (63.3%) with moderately high level of participation as shown by 47.8%. Results show a favourable attitude of about 77% despite the low levels of education, over dependence of forest resources and small size of land holdings that would be expected to affect communities' perception, attitudes. The study concludes that communities in Zanzibar islands have positive attitude and perceptions on conservation initieatives which is a good indicator for sustainability of REDD+ initiatives. However, in a bid to sustain the communities' continued involvement, there should be continued capacitation of the communities to be in full control of their resources as well as ensuring equitable benefit sharing.

Key Words: *REDD+, Community perception, Attitudes, Zanzibar, Tanzania.*

Introduction

Reducing emissions from deforestation and forest degradation (REDD) initiative is considered as a possible means for mitigating climate change in developing countries (UN-REDD, 2011). It is based on a core idea: reward individuals, communities, projects and countries that reduce greenhouse gas (GhG) emissions from forests. The initiative has the potential to deliver large cuts in emissions at a low cost within a short time frame and, at the same time, contribute to reducing poverty and enhancing sustainable development (Angelsen, 2008).

Today, natural forests are rapidly disappearing due to local people's over

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dependence on forest goods (especially wood for fuel) and an absence of ready alternatives to logging or clearing land for agricultural fields and infrastructure among others (Mutabazi *et al*., 2014). This pressure is intensified by insecure land tenure and forest rights, which cut people's inspiration for sustainable management. Therefore, securing land tenure alongside other mechanisms for sustainable forest management such as efficient governance structures must be put in place (Arild *et al*., 2013).

The realization of this led to the adoption of the REDD+ initiative in 42 countries spanning Africa, Asia-Pacific and Latin America and the Caribbean with 16 of these countries receiving direct support to National Programmes. The countries include: Bolivia, Cambodia, Democratic Republic of the Congo (DRC), Ecuador, Indonesia, Nigeria, Panama, Papua New Guinea, Paraguay, the Philippines, Republic of Congo, Solomon Islands, Sri Lanka, Tanzania, Vietnam and Zambia (UN-REDD, 2009).

The introduction of REDD+ initiatives in Tanzania underwent a series of preparation activities including, selection of REDD+ pilot implementing NGOs, launching and implementation of the nine REDD+ pilot projects in both Tanzania Mainland and Zanzibar. The areas involved in the pilot include Kondoa, Shinyanga, Mbeya, Rukwa, Iringa, Kilwa Kivinje, Kigoma, Kilosa and Zanzibar (TNRF, 2011). REDD+ implementation process is designed for two phases, the piloting phase as the first phase which aimed to draw necessary lessons for the actual implementation phase.

As part phase one implementation of REDD+, Tanzania carried out the countries' first ever forest inventory which was completed in 2013. However, little is known about the status and trend especially on community perception, awareness and attitudes towards REDD+ initiatives. For that reason it was important to conduct this

research. The question is as to whether the community is satisfied with the implementation process and whether the community is willing to continue involving in REDD+ initiatives or is not. Therefore this study focused on the factors pre and post REDD+ implementation which specifically determine the awareness levels, participation levels and attitudes of forest dependent communities towards REDD+ initiatives. The aim is to shade light and therefore understanding on how communities see REDD+ initiatives and the whole piloting process.

Studying the community perception/awareness and attitudes on REDD is important based on the fact that the monitoring of the implementation of REDD+ in Tanzania needs to be operated at two levels which are at local and national levels (Burgess *et al*., 2010). Moreover, a better understanding and analysis of the drivers of forest degradation is required as part of developing mitigation interventions at local and national levels to ensure improved land-use change. This kind of understanding is also crucial for subsequent development o f management techniques for ecological restoration. According to Suyanto *et al*. (2014) national baseline and calculation of reference emission levels and potential emission reductions will be developed using remote sensing and a network of forestry plots.

However, these approaches struggle to provide the details required to assess the implementation of community-level forest conservation interventions. In these cases, alternative locally based or community forest management approaches are more likely to be successful. Locally based monitoring involves local people or local government staff directly in data collection and interpretation and also employ relatively simple and cheap methods which require few other resources (Danielsen *et al*., 2005, 2008;

Van Laake *et al*., 2009). It has also been shown that local people can count trees, measure their girth and identify the species accurately (Skutsch *et al*., 2009) at a cost-effectively way, thus necessitating the need to understand their perception to these initiatives.

Theoretical Framework

The study has been guided by the theory of "perception-in-action", derived from the early work of (Gibson, 2002) that says perception is a necessary property of animate action; that without perception action would be unguided, and without action perception would serve no purpose. This means that perception and action are inter dependent, before an action is taken series of events must occur. For example, the perceiver has to acquire information using the five senses by seeing, hearing, smelling, touching or testing, then the perceiver has to process the information in an attempt to gain more insight about it (understand) and finally take action. In this regard, REDD+ initiative as an action to be undertaken, is highly dependent on how it has been perceived by the community implementing it thus assuring its sustainability.

However, critics of this theory claim that the notion "perception is a necessary property of animate action; and that without perception action would be unguided or without action perception would serve no purpose" is controversial. Loomis and Philbeck (2008) argues that perception cannot be measured directly instead it should be understood that the perceiver's ability affects the perceiver's judgment about what they see, rather than affecting perception itself. To them, the ability of a perceiver may be a hindrance in action taking, because it affects their judgement. In this case the perceiver's ability may be intentional, intellectual or physical. For example, forest dependent communities may intentionally choose not to involve in REDD+ initiative implementation because they directly depend on the forest resources for their daily household income even though they know the impacts of deforestation on climate change. However, some may not participate because of their low intellectual or physical abilities as provided by their age, income, education or marital status.

According to Loomis and Philbeck (2008) the abilities of the perceiver should be measured as well in order to have comprehensive explanations on perception. For example, the focus should be on both how the perceiver gained insight about REDD+ initiative implementations and also the perceiver's views and actions towards REDD+ initiative implementation. Therefore, basing on both arguments of the theory; that perception guides an action and that perception cannot be measured directly, this study considered perception and perceiver's ability as necessary ingredients in the assessment of perception of forest dependent communities. These ingredients are also important in answering the question as to whether the community will continue involving in the future REDD+ implementation.

Methodology

Description of the Study Area

The study was carried out in Zanzibar; a group of Indian Ocean Islands that constitute a semi-autonomous region of Tanzania. It comprises the Zanzibar Archipelago in the Indian Ocean, 25–50 kilometres off the coast of the mainland, and consists of numerous small islands and two large ones: Unguja (the main island), and Pemba (Figure 1). Other nearby island countries and territories include Comoros and Mayotte to the south, Mauritius and Reunion to the far southeast, and the Seychelles Islands to the East.
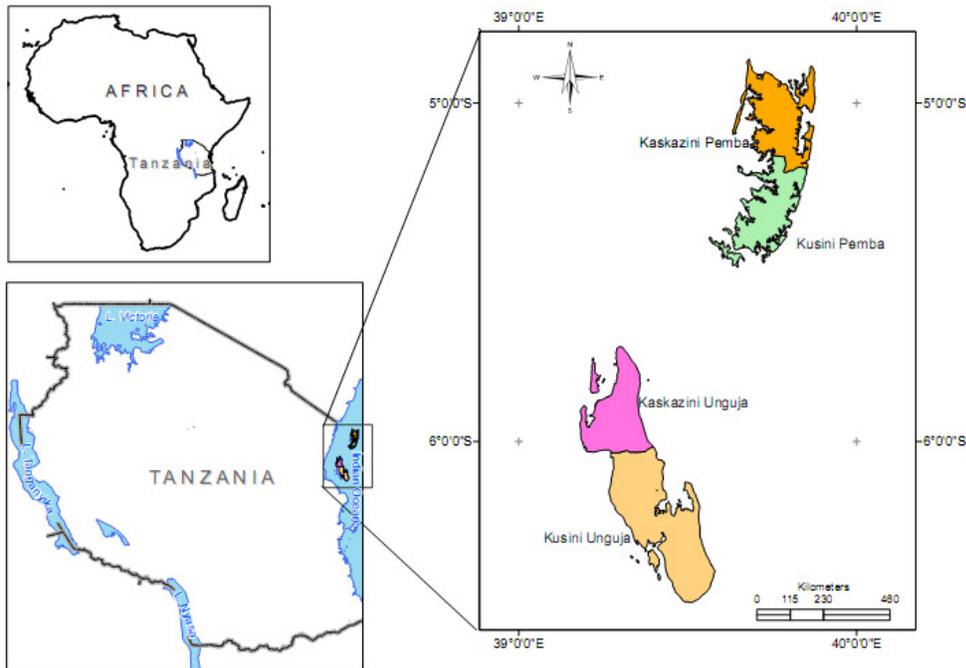
Figure 1: Map of Tanzania showing Kaskazini Unguja as part of Zanzibar Islands where the study was conducted

Zanzibar was selected purposely because it hosts one of the nine REDD+ pilot projects administered in selected areas. REDD+ piloting in Zanzibar is implemented by CARE International with a project named Hifadhi ya Misitu ya Asili 'HIMA' (Translates into Conservation of Natural Forests). HIMA is a four year project that began from April 2010 to March 2014. The project aims at promoting a pro-poor gender-equitable approach to community forest management in Zanzibar. This includes piloting of carbon financing for Reduced Emissions from Deforestation and Degradation (REDD+), which provides forest-dependent communities with secure property rights, equitable rewards for providing ecosystem services and other livelihood benefits, and which informs the priorities of Zanzibar within the national REDD+ strategy. The CARE-HIMA Zanzibar project's central approach is the promotion of decentralized forest management, working at community level on Community Forest Management (CFM). The project is being implemented in 29 community forest sites in seven districts, covering 60,000 ha of forest, and benefiting an estimated 16,000 rural households.

According to (CARE, 2010), the project is working in partnership with local civil society and government institutions with key implementing partners being CARE International Tanzania and the Zanzibar Department for Forestry and Non-Renewable Natural Resources, and 3 local NGOs in Zanzibar. Other collaborating agencies/partners include: the Department of Environment and the 3 umbrella organizations of VCCs (JECA, SEDCA, and NGENARECO); CARE International's Poverty, Environment and Climate Change Network; CARE Norway; Tanzania Gender Network Program; Terra Global; Sokoine University of Agriculture and the Institute of Resource Assessment of the University of Dar es Salaam.

Sampling Procedure and Sample Size

The study employed a purposive sampling technique. Two districts in Unguja Kaskazini region were selected. These are Kaskazini B and Unguja Kati districts. Four Shehias were selected purposely from which which five villages were selected. From the purposely selected Shehias five villages namely Kumbaurembo, Muyuni C, Mtende, Chuchumile and Hanyegwamchana were selected. The selection of Shehia was done randomly from a list of those with interventions. This is because it was necessary to capture feelings and reactions of the forest dependent communities living in the villages implementing REDD+ project as the primary beneficiaries of the intervention.

A list of households was obtained from the respective village/Shehia registers where the study population were randomly selected. The names of household were written in the pieces of paper and were collected in one box for selection. 18 households were picked in each village making a total of 90 respondents.

Data collection
Questionnaire survey

A Semi-structured interview schedule with closed and open questions was used to gather information from the households. This tool was used to collect information regarding, levels awareness/ perception, levels of participation and the attitudes of the forest dependent communities towards REDD+ initiatives and the piloting process.

In depth interviews were conducted with key informants from the core actors in piloting the project. These included the Project coordinator, members of the District Conservation Committee (DCC), and Heads of Village (Sheria) Conservation Committee (VCC). The information collected from these groups included, evidence of community land ownership status, benefits of REDD+ initiatives in the community and the general status of environment in the study areas.

Focus Group Discussions were conducted with the forest dependent communities by forming one group per Shehia. Each group composed of six members' two women and four men. Information gathered from these groups cut across REDD+ pilot activities. The information included issues related to the introduction and implementation the pilot. The discussion also touched on the challenges that the forest communities experienced in the process.

Data processing and analysis

Statistical Package for Social Sciences (SPSS) was used to analyse quantitative data while content analysis was used to analyse qualitative data. Likert scale was used to analyse the levels of perception, awareness and participation. Due to the absence of any universal measure of participation and awareness/perception index, intensity of peoples' participation, awareness and perception towards REDD+ was captured by adopting approach from Singh (1992). Five determinants of awareness and perceptions were used; the determinants were classified and assigned weight into low, medium and high quality categories with the values one for low, two for medium and three for high. The low level of awareness (1) towards five statements would score five, medium level of awareness (2) scored ten that is two towards five determinants, (2) and high awareness (3) scored 15 (three towards five determinants). Issues of participation also were computed in a similar way but for the case of participation the determinants/indicators were three where low level scored three to three, medium scored six while high level scored 9. Higher level of participation, awareness or perception implies relatively greater degree of satisfaction of the desired category for participation or awareness.

Likert scale was used to measure the communities' attitude toward REDD+ piloting process. A four level of measurement

summated scale which had six statements was used. The statements were categorised into two sets, the first set had positive statements where every respondent was asked to indicate if they are dissatisfied (1), somewhat dissatisfied (2), and somewhat satisfied (4) or satisfied with each item of the scale. The second set had negative statements where every respondent was asked to indicate if they disagree (1), disagree somewhat (2), and somewhat agree (3), or agree (4) with each item of the scale. If one had an extremely unfavourable attitude (1) towards each of the 6 statements, one would have scored 6 (i.e. 1 x 6). If one had an extremely favourable attitude (4) towards each of the six statements, one would have scored 24 (i.e. 4 x 6). Therefore, overall, six to 12 scores represented unfavourable attitude and 13 to 24 represented favourable attitude. The study adopted a four level scale of measurement because it was testing the attitude of the respondents towards a project which they either like or not. None of the respondent gave a neutral response.

Descriptive statistics were also used to analyse levels of participation and awareness towards REDD+ across the villages. Statistical Package for Social Sciences (SPSS) programme spread sheets was used. Additionally, Chi square was used to test the relationship between variables in testing participation and awareness of the respondents towards REDD+. Qualitative information, particularly related to feelings and people's opinions, was recorded through FGDs and was subjected to content analysis.

Results and Discussion
Characteristics of Respondents
Characteristics of the respondents have been divided into two considerations, the demographic characteristics and socio-economic characteristics. The demographic characteristics which were assessed included age, education, sex and marital status. Socio-economic characteristics included land ownership, most important respondents' source of energy for cooking and the point of collection. These considerations provided the general overview of the respondents' composition for possible association on their influence towards REDD+ and the willingness to participate in the implementation of REDD+ initiatives. In the study area 59% were men with the rest being females. Most respondents were between 30 and 40 year of age as represented by 28% of the population. The ages of respondents varied as from 19 to 62 years implying that large proportion of the respondents were mature and responsible people who were rational in making decisions on conservation initiatives in the area.

URT (2001) reported that age of a household head influences decision making and provision of labour itself. Additionally, this age bracket is also the most active and busiest age engaged in various economic activities for the wellbeing of the families including; farming, fishing and petty business. According to the World Bank (1996) adults between the ages of 15 to 64 are the most economically active age in the developing countries and are the work force support of the children and elderly. Therefore, there is no doubt that this age group also participates in carrying out conservation activities such as forest patrolling, tree planting including participating in training programmes.

Furthermore, findings indicated that 82.2% of the household interviewed owned different pieces of land while the rest are landless. Based on the gathered information from focus group discussions, there was no evidence of anybody with a title deed. It was further revealed that ownership of land in the study area was either through inheritance or allocation by the local leadership. It was noted however that subdivision of landholdings prevails as a result of

patriarchal system with family members owning small parcel of land.

Assessment of the sources of energy showed that the common source of energy for domestic purposes in the study area was fuelwood. Most households get wood for free as revealed by 82.2% of the households. The rest of the households buy from business men. It was learned that nearly 80% all wood is obtained from forests in general lands with 20% obtained from farmlands Small population (4%) use charcoal while the rest use fire wood as source for cooking. This observation tallies well with findings from different parts of Tanzania. For example URT (2010) shows that over 90% of Tanzanians depend on wood fuels to meet their energy needs. This statistics show that the demands of wood higher countrywide. Meanwhile, with the increasing population is expected to further increase the demands for biomass. This is based on the fact that majority (mostly the poor) don't have access to alternative sources of energy. While there are few energy alternatives even where they are available most population do not afford due to higher prices.

Community Awareness and Perceptions on REDD+

Results show that majority (80%) of the respondents knew the role forests in climate change mitigation and adaptation. Discussions further showed that the community is aware of some issues regarding cause and effects of climate change and the need for conserving forests in their area. For example one respondent Mr. Hafidhi Othman said that for sometimes the area has been experiencing increased sea water levels, unpredicted rainfall patterns and increased temperatures.

Further, it was learned that 87.8% of the forest dependent communities are aware of different conservation initiatives in the area that are directly and indirectly related to mitigation and adaptation to climate change. These initiatives include formation of different groups for forest and environmental management but also livelihood improvement as attested by 88% of the respondents. These groups have served to be a good source of information to the communities as well as being a good link with government and non Governmental agencies. Results further show that about 54% of the respondents have access to the forests where they obtain some goods and services which are none destructive. The assessment on whether the community faces challenges with regard to forests conservation showed that most challenges are related to poor law enforcement and few alternative sources of income. The study population is however aware of the difficulties that conservation groups and conservation practitioners face in the course of executing their roles (Table 1).

Table 1: Level of awareness of forest dependent communities on REDD+ piloting (n=90)

Characteristics	Not aware	Aware
Determinants of awareness		
1. Aware of the role of forest on climate change	20%	80%
2. Aware about a forest management group.	12.2%	87.8%
3. Receive information about the forest management process from the group.	12.2%	87.8%
4. Allowed to use forest resources by the group	45.6%	54.4%
5. Difficulties faced by forest management group.	17.8%	82.2%

Overall Awareness Level

The overall level of awareness on REDD+ initiatives is high by 63.3% (Figure 1). This implies that the community is well informed about REDD+ initiatives which is an indicator of being well engaged in the implementation processes. These finding are in line with the observation by Marg (2008), who found out that community participation is conditioned by awareness and a facilitating community friendly attitude.
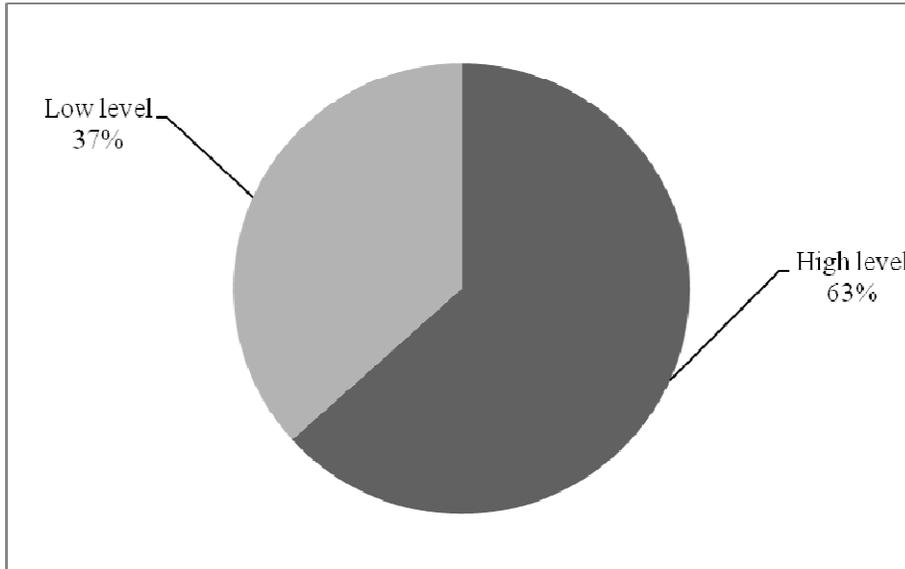

Figure 1: Respondents overall level of awareness towards REDD+ initiatives in the study villages (n=90)

Participation level on REDD+

Participation level of the community on REDD project was assessed using three indicators which were tested using three levels of either being low, medium or high. Results indicated a slightly high level of participation (Figure 2). This is because the community was not equally involved in all aspects of the project implementation. For example, discussions show that some community members were involved in matters concerning forest utilization and management only. Some showed to have been involved in project implementation planning, monitoring and evaluation activities.

Additionally, when it came to household contribution towards REDD+ project preparation and implementation, households contributed differently while others identified priorities, some identified resources, selected their leaders and participated in decision making. Colchester and Ferrari (2007) asserted that participation and community engagement processes are important ways by which community consent can be gained. Furthermore, people's involvement in the project also differed across the community although the differences do not originate from the project setting or the implementing NGO rather form individual willingness.. Results show that while others attended the meetings at different levels, others have participated by providing labour and materials necessary for project implementation. This implies that the community is engaged in the implementation process. This kind of community engagement and participation is a good sign of attesting willingness to continue participate in the future REDD+. Peskett *et al.* (2008) argues that community participation is a key to

success of any REDD+ project. However, members of the conservation committees cautioned that, the initiative need to ensure

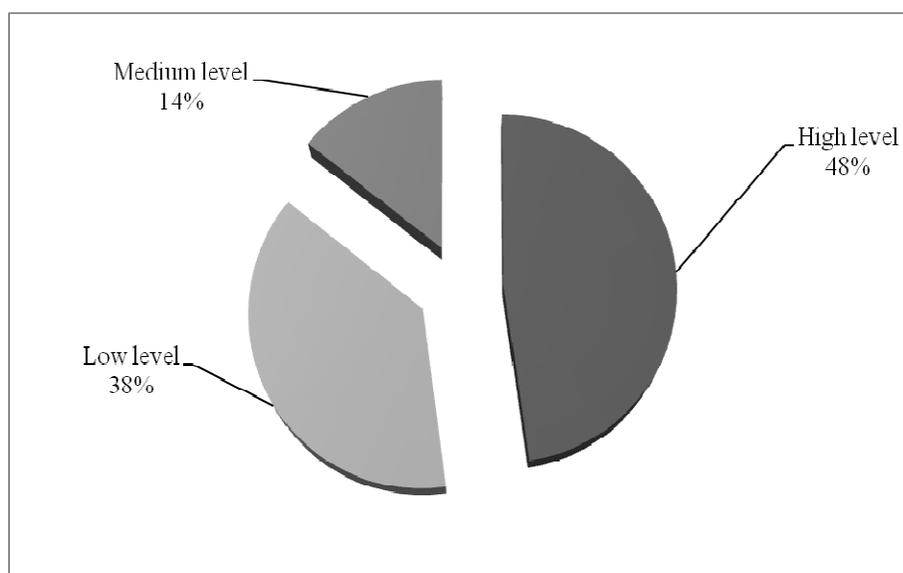for sustainable payment schemes to avoid any demoralization of the participating communities.

Figure 2: Respondents overall level of participation in the study villages (n=90)

Association between awareness and participation

Studies (e.g. TNRF, 2011) have showed that for any member to participate fully in any intervention S/he must be well informed about the initiative purpose, scope and benefits Therefore, awareness and participation of the community in any community initiative go together. According to Carpathian convention (2006) awareness and access to information are prerequisites of community participation. Results in Table 2 indicate that 100% of the community members who participated in the

implementation of REDD+ project knew what REDD+ entails. Most respondents could identify the activities performed by the project and could clearly explain the benefits associated with the project. The Chi square results indicated that there is significant (P<0.001) correlation between participation and awareness on REDD+ project. This implies that the respondents who were aware about the project REDD+ actively participated in the implementation of the project as compared to those who were less aware.

Table 2: Association between awareness and participation towards REDD+ (n =90)

Characteristic	Indicator	Participation in REDD+ %			X2	P-value
		Yes	No	Total %		
Awareness towards REDD+	Yes	100	0	74.4	90.000	0.000***
	No	0	100	25.6		

***=Significant at 1% level of significance

Community Attitudes on REDD+ Initiatives

Issues of community attitude towards REDD+ project have been assessed using the likert scale choices grouped into two sets satisfied and dissatisfied in the first set, agree and disagree in the second set. The results in Table 3 indicate that majority (87.8%) of the respondents were satisfied with the newly developed conservation measures. These measures which were identified during focus group discussions were; control of the illegal harvest of forest products, limit of farming activities in the forest land and forest fire patrols. Respondents claimed that their forests status have improved since the introduction of these new conservation measures.

Furthermore, results reveal that majority (74%) of the community members had a positive attitude towards REDD+. This was attributed by their satisfaction on the way the project is being implemented as shown by 82.3% of the responses (Table 3). Through focus group discussions it was revealed that the community is involved in the planning, implementation and evaluation of REDD+ initiative more often.

Additionally, only 7.8% of the respondents disagreed to the fact that the activities of REDD+ have restricted their access to forest resources. Meanwhile, 42.2% agree that the initiatives' have hindered their access to forests as attributed by the lack of an open forest in an area (Table 3). Therefore most of the people now collect forest resources in their farmland as well as from the open forests meaning that have adapted to the situation. Despite these restrictions majority of the respondents (88.9%) were happy that illegal use of forests resources had been minimised. As a result the status forests in the areas have improved. A good number of respondents claimed as well that REDD+ interventions have reduced temperatures due to increased vegetation cover in their surroundings (Table 3).

Table 3: Community Attitudes on REDD+ (n= 90)

Characteristics	Satisfied	Dissatisfied
Set one		
Communities are satisfied with the way forests in their communities are managed.	82.3%	17.7%
Communities are satisfied with the way REDD+ is conducting its activities	74%	26%
Communities are satisfied with the developed conservation measures.	87.8%	12.2%
Set two	**Agree**	**Disagree**
Communities agree that REDD+ activities have restricted their access to the forests	42.2%	57.8%
Communities agree that REDD+ activities have increased illegal use of forests	11.1%	88.9%
Communities agree that REDD+ activities have increased temperatures in their society	26.6%	73.4%

Attitude on REDD+ as Measured by Attitude Index Scale

Results show that the respondents overall attitude towards REDD project is favourable as shown by about 85% of the responses (Table 4.) Since the study was testing the attitude of the respondents capturing responses on positive or negative, these results imply that the community may take similar roles in the future REDD+ and similar conservation projects.

Table4: Respondents overall attitude in the study villages (n=90)

Characteristics	Frequency	Percent
Attitude scores		
Unfavourable attitude	13	14.4
Favourable attitude	77	85.6

Conclusion and Recommendations

Study findings indicate that the communities in Zanzibar island have positive attitude and perceptions toward REDD+ initiatives. This observation could be as a result of the approach used by the pilot NGO in the introduction and implemetation of the project activities. This was based on the fact that the approach used by CARE ensured that all members have equal right and that they are equally involved from the begining. The involvement was irrespective of their sex, occupation, level of education or state of marriage through sensitization programs which covered the initiatives' scope, objectives,goals and dirrection.

Additionally, the approach have facilitated high levels of community awareness and participartion. The awareness and participation indexes have indicated high levels of participation and awareness. In this regard, the community will likely continue taking active roles in future REDD+ and other similar conservation initiatives. The approaches also managed to transform the attitude of the community members on conservation practices in their society from negative to possitive. For example, the fact that before REDD+ started operating farmers would practice small scale agriculture in the forest land.

Therefore, the theory of perception in action by (Gibson, 2002), hold true for the reason that, forest dependent communities have full control in the implementation of REDD+ in their localities. Their attitude higly affects the initiative trend. However, since they have a favourable/positive attitude towards the initiative, the likelihood that they will continue involving in the implementation of the initiatve is guaranteed.

Recommendations

Implementation of REDD+ should ensure equal distribution social benefits. REDD+ initiatives should strive to provide alternative means of livelihood especially in areas where interventions have caused restrictions to basic products from forests. Beneficiary communities should also be capacitated to be in control of their own development with minimal backstopping support from REDD+ project. These capacities can be on areas of law enforcement, conflict resolutions as well as development of income generating activities that release pressure from forest resources.

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