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Rural Community Participation and Accruing Benefits in Climate Change Interventions under Market-Based Instruments in the Global South

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ABSTRACT

Market-based instruments are increasingly used in climate change interventions to promote community participation and generate socio-economic and environmental benefits. However, evidence on their effectiveness in rural communities remains limited. This study examines community participation and associated benefits in two climate change projects in Tanzania: Milola in Lindi Rural District, implemented by a non-governmental organization under a Payment for Ecosystem Services scheme, and Mapanda in Mufindi District, implemented by a private company through voluntary carbon offset trading. Data were collected through household surveys involving 177 households (110 in Mapanda village and 67 in Milola West village), six focus group discussions, and key informant interviews with village leaders, local government officials, project managers and community elders. Findings reveal notable differences in participation and benefit outcomes between the two projects. While both communities were involved through information sharing and consultation, Milola exhibited stronger collaborative participation. Communities in Milola reported a wider range of benefits, including direct cash payments, environmental education, improved farming practices, beekeeping, and socio-technical infrastructure. In contrast, benefits in Mapanda were largely associated with ecosystem services and community facilities such as classrooms and health care infrastructure. Community satisfaction was also higher in Milola than in Mapanda. The study suggests that the type of project implementer influences the level of community participation and the benefits realized. It concludes that meaningful and sustained community engagement throughout the project lifecycle is essential for maximizing the effectiveness and long-term success of market-based climate change interventions.

Keywords: Market-based mechanisms, carbon markets, community participation, project implementer organisation, livelihood benefits, Global South.

INTRODUCTION

Market based instruments (MBIs) are increasingly favoured among politicians and environmental change scientists as they are believed to contribute substantially into climate change adaptation and mitigation initiatives (Aldy and Stavins, 2012). At the same time policies supporting MBIs have been widely recognised to maximise net environmental gains and be the least costly option for achieving pollution reduction goals (Scheba, 2018). Yet, the climate change related MBI policies are argued to be more efficient in developed countries as opposed to developing countries (McAfee, 2012, Scheba, 2018). This reasoning follows the assumption behind MBI research that adequate governance structures ought to be in place to guarantee

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successful enforcement of the underlying environmental policy that creates conducive space for MBIs to operate effectively (Buhmann et al, 2024). Since the governance infrastructures are less developed in developing countries, there has been limited MBI interventions and research on varied aspects of MBIs in this region. Developing countries, including countries in the Global South, are of the greatest need for MBIs given their prevailing social, economic and poverty conditions.

The imperatives of deploying MBIs in countries of the Global South are multi-faceted. In this article, we articulate two facets i.e., sustainable livelihoods development and economic growth. MBIs are claimed to have enormous potential for boosting livelihoods of the poor rural communities in the Global South (Scheba, 2018). This is owing to the reality that majority of rural communities in countries of the Global South are living under multiple poverty conditions, including livelihoods poverty. This is happening despite the fact that these rural communities live in the vicinity of abundant natural resources, including forest resources. The MBIs expectations to village communities include sustainable rural livelihoods and economic growth, serving as an appropriate intervention for the poor rural communities to attain sustainable development. On economic growth, MBIs are believed to have potential to unlock the income impoverishment facet of the rural poor communities in the Global South (Scheba, 2018, Aldy and Stavins, 2012). The MBI income accruing benefits in respect of successful conservation of forest resources and or ecosystem services would help the rural poor community's income to grow. These interventions depart from previous rural development initiatives in significant ways, as they emphasise the importance of economically valuing nature and introducing new markets (or market like scenarios) for the management and protection of nature (Scheba, 2018). The multiple MBIs-win promises explain in part their growing political support and surge in popularity across countries of the Global South (McAfee, 2012). Despite the increasing claim over MBIs multiple win-promises, there is limited on-ground research that justifies this growing believe. This article is partly addressing that empirical gap as it will bring to the fore the evidence on how local livelihoods might benefit from MBIs.

Tanzania, similar to other countries in the Global South have had limited research on MBIs and particularly so on climate change related policies. Despite the broad inadequacy on MBIs research in Tanzania, few studies have attempted to investigate some issues pertaining to MBIs. The most apparent developments on MBIs research have been those focusing on the contribution of MBI on landscape restoration; conflicts over MBIs (Scheba and Rakotonarivo, 2016, Lalika et al., 2017); and, MBIs and livelihoods (Scheba, 2018). Studies have also concentrated on explaining the influence of prosocial behaviour on MBIs (*See* Scheba, 2018). Literature indicates also that most of the existing research into the practice of MBIs have had a focus on payment of ecosystem services (PES) schemes in large part of the world (Sattler and Matzdorf, 2013, McElwee et al., 2014). The biased research focus on PES has made it to be popular in practice as well as in scientific - research and in policy circles as compared to other MBIs. This has been true globally, in the Global South as well as in the Tanzanian context.

A research topic that is not largely looked upon as per our knowledge in Tanzania as well as in the Global South region is the governance of MBIs. While governance is a broad concept that can be explored from different viewpoints including; accountability, transparency, rule of law, equity and participation), it is critical to explore the communities' participation level in the MBI

schemes towards realizing co-benefits to host communities. Explicitly, previous studies have largely examined the environmental, livelihood, conflict, dimensions of MBI, with comparatively limited attention to how different implementation arrangements influence community participation and the livelihood benefits accruing to local communities. Addressing this gap is imperative because community participation is widely recognised as a prerequisite for the long-term effectiveness and sustainability of MBI - climate interventions. Accordingly, this study comparatively examines community participation and the livelihood benefits associated with these two implementation models using evidence from rural Tanzania. Besides this introductory section, the remainder of the article is organised as follows. Section 2 reviews REDD+ and market-based instruments in Tanzania and discusses the conceptual perspectives underpinning community participation. Section 3 describes the research design, case study selection, data collection and analytical procedures. Section 4 represents and discusses the comparative findings on community participation and livelihood benefits under the two implementation models. Finally, Section 5 concludes the article and discusses the implications of the findings for market-based climate interventions in the Global South.

REDD+ AS MBI SCHEME: A TANZANIAN PERSPECTIVE

REDD+ concept is primarily geared for conservation of natural forests through carbon sequestration. Key elements of REDD+ framework interventions are reducing emission from deforestation and reducing emission from forest degradation, an example being reduced forest degradation through village forest management in Milola Village and established forests in Mapanda Village to offset carbon. Others are forest conservation, example of Village Land Forest Reserves in Milola Village and enhancement of forest carbon stock such as the large-scale tree planting to increase carbon sequestration (Mapanda Village); and sustainable forest management, as practiced in Mapanda Village Forest management and carbon certification standards, and, applied participatory forest management (PFM) in Milola Village. All the elements are support operations on a result-based payment system, where funds or credits are issued once emission reductions are verified. Several pilot projects have been in operation in Tanzania since the agreement. The initiative was a result of the Paris Convention whereas, forests are substantially considered in the Paris Agreement. The REDD+ program focuses on cutting greenhouse gases (GHG) emissions by providing financial incentives to developing countries to reduce deforestation and forest degradation, promote forest conservation and sustainable management of the forests. REDD+ is one of the MBIs designed in such a way that developed countries provide finances for the provision of the ecosystem services for carbon sequestration and carbon storage, through maintenance and proper management of forest ecosystems in the developing countries (Pistorius et al., 2010). As such, REDD+ is discussed within the MBI framework owing to its market-based incentives allotted to communities at the vicinity of forest resources as a reward to their added value in the conservation of forest resources and consequently increased carbon sequestration.

Tanzania was one of the pioneers of REDD+ pilot countries in the world. This is propelled by a number of factors, including abundance of forest resources (48.1 million hectares); supportive policy environment as well as political readiness. The Strategy has been developed based on the National Framework for REDD+ developed in 2009. The framework for REDD+ operationalisation in Tanzania aims at reducing emissions from deforestation and forest degradation while supporting poverty alleviation among forest-dependent communities. This

mandate aligns with key national priorities articulated in the Tanzania Development Vision 2025; the National Strategy for Growth and Poverty Reduction (2005); the National Environmental Policy (2021); the Land Policy (1995); and the National Climate Change Strategy (2021-2026). Legally, the Environmental Management Act (2004) designates the Division of Environment under the Vice President's Office as the national authority responsible for coordinating climate change mitigation and adaptation initiatives, including REDD+.

Market-Based Instruments (MBIs) and community participation at a glance

In this study, MBIs belong to the incentive type of intervention to increased level of supply of forests services for carbon sequestration by market mechanisms rather than through explicit directives such as regulations. One such instrument is to capture the potential of reduced emissions from land use change, industrialised countries make payments to tropical countries with forests and woodlands most of which are poor or developing, for reducing their emissions from deforestation and degradation (REDD+). This initiative popularly termed carbon buying was established through (Meilstrup, 2010) and UNFCCC meeting CoP 15 (Lovett et al., 2009); among other decision-making bodies. MBIs can channel significant finance to communities when credit integrity is high, tenure and transparency are appropriately and transparently carried out (Gao et al., 2019, Li and Zhang, 2024). Learning from the global perspectives, Tanzania, through participatory forest management experience, positions itself for better carbon credits and community dividends, though the level of development to match local context should be considered. If properly executed, emission control mechanisms are expected to be cost-effective instruments, i.e., they allow society to achieve a specified benefits per unit of reduced emissions at minimum cost.

However, Baumber et al. (2020), cautions that the efficiency of the MBIs largely depends on the quality of information the project implementer possesses and shares about benefits and costs, and how the combination of the two aspects works. It is therefore important to be clear on who are the forest dependent people, the potential beneficiaries, in terms of their profile and characteristics and how best to engage them for efficient implementation of the MBIs and optimal benefits utilisation. However, it is difficult to predict even theoretically what will happen with the mechanisms as innovations are, by nature, hard to predict *(Ibid).* Bond, *et al.,* (2009) notes that, planning and implementation of some MBIs may fail to reduce forest emissions and even create unintended incentives to increase emissions and threaten the rights and livelihoods of forest-dependent communities if governance issues are not addressed. Alongside the demonstrated and anticipated benefits, REDD+ system is subject to some critiques. One such criticism is on unclear and contested tenure, particularly over carbon as an asset, which brings ambiguousness and undermines benefits sharing; as such, carbon sharing and long-term benefits remain a complex matter in actual practice (Benjaminsen and Bryceson, 2012). Also, communities' expectations are not easily reconciled with REDD+ goals and other structural processes such as standardized carbon accounting (Mustalahti et al, 2012). Mustalahti and colleagues further argue of instances of poorly defined benefit sharing and grievances mechanisms Social impacts, including restricted land access to originally communal land (Degnet et al., 2020) while Westholm (2017), cautions about the danger of reinforcing the pre-existing inequalities and deeper women's unpaid labour if the REDD+ interventions are not considerate of gender safeguards. Killian and Hyle (2020) reports women marginalization in in the decisions made about forest management and in distribution of benefits from the natural resources that exist within their communities.

Consequently, actual structures and benefits (or losses) from the incentives must be understood to fully grasp the conditions under which forests' management under MBIs should be more effective and efficient. Whereas the incentive structures for MBIs in Tanzania are relatively well documented, the benefits, which form a focus of this article are not adequately documented.

MBI in natural resources and environmental change perspectives refers to the process of commodifying ecosystem services, which means creating distinct tradeable commodities from complex ecosystems (e.g., carbon credits from carbon sequestration services) (See Scheba, 2018). Under the pillar of the MBIs - governments, multilateral organisations, and international conservation organisations have introduced new ideas, technologies, and practices of managing landscapes in the Global South, with the proclaimed aim of promoting sustainable development (Scheba, 2018). As, such, the success of such interventions relies on the active restructuring of society-nature relations and institutional arrangements by a capacitated state towards market exchange and private sector engagement (including businesses, non-governmental organisations, consultants, international organisations). These MBI success conditions especially the established institutional arrangements and capacitated state explain in part what was described earlier (Section 1) as the reasons behind limited MBI research in the Global South.

Community participation perspectives

Participation in project is defined as the collective involvement of local people in assessing their needs and organising strategies to meet those needs (Arkorful et al, 2023). Community involvement is recognised as a tool for promoting community participation, especially when there are multi-actor partnerships, particularly in development initiatives, where community participation is recognized as a basic operational requirement. Nilson et al (2024) notes that, without proper participation, attempts to accomplish significant and sustainable impacts from projects are bound to fail. Sumari et al (2025) and Nilson et al (2024) consider the participatory approach as a reaction to the shortcomings of top-down management in development practices. Community-initiated developmental projects often demonstrate sound outcomes (Ewane, 2024). In the subject of forest conservation and management, community participation has been popular as a way of ensuring sustainable forest management (Paluš et al, 2024).

In reference to stakeholders' participation, Buhmann et al, (2024), suggested a landscape that suits environmental projects-that is, discussions on the environmental projects in relation to the participation techniques. The authors also suggest that stakeholders should properly be identified, characterised and structured. Proper identification of stakeholders allows project implementers to know who the stakeholders are that have interest in the project, and how positively or negatively are they likely to be oriented towards the project, and consequently, their levels of motivation and possible effects to the project (Luyet et al., 2012). Identification of stakeholders is a crucially important step as inclusion of important stakeholders is among the viable principles for successful participation (Jahan, 2024). Meanwhile, characterisation of stakeholders is an important component of proper participation in community projects because it gives highlights on understanding the power relations amongst the community people, who are also beneficiaries of these projects. Moreover, specific project interests can be mapped, to assist on improving levels of participation (Buhmann et al, 2024). Some criteria to consider during characterisation of stakeholders include their attitudes towards the project, potential relations in terms of conflicts or coalitions likely to be formed, powers and levels of influence, amongst

others. Stakeholder structuring involves working with important stakeholders that are identified as being influential to the proposed project, by establishing their required degrees of involvement. Stakeholders may be important; however, the extent of influence and therefore involvement would practically not be at identical levels. Identification, characterisation and structuring allow project implementers to have sufficient knowledge of the community, enabling them to determine appropriate levels of participation interventions throughout the project. This study adapted five levels for assessing community participation as proposed by Luvet, et al., (2012).

The participation concept describes the relevance of each phase, while linking the participation framework to REDD+ projects in Tanzania. *Information* involves explanation of the project to the stakeholders. In this stage, communities received accessible explanation about the proposed REDD+ project activities, including why the respective village forests were being targeted, as well as broad ideas about possible benefits. During meetings, communication was translated into Kiswahili, the local language understood by communities and delivered through village meetings (a specifically organized village assembly). The investors, communities and the local government representatives attended. *Consultation,* presentation of the project to stakeholders, collection of their suggestions, and then decision-making with or without considering stakeholders' input. Project investors present the project design to various forest user groups, including broad activities and more ideas about benefit sharing. *Collaboration* focuses on presentation of the project to stakeholders and collection of suggestions from them, and then decision-making, considering stakeholders' input. In this stage, Community representatives in the case study area participated during collaboration, with various stakeholders' teams and at various levels of involvement for each case study village. They included the land and natural resources committees, village leaders, local government departments, and investors in the carbon market programs. They included working on important project activities such as co-drafting measuring, reporting and verification (MRV) systems particularly for implementation and benefits disbursement (look for alternative term for measuring progress and means of how benefits are gradually being generated and shared), and, how to implement the Village Land Use Plans (VLUPs). Co-decision, in respect of cooperation with stakeholders towards an agreement for solution and implementation. In the case study villages and based on project requirements, important activities should be ensuring that relevant and capable representatives are invited to the project meetings. This was important to jointly decide on key REDD+ project choices, by formal resolutions.

The key activities were concluding about the benefit-sharing method between the villagers and investors, finalizing and approving terms of contract, and to formally sign the recorded meeting proceedings and resolutions. *Empowerment,* which focus on delegation of decision-making over project development and implementation to the stakeholders. To enhance preceding agreements in previous stages of participation, communities in the case study area ought to be facilitated to fully participate in project implementation activities. These include observing compliancy with pre-set bylaws for operations during project execution, managing carbon quantification and revenues, and, apportioning the agreed benefits accordingly. However, issues related to power dynamics and recentralisation can produce older patterns of centralized environmental governance, even when framed as participatory or community-driven (Degnet et al, 2020). This

tends to shift decision-making power away from communities. Ambiguities and dissatisfaction arise particularly when new guidelines are unfamiliar to local forest users.

Based on the foregoing discussion on market-based instruments and community participation, this study is conceptually based on the proposition that the characteristics of the market-based instrument and the institutional characteristics of the implementing organisation influence the level of community participation throughout the project cycle. Community participation reflected through information sharing, consultation, collaboration, co-decision and empowerment, is in turn conceptualised as influencing the communal and household benefits accruing from market-based interventions. As guided by this conceptual understanding, the study comparatively examines how two contrasting implementation arrangements, i.e., a privately implemented voluntary carbon market initiative and an NGO-led REDD+ intervention, differ in terms of community participation and livelihood benefits perceived by participating communities.

MATERIALS AND METHODS

Study design

This study employed a comparative multiple-case study design to examine community participation processes and livelihood outcomes under market-based instruments (MBIs) in forest conservation initiatives. Case study design is appropriate for investigating contemporary phenomena within real-life institutional contexts, particularly where explanatory "how" and "why" questions are central (Yin, 2018). The comparative structure enables cross-case pattern matching and analytical generalization across institutional arrangements rather than statistical inference to a broader population (Yin, 2018, Flyvbjerg, 2004). The design integrates quantitative and qualitative methods to enhance internal validity through triangulation (Creswell & Plano Clark, 2018). This mixed-method approach allows systematic comparison of participation structures and perceived benefits under two governance models: a privately implemented voluntary carbon market project and an NGO-led Payment for Ecosystem Services (PES) REDD+ initiative.

Case study selection

Two rural forest villages were purposively selected based on: (i) the presence of an operational MBI intervention; (ii) at least two years of implementation; and (iii) documented community engagement. Both villages operate under communal Village Land tenure systems and rely on forest-based livelihoods, allowing structured institutional comparison under broadly similar socio-ecological conditions. Purposeful case selection in comparative case research aims to maximize analytical contrast and explanatory leverage rather than statistical representativeness (Seawright and Gerring, 2008). In other words, although the case study approach enabled a rich contextual understanding of local dynamics, it slightly limits the extent of findings generalization to other REDD+ interventions with different socio-ecological and institutional contexts. However, the analytical lessons and transferable principles may inform similar interventions.

Data collection

Data were collected through household surveys, Focus Group Discussions (FGDs), key informant interviews, and field observations. The use of multiple data sources strengthens construct validity and reduces single-method bias (Denzin, 1978; Creswell & Plano Clark, 2018).

Household survey and sampling

The survey population comprised all households in each village: 314 households in Mapanda and 264 households in Milola West (mainly because there were households with different benefits, e. g., communal and individual household benefits (Mapanda village), and those earning money, training in bee keeping, forest fire management, etc.) Sample size determination followed the standard formula for estimating population proportions with finite population correction (Cochran, 1977):

$$n = \frac{Z^2 p(1-p)}{e^2 + \frac{Z^2 p(1-p)}{N}}$$

where (Z) is the Z-score corresponding to the selected confidence level, (p) is the estimated population proportion, (e) is the margin of error, and (N) is the population size. In the absence of prior variance estimates, a conservative assumption of (p = 0.5) was adopted, which maximizes required sample size and ensures robust estimation (Cochran, 1977). A 95% confidence level ((Z = 1.96)) was selected, consistent with standard practice in social research (Israel, 1992). The achieved sample sizes were 110 households in Mapanda (35% of total households) and 67 households in Milola West (25.4%). Applying finite population correction under the stated parameters, the achieved samples correspond to approximated margins of error of ±7.5 percentage points for Mapanda Village and ±10.4 percentage points for Milola West at the 95% confidence level. Finite population correction is appropriate when sampling fractions exceed 5 – 10%, as standard errors are reduced when sampling from small, bounded populations (Hayden, 2010). These sampling fractions are substantial for village-level studies and provide adequate precision for descriptive and comparative analysis within a case-based framework. Given the study's comparative case design, emphasis is placed on cross-case pattern identification rather than population parameter estimation.

Following determination of the required sample size, households were selected using a systematic field-based household selection approach. Data collection was organised across different sections of each village, where researchers systematically selected households while deliberately skipping neighbouring households to achieve broad spatial coverage and minimise spatial clustering. Interviews were conducted with the selected household heads, or another adult member of the household where necessary, until the required sample size for each village was attained (Turner, 2003, Hayden, 2010). Similarly, three focus group discussions were carried out in in each village (women, men, youth), with 9–11 participants per group. Age–gender stratification was used to reduce hierarchical influence and promote open discussion, particularly on sensitive issues such as benefit distribution and decision-making participation (Krueger, 2014). Participants were purposively selected to capture variation in project involvement and socio-economic position. Key informant interviews involved key informants who were selected purposively based on institutional role and project involvement. Interviews included village leaders, local government officials, project managers, and community elders. Elite and expert interviewing is appropriate for accessing institutional knowledge and governance perspectives in case-based research (Aberbach and Rockman, 2002).

Data Analysis

Quantitative data were analyzed using descriptive statistics (frequencies and percentages) to summarize participation forms and benefit outcomes. Cross-case comparison was conducted to identify institutional differences between implementation models. Given the achieved margins of error and case study orientation, findings are interpreted within analytically bounded village contexts. Qualitative data were transcribed verbatim and analyzed using inductive thematic analysis (Yin, 2006). Coding proceeded iteratively, grouping patterns into higher-order themes. Triangulation across survey, FGD, interview, and observational data enhanced internal validity of the collected information.

Ethical Considerations

Participation was voluntary. Informed consent was obtained prior to data collection, and confidentiality was maintained throughout analysis and reporting.

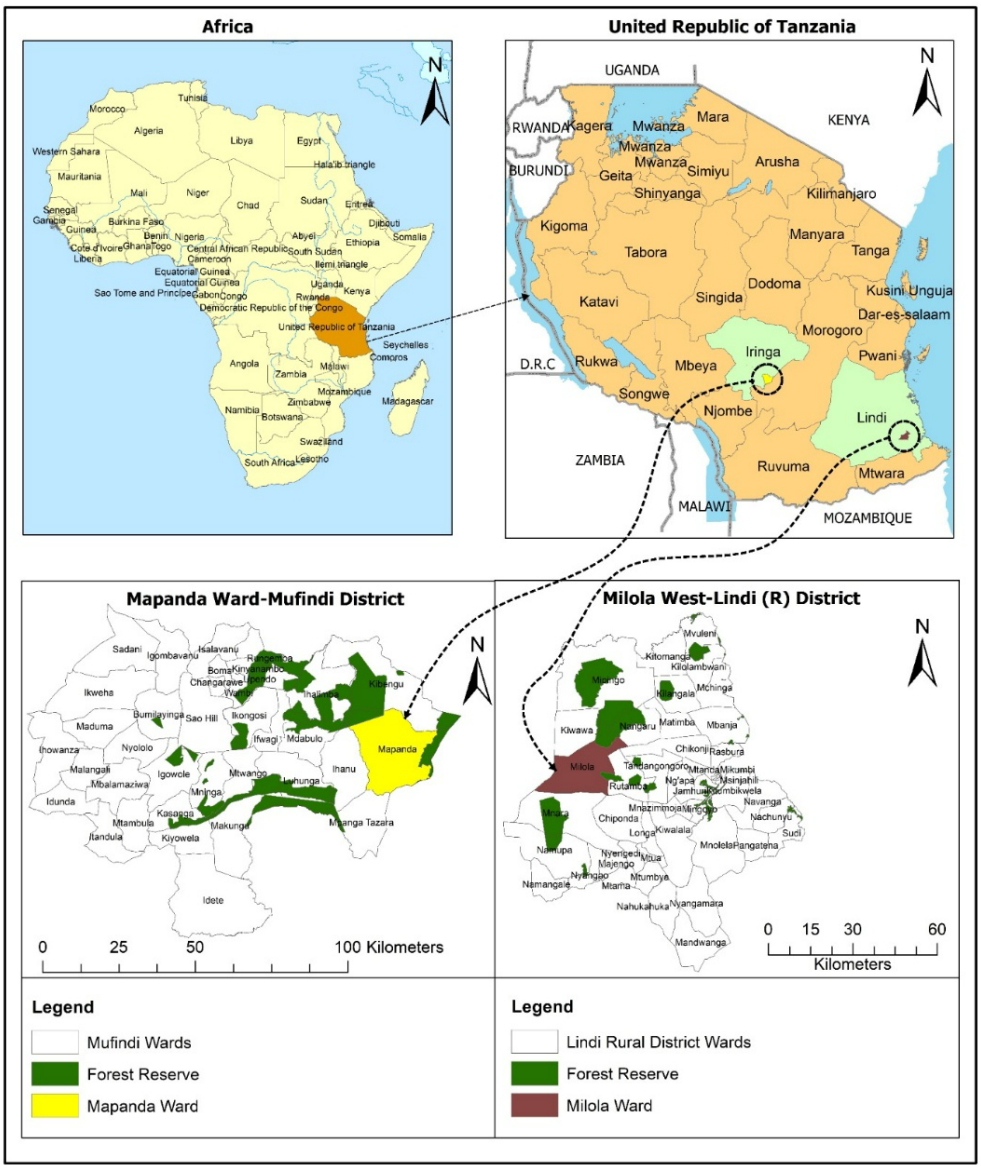


Figure 1: Case study areas in Mufindi and Lindi Rural districts

FINDINGS AND DISCUSSIONS

The analysis focuses on community participation processes, associated constraints, and the influence of varying participation levels on expected community benefits. It also examines how community perceptions shape project outcomes. Importantly, both participation levels and achieved benefits were assessed in relation to the nature of the project implementer, whether a privately owned company or a non-governmental organization. These factors influence the effectiveness of MBI schemes and their contribution to climate change adaptation.

Community participation in MBI schemes

In Mufindi District, where the Mapanda Forest is located, community participation in the MBI schemes prompted mixed responses. While 79% of villagers were engaged by project implementers at the information stage through a village-wide meeting, participation declined to 75% during consultation and dropped significantly to 31% at the collaboration stage. This trend suggests that the level and depth of participation are more critical to project success, rather than the number of participants, corroborating with Sumari et al, (2025). Despite early involvement, villagers reported lack of transparency and exclusion from implementation and decision-making role in the project. This limited community engagement prevented the implementers from identifying and addressing potential conflicts, eventually undermining project outcomes. village leaders were relied upon to represent community interests. While this approach is commonly accepted, it proved ineffective due to the leaders' limited technical, managerial, and negotiation skills, considering the complexity of carbon trading. As a result, agreements made did not reflect the broader community's interests. These observations align with Ben-Shmuel (2026), who emphasize that effective community representation requires leaders with negotiation competencies and the ability to involve knowledgeable community members in the process. The findings underscore that meaningful, sustained participation throughout all project phases is essential for achieving anticipated benefits. Additionally, these findings suggest that the dynamics of community participation can shift due to different priorities. The privately owned company project implementer being profit driven would mostly prioritize efficiency and timelines in project deliverable. In this study site, findings showed community participation during early project stages, i.e., information meetings, with community exclusion in more meaningful stages later, i.e., decision making. These findings correlate with Boyle, et al. (2025) who suggest how innovative inputs and decision making are shaped through early communities' engagement in projects.

Findings from the FGD indicated dissatisfaction with their level of involvement in the project. They reported being inadequately informed about project benefits and were minimally briefed through local leaders regarding the project implementation process. Participants mentioned issues including the lack of transparency in agreements ("there are no explanations about what project processes are ongoing"), disregard for community preferences ("they ask for our opinions, but they do not include them in project plans and deliverable"), and ineffective engagement processes (e.g., "a short notice of 2 days was issued for a village stakeholders' meeting, and as such, we could not get adequate time and detailed information to prepare well"). Additionally, decisions were perceived as hurried and top-down ("the project must commence immediately whereas a second village meeting could not be held"), and, there was concern over the lack of disclosure on carbon revenue ("the quantity of carbon sequestered was not disclosed

to village communities"), highlighting restricted access to important project information, which could influence community benefits. Inadequate participation was primarily due to limited involvement of the District Commissioner (DC). As the mandated connection between investors and village communities, the DC's minimal engagement and restricted information flow hindered adequate outreach to villagers. The local government structure entitles the DC to facilitate community engagement, ensure inclusive decision-making, and encourage transparency through clear project communication. FGDs also revealed underlying issues, particularly a lack of trust between communities and leadership, which contributed to community exclusion from decision-making and benefit-sharing processes.

Village leaders whose number was not disclosed were trusted by the community to properly represent them, failed to disclose details of the verbal agreement reached between the villagers and the investors. Specifically, the tenure duration was not agreed upon in the knowledge of the community, while the village leaders agreed to 99 years for the investor to operate uninterrupted. It came as a surprise when the investor harvested the first batch of forest plantations and replanted. The other disagreement was on the quantity of forest land leased to investors, which kept being changed by adding some patches. Findings show that villagers wanted more information on estimates for carbon stocks; details of the agreements between the villagers and the investor; and, preferred monetary distribution as benefits; all of which were ignored by project implementers as the project took off. The village leaders in place agreed that they are informed of the same, which they could not verify as the agreement drawn at the beginning was verbal. Expected project outcomes/benefits from the investor in carbon trade in Mapanda village were the ecosystem services and community facilities. These includes construction and furnishing of classrooms and Health Care Facilities (HCFs). These outputs were realised; however, findings show that the community were not satisfied because of the timing, size, quality and functionality of the services were below expectations. The verbal agreement was to construct classrooms and HCFs while details were not specified about the number of classrooms and HCFs, the quality specifications, their time of delivery. The nurse's house and the secondary schools' classrooms were of an inferior quality and formed structural cracks within a year of their construction, which should not have happened if the building was of required quality standard. Makatta et al. (2015), in a discussion on power relations and struggles in community forests management, identified capacity building to village governments in financial management to be critical in successful forest conservation. Findings from this study suggest a contradiction. Financial management was not a critical issue; rather, mistrusts and poor agreements set between village officers and the project implementers led to dissatisfactions. These findings corroborate what was found by Eastman et al (2025), where many stakeholders distrusted climate change mitigation promises associated with forest carbon trade, considering that as environmental injustice.

Overall, weaknesses in village leadership capacity in making decisions which reflect the actual needs and priorities of the villagers was revealed in multiple ways including; disapproval of community projects in preference of individual cash distribution and decreasing farmlands for food crop farming. Others were requirements for certifications prior to carbon selling at individual levels. This is yet another facet of community participation where inadequate participation with the broader village community could not be initiated by the village leaders to

gather information on community priorities. Gathering appropriate community priorities would imply meeting the investors with community agreed concerns.

In Lindi district where the West Milola forest village is located, the community and village leaders were sufficiently involved in all important project stages: 78%, 76% and 70% of villagers were involved in information stage, consultation stage and collaboration stage *(see Figure 3).* The collaboration among the community and the project implementers was also sufficient as many of the suggestions forwarded by the community were incorporated in the project development and implementation plans. The incorporation included; the issue of addressing forest fires, alongside livelihood initiatives. Also, a series of meetings were convened at the Lindi (R) district council, attended by the WM village representatives and the project implementers. Respondents mentioned to have been largely influenced by the trust based on the presence of the district council officials who attended information consultative meetings.

Figure 2 shows community participation levels in the two case studies. Where community involvement was sufficiently conducted, the outcome is reflected in achievement of expected benefits, impliedly informing about importance of proper participation from the project planning stage. A key informant from WM village echoes the idea:

> *"In Milola West village, effective community engagement was rendered through project planning, implementation and monitoring and evaluation. We were sufficiently informed and consulted. As such, the concerns for consideration to the project were adopted by the project proponents as they were provided by members of the community. We really felt to be part and parcel of the project, and we were ready to provide support for the well to do of the project."*

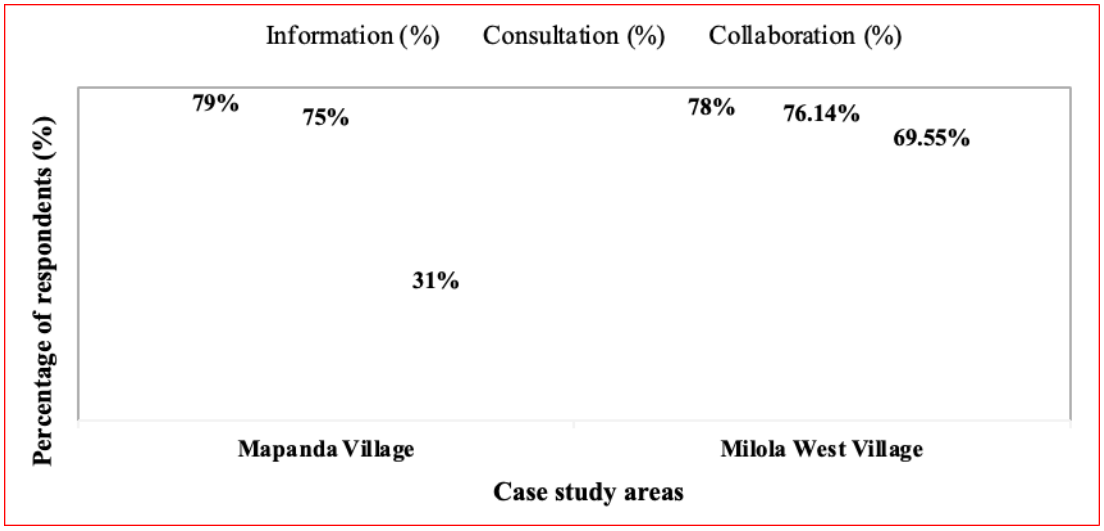


Figure 2: Levels of community participation in the case study areas

A cross-case comparison of the cases as represented in Figure 2 in terms of communities' levels of participation reveals the contribution made by participation in project success and sustenance. At project introduction Mapanda village made access to 79 % of villagers while in Milola West village 78 per cent of villagers were involved.

The information stage entails project features to stakeholders, including the beneficiaries i.e., the villagers. The information imparted to the villagers included, project goals, timelines, outcomes and expected impacts. They are one-way communication as community members are informed about the project, but they hardly share any feedback. The stage is critical in awareness raising; and more importantly, for setting expectations and potentially increasing supports and sense of ownership. It is an important phase as it is a foundation for consequent stages of the project. Subsequent involvements are the consultation stage, an advanced component of collecting suggestions. Community members give feedback, including concerns about the project, needs assessment and more ideas and adjustments are discussed. At this stage, trust and ownership are built. It is relevant in project success and sustainability as community needs are validated, which increases success chances. At this stage, much less involvement was observed in Mapanda Village while a higher involvement level was maintained in Milola West Village. The collaboration stage involves joint decision-making, essentially, involving the communities in making important project decision, as they actively participate alongside project implementers and ideally supported by the technical and administrative staff from the responsible LGA. In Mapanda village, minimal community collaboration was observed, and eventually realizing that some community suggestions were ignored, un-informed of reasons for this decision. The approaches used for decision-making for project proposals were through representation by some members from the village leadership and the village committee, and casting votes by villagers in Mapanda and in Milola West villages respectively.

In Milola-West Village, a high level of community participation was observed during project meetings, with most co-decisions incorporated into project implementation. The majority of project ideas which originated from villagers and presented during the consultation stage, were further developed during the collaboration stage. These included initiatives such as beekeeping, forest fire watch groups, and the review and enforcement of forest resource use bylaws. This supports earlier research by Tsoeu-Ntokoane et al. (2022), where they emphasise on community involvement in decision-making, including the adoption of appropriate communication strategies for community involvement. These findings highlight the central role of Local Government Authorities (LGAs) in representing communities, particularly in the context of development projects. In the Mapanda Village carbon project, the LGAs' intermediary role between villagers and private developers was insufficient, undermining community participation in decision-making. This hindered proper identification of local needs and limited both social and economic benefits. Village leaders lacked the capacity to negotiate and prepare contracts, where LGAs could have provided critical guidance. As a result, conflicting information emerged regarding carbon sales, lease durations, market-oriented forest plantation priorities and certification barriers, which left villagers disadvantaged. Findings from Paluš et al (2024) support a transparency and effective community engagement in evaluation and certification of carbon projects for forest management where communities are important stakeholders. *Ibid* however caution of cases where participation is not always successful and may escalate conflicts, where there are too many stakeholders with different interests. On the other hand, in Milola West Village, communities reported moderate to high satisfaction with project outcomes. This was reflected in tangible benefits such as cash payments, improved socio-technical infrastructure, environmental education, enhanced farming methods, and livelihood projects including beekeeping and poultry farming.

Community participation which LGAs are expected to support, are geared at ensuring quality and effectiveness through degrees and approaches of involvement. Analysis reveals significant gaps in opportunities for feedback and decision-making in Mapanda Village with a private project implementer, unlike in Milola West Village. In Mapanda, villagers and leaders reported inadequate timing for engagement, at times receiving only two days' notice for meetings, often held first at the district level before local discussions, limiting meaningful participation. Participation quality also depended on the representation capacity of village leaders. In both villages, leaders lacked adequate capacity in carbon trade processes. However, in Mapanda, the LGA provided limited technical and legal support, while in Milola West Village, LGA engagement was stronger. Power structures played a critical role: where community leaders were better supported and empowered, project outcomes improved significantly. Additionally, project implementer characteristics significantly influence community engagement. Private investors, driven primarily by financial returns, often adopt a limited approach to community participation, viewing local stakeholders through the lens of investment goals. This can constrain meaningful engagement and negatively impact project outcomes. In contrast, NGOs typically prioritize social, economic, environmental, and empowerment objectives, fostering deeper community relationships through capacity building and local ownership, supported by Ahmad and Islam (2024). Community participation was weaker where private entities led implementation, unlike in Milola West Village, where NGO involvement correlated with more effective engagement. This underscores the critical role of LGAs in regulating project implementers and ensuring alignment with community needs.

The degree of transparency in the project planning and execution is also echoed by the lack of documented communication and agreements between investors and village leaders in Mapanda Village. While community concerns are supported by quantitative data, investor's claims relied on interviews, with no written records provided. Such absence of documentation, particularly in a complex project like carbon trading, limits verification of information, and reflects poor support for local participation, aggravated by the limited technical capacity of village leaders.

Communal and personal based benefits

In both case study areas, communal and personal benefits emerged beyond the originally planned outcomes. In Mapanda village, added benefits included opportunities for harvesting timber and non-timber forest products through monitored licensing systems that ensure forest sustainability; improved forest management through revised bylaws; enhanced climate change adaptation through increased forest cover; and, capacity building, as plantation laborers acquired skills in site preparation, seed sowing, seedling selection, weed management, pruning, and tree training. Survey results revealed that 44% of villagers informed improved livelihoods post-project, 48% observed no change, while 12% were uncertain regarding livelihood improvements.

To better understand the nature of these perceived benefits, respondents were subsequently asked to identify the specific communal and household benefits that accrued from the project. The most frequently reported benefits were social infrastructure (58%). Other benefits comprised physical infrastructure (15%), livelihood infrastructure (10%), other livelihood benefits (8%). A small proportion of respondents (9%) were indifferent about the benefits accrued, suggesting that they did not express a clear perception regarding the benefits associated with the intervention despite having participated in the project.

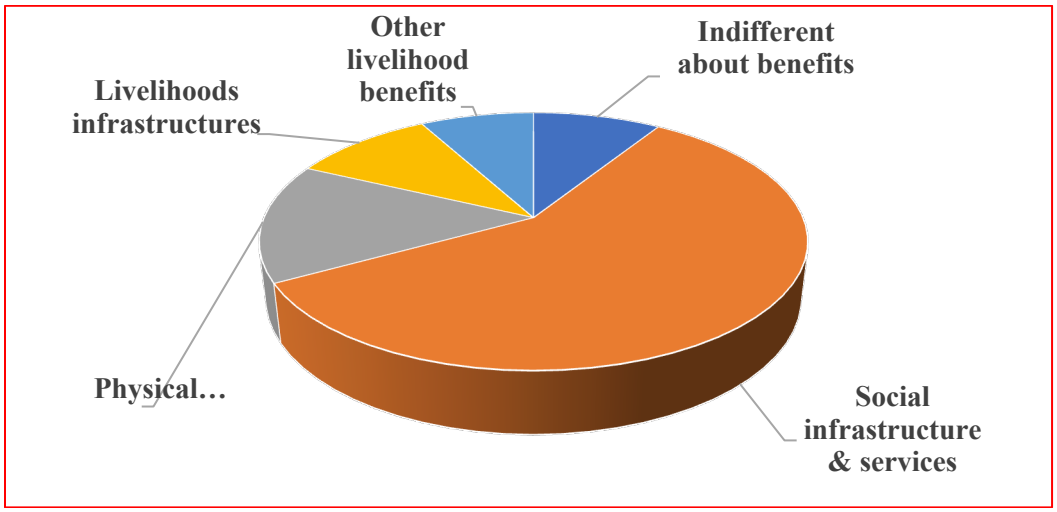


Figure 3: Community benefits in Mapanda village

In Mapanda village as presented in Figure 3, community improvements included infrastructure such as nurses' house and secondary school classrooms. However, some villagers expressed dissatisfaction, citing limited personal benefit, particularly those without school-age children or who felt that students from outside wards primarily benefited. This dissatisfaction reflects a broader concern of perceived unfairness and the preference for direct monetary compensation over communal services. While project implementers delivered the officially agreed benefits, many villagers did not perceive them as fair benefits, mainly due to insufficient transparency, communication gaps, and a failure to align project outcomes with local priorities. Typically, when individuals do not directly relate to a benefit, they view the project as not contributing to their well-being, highlighting the need for more inclusive and participatory planning processes. An important explanation to this perception is the lack of effective community engagement and inadequate involvement by local government authorities (LGAs).

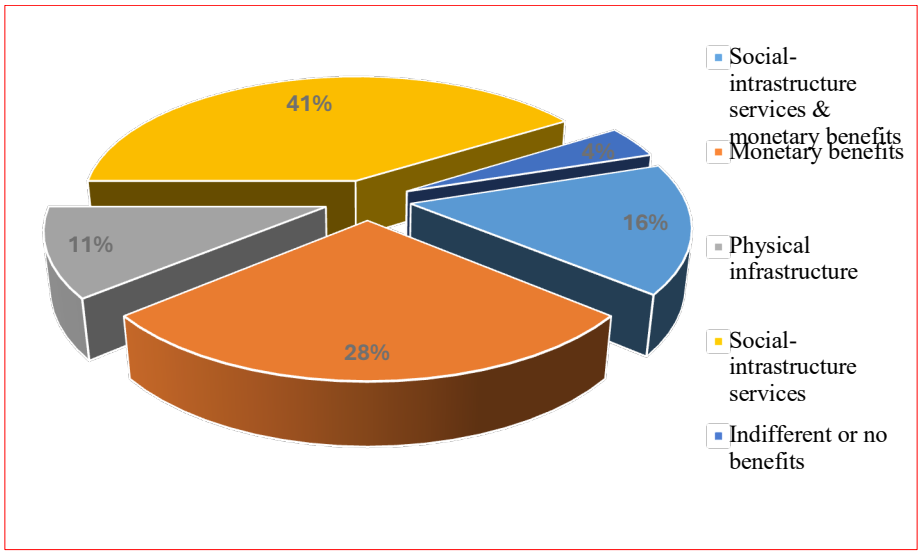


Figure 3: Community's benefits in Milola Western village

Figure 4 shows that the most frequently reported benefits in Milola west village were social infrastructure (41%), followed by cash benefits (28%), social infrastructure and cash benefits (16%), physical infrastructure (11%), while 4% of respondents were indifferent about the benefits accrued. Benefits realized included cash disbursements and construction of a Village Executive Officer (VEO) office. Additionally, 90% of respondents valued the introduction of traditional forest management practices, which was previously absent in the village. These approaches which reflect cultural values were reinforced during the MBI scheme through community training and the development of forest-protection by-laws. The Village Land Use Plans (VLUPs) were anticipated to mitigate conflicts between crop farmers and livestock keepers which were rampant. However, the intervention did not fully achieve its intended outcomes, thereby prolonging ongoing tensions between the two groups. Moreover, the absence of effective land use planning undermines conservation efforts, increasing the risk of re-encroachment into protected areas. In Milola West, where community participation was adequate, the failure of the VLUPs intervention was primarily due to expert-driven factors rather than community involvement. Land use planning highly relies on the technical expertise and capacity of local government personnel, particularly town planners and legal officers. Therefore, the outcome cannot be unique to the level of community participation. Nonetheless, for successful community-based projects, the interaction between community engagement and the technical capacity of local authorities and village leaders is complementary. This evidence confirms the conclusions by Sumari et al (2025) where they observe robust community engagement, supported with significant agency from other important stakeholders, like LGAs substantially contributed to project success.

Although only a small proportion of respondents in both Mapanda and Milola West were indifferent about the benefits accrued (9% in Mapanda and 4% in Milola West), this finding suggest that not all community members perceived or evaluated project outcomes in the same way. Such differences may reflect variations in individual experiences, awareness of project outcomes, or expectations regarding the types and magnitude of benefits generated by the intervention. They may also be associated with differences in access to information, consultation, and involvement throughout the project cycle, as well as the visibility of project benefits under different implementation arrangements. This highlights the importance of maintaining transparent communication and meaningful community participation to ensure that project benefits are widely understood and appreciated by all participating households.

Taken together, the findings from the two case studies suggests that differences in implementation arrangements influenced not only the types of benefits generated but also how communities perceived and valued those benefits. The privately implemented voluntary carbon market initiative in Mapanda was associated with substantial investments in social infrastructure and forest-based livelihood opportunities, whereas the NGO-led REDD+ intervention in Milola West placed greater emphasis on direct cash payments alongside community infrastructure. These differences appear to reflect variations in project implementation and community participation throughout the project cycle. Overall, the findings underscore the importance of transparent implementation processes and meaningful community participation in enhancing both the distribution of benefit distribution and community perceptions of market-based interventions.

CONCLUSION

This article is contributing to MBI schemes scholarship both theoretically and empirically. Theoretically, the article contributes to the debate on MBI schemes and particularly so in trying to unearth the assumptions of its accruing benefits to rural communities in the Global South. It has as well contributed to the debate of community participation in MBI schemes. Empirically, the article focused on uncovering community participation and benefits accruing to two selected MBI schemes in Tanzania within climate change adaptation context. In both case study cases, community participation was found to be sufficient during the information stage since it involved majority of villagers. In consequent stages of participation i.e., consultation and collaboration, the private operators case reached a small proportion of the community, whilst the NGO implementers reached large proportion of communities. These are the community participation stages where community feedback is received and collaborative decision-making is made. Where limited community participation was experienced, constraints included insufficient support from the local communities and the respective LGA. It was further observed that the LGA involvement in facilitating effective communication to balance the interest of both parties is inadequate. Others include the orientation of the project implementers affecting the participation and resulting project outcomes, where the comparison between privately owned implementers and NGO have different focus in regard of their interests and commitments in the projects.

Successful community projects, in particular in climate change adaptation and which involve contemporary subjects such as carbon trading and market-based incentives, should be supported by strong community engagement, capacity of the village leaders and effective support from the respective LGA in the project area. It is concluded therefore that community participation is critical to make a meaningful impact on climate change adaptation strategies. As such, a full range of stakeholders should fully be engaged in planning and making decisions in all stages of climate change adaptation projects. On the same lane, the success of MBI schemes in enhancing rural livelihoods in the Global South lies in part at the nature and the extent at which communities are engaged. Overall, this article is contributing to the conceptual understanding MBI schemes and in particular how could the schemes contribute to the enhancing rural livelihoods through effective community participation.

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