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Market-Based Conservation for Better Livelihoods? The Promises and Fallacies of REDD+ in Tanzania

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Abstract: Governments, multilateral organisations, and international conservation NGOs increasingly frame nature conservation in terms that emphasise the importance of technically managing and economically valuing nature, and introducing markets for ecosystem services. New mechanisms, such as REDD+, have been incorporated in national-level policy reforms, and have been piloted and implemented in rural project settings across the Global South. By reflecting on my research on REDD+ implementation in two case study villages in Tanzania, the paper argues that the emergence and nature of market-based conservation are multi-faceted, complex, and more profoundly shaped by structural challenges than is commonly acknowledged. The paper identifies three particularly important challenges: the politics surrounding the establishment of community-based forest management; the mismatch between formal governance institutions and actual practices on the ground; and the fickleness of income from carbon sales and alternative livelihood opportunities. I argue that these challenges are not merely teething troubles, but they question fundamental assumptions of market-based conservation, more generally. I end with reference to better ideas for achieving sustainable development.

Keywords: neoliberal conservation; Africa; REDD+, market-based conservation; Tanzania

1. Introduction

Livelihoods and landscapes in rural Africa are changing in important new ways. Rural populations across the continent are adapting to unprecedented biophysical and political-economic transformations. Climate change, extreme weather events, such as droughts and floods, soil degradation, and deforestation, threaten livelihoods and increase vulnerabilities [1,2]. These biophysical changes are occurring in conjunction with important global political-economic transformations that are filtered through policy, at national and sub-national scales [3,4].

Under the banner of the green economy, 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 [5,6]. 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 instruments) for the management and protection of nature. Market-based approaches to nature conservation, and natural resource management, more broadly, include schemes such as REDD+ (reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries), payments for ecosystem services, and biodiversity offsetting.

While market-based instruments differ in their specific form, they all share a common objective of re-framing landscapes as providers of “ecosystem services” and rural communities as latent eco-entrepreneurs, who can cultivate and sell them as commodities for profit [7–9]. In the words

of McAfee [10], “selling nature to save it” is promoted as the best means of achieving sustainable rural livelihoods in the face of mounting environmental crises and persistent poverty. The multiple win promises of market-based instruments are the decisive factors behind their immense political support and surge in popularity across the Global South [11,12]. They offer something to everyone: better landscapes, better livelihoods, better environment, and better economic growth.

Scholars have described the shift in global conservation policy and practice towards the increasing use of markets as neoliberal conservation [8,11]. Neoliberal conservation is, here, defined as initiatives which promote the idea (both in policy and practice) that “the value of ecosystems should be captured in monetary terms and conserved through market dynamics” [13]. The fundamental assumption behind neoliberal conservation is that nature needs to be made economically valuable (through pricing) and profit-making, in order for conservation to compete with alternative land uses (e.g., conversion of forests into agricultural land) [6,8,11]. Market-based conservation thus hinges on the process of commodifying ecosystem services, which means creating distinct tradeable commodities from complex ecosystems (e.g., carbon credits from carbon sequestration services). However, this is anything but a natural and easy process. Its success 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) [14]. Local communities are often drawn into this neoliberalisation process, on the premise that they will obtain significant socioeconomic benefits [15–17].

A growing number of studies have examined the effectiveness of REDD+ and other Payment for ecosystem services (PES) schemes on slowing deforestation and protecting ecosystem services. These studies have found mixed results, with some programs demonstrating conservation success and positive livelihood outcomes, while others have shown little or no impacts [18–21]. Many scholars have emphasized that market-based conservation is much more complex and, indeed, contested in practice, than is implied in dominant policy narratives, with outcomes being mixed and particularly dependent on the institutions, politics, and particularities of place [11,22–27]. Market-based conservation produces both benefits (e.g., nature protection, political inclusion, monetary income, economic opportunities) AND risks (e.g., physical displacement, loss of livelihoods, increased human–wildlife conflicts, unequal distribution of benefits) to local population groups [6,12,27–29]. Some scholars view the successful implementation of REDD+ and PES as dependent on decentralization and community empowerment [30,31]. West, for instance, examined a REDD+ pilot project in Amazonian Brazil, and emphasized the importance of engaging indigenous people through a properly designed institutional framework that fostered transparency, accountability, and good governance [32].

While recent quantitative studies have generated important knowledge on the environmental effectiveness and socioeconomic impacts of REDD+ and PES [18–21], they have neglected other important process-related aspects of REDD+ implementation, which qualitative studies are better able to reveal. In bringing an anthropological perspective to the literature, which is less common compared to quantitative impact assessments, the contribution of this article is to examine the process of implementation of two community-oriented REDD+ projects, and demonstrate the significant social challenges underlying it. As will be shown below, the challenges are intimately linked, and share much in common with previous community-based forest management schemes. The aim of this paper is to reflect on my research on REDD+ implementation in Tanzania, to answer often-neglected, yet important questions, such as who and what enable market-based conservation in this specific context?; how and why does it manifest itself in this particular time and place?; and what are its multiple and contradictory outcomes to the environment and people? Using a political ecology lens (Political ecology has been defined and practiced in numerous ways, thereby cutting across different disciplines and subject matters. However, it is fundamentally premised on the understanding “that politics are inevitably ecological and that ecology is inherently political” [33]. Political ecologists view processes of social and environmental change as mutually conditional and relational [33–35]. Key areas of interest in political ecology are how discourse, power, institutions and politics shape

resource access, use, and the distribution of costs and benefits.) the paper draws on primarily qualitative data collected through various methods in two case study villages to synthesise key findings of my study. The qualitative nature of the evidence inevitably brings forth important limitations with regard to sample size and representativeness. This paper is not an impact evaluation of REDD+ in Tanzania, and no generalisations should be made. Instead, it provides new insights into the emergence and nature of REDD+ in a particular context, and argues that it is multi-faceted, complex, and more profoundly shaped by structural challenges than is commonly acknowledged. The paper proceeds as follows. In the next section, I discuss REDD+ in Tanzania, and describe the two pilot projects in the case study villages. In section three, I present my research approach and methods. In section four, I describe and discuss three major findings emanating from my research. In the final section, I offer conclusions and suggestions for alternatives.

2. REDD+ Context in Tanzania

2.1. REDD+ in Tanzania

Tanzania has been a popular REDD+ country, which received large amounts of donor funding to test community-based approaches to REDD+ [36,37]. The government of Tanzania embraced the REDD+ mechanism as early as 2008, and began to establish the required institutional and policy framework to support conservation organisations and researchers in initiating REDD+ demonstration projects [38]. The government had high hopes in REDD+, to address the shortcomings of previous participatory forest management initiatives and to contribute to sustainable forest management and poverty alleviation [36]. Nine conservation organisations received official REDD+ funding to demonstrate how REDD+ can contribute to sustainable forest management and poverty reduction. In addition, researchers and other organisations used foreign donor money to initiate REDD+ in the country.

Most REDD+ initiatives in Tanzania aimed to reduce emissions from deforestation and degradation in the villages by linking community-based forest management with international carbon markets. The idea was to transfer formal ownership and management rights over the forests to the local village council, which is a recognised legal entity in Tanzania, and monetarily reward villagers for conservation efforts by selling carbon credits. REDD+ was to benefit from Tanzania's progressive forest governance legislation, that allows for forest decentralisation through the establishment of joint management or community-based forest management institutions (CBFM).

The Tanzanian National Forest Act of 2002 [39] provides a strong legal basis for communities to own and manage forest reserves, and it entails a clear pathway to the transfer of rights to the community (The nuts and bolts of "participatory forest management" (PFM) in Tanzania have been well documented and summarized by Blomley and Iddi (2008) [40]. Limited space prohibits me from elaborating on PFM here, but it is useful to explain the most important features of CBFM, which forms part of PFM. In order for a village to establish community-based forest management, it must have legal tenure over its land, which means it must be classified as "village land" and not "general land". Second, a village natural resource committee (VNRC) must be elected by the village assembly, which are all the adult residents in the village. Third, the boundaries of the village must be described, and plans for different land uses (including village land forest reserve) must be delineated in a village land use plan. Fourth, the village natural resource committee must develop a forest management plan, and bylaws describing how their forest is managed, used, and protected. The management plan and the bylaws must then be approved by the village assembly and the district council. Following all this, the village land forest reserve (VLFR) is declared and managed in accordance with the forest management plan, bylaws, and normal rules governing local governments [40].). Under CBFM, the village council (i.e., village government) obtains the formal rights to establish a village land forest reserve (VLFR) on its land, which is then being managed by the village natural resource committee (VNRC), based on legally binding forest management plan and by-laws. The forest management plan

and by-laws contain, in detail, the responsibilities of the VNRC, the village council, and residents and, together, they set the rules in terms of accessing and managing the VLFR. The village is entitled to up to 100% of the benefits from the sale of products from the VLFR but, in practice, benefits are often shared with the local district office in return for support services.

2.2. REDD+ Case Study Sites

This paper draws on data collected in two REDD+ projects that were located in the Lindi region in Tanzania, albeit only one of them was an official REDD+ project that received Norwegian funding. The second project was mainly supported by Finnish funding, and part of an international research project. The two projects are called the TFCG/Mjumita “Making REDD work for communities and forest conservation in Tanzania” and the Angai Village Land Forest Reserve (AVLFR) REDD+ project.

2.2.1. TFCG/Mjumita

The TFCG/Mjumita “Making REDD work for communities and forest conservation in Tanzania” project was the first REDD+ pilot project in Tanzania. It was a partnership between two local conservation organisations: Tanzania Forest Conservation Group (TFCG) and Community Forest Conservation Network of Tanzania (Mjumita). The project received funding of USD 5.9 m from the Ministry of Foreign Affairs of the Government of Norway for a period of 5 years (2009 to 2014) [41]. The TFCG/Mjumita REDD+ initiative was internationally acclaimed for its pro-poor approach and multiple benefits, aiming to “reduce greenhouse gas emissions from deforestation and forest degradation in Tanzania in ways that provide direct and equitable incentives to communities to conserve and manage forest sustainably” [42]. It aimed “to demonstrate at local, national and international levels, a pro-poor approach to reducing deforestation and forest degradation by generating equitable financial incentives from carbon finance sources for communities that are sustainably managing or conserving Tanzanian forests at community level” (ibid.).

TFCG and Mjumita committed to good governance principles and social safeguards when introducing and implementing the REDD+ project [41,43]. Emphasis was placed on obtaining the free, prior, and informed consent from project participants before the interventions started. In-depth assessments of local livelihoods and drivers of deforestation preceded the design of crucial project elements, including the community governance framework and proposed alternative livelihood strategies. The project utilised participatory and bottom-up methods to introduce rural villagers to the REDD+ concept, and let the village community decide democratically whether they want the project or not. Information strategies (brochures, information sheets, meetings) were adapted to fit the specific local cultural context and language. From the outset, the project proponents promised that the REDD+ project would establish community-based forest management, which will transfer management, ownership, and beneficiary rights of the forests to the community. The protection of the forests would enable villagers to benefit from the sale of carbon credits. Biodiversity conservation and alternative livelihoods were another important co-benefits (ibid.).

By the end of the TFCG/Mjumita project period in December 2014, a total area of 151,867 hectares of forests across 27 villages were put under community-based forest management and trial cash payments of over USD 450,000 were made to over 44,000 people in the villages. In Ruhoma, the project set aside 2488 hectares of forest under protection, covering around 65% of the entire village land (3817 ha) and 88% of all forests in the village. Ruhoma was among several villages that have recently been successful in developing a Verified Carbon Standard/Climate, Community & Biodiversity Standards Project Documents (The Climate, Community and Biodiversity Standards are a prominent certification mechanism for forestry-carbon and other land management projects. It was developed by the Climate, Community and Biodiversity Alliance, and is now managed by Verified Carbon Standard, which is the world’s largest certification programme for voluntary carbon reduction projects. Certification from CCB/VCS supposedly guarantees that the carbon project genuinely reduces carbon emissions, contributes to biodiversity, supports community development and adheres

to good governance principles. For more information, see <http://verra.org/project/ccb-program/>) in preparation of selling forest-carbon [41]. However, no carbon credits have been sold as of yet, which is a major concern to the sustainability of the project [37,44].

2.2.2. AVLFR REDD+

In the AVLFR, an international participatory action research project titled “The role of Participatory Forest Management in Mitigation of and Adaptation to Climate Change: Opportunities and Constrains” aimed to demonstrate the benefits of REDD+. The aims of the project were “(a) to assess local communities’ perception and willingness to be involved in the REDD+ initiative; (b) to assess local communities’ capability and the costs to carry out participatory forest carbon assessment in three villages surrounding Angai Village Land Forest Reserve (AVLFR); (c) to determine forest carbon stock in three villages’ forest area constituting AVLFR” [45]. The research was specifically concerned with the idea of linking village land forest reserves with REDD+ efforts, to promote sustainable and poverty alleviating forest management. The Clinton Climate Initiative (CCI) and local district council, among other stakeholders, supported the AVLFR REDD+ initiative, which built on many years of donor support for community-based forest management in Liwale district [46]. The Clinton Climate Initiative selected the Angai forest from a pool of 70 potential sites to support community-based forest management linked with REDD+ based carbon payments and FSC timber harvesting [47]. However, Clinton Climate Initiative’s proposal, to include Liwale as an official site for REDD+ piloting, was not supported by the Norwegian government. In 2010, a new Finnish-led development programme started in Liwale titled LIMAS (Lindi and Mtwara Agribusiness Support). LIMAS was a five-year programme aimed at increasing agricultural productivity, business opportunities, and participatory forest management in selected districts in Lindi and Mtwara regions. Among the options to generate more income from forestry, the LIMAS project mentions the sale of forest carbon credits, but the focus of the programme was to establish village land forest reserves and empower communities to sell timber commercially on a sustainable basis [48,49].

By the end of the LIMAS project, 14 out of 24 villages completed land use plans. Mihumo/Darajani was one of the 14 villages. Only 6 out of the 14 plans that were approved by the Liwale district council, had been submitted to the National Land Use Planning Commission in order to be gazetted. Mihumo/Darajani is still waiting for its plan to be submitted. The village still does not have an approved forest management plan, which means that villagers continue to wait for their legal rights to harvest and sell timber, carbon, and other commodities commercially [49].

3. Approach and Methods

3.1. Case Study Contexts

The paper is based on data collected in two case study villages—Mihumo/Darajani (Around the Angai forest there were 13 villages in the past, but in the year 2008/2009, eight of them split into two or three villages, creating a new total of 24 villages. Mihumo/Darajani was Mihumo before, and split into Mihumo and Darajani. For reasons of simplicity, I refer to the two villages as one.) and Ruhoma—both located in the Lindi region, southeastern Tanzania. Lindi region is the fourth largest of Tanzania’s 30 regions, and covers approximately 67,000 km². Residents belong to the poorest people in the world, by most standards, and they are part of a geographical band of food insecurity in the country [50]. While livestock grazing and pastoralism is extensively practiced in other areas of Tanzania, residents in the Lindi region mainly practice crop production as their major agricultural activity, due to widespread existence of the tsetse fly (Tsetse fly are large biting flies, commonly found in East Africa, which transmit dangerous diseases, including human sleeping sickness and animal trypanosomiasis.) [51–53]. Major agricultural crops are maize, sorghum, and paddy, followed by oil seeds and oil nuts [53]. Small-scale agriculture is one of the main drivers of deforestation and associated carbon emissions in the region [54,55]. When REDD+ projects started in Tanzania,

the national deforestation rate was estimated to be significant—1.1% annually [54]. Besides using it for agricultural land, villagers derive important benefits from forests, including poles and timber for construction, mushrooms, fruits, wild meat, and honey for consumption, and firewood for cooking [55].

The first case study village is Mihumo/Darajani, which is located in the Liwale district in the Lindi region. The village was part of the AVLFR REDD+ project. In 2011, the village had more than 3000 inhabitants, and spanned across an area of 29,555 hectares. In the district are two forest reserves, one of which is Angai village land forest reserve (AVLFR), which covers a total area of 139,420 ha and is surrounded by 24 villages (previously 13 villages). The village of Mihumo/Darajani set aside 11,792 ha as forest reserve, which is equivalent to about 8.45% of the total AVLFR.

The second case study village is Ruhoma, which is situated in the Lindi rural district in the Lindi region. Ruhoma is part of the TFCG/Mjumita “Making REDD work for communities and forest conservation in Tanzania” project. Ruhoma is considerably smaller than Mihumo/Darajani, both in size and population. In 2011, it counted 475 residents, living in 169 households, in an area of 3817 hectares. Despite its smaller size, forests play an equally significant role in Ruhoma, covering a total area of 2830 hectares. About 88% of this area, which is equivalent to 2488 hectares, was set aside as forest reserve in the course of the REDD+ intervention by the two non-governmental organisations Tanzania Forest Conservation Group (TFCG) and Mjumita.

3.2. Data Sources

This paper synthesises findings from various sources of data, which were collected for my PhD study from August 2011 to July 2012 [56]. During my 11-month-long stay in Tanzania, 7 months of which I lived in the two case study villages, I employed a range of qualitative and quantitative methods, including participant observation, ethnographic interviewing, 116 recorded semi-structured interviews, 116 household surveys, one focus group discussion, and document analysis. In this paper, I predominantly reflect on the results from the qualitative research methods, in order to highlight three particularly important findings on REDD+ implementation in Tanzania. The qualitative data were collected through direct observations, informal conversations, and structured conversations in more formal interviews and focus group discussion. During my stay in the villages, I participated in the everyday life of villagers, and engaged in innumerable informal conversations with as many villagers as possible. For the 116 more formal, semi-structured recorded interviews, and for the participants of the focus group discussion in Ruhoma, I used purposive sampling to interview villagers with different characteristics and from a variety of backgrounds and positions in the village, to have a wide range of viewpoints in my analysis. I conducted 66 semi-structured interviews with stakeholders of Mihumo/Darajani village, and 50 semi-structured interviews with stakeholders in Ruhoma village. This was the maximum amount I was able to achieve in the time available. For a detailed list of all recorded interviews, see Appendix A. The majority of the data were collected in Swahili, and later translated into English for analysis.

The primary data has been complemented with an in-depth analysis of project documentation, which include project leaflets, internal reports, independent evaluation reports, and legal documents (e.g., by-laws, forest management plans, village land-use plans). An important source of more recent information on the TFCG/Mjumita project is an official final project evaluation report conducted by NIRAS for the Royal Norwegian Embassy in Dar es Salaam [44]. Similarly, a project completion report of the LIMAS project in Liwale provided updated information on the AVLFR project [49].

4. Results and Discussion: Three Major Challenges of REDD+ Implementation

From my research findings, it emerges that REDD+ projects encountered important challenges and unanticipated consequences in the two case study villages. Reflecting on my data, I identify three challenges that are particularly important to REDD+ implementation in Tanzania: the politics surrounding the establishment of community-based forest management; the mismatch between formal governance institutions and actual practices on the ground; and the fickleness of income from

carbon sales and alternative livelihood opportunities. This section discusses these three identified key challenges, with less focus on the first one, because I have dealt with it extensively elsewhere [15,46,57].

4.1. The Politics of Establishing Community-Based Forest Management

The establishment of community-based forest management in the two case study villages was technically complicated, resource intensive, and much more time-consuming than expected. Throughout the project period, villagers depended on the state and project proponents to take the process forward, requiring more resources, time, and investment than donors anticipated [15,46,57]. Structural issues regarding ownership of land and boundary demarcation became the most significant obstacles. The final review report of the LIMAS programme confirmed: *“There have been continued delays to resolve boundaries between villages, and additional land use planning and forest management planning costs. In many instances the difficulties in resolving boundary disputes has delayed the opportunity for communities to enter into PFM, and boundary uncertainty has also been a factor in illegal logging”* [49]. Although the establishment of community-based forest management was quicker in Ruhoma than in Mihumo/Darajani, the process still experienced delays due to inter- and intra-village conflicts over forest resources and village boundaries, and complex bureaucratic requirements [44,57].

The first key finding from my data questions the assumption that market-based conservation is a quick and win-win solution that benefits everyone. My data show that the establishment of community-based forest management and REDD+ is not a straightforward technical process, but requires active engagement with local politics, power struggles, and deep-seated structural challenges regarding land ownership and boundaries. This requires the availability of significant resources and capacitated actors outside the village, who could take the complex and contested decentralisation process forward. The seemingly technical activities were inherently political—they shaped who gets access to what—and required serious time and resource commitment to resolve land use conflicts. Project proponents needed access to substantial amounts of up-front capital to finance necessary activities, which the carbon market does not provide.

If followed through though, the study shows that community-based REDD+ activities can result in important positive changes, such as assisting villages to express their claims over the authority of village and forestland, helping to address boundary conflicts, organising village land use planning exercises, and establishing formal village institutions. However, it is also important to recognise that introducing formal community governance institutions shifts power away from customary arrangements with detrimental effects to some population groups in and outside the concerned villages [57]. In the Lindi region, forests were generally treated as de facto open-access and, thus, accessed freely by villagers. Residents from different villages could move between forests and access them for agriculture or other uses without major hindrances. With the introduction of REDD+ and community-based forest management, certain parts of the forests were put under formal protection, and villagers excluded from specific uses [58]. By excluding villagers from farming and logging in the forests, it was hoped that the forest carbon content would increase, and be turned into income from carbon sales. The expectation was that villagers would manage the forest reserve sustainably, i.e., follow the rules and institutions laid out in the forest management plans and by-laws. Unsurprisingly, villagers only partially adopted the new set of formal institutions, as will be described below.

4.2. The Intricacies of Practicing Community-Based Forest Management

Based on the newly established forest management plans and by-laws, a range of forest activities became prohibited, including farming in the forest, collecting fresh cut firewood, harvesting wild bee hives, trapping wildlife, herding livestock, setting fire, and producing charcoals, among others. Some activities were restricted to the availability of permits, which were given for free or after payment [15]. The VNRC became a powerful group in the village as it was tasked with the responsibility of managing and protecting the community forests from any prohibited activity. Furthermore, any income from permits, fines, and sales of forest products were to be managed transparently

and transferred to the village council. While the different responsibilities, rules, and regulations were clearly outlined in the forest management plans and by-laws, the following text will discuss how they were actually practiced by residents.

4.2.1. Practising CBFM in Mihumo/Darajani

Although the forest management plan and by-laws formally permitted various activities in the village land forest reserve, many villagers in Mihumo/Darajani generally thought of it as a closed-off area. Ethnographic interviews with residents attested that entering the reserve would lead to arrest by the village natural resource committee. Exclusion from the village land forest reserve was tolerated by villagers because of the large forest areas outside of the reserve, which they used to meet their livelihood needs. One way the VNRC used to keep villagers out of the reserve, was to conduct patrols. According to the management plan of Mihumo/Darajani, the patrol team should go every two weeks to check the forest reserve. Yet, in reality, patrols were less frequent and not carried out as planned. Village and committee members explained that organised patrols into the forest reserve had become rare, and only took place if prompted by obvious intruders in the forest.

The people of the forest committee used to go every week. But these days they don't go. They have quit going. When they went in the past, they started there, walked and slept over. Then they made a mark that they passed here. If you catch somebody then it is necessary to pay a fine. (M Interview 5).

We started the system of going into the forest. We went twice this year. Last year the secretary quit and another one joined. Since then we haven't gone to do a survey in the forest. We do patrols in the open area. When we hear that they fell trees then we go. We hear people entered, then we go (M Interview 49).

The reasons given for the lack of regular patrolling into the forest reserve related to insufficient resources to cover the incurred expenses, which can be substantial, given the size of the forest reserve and time needed to complete a patrol.

We haven't gone there again because in our cash register there is no money. Because it is far. You need to carry food and medicine. We struggle because we don't have money (M Interview 50).

But we are asking: Who will facilitate us? There is no money. If they had given us money, we would stay the whole time there. But you stay to your own loss (M Interview 29).

In informal conversations, villagers told me that, when village committee members did go on patrols, they often went in the area outside of the reserve after they had heard about tree felling from villagers. It appeared to them that, in order to save costs, the VNRC focussed on issuing permits and conducting patrols for areas outside of the reserves. This would be a clear divergence from the formal rules, as there are no provisions to carry out patrols outside of the forest reserve. The allegation that committee members especially went on patrols after they had heard about "illegal" intruders, could suggest that patrols were primarily conducted for functional reasons, namely to catch and fine people for the committee's and/or individual committee members' benefit. Yet, according to the views of some villagers, despite patrols, the illegal harvesting of timber products continued to take place, and often remained unreported and without prosecution.

Some people who fell trees in the open area don't pay tax. They log timber and sell, but they claim to fell trees for construction. In the morning we see people who buy timber and go with it. If you ask him he says ah this is just to pay my debts with him. I rent from him and now he is taking my timber (M Interview 49).

For some people who live on their farms it is easy to enter the forest, fell trees and we don't know about it (M Interview 50).

Around three people got fined. But because they are our brothers, you know. If they arrive their they say people we don't have 50,000. We did so because of poverty. So the 50,000 can be cancelled. He can pay 20,000 or 20 something. And others arrive there and say yes you caught me and my tools but I don't have anything. He can complain and maybe pays 15,000. We just put the 50,000 as a law. If somebody gets caught he pays 50,000. But nobody has ever paid 50,000. (M Interview 50).

The possibility of mismanagement and corruption was supported by the confusion that prevailed over the income and expenses from the village land forest reserve. Despite several attempts, I was not given access to records of income and expenses from the forest reserve by committee members. There was confusion over the amount of fines, stories about the handling of illegal forest users, and secrecy over the income and expenses. From interviews with village natural resource committee members, it also transpired that people had to pay different amounts of tax per plank. The tax on sawed planks seemed to be negotiated on an individual basis, where village natural resource committee members often tried to levy 500 TShs (0.3 USD) tax on each plank, in order to increase their own share of benefits.

So what happens is that the price is 250. But we from the village natural resource committee we don't have any salary. Maybe if there is somebody from there who comes here to get 10 planks for doors. If I meet him then I tell him 500 shillings. From the 500 shillings I take 250 shillings for soaps for the work I do and 250 I take to village (M Interview 54).

4.2.2. Practicing CBFM in Ruhoma

In Ruhoma, REDD+ interventions resulted in regular patrolling and more transparent forest management practices at the time of my fieldwork in 2011/2012. In conversations with ordinary villagers and village natural resource committee members, I was told that regular patrols had been conducted. In the beginning, it was done voluntarily but, once the REDD+ trial money arrived, the amount of 700,000 TShs (450 USD) was set aside to finance patrolling four times a month for a period of one year. Every week, six members of the village natural resource committee went into the forest reserve to assess the situation and check for any criminal offences. Because of the small size of the forest reserve, the patrolling took three to four hours, on average, and there were no particular challenges. At the end of the day, each member received an allowance of 2000 TShs (1.3 USD).

The money from REDD+ contributed to regular patrols, as payments were set aside for the activities of committee members. It seems that they felt less of a need to obtain money by fraud. The smaller forest size and fewer dangerous animals in Ruhoma made forest management activities much easier than in the vast dangerous landscape of Mihumo/Darajani.

In Ruhoma, permits for timber harvesting were issued for subsistence purposes only. Also, in this village, village natural resource committee members had a different understanding of the amount of money required to obtain a permit. One member explained to me that for 10,000 TShs (6.4 USD), you obtain a permit, which allows you to harvest 50 planks and 40 beams, where you pay 200 TShs (0.1 USD) tax on each plank. Another member spoke of 500 TShs tax per plank, and a third one told me that 20,000 TShs (10 USD) are required to obtain a permit for 100 planks and 300 TShs (0.2 USD) tax are levied on each plank. From the income statements that I received from the village natural resource committee secretary, I learnt that people were usually charged with 200 TShs (0.1 USD) tax per plank, but I also viewed a case where 300 TShs (0.2 USD) tax was charged. What I could not ascertain from the income records provided to me, was whether anything was charged for issuing the permits.

One issue that emerged from my conversations with villagers about the harvesting of timber related to follow-ups of permits. I was told that craftsmen could easily log more trees than they were permitted, in order to produce more planks. Village natural resource committee members seem to not rigorously follow-up on the amount of planks sawn. Craftsmen were, therefore, easily tempted to apply for small amounts of timber, and then log much more than permitted.

Also in Ruhoma, I came across cases where timber was harvested without the permission of the village natural resource committee. Obtaining a permit for a few planks to produce stools, chairs, or similar things seemed, to many, to be an unnecessary obligation. This view appears to be shared by villagers, in general, and the responsible authorities, as non-compliance to the rules does not result in penalisation.

... I for myself I haven't been ready to get permits. If I get the timber illegally [michocho] then the days continue as if nothing happened (siku zinakwenda). And if you go for permit, you are being robbed a lot (R Interview 32).

The second key finding from my data questions the assumption that formal governance institutions can be introduced relatively easily into villages to promote sustainable forest management. My data show that the formal community-based institutions, which were introduced to manage the village land forest reserve sustainably, were not entirely adopted by villagers at the local level. According to Dill, this is a lack of fit between domestic norms, which inhibit or constrain popular participation, and the imported institutional superstructure, which should facilitate it. He further argues that, by following a certain mode of institutionalisation, community-based organisations are reified and separated “in an unrealistic way from the dynamics of change in the community of which it is both part and reflection” [59]. In both case studies, project proponents displayed a rather static and homogenous notion of a “community” yet, in reality, communities are heterogeneous entities where diverse interests exist [60]. The discrepancy between formal institutions and actual practices was most striking in Mihumo/Darajani, but it was also present in the village of Ruhoma and other TFCG/Mjumita REDD+ villages. According to the final evaluation report of the REDD+ projects, there is “on-going agricultural expansion from residents within the village, encroachment from neighbouring villages, unregulated harvesting taking place between villages, clearance of forest land reserved for agriculture in the land use plan and lack of enforcement of bylaws. A weakness in local governance such as tension between the village natural resource committee and the village government in some villages has also contributed to the lack of effective enforcement” [44].

4.3. Carbon Sales and Alternative Income Opportunities

The fundamental premise of REDD+ is that the income from carbon sales incentivises villagers to protect the forests and contributes to economic development. By aiming to reward forest users with performance-based payments for the protection and enhancement of carbon, REDD+ initiatives represent a deliberate external intervention that aims to facilitate collective protection of the forest [26]. Carbon payments are the primary means of REDD+ to balance incurred livelihood losses from forest protection [61]. Like all other REDD+ pilot projects in the country, both initiatives failed to sell carbon credits in the global market. Although TFCG/Mjumita distributed trial payments to several villages including Ruhoma, the dispersed payments were only possible due to donor funding, which stopped in 2014 (A special committee was founded in Ruhoma to distribute carbon trial payments. A group of 12 people, 50% male and 50% female, were selected by sub-village chairmen and other village leaders to manage the distribution of forest-carbon payments among the villagers. Among the members are representatives from the village council, village natural resource committee, land use planning committee, and the wider village community.). The initial expectation was that, by this time, a carbon cooperative was to be established, through which income from the sale of carbon credits would be channelled directly to the communities and their village residents. The idea was that the carbon cooperative would aggregate and market the voluntary emission reductions from the various villages that take part in the TFCG/Mjumita REDD+ project. Each village resident would be a member of the cooperative, and entitled to its dividend. In addition to individual dividends, carbon sales would be used to finance community development projects and the operation costs of the cooperative [41]. Because no carbon credits had been sold by the project (at least until 2015/2016), the carbon cooperative was not in operation [37,44].

In the beginning, the project planned to reward individual villagers based on their actual performance and contribution, but this was abandoned for the trial payments, which were distributed equally among villagers. The REDD+ trial money was put to use by villagers in different ways. Most of them spent the money on food, clothes, and miscellaneous items, such as consumer goods. Food was the most popular benefit from carbon payments for villagers in Ruhoma. One explanation for this is that the trial payments were dispersed in February, which is usually a month characterised by food insecurity. The final review report of the TFCG/Mjumita REDD+ project points out that

It seems unlikely that at present levels payments were sufficient to significantly impact poverty or vulnerability levels—although the review team was able to verify the very high level of popularity of REDD+ payments across all villages visited. Although the project has made a significant achievement developing the payment system and testing the value of payments it is worth noting that the funds for this were not coming from the carbon market and that funds for future carbon payments are still not secured [44].

Because the opportunity costs for protecting the forests range from USD 10 to 20 per ton of carbon [62,63], it could just be a matter of time until villagers go back to converting the forests to agriculture. The pressure on forest protection is exacerbated by the growing demand in agricultural land and increased prices for cash crops, such as sesame and cashew nuts [36]. Besides carbon payments, project proponents promised alternative livelihoods as compensation for forest protection. All REDD+ projects in Tanzania struggled to generate alternative livelihood strategies. Efforts to introduce alternative income generating activities, such as beekeeping, conservation agriculture, butterfly farming, vegetable farming, and development of woodlots, generally struggled to deliver the expected results [36]. In the final review report of the TFCG/Mjumita REDD+ project, it is stated that

A number of concerns were expressed by the visited communities on the relevance and quality of support provided for income generation activities (IGAs) as well as on the lack of market linkages. This included technical support and advisory services on beekeeping and poultry farming which had very limited success. Poultry keeping was discontinued by the project due to its poor performance and limited links to the broader deforestation objectives. Identifying private sector or non-governmental service providers during design and engaging them to deliver these outputs could have improved performance [44].

The third key finding from my data questions the most fundamental assumption behind market-based conservation, namely, that there is a market for conservation. In the words of the final evaluation report: “the sale of carbon credits remains a “killer assumption” that underpins long-term sustainability of measures that reduce deforestation” [44]. However, in both case studies, REDD+ projects have failed to sell carbon credits via market exchanges, while relying on government funding. The case studies demonstrated that initial hopes of generating long-term income from carbon markets proved to be illusive. There is much uncertainty over the future of the projects and, indeed, villager’s willingness in performing conservation. Given the high opportunity costs of forest protection and serious extent of poverty in the villages, the likelihood that villagers go back to previous land use practices is high if the payments fail to materialise. In addition to failing to generate long-term security over performance-based payments, the projects have not succeeded in creating alternative income sources, due to long-standing structural constraints and other well-known barriers.

5. Conclusions

In this article, I synthesise findings from my research on REDD+ in Tanzania to discuss three key challenges of implementation: the politics surrounding the establishment of community-based forest management; the mismatch between formal governance institutions and actual practices on the ground; and the fickleness of income from carbon sales and alternative livelihood opportunities. I argue that these challenges are not merely teething troubles, but they question fundamental assumptions of

market-based conservation, more generally. Market-based conservation promises win–win benefits and a relatively quick fix to complex socio-environmental problems. In practice, however, it encounters resistance, politics, and deep-seated structural inequalities that are prevalent in many rural African landscapes. Market-based conservation thus appears to be, in the words of Lund et al. (2017), a conservation fad that promises change but delivers continuity. Although, this notion of fad is being criticised by others who place the responsibility for its failures on implementation shortcomings. As there is urgent need for conservation that is both environmentally and socially sustainable [64–66], what is to be done?

To attain the objective of long-term sustainable development, we need to significantly transform the political economy of nature conservation. Community-based forest management holds promise to deliver environmental and social benefits, but its establishment is complex and politically contested. It requires political and financial commitment over a long period of time, during which, considerable losses may be incurred. Markets and profit-making mechanisms are ill-suited to carry those. As Fletcher et al. (2017) suggested, we need global commitment to sustainable sources of funding without a competitive process, which can assist local communities in obtaining the rights over resources, and assists them in covering the costs of establishing and implementing community-based forest management [65].

In addition, conservation initiatives need to acknowledge the complex and contentious process of strengthening democratic governance in rural villages [67]. Promoting good leadership, accountability, participation, and equal distribution of benefits requires the building of active citizenship among rural villagers. Simply developing good governance institutions on paper, even with local participation, does little to achieve actual good governance on the ground. Conservation initiatives will have to actively fund measures that strengthen citizenship and positively impact on democratic governance, even if they take years to bear fruit.

Lastly, as suggested by Turnhout et al. (2013), conservation initiatives should go beyond the techno-managerial and economic-centric focus of payments for ecosystem services, and learn about the variety and multiple ways of shaping society–nature relations, which have existed for millennia, and involved many different reasons for engaging with nature. We need to avoid singular measures to represent the myriad relationships with nature, and commit to inclusive processes of knowledge creation, to include alternative voices and perspectives [68]. Aside from appreciating the diversity of possible human–environment interactions, we need to build on existing alternative practices and examine how they can be replicated across diverse contexts.

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Appendix A. List of Recorded Interviews

Interviews recorded in Mihumo/Darajani

No.	Type of Interviewee	Sex	Place	Date
M 1	Researcher	M	Liwale	17.08.2011
M 2	Researcher	F	Dar es Salaam	21.08.2011
M 3	Livestock owner	M	Darajani	19.12.2011
M 4	Village leader	M	Darajani	19.12.2011
M 5	Young villager	M	Darajani	19.12.2011
M 6	Sub-village Chairman	M	Darajani	24.12.2011
M 7	Elder	M	Darajani	26.12.2011
M 8	Elder	M	Darajani	29.12.2011
M 9	Sub-village Chairman	M	Darajani	30.12.2011
M 10	Sub-village Chairman	M	Darajani	30.12.2011
M 11	Sub-village Chairman	M	Darajani	31.12.2011
M 12	Vicoba	M	Mihumo	02.01.2012
M 13	Elder	M	Mihumo	02.01.2012
M 14	VNRC	M	Darajani	04.01.2012
M 15	Village outsider	M	Mihumo	12.01.2012
M 16	VNRC	M	Darajani	14.01.2012
M 17	CA (CA refers to Conservation Agriculture group)	M	Darajani	19.01.2012
M 18	Young villager	M	Darajani	26.01.2012
M 19	Elder	F	Darajani	26.01.2012
M 20	Sub-village Chairman	M	Mihumo	27.01.2012
M 21	Young villagers		Mihumo	23.03.2012
M 22	Female farmer	F	Mihumo	23.03.2012
M 23	Male farmer	M	Mihumo	23.03.2012
M 24	Single mother	F	Mihumo	24.03.2012
M 25	CA Darajani	M	Darajani	24.03.2012
M 26	CA Mihumo	F	Mihumo	26.03.2012
M 27	CA Darajani	M	Mihumo	27.03.2012
M 28	CA Mihumo & REDD	F	Mihumo	27.03.2012
M 29	REDD	M	Mihumo	28.03.2012
M 30	Sub-village Chairman	M	Mihumo	28.03.2012
M 31	CA Mihumo	F	Mihumo	04.04.2012
M 32	CA Mihumo	F	Mihumo	04.04.2012
M 33	CA Mihumo	F	Mihumo	05.04.2012
M 34	CA Mihumo	F	Mihumo	07.04.2012
M 35	CA Mihumo	M	Mihumo	09.04.2012
M 36	CA Mihumo	F	Mihumo	09.04.2012
M 37	Elder	M	Mihumo	10.04.2012
M 38	CA Darajani	F	Darajani	10.04.2012
M 39	CA Darajani	M	Darajani	10.04.2012
M 40	CA Darajani	F	Darajani	11.04.2012
M 41	CA Darajani	M	Mihumo	12.04.2012
M 42	CA Darajani	F	Darajani	12.04.2012
M 43	CA Darajani	M	Darajani	13.04.2012
M 44	CA Darajani	F	Mihumo	13.04.2012
M 45	REDD	F	Darajani	21.04.2012
M 46	Village council	M	Mihumo	22.04.2012
M 47	REDD	M	Darajani	22.04.2012
M 48	Elder	M	Mihumo	23.04.2012
M 49	VNRC	M	Mihumo	24.04.2012
M 50	VNRC	F	Mihumo	25.04.2012
M 51	VNRC	F	Mihumo	25.04.2012
M 52	Health/Dispensary	M	Mihumo	26.04.2012

No.	Type of Interviewee	Sex	Place	Date
M 53	VNRC	F	Darajani	26.04.2012
M 54	VNRC	M	Darajani	26.04.2012
M 55	VNRC	F	Darajani	26.04.2012
M 56	VNRC	F	Mihumo	27.04.2012
M 57	VNRC	F	Mihumo	27.04.2012
M 58	Teacher	M	Mihumo	11.07.2012
M 59	Sub-village Chairman	M	Mihumo	11.07.2012
M 60	District	M	Liwale	16.07.2012
M 61	District	M	Liwale	16.07.2012
M 62	Ward	M	Liwale	16.07.2012
M 63	Village council	M	Mihumo	20.07.2012
M 64	VNRC	M	Mihumo	20.07.2012
M 65	Village council	M	Darajani	20.07.2012
M 66	Village council	M	Mihumo	21.07.2012

Interviews recorded in Ruhoma

No.	Type of Interviewee	Sex	Place	Date
R 1	VNRC	F	Ruhoma	09.03.2012
R 2	VNRC	M	Ruhoma	09.03.2012
R 3	VNRC	M	Ruhoma	09.03.2012
R 4	VNRC	F	Ruhoma	10.03.2012
R 5	CA	F	Ruhoma	10.03.2012
R 6	CA	M	Ruhoma	11.03.2012
R 7	Village outsider	M	Ruhoma	11.03.2012
R 8	REDD	F	Ruhoma	11.03.2012
R 9	Elder	M	Ruhoma	12.03.2012
R 10	LUP	M	Ruhoma	08.05.2012
R 11	LUP	M	Ruhoma	09.05.2012
R 12	LUP	F	Ruhoma	09.05.2012
R 13	Village leader	M	Ruhoma	10.05.2012
R 14	CA	F	Ruhoma	11.05.2012
R 15	Ordinary villagers	F	Ruhoma	11.05.2012
R 16	Village outsider	M	Ruhoma	12.05.2012
R 17	CA	M	Ruhoma	13.05.2012
R 18	LUP	F	Ruhoma	14.05.2012
R 19	LUP	F	Ruhoma	14.05.2012
R 20	Committees	F	Ruhoma	15.05.2012
R 21	Committees	M	Ruhoma	15.05.2012
R 22	Ordinary villagers	M	Ruhoma	16.05.2012
R 23	Ordinary villagers	M	Ruhoma	16.05.2012
R 24	CA	F	Ruhoma	16.05.2012
R 25	LUP	M	Ruhoma	17.05.2012
R 26	CA	F	Ruhoma	17.05.2012
R 27	Teacher	F	Ruhoma	20.05.2012
R 28	Village leader	M	Ruhoma	20.05.2012
R 29	Project staff	M	Ruhoma	21.05.2012
R 30	Ordinary villagers	M	Ruhoma	02.06.2012
R 31	CA	M	Ruhoma	02.06.2012
R 32	Ordinary villagers	M	Ruhoma	02.06.2012
R 33	Ordinary villagers	M	Ruhoma	03.06.2012
R 34	REDD	F	Ruhoma	04.06.2012

No.	Type of Interviewee	Sex	Place	Date
R 35	Teacher	M	Ruhoma	04.06.2012
R 36	Ordinary villagers		Ruhoma	06.06.2012
R 37	Ordinary villagers	M	Ruhoma	06.06.2012
R 38	Ordinary villagers	M	Ruhoma	06.06.2012
R 39	District	M	Lindi	13.06.2012
R 40	District	M	Lindi	13.06.2012
R 41	District	M	Lindi	14.06.2012
R 42	District	M	Lindi	14.06.2012
R 43	Project staff	M	Lindi	14.06.2012
R 44	Ordinary villagers	F	Ruhoma	20.06.2012
R 45	Ordinary villagers	F	Ruhoma	20.06.2012
R 46	Ordinary villagers	F	Ruhoma	20.06.2012
R 47	Elder	M	Ruhoma	21.06.2012
R 48	Project staff	M	Kinyope	22.06.2012
R 49	Ward	M	Rutamba	22.06.2012
R 50	Ward	M	Lindi	22.06.2012
R 51	Focus Group Discussion		Ruhoma	26.06.2012

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