PERCEPTIONS AND ATTITUDES OF LOCAL STAKEHOLDERS TOWARDS THE FOREST CO-MANAGEMENT APPROACH: A CASE STUDY OF COMMUNITIES SURROUNDING MULANJE MOUNTAIN FOREST RESERVE IN MULANJE DISTRICT, MALAWI

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ABSTRACT

Gaining an in-depth understanding of the perspectives and attitudes of local people toward conservation of forests is key to achieving effective and long-term sustainable forest resource management. This paper examined the perceptions and attitudes of local people surrounding the Mulanje Mountain Forest Reserve in Malawi toward the forest co-management approach. The study explored the efficacy of the co-management model as a participatory forest governance tool. Individual semi-structured interviews were administered to thirteen participants, which included ten representatives of the local communities and three representatives of implementing agencies, selected through purposive sampling. Thematic analysis was used to analyse the collected data. The research findings revealed that the local people held positive perceptions and attitudes toward the co-management system of the forest reserve. The study further revealed that various challenges encountered during the implementation have negatively impacted the efficacy of the current co-management system. Weak forest law enforcement strategies, lack of accountability in the benefit-sharing scheme, and the top-down information flow were some of the key challenges affecting the implementation of the co-management model. Success of the co-management model as a participatory forest management tool could be achieved if the perceptions and attitudes of local people regarding forest governance are considered in the planning and implementation of forest management strategies. The study suggests that strong multi-stakeholder collaboration is vital

for the co-management approach to achieve sustainable forest management while uplifting the livelihoods of the people living close to the forests.

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1. INTRODUCTION

During the 1990s, many African countries in the sub-Saharan region, including Malawi, experienced a transitional wave of democratisation from authoritarian leadership to participatory systems. This democratic revolution was paralleled by similar shifts in the forestry sector leading to the decentralisation of forest governance powers from central governments to lower administrative units. The Government of Malawi, through the Department of Forestry (DoF), joined the decentralisation trend by devolving its forest resource governance powers from the conventional state-centralised approaches to participatory-oriented approaches.

Forest co-management was among the new participatory approaches adopted. Forest co-management involves the sharing of rights, responsibilities, and benefits over a particular forest resource between governments and local communities. Owing to its bottom-up approach, the co-management principle is now gaining international recognition and support among governments, development agencies, and development practitioners in the forest sector as a significant feature of forest policy and practice. By design, the co-management model was meant to resolve issues of inefficiency, foster community empowerment, achieve equity/inclusiveness, and improve productivity (ecosystem services, incomes, and livelihood support) through sustainable management.

Understanding the perceptions of local people towards a forest governance approach may help to predict the success or failure of an intervention (Akamani et al. 2019) and at the same time monitor the performance of the current system for learning purposes. However, local stakeholders' perspectives on forest governance approaches have seldom been studied in conservation spheres. This research assessed the perceptions and attitudes of local people towards the forest co-management approach as an existing forest governance tool in managing Mulanje Mountain Forest Reserve (MMFR).

1.1 Forest co-management in Malawi

Co-management is one of the institutional arrangements under the participatory forest management approach which provides a framework for managing common pool resources, such as public forest, where communities and state agencies share the responsibilities (costs) and benefits of forest management through clearly agreed collaboration guidelines. The National Forestry Policy of Malawi adopted in 2016 promotes participatory forest management through one of its overall policy outcomes which seeks to achieve "increased participation of all stakeholders in forest conservation and management" (Government of Malawi 2016, p.13). In 2020, the Government of Malawi enacted the Forestry Act Amendment which has clear guidelines on the regulation of forest products including charcoal, increased collaboration, and participation of stakeholders in forestry-related decision-making processes, strengthened law enforcement, and provides stiffer fines and penalties.

The DoF is the regulatory and planning authority for all forestry-related activities in Malawi. It receives support from non-governmental organisations (NGOs), faith-based organisations, the private sector, and civil society groups in implementing participatory forest management activities across the country. A national guideline on participatory forest management called Standards and Guidelines for Participatory Forestry in Malawi was produced by the DoF in 2005 and is used to guide efforts by various practitioners working towards promoting community-based management of forest resources. According to the Standards and Guidelines

for Participatory Forestry in Malawi (Government of Malawi 2005), there are 17 service standards which have been organized into four stages:

(i)   setting strategic goals and roles,
(ii)   institutional building, strengthening, and prioritizing actions,
(iii)   implementing practical participatory forest management actions, and
(iv)   performance monitoring and learning.

Out of the 17 service standards, the co-management model mainly consists of service standards one up to six, eight and nine, and 13–17 (Government of Malawi 2005). Figure 1 below is a model for participatory forest management and co-management in Malawi which includes the 17 service standards.
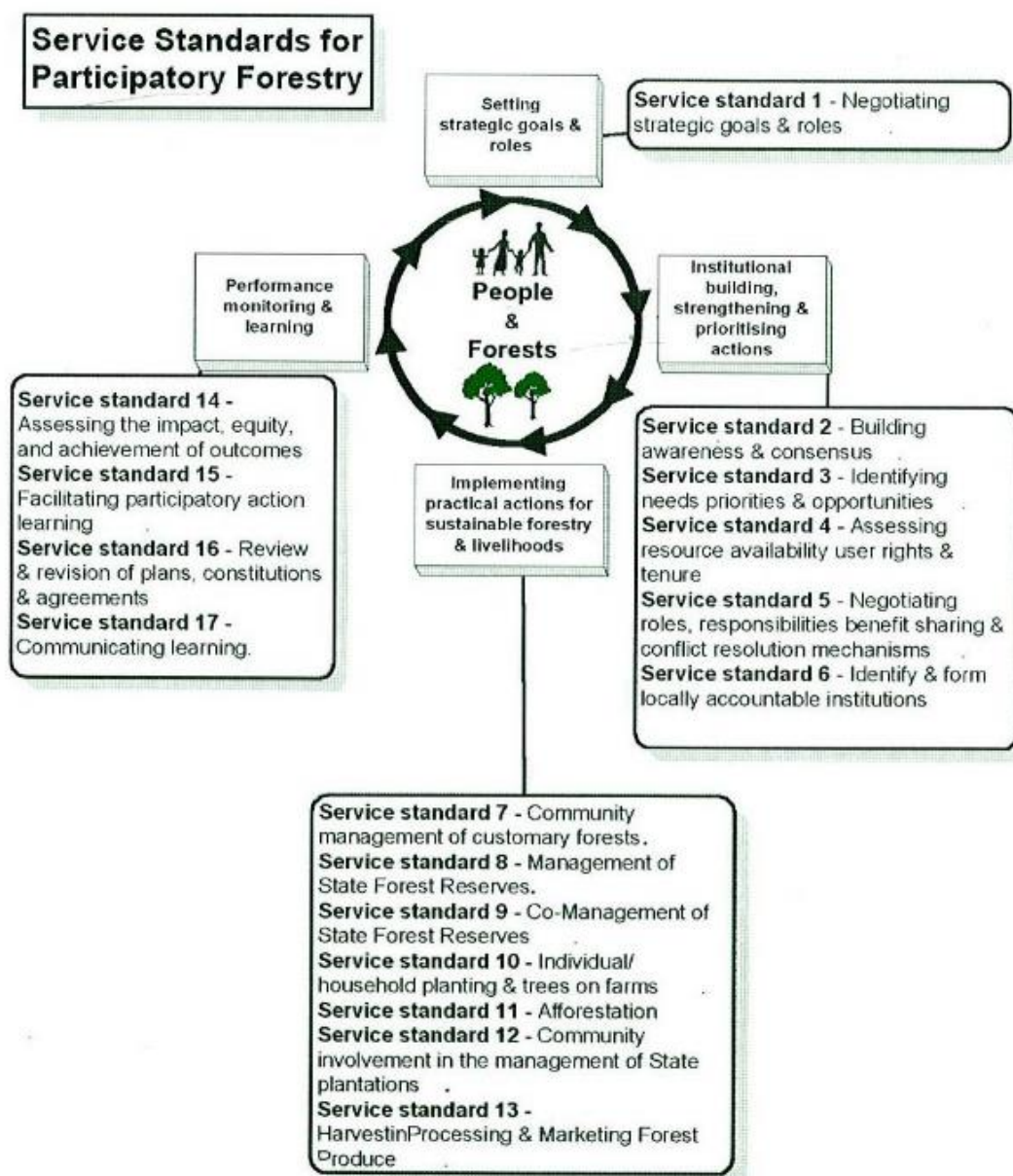

Figure 1. Model for Participatory Forest Management and Co-management in Malawi. (Source: Adapted from Government of Malawi 2005).

1.2   Problem statement

The success or failure of any participatory forest conservation programme is determined by the perceptions and attitudes of the local communities who actively participate in managing their adjacent forests (Akamani et al. 2019). According to Tesfaye (2011), perceptions and attitudes can either be positive or negative and they depict the local people's interpretation, behaviour, and/or response towards a certain forest intervention. Local people's attitudes towards participatory forest management, whether negative or positive, will likely have an impact on their commitment and participation in the conservation and management of forests (Tesfaye 2011). Decisions by local people to actively take part in conserving natural resources are generally influenced by their understanding of the challenges and perceived benefits of their involvement in conservation activities (Tesfaye 2011).

The literature shows that there has been some research to assess the perceptions and attitudes of local people towards the management of some forests in Malawi. However, none of this research has been done in the proposed study area. This study will therefore fill this knowledge gap by examining the perceptions and attitudes of the locals living adjacent to MMFR towards the forest co-management system which is currently followed in managing the forest reserve. The research findings will establish the effectiveness of the current co-management approach and provide lessons and recommendations for improvements.

1.3   Research questions

Main research question:

- How effective is the current co-management approach as a participatory forest management tool in conserving the Mulanje Mountain Forest Reserve?

Specific research questions:

1) How do local people perceive the current co-management approach to managing Mulanje Mountain Forest Reserve?
2) What are the local people's attitudes towards the co-management approach in managing the Mulanje Mountain Forest Reserve?
3) What steps could be taken to improve the implementation of the policy and strategic framework in managing Mulanje Mountain Forest Reserve?

2. LITERATURE REVIEW

This research aims to explore the governance of forests and trees in integrated landscapes and examine the effectiveness of policy frameworks in conserving the natural environment and improving the livelihoods of people living in proximity to forests. As argued by Maryudi et al. (2018), understanding governance challenges can help solve the problems related to forest management issues that are contributing to global environmental crises. Governance research is very important if we are to understand how to introduce transformational change in policies, institutions, and behaviours (Maryudi et al. 2018).

Since time immemorial, humans have relied on forests for the provision of ecosystem services, which include cultural, provisioning, regulating, and supporting services. However, human

impacts have led to the alarming loss of the world's forests through rapid deforestation and degradation. Forests continue to be under threat from actions, such as the expansion of land for agriculture or unsustainable levels of exploitation, mainly from illegal harvesting. The 2021 Global Forests Goals report indicates that between 2010 and 2020, global forest areas were reduced by 1.2%, with declines concentrated in Africa and South America (United Nations Department of Economic and Social Affairs 2021). The report further estimates the current global rate of deforestation at 10 million hectares per year.

There is a growing realisation across the world that, to address the current forest problems, there is a need to consider the social aspects and institutional arrangements involved in managing forest resources alongside silvicultural issues (Mancheva 2018). This has resulted in consistent moves toward devolution in many countries around the world which were previously using centralised models for managing forests. The devolution of forest governance puts more emphasis on the involvement of local communities in managing the forests in collaboration with government authorities (Correa 2016). This collaborative forest management approach is increasingly being viewed by many forest experts as an effective and sustainable tool that can be used to concurrently address social, environmental, and economic issues (Carter & Gronow 2005).

In most African countries, forest rights devolution policies have recently become a development trend and a policy agenda whereby the government defines the scope of the role of local communities in managing the forests in collaboration with government authorities (Kamoto et al. 2008). Before the 1970s, many African countries were managing protected forest areas using the conventional way of barring local people access and denying them management roles. (Kamoto et al. 2008). Most of the new forestry interventions carried out in Africa focus on well-defined cost-benefit sharing mechanisms which permit local people's engagement in the management of forests while allowing them to benefit from various forest ecosystem services to improve their livelihoods (Lawry et al. 2012). However, according to findings by Lawry et. al (2012), despite the potential to uplift local people's livelihoods and improve stewardship of the forests, most of the incentives developed through these benefit-sharing schemes have not been given sufficient attention to foster sustained participation among local people. Studies conducted in many African countries have also established that only limited rights are devolved by the state, and this causes scepticism among local people concerning the long-term commitment by their governments (Lawry et al. 2012). In a comparative study done in five countries in Eastern Africa focusing on the design of forest decentralisation policies towards achieving devolution, all the countries studied, including Malawi, had policies that lacked some of the critical elements required to achieve meaningful devolution, such as equitable benefit-sharing mechanisms (Kajenje et al. 2020).

Malawi is facing a rapid decline in its forest resources and there is a need for the various actors to collaborate in their efforts to conserve and protect the remaining forests. As reported by the Global Forest Watch (2022), in 2010, Malawi had 1.39 million hectares of natural forest, covering over 12% of its land area but, in 2021, the country had lost 14,700 hectares of natural forest. Just like many African countries, Malawi has evolved its forest management policies from the pre-colonial era where communities managed their forests under traditional leadership, to the colonial and post-colonial era where fences and fines were used to exclude local communities after taking away their rights to utilise forests, and finally to the current era of co-management policies developed from the 1990s (Zulu 2013). Before the forest devaluation policies, local people living next to protected forests in Malawi had been marginalised and did

not benefit from the centralised government system of managing forests (Kamoto et al. 2008). The 1996 Forest Policy and the proceeding Forest Act of 1997 marked a paradigm shift which allowed people to return to forest reserves legally. Much as this participatory forest management model has played a direct and crucial role in structuring the roles and responsibilities regarding local people's involvement, it has been criticised for sending contradictory signals resulting from the way the policy has been framed and interpreted by the bureaucracy (Kamoto et al. 2008).

Nath et al. (2020) established that managing forests through participation of local people can help achieve the majority of the 17 Sustainable Developments Goals (SDGs). Sustainable forest management is inarguably one of the preconditions to obtaining sustainable benefits from these forest resources. However, to ensure effective management of forest resources, there is a need to have an idea of the perceptions and attitudes of the local people who have close interactions with forests by assessing their perspectives, suggestions, and ideas concerning forests and how they are governed (Tadesse & Teketay 2017). Understanding the attitudes and perceptions of local communities toward forest conservation is paramount to long-term sustainable management of forests. According to Garekae et al. (2016), it is vital to consider communities' needs, aspirations, attitudes, and perceptions regarding the conservation of their forests and to factor them into strategies and management planning.

3. METHODS

3.1 Description of the study area

This research was conducted in communities living adjacent to forest co-management blocks within the Mulanje Mountain Forest Reserve (MMFR) located in the Mulanje district, which is found in the southern region of Malawi and covers 56,317 hectares of land. The forest reserve has a valuable environment that is considered a hotspot for biodiversity in Malawi and provides people with a wide range of ecosystem services from its natural resources. MMFR was gazetted in 1927 and is under the jurisdiction of the DoF, a mandated national agency responsible for the management of timber plantations and the conservation of forest reserves in Malawi. The main economic activities for local communities include small-scale agriculture (crop production, fruit trees, bamboo, beekeeping, tea growing, and fish farming), pastoralism, ecotourism, selective logging, and extraction of medicinal plants and other non-timber forest products (Hedden-Dunkhorst & Schmitt 2020). In the year 2000, UNESCO, through its Man and the Biosphere (MAB), Programme recognised MMFR as a biosphere reserve known as the Mulanje Mountain Biosphere Reserve (MMBR). According to the UNESCO's zoning model, each biosphere consists of three main zones with different functions and degrees of protection: (1) the core area comprising a strictly protected zone for conservation of biodiversity; (2) adjacent buffer zones allowing for sound ecological practices, such as environmental education, awareness campaigns, research, education and training concerning local knowledge and traditions; and (3) the transition area characterised by the least restrictions where communities foster sustainable ecosystem service use and ecologically sustainable economic and human activities (UNESCO 2021). Figure 2 below shows UNESCO's zoning model for biosphere reserves.
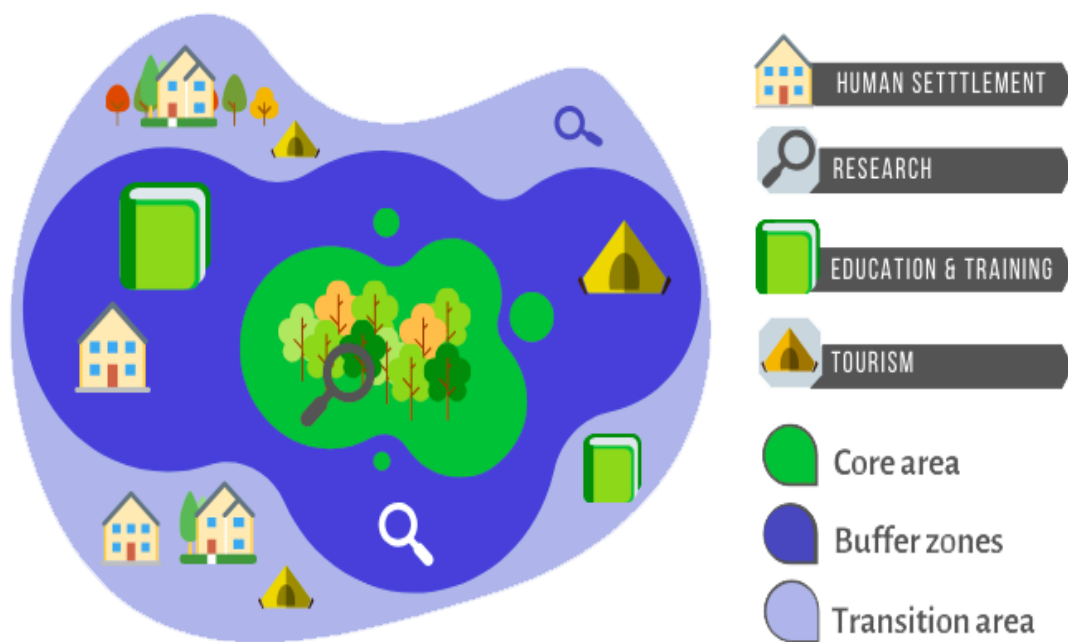
Figure 2. The three interrelated zones of a biosphere reserve. (Source: Adapted from UNESCO Biosphere Reserves 2021).

MMFR, which forms the core zone of the MMBR, is facing rapid deforestation resulting in massive tree cover loss due to illegal logging and forest fires. The severe decline in biodiversity has led to some endemic species like Mulanje cedar (*Widdringtonia whytei*) being critically endangered and facing extinction due to illegal logging. Recent data from Global Forest Watch (2022) indicates that from 2001 to 2021, MMFR lost 4,150 hectares of tree cover, equivalent to a 17% decrease, since the year 2000. Figure 3 shows the location of MMFR.

On 25 March 2008, three forest co-management agreements were signed between the Forest Department and local forest institutions from Mbewa, Nakhonyo, and Mangombo villages to manage the three forest management blocks of Mbewa, Nakhonyo, and Mangombo respectively (see Figure 4).

All three co-management blocks share boundaries and are located on the downslope of Mulanje Mountain adjacent to the three villages. In 2021, a series of review meetings was organised involving the key stakeholders and one of the recommendations was to re-demarcate the three blocks into two which are now called the Tchete and Kazembe co-management blocks. The three previous blocks have been maintained as per the requirement for forest co-management establishment guidelines but are now called sub-blocks and are still managed by the three adjacent villages through their Village Natural Resource Committees (VNRMCs). The main purpose of the meeting was to review the outdated ten-year forest co-management plans. Another outcome of the review meetings was to incorporate some villages located in the transition zone of the biosphere reserve which were previously excluded from the management of the forest reserve. Each of the two blocks has a Forest Block Committee (FBC) which is comprised of representatives from members of the various VNRMCs from both the buffer and transition zone within the biosphere reserve.

The review process was facilitated by the DoF, WeForest (an international NGO) and Mulanje Mountain Conservation Trust (MMCT), which is a local NGO established around 1994 as an environmental endowment trust to support the DoF in the management and conservation of the MMFR and its substantial biodiversity. Figure 5 shows a schematic view of the processes involved in setting up and reviewing a forest co-management approach.
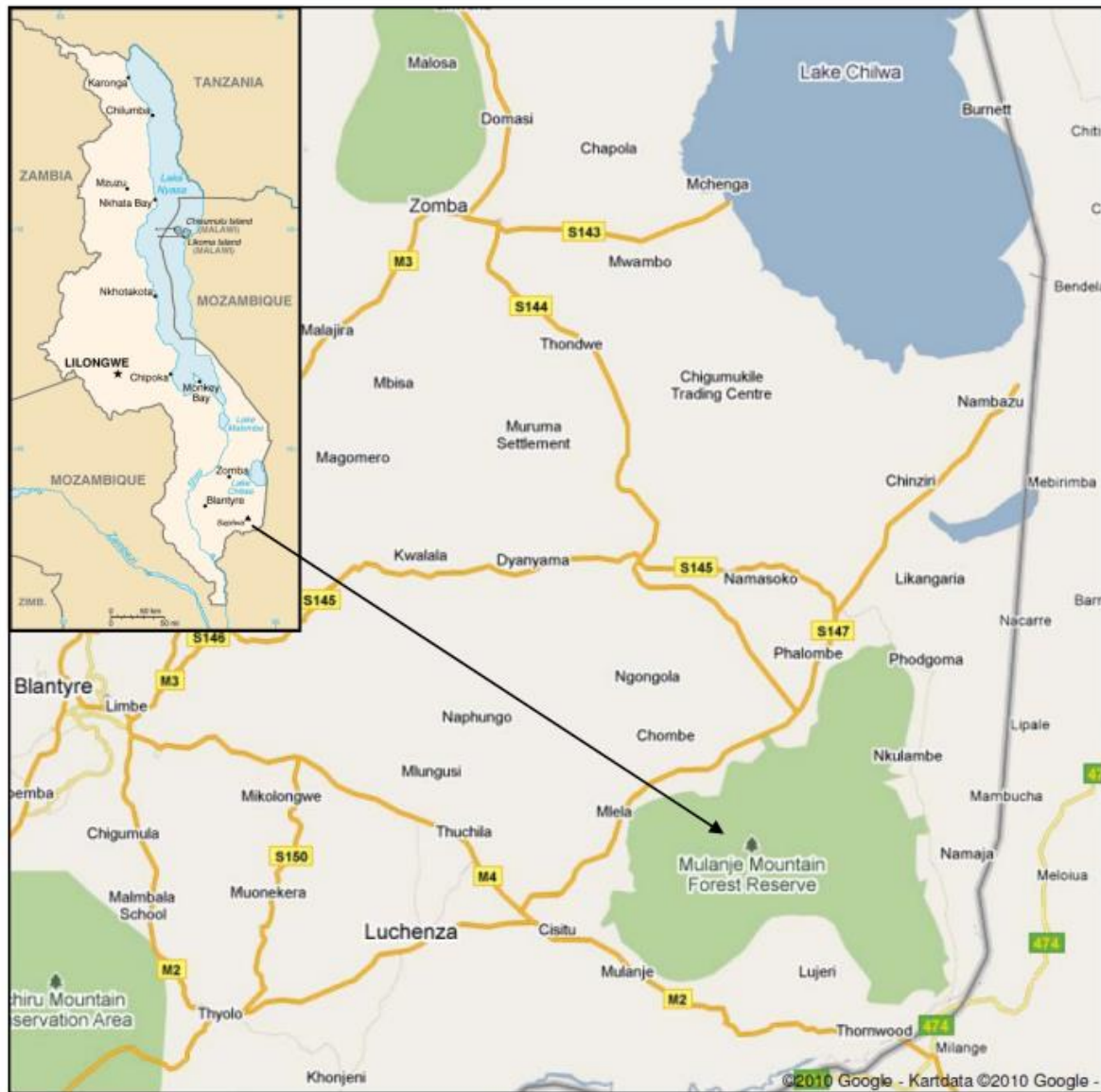

Figure 3. Map of Malawi showing the location of MMFR. (Source: Adapted from CIA World Fact Book 2022).
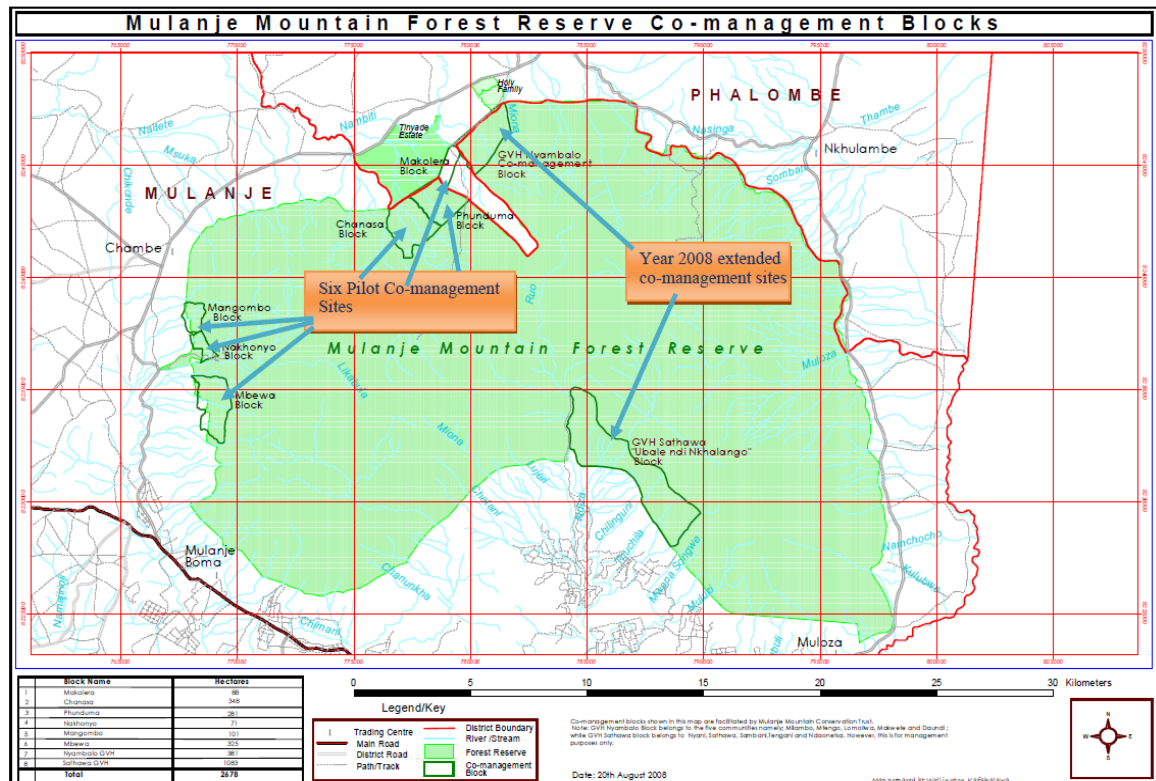
Figure 4. Co-management blocks inside MMFR. (Adapted from the MMCT 2008 report).
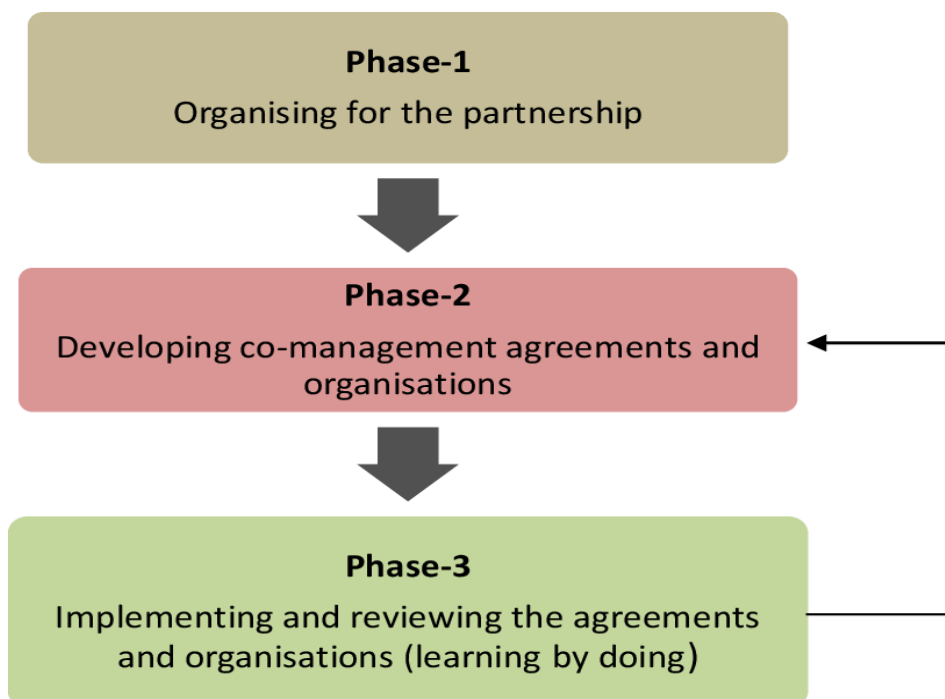

Figure 5. The three phases of the forest co-management process. (Source: Manzoor 2012).

3.2   Data collection

This study used a qualitative research approach and original data was collected from the study area through individual semi-structured interviews. The participants were key stakeholders purposely selected from the villages involved in the co-management of the Tchete and Kazembe blocks as primary stakeholders. Before beginning an interview, each of the respondents was informed of the purpose of the interview through a statement that was read out by the data collector to assure them that the information collected would be analysed anonymously. The interviews were all conducted after verbal consent had been granted by each of the respondents. The total number of sampled respondents was 13, consisting of seven males and six females. Table 1 shows all the key stakeholder groups involved in the management of the forest co-management blocks Tchete and Kazembe, and the number of interviewees from each group.

Table 1. Sampled number of respondents from each stakeholder group.

No.	Stakeholder group	Respondents
1	Forest Block committee	**2**
2	Tree nursery group	**2**
3	Community forest patrol group	**1**
4	Beekeeping group	**2**
5	Ecotourism group	**1**
6	Local traditional leaders	**2**
7	Department of Forestry (Govt)	**1**
8	MMCT (NGO)	**1**
9	WeForest (NGO)	**1**
	TOTAL SAMPLED	**13**

A set of interview questions were formulated to guide the interview process, built on the objectives of the research. All the interviews were recorded, and notes were taken by the data collectors. All interviews were conducted in *Chichewa* which is a local language spoken and understood by everyone in the study area. Secondary data sources were also used to complement and strengthen the research findings.

3.3   Data analysis

The interview data were analysed using the thematic analysis method which involves the process of identifying patterns or themes within qualitative data. The analysis approach applies the Braun and Clarke (2006) systematic framework which provides a guide for thematic analysis and has been summarised into a six-phase guide by Maguire and Delahunt (2017). Table 2 below shows Braun and Clarke's six-phase framework for a thematic analysis.

Table 2. Braun & Clarke's (2006) six-phase framework for doing a thematic analysis.

Step **1:** Become familiar with the data	Step **4:** Review themes
Step **2:** Generate initial codes	Step **5:** Define themes
Step **3:** Search for themes	Step **6:** Write up

4. FINDINGS

4.1 Perceptions of a forest co-management approach

4.1.1 *Importance of the forest reserve*

The study explored local people's perceptions of the importance of forests for their livelihoods. The respondents were asked if they thought forests were important and were asked to mention the benefits of MMFR as their adjacent forest. All respondents acknowledged the importance of forests to humans and agreed on the need to protect MMFR due to the significant role it plays in sustaining their livelihoods. Most of the mentioned benefits obtained from the forests were provisioning services which included fruit collection, honey, mushrooms, fuelwood, thatching grass, water, and medicinal plants. The other benefits mentioned included regulating services from the forest, such as soil erosion prevention, flood control, water purification, and pollination by bees allowing for beekeeping through hundreds of beehives which have been hung inside the co-management blocks for honey production. One of the traditional local leaders interviewed stated that:

> *...the forest supplies us with the oxygen that we breathe, but again as women, we rely on the forest reserve to collect firewood for cooking in our homes. The other benefits include mushrooms, construction materials, fruits, honey, and health benefits from medicinal plants and a lot of people in my village get monetary benefits through their involvement in casual labour like tree planting and maintenance of fire breaks.*

All the respondents mentioned, as one of the indirect benefits, financial incentives obtained from casual labour payments through their involvement in forest management operations like tree planting, weeding, and maintenance of firebreaks in the forest reserve. Ecotourism was also mentioned by half of the respondents as another benefit they get from the forest reserve.

4.1.2 *Understanding of the co-management approach among local people*

The participants were asked to explain in their own words the meaning of the term "forest co-management" to ascertain their understanding of the approach as a forest governance tool. They all described it as a participatory approach that involves them as community dwellers living adjacent to the forest reserve to work together with the government and other interested NGOs, like MMCT, in managing the forest resources by sharing responsibilities to sustainably manage the forest reserve.

The respondents were also asked to describe the current state of the forest under co-management as compared to the time it was adopted. Slightly more than half of the respondents felt the

situation had improved, while the rest described the current condition of the forest blocks as worsened in terms of forest cover changes.

From the implementing agencies' point of view, the WeForest representative thought the situation had worsened while the DoF representative felt the situation had improved overall. However, according to the MMCT representative, it was difficult to generalise whether there was an improvement or reduction in forest cover but, from his observation, the rate of destruction had decreased under co-management. He stated that:

> *In many parts of the forest, the situation may be described as worsened, especially in the areas where there has been less community involvement in managing the forest. However, the forest destruction rate has been greatly reduced in areas where community involvement is enhanced, like those communities which have formed conservation groups.*

The three representatives from the implementing agencies singled out the Nakhonyo block as having improved under the co-management approach, for the Mangombo block, there were no observed changes while, while for the Mbewa block, they indicated a worsening situation. The DoF representative was also in agreement with the observation made by the representative from MMCT by stating that:

> *The condition has improved for Kazembe (formerly Nakhonyo and Mangombo) unlike Tchete (formerly Mbewa) because the former has an active co-management committee and has a vast interest in managing natural resources without expecting monetary incentives.*

The WeForest representative also agreed with the representatives from the DoF and MMCT that Nakhonyo (which, after the review process, is now under the Kazembe block) has so far registered some successes in the management of their forests as compared to the Tchete block (previously known as Mbewa block). The general view among the three representatives from the implementing agencies is that the success in Nakhonyo is due to good local leadership by the chief and the commitment of the co-management committee at the village level. They also cited the livelihood improvement schemes introduced, fore example beekeeping support, which has motivated the local community members. In Table 3 below is a summary of the interview responses regarding the observed forest changes under the forest co-management and the drivers behind the cited changes.

4.1.3   *Effectiveness of the co-management approach*

The local people's perceptions of the effectiveness of the existing co-management approach in dealing with challenges were ascertained by asking the following set of questions:

(1) What challenges were there before the co-management approach?
(2) Which of the mentioned challenges have been solved by the co-management approach?
(3) Which of the mentioned challenges have not yet been solved by co-management?

Table 4 summarises the local stakeholders' responses to the above questions.

Table 3. Summary of responses regarding the current state of forest blocks under co-management and their driving factors.

Observed changes under co-management	Drivers cited by local stakeholders	Drivers cited by implementing agencies
Improved	Strong collaboration between stakeholders	Good leadership by traditional leaders regarding the management of forest resources
	Enforcement of forest laws and by-laws through community patrols	Increased interest by block committee members
	Increased participation by community members	The motivation of members through livelihood improvement schemes
	Increased awareness of the importance of and need to protect forests	Support for community patrol groups towards forest law enforcement by NGOs
	Incentives such as beekeeping and support to community tree nurseries	
Worsened	Inadequate DoF staff	Agricultural encroachment, firewood collection, and charcoal
	Corruption by some DoF staff	Ineffectiveness by the DoF in managing MMFR due to lack of manpower and funds
	Lack of commitment by implementing agencies	Intermarriages in surrounding villages bring illegal harvesters closer to the forest
	Lack of sufficient financial incentives or material support to foster local people's participation.	
	High unemployment in surrounding villages resulting in increased pressure on forest resources	
	Rapid population growth leading to increased pressure on forest resources	

Table 4. A summary of responses on the effectiveness of co-management in dealing with challenges in forest management.

Challenges faced before co-management	The current situation during co-management
Illegal logging for timber	Reduced cases of illegal logging through patrols
Deliberate setting of forest fires	Reduced cases of forest fires caused by arson
Mass felling of trees for charcoal production	Reduced in Kazembe block but still exists in Tchete
Corrupt FD employees	Reduced but cases of corruption are still reported
Soil erosion and floods	Improved
Lack of incentives to motivate community members	Improved but more incentives needed
Lack of knowledge on the importance of conserving forests	Improved through increased awareness meetings, training, and learning by doing
Poor collaboration between FD and local people	Improved

Responses from representatives from the three implementing agencies agreed with the local people's opinions as highlighted in Table 4 above. In addition, the MMCT representative pointed out another challenge that was there before introducing the co-management but has now been solved through awareness meetings between the traditional leaders and local forest institutions regarding legal procedures to follow once they apprehend anyone breaking forest laws. This is what the MMCT representative had to say regarding the issue of forest patrols and confiscation mandate:

> *Communities under the leadership of forest co-management block committees never have the mandate or power to apprehend, confiscate and exercise penalties based on their by-laws within their capacity. Anything beyond their capacity must be referred to the Department of Forestry and Police.*

On whether the co-management approach has been effective enough as a forest governance tool to deal with the challenges, a WeForest representative stated that the first co-management phase has failed to deliver but that there are notable improvements during the ongoing review process, which puts more emphasis on the sustainability, exit strategy, and business models to ensure communities benefit in both the short and long run. Other areas are still in the learning process, he said, but the situation looks promising with continued engagement and awareness campaigns. The representative from MMCT shared the same opinion by adding that the first co-management phase was more of a learning process for the government, facilitating agents and communities as evidenced by some communities which have shown positive attitudes by forming conservation groups to complement government efforts in managing their adjacent forest areas. The groups conduct forest patrols independently of the DoF or police and they also organise awareness sessions in the villages sensitising people on natural resources management. This, according to the MMCT representative

> *… gives some confidence that forest co-management will take ground and protected areas will regenerate for improved ecosystem services.*

Access to forest resources and benefit sharing was highlighted by both MMCT and WeForest as one aspect of the co-management agreement which has failed to be addressed by the existing co-management approach. WeForest noticed that before the review of the first phase of co-management,

> *… no clear benefit-sharing modalities were established, allowing communities to directly benefit while sustainably managing the forest. Transparent benefit sharing is key to driving trust between DoF and communities.*

The DoF was also in agreement with limitations in access and benefits by particularly singling out

> *… lack of rights to harvest trees in the co-management blocks by community members.*

According to the DoF, the co-management agreement and the Forestry Act only allows local people to access non-timber forest products and not high-value products like timber. According to the MMCT representative,

> *... this is a very unfair access and benefit sharing mechanism for the community members who are just taken as managers, but all the high economic products are harvested by the government without any share for the community.*

To ascertian the strengths and weaknesses of the existing co-management model, local people and implementing agencies were asked direct questions about what they have observed as the positives and shortfalls of the system in place. Table 5 summarises their responses.

Table 5. Summary of responses on strengths and weaknesses of the current co-management approach.

Strengths	Weaknesses
Strong multistakeholder collaboration in addressing challenges	Lack of commitment by the FD to implementation, leaving most of the work to communities
Easy access by local community members to the forest	Apart from NTFPs, communities don't have access to high-value products like timber which are solely under the mandate of the government
Increased active participation from community members in forest management	Community institutions lack support to carry out duties, e.g. protective wear, whistles, uniforms
Financial incentives through casual labour and livelihood-improvement schemes like beekeeping	Lack of incentives to local forest institutions' members for their services
Villagers benefit from livelihood-improvement schemes like beekeeping and payment for ecosystems (payment for forest operations)	Limited understanding by both the government and communities regarding key aspects of co-management as a new model
Forests are restored through active restoration (tree planting) and tending operations	Lack of capacity building for local forest protection institutions
Cost-effective as the responsibilities are shared between the government and local people	Lack of transparency and accountability by the DoF to comply with agreed benefit-sharing arrangements
Increased awareness of the importance of forests and the need for protection	No compensation for personal injuries by local forest committees in their duties while conserving or protecting the forest, e.g. attacks from illegal harvesters during patrols

Multi-stakeholder collaboration strength was assessed through a direct question about the respondents' views on stakeholder involvement in implementing the co-management agreements, to which most local stakeholders said a strong collaboration exists with the DoF, NGOs, the police, and the courts. The representative for the Mulanje Porters and Tour Guides association expressed the need for maintaining a strong collaboration to sustain the tourism potential of the forest by taking part in managing the forest. In describing the collaboration, he recounted:

> *Currently, there is a solid working relationship between our association and the other stakeholders. I will give an example of our recent involvement in tree planting and conducting forest patrols to curb the destruction of our forest from illegal charcoal production.*

However, the majority of the respondents representing the local people mentioned that there is still a need for improvement in the collaboration, as sometimes the implementing agencies do

not commit to the agreed action points during the multi-stakeholder meetings. This was explained by the leader of a local law enforcement patrol group:

> *Regarding the collaboration, I can say it is going on well and strong as we can meet whenever there is a need to be addressed. However, there are times we feel demotivated when there is a lack of seriousness to implement what we agree. For instance, there was a time when we agreed to maintain firebreaks in the co-management block, but we waited for resources until the season for carrying out the task was over, and we did not even get any communication.*

The need to have a strong and improved collaboration for a successful co-management programme was emphasized by all three implementing agencies. MMCT indicated that collaboration was not that strong at first but has now improved after the review process. WeForest underscored the need to have full support from local traditional leaders to ensure long-term success and additionally suggested that:

> *The Department of Forestry needs to be the central body in the implementation since the agreement is signed between communities and them. Other community-based structures, like functional farmer field schools and self-help groups, need to be involved in the process through awareness, business opportunities, etc.*

On the frequency of stakeholders' meetings, all participants mentioned that stakeholders' meetings are scheduled whenever there is a need to be addressed and/or communicated.

4.1.4 *Law enforcement under the co-management system*

When asked about the effectiveness of forest policies and strategic frameworks available in guiding the implementation of the co-management system, most of the local stakeholders acknowledged that there are laws in place which include both the government forestry laws and the by-laws under the traditional leadership. As one of the respondents representing a local tree nursery group from Nakhonyo said:

> *There are forest laws set by the government and by-laws which we follow in protecting our forests. Currently, we are finalising the co-management review process where there are guidelines on strengthening the enforcement of these laws in the next phase but I would urge the police and the courts to always take appropriate action according to these laws by imposing stiff penalties on those apprehended committing forest crimes to deter the would-be offenders.*

There was a shared opinion among implementing agencies who believe the implementation of law enforcement is less effective despite having good policies and guiding strategic frameworks, as highlighted by the representative from WeForest who stated that:

> *Forest law enforcement measures are not effective enough, since they are not being implemented by the mandate holder which is the Department of Forestry. However, the theory behind them is nice, but the application is mostly non-existent.*

The representative from MMCT observed that these laws

> *... are effective only on poor people but are less or not effective at all on elites and politicians.*

The government representative believed that law enforcement can be enhanced if more support would be given to the co-management block committees. When asked which legal instruments they are using in managing the MMFR, all the implementing agencies mentioned the National Forest Policy of 2016, the Forest Amendment Act of 2020 and the Standards and Guidelines on Participatory Forest Management in Malawi. The other supporting tools mentioned included the co-management agreements, forest by-laws, and forest management plans.

The participants were also asked about their view on current access and control over forest resources in MMFR. Most respondents said there are permits issued by the DoF for harvesting valuable resources like timber and dry firewood. These permits are exempted from harvesting or collection of non-timber forest products like mushrooms, fruits, medicinal plants, honey, and bamboo.

4.1.5 *Suggested improvements to the co-management approach*

The participants were asked if they would like the co-management model to continue or not and all of them, including the implementing agencies, agreed that, despite the challenges observed, they would like to see it continue. However, the majority of the respondents wanted to see more emphasis being put on raising the level of seriousness regarding the implementation part. All 13 participants responded that there is a need for improving the implementation of the co-management and justified their responses by giving suggestions for improvements. There were varying views on the areas needing improvement, however, between the local stakeholders and the implementing agencies. Table 6 presents a summary of the local stakeholders' responses after being asked to suggest improvements to the current co-management system.

Table 6. Summary of the respondents' suggestions on improving the co-management approach.

Suggestions for improvements from local stakeholders	Suggestions for improvements from implementing agencies
Motivation through incentives for the co-management committee members	Government should show political will and a strong commitment to implementation according to co-management agreements
Capacity-building training for local community institutions	Requires long-term project funding to train, build capacity, and empower local forest institutions
Community patrol groups should be supported, e.g. with protective wear, whistles, uniforms	Should take a holistic Forest Landscape Restoration approach, ensuring root causes of deforestation/degradation are addressed
Implementing agencies need to consider the views of local stakeholders during stakeholder meetings	Active engagement of local traditional leaders in co-management at every stage of the project
FD should be transparent and share the benefits with communities	Forest law needs to be reviewed to allow communities access to valuable resources like timber

4.1.6   General perspectives on the efficiency of the co-management approach

When asked to give their general view on the effectiveness of the entire co-management system, there were mixed responses, as six out of the ten local stakeholders felt it is an effective tool as it empowers local communities, fosters community participation, and is effective in conserving and restoring the forests. However, the other four respondents indicated that the co-management model has proven not effective enough on the basis that it is only the government benefiting, such that some local people are losing interest to take part in conservation work, as explained by the representative of the beekeeping group who said:

> *The co-management system is not effective as it is only the government side benefiting while the local people are just being used to help the government in taking care of the forest, but we don't get the real benefits from managing the forest.*

Nevertheless, the three respondents representing the government and NGOs as implementing agencies shared the opinion that co-management is an effective system as it addresses most of the needs of the local people, but they all emphasized the need for all stakeholders involved to increase their commitment in dealing with current challenges. According to MMCT

> *… it would be an extremely effective tool if it is approached with seriousness and rectify the existing challenges.*

4.2   Attitudes toward co-management

In ascertaining the attitudes of local stakeholders on the co-management system of forest governance, the local stakeholder participants were asked if they have been involved in any tree planting or forest conservation activities in MMFR. All 10 participants responded with a "Yes". A follow-up question required them to specify if this involvement was before co-management started, during co-management or if they had been involved during both periods. Three participants said they had been involved was during co-management, while the other seven participants said they had been continuously involved in forest management activities before and during the co-management era. The participants were asked about the source of motivation for their involvement to which eight of them mentioned non-cash incentives while two participants indicated both cash and non-cash incentives as their source of motivation. The participants were also asked if they have been involved in any of the voluntary works in the management of the MMFR to which all of them responded with a "Yes". In responding to whether they have been involved in any tree planting activities outside the core zone (MMFR) but within the biosphere reserve, all ten local participants responded with a "Yes". The majority of them mentioned that most of the trees had been planted in their homesteads for shade and as windbreaks. The other purposes mentioned included riverbank protection, beekeeping, individual woodlots, community woodlots, and farmer-managed natural regeneration (FMNR).

5.   DISCUSSION

Studies focusing on local people's perceptions and attitudes towards their participation in participatory forest management are limited in the Malawian context and worldwide in general (Tesfaye et al. 2012). According to Jotte (1997), local people's perceptions and attitudes are considered to be important antecedents of people's behaviour in relation to the utilisation and

conservation of their natural resources. The Theory of Planned Behaviour as elaborated by Azjen (1991), suggest that people's behaviour will result in either negative or positive consequences by maintaining that people's intentions are shaped by three core components; their perceptions, attitudes, and subjective norms. It is against this background that this study attempted to explore the local people's perceptions and attitudes that could likely influence their participation and engagement in the forest co-management scheme of the Mulanje Mountain Forest Reserve. The findings reflect on sources of conflicts, suggested solutions, and the effectiveness of the policies and strategic frameworks used in managing the forest reserve under the co-management approach.

5.1   Local people's perceptions of the current co-management approach

The research findings indicate that the respondents have a positive perception of co-management. The study also revealed that the local people interviewed understand the concept of co-management and its intended objective. This finding was ascertained by asking a direct question for the respondents to explain in their own words their understanding of "forest co-management" as a forest governance tool to which all of them stated key terms including multistakeholder collaboration, shared ownership, shared responsibilities, and benefit sharing. Various literature captures these key terms as highlighted by Yandle (2003), who refers to forest co-management as a spectrum of institutional arrangements in which the responsibilities and benefits of co-management are shared between the forest users and government authority. Forest users' understanding or perception of a forest governance system concerning their interests, which eventually determines their attitude, will influence their commitment and willingness to participate in such programmes (Tesfaye et al. 2012). The observed increased knowledge and awareness of the co-management model can be linked to education and awareness campaigns which according to the respondents had helped to change people's perceptions of the forest. As highlighted by the majority's responses, environmental education and awareness meetings conducted by implementing agencies can be attributed to the increased understanding of the co-management model. However, according to the implementing agencies, there is still a need for increased awareness as the majority of the local people don't have a deeper understanding of the key concepts of co-management, since it is still a relatively new concept introduced barely a decade and a half ago. It is therefore important to scale up the education programmes and awareness-raising meetings during the second phase of the implementation to increase awareness of the key components of the co-management system. According to the WeForest respondent, these key components include benefit sharing, ownership, and emphasizing business to increase benefits for the local people.

The study also revealed that the majority of the local participants perceive the co-management model as effective in dealing with the problems that were there before its introduction in the year 2008, as presented in Table 4. However, despite the majority agreeing on its effectiveness in solving the problems, a few respondents indicated that there are still some problems that have not been dealt with, such as corruption by some DoF staff members, charcoal production, and the deliberate setting of bush fires. According to the report on the role of corruption in enabling wildlife and forest crime in Malawi (Bacarese et al. 2021), corrupt staff from the DoF, both at the field level and administration level, were also highlighted as some of the actors that responsible for corruption in Malawi. However, if left unchecked, a high perception of corruption can erode the people's trust in the implementing agencies as most people will become demotivated, resulting in increased forest crimes which will lead to further destruction of forest resources (Bacarese et al. 2021).

The study also explored the respondents' awareness of changes in the condition of the forest by comparing the periods before and during co-management. They were also asked to explain the drivers of these changes, as presented in Table 3. Built on the responses, it was not possible to conclude whether co-management had improved or worsened the forest conditions as there were differing views among local participants, with six participants citing improvements while the other four indicated worsening conditions as noticed by changes in forest cover. However, the responses of representatives of the implementing agencies indicate that co-management has particularly helped in reducing the rate of forest destruction but not necessarily improved the condition of the forest, except for the Nakhonyo sub-block located inside the Tchete co-management block. The success under Nakhonyo has been attributed to good leadership and the strong commitment of the local co-management committee, which unlike committees from the other blocks, does not rely on cash incentives to participate in managing their forest area. This can be drawn out as an important learning point to be adopted in other forest blocks by emphasizing sensitisation meetings with traditional leaders and forest block committees to remind them of their roles in managing the forests. There is also a need to foster collaboration, learning, and sharing of experiences among the various local institutions and their respective traditional leaders from the two co-management blocks, by holding regular meetings during which they should reflect on successes, challenges, lessons learned, and proposed solutions.

Regarding the sharing of the costs and benefits from the forest co-management blocks, the general views of all the participants indicated that local people have not received any share of benefits as agreed in the co-management agreements ever since the introduction of co-management. The study revealed that local people are dissatisfied as they feel that the government is not sufficiently transparent and just wants to use them in to manage the forest while it gets all the benefits. However, most local participants seemed to remain committed to protecting and managing the forest as they perceive it as their main source of livelihood. This revelation is supported by a study by Blaike (2006), who suggested that many governments and implementing agencies, including some donors, use the forest co-management model to externalize the costs associated with forest conservation to the local communities.

The multi-stakeholder collaboration was strong, but the communication flow was top-down as it was found out that these stakeholder meetings were only arranged and facilitated by the DoF or NGOs whenever they had something that needed to be addressed. This is not in compliance with the model of forest co-management (Figure 1), where service standard 17 emphasizes the need for a horizontal communication flow to enhance mutual learning. A top-down communication approach was also observed in a similar study by Zulu (2013), who cited top-down decision-making and extraordinary bureaucratic inefficiencies as the major negative impacts of donor support.

That the participants had mixed views regarding the effectiveness of the co-management model suggests that the model needs some improvements despite registering some successes. The majority of the respondents, including those who felt the co-management model to be effectively run, provided their suggestions for improvement as shown in Table 6.

5.2 Local people's attitude towards the current co-management approach

As indicated earlier, attitudes are essential in influencing human behaviour, e.g. regarding how they manage and conserve their forest resources (Jotte 1997). In this study, local people's involvement in forest management operations, such as tree planting activities, tending

operations (e.g., firebreak maintenance) and forest law enforcement, was considered behaviour revealing their attitudes towards co-management. The findings showed that all participants had taken part in tree planting activities and the majority had taken part in tending operations and/or forest law enforcement through joint patrols with the government forest guards. All respondents indicated that they has occasionally taken part in voluntary work which is seen as another indicator of a positive attitude. This positive attitude may also suggest local people's understanding of the need for sustainable forest management emanating from the benefits realised as reported by Matta and Alavalapati (2006), who correlated local people's positive attitudes with their perceptions of benefits. Dale (2000) also documented that the people's decision to participate in any developmental programme is largely determined by perceived benefits. Despite the majority indicating non-cash incentives as their source of motivation, all participants representing local people indicated that they had benefited through cash incentives from casual labour involvement (see findings in section 4.1.1).

5.3   Suggested improvements in the implementation of the co-management model

The participants mixed views regarding the effectiveness of the co-management model suggest that the model needs some improvements despite registering some successes. The majority of the respondents, including those who felt the co-management is effective, provided suggestions for improvement as shown in Table 6. All participants demonstrated knowledge about the existing forest laws and bylaws guiding the co-management. However, the responses about the effectiveness of these legal guidelines indicate that the forest law enforcement is not effective. Nevertheless, the majority of the respondent expressed their willingness and commitment to help in conducting forest patrols if they were to be supported with safety wear and materials to be used while self-guarding the forest from illegal harvesters.

5.4   Effectiveness of the co-management approach

The findings from the study indicate that the effectiveness of the current forest co-management is dependent on the level of commitment from the involved stakeholders and strong multistakeholder collaboration; as such, it cannot be considered a panacea to the various challenges it seeks to address. There is a need to focus more on a bottom-up approach to interaction among the involved stakeholders. Regarding the effectiveness of the current co-management approach in managing the MMFR, there are mixed results, but it appears to be a promising strategy if it can be applied effectively. There is also a need to take a holistic forest landscape approach that looks beyond forest institutions to also consider other local sectoral institutions, such as farmer associations, water users, and pastoral land managers.

6.   CONCLUSION AND RECOMMENDATIONS

The study findings suggest that local people have positive perceptions and attitudes towards the forest co-management system currently used in managing the MMFR. According to the findings, all the participants showed that they had at least benefited to some degree from the co-management approach, and they all wished for the continuation of the system. The study indicates, however, that various challenges encountered during implementation have negatively impacted the efficacy of the current co-management system as a participatory forest governance tool. It is therefore recommended that the government, in coordination with NGOs and local people, should strengthen the multi-institutional approach and implement the co-management

model following the signed co-management agreement and the national forest policy. The study also revealed a lack of public accountability in the revenue-sharing mechanism by the DoF as the benefits collected from the forest co-management blocks are not shared with the local communities. It is therefore recommended that the government should address this issue by striving for accountability to the local people when it comes to the benefits, otherwise it poses the risk of demotivating local people from participating in the programme. There is also a need to improve the communication flow from the current top-down to a horizontal flow among stakeholders. The communication flow problem could be addressed by forming a multi-stakeholder forum which would organise regular stakeholder meetings to discuss pertinent issues affecting the implementation under the co-management arrangement.

ACKNOWLEDGEMENTS

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