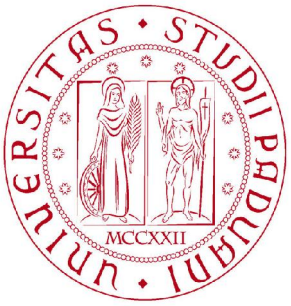

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Benefit Sharing and Governance issues in Participatory Forest Management related to REDD: A Case Study of the Angai Villages Land Forest Reserve, Liwale District - Tanzania

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Abbreviations and acronyms

AVLFR	Angai Villages Land Forest Reserve
CBFM	Community Based Forest Management
CCI	Clinton Climate Initiative
CDM	Clean Development Mechanism
CO_2	Carbon Dioxide
COP	Conference of Parties
DFO	District Forest Officer
DNRO	District Natural Resource Office
FAO	Food and Agriculture Organisation
FSC	Forest Stewardship Council
GHG	Green House Gas
IPCC	Intergovernmental Panel on Climate Change
JFM	Joint Forest Management
LIMAS	Lindi and Mtwara Agribusiness Support programme
MoU	Memorandum of Understanding
MUHIMA	*Muungano wa Hifadhi ya Msitu wa Angai* (Union of Angai forest Reserve)
MJUMITA	*Mtandao Wa Jamii Wa Usimamizi Wa Misitu Tanzania* (Tanzanian Community Forestry Network)
NTFP	Non Timber Forest Product
PES	Payment for Environmental services
PFM	Participatory Forest Management
PRA	Participatory Rural Appraisal
REDD	Reduced Emissions from Deforestation and forest Degradation
REDD-plus	Reduced emissions from Deforestation and forest Degradation, and the role of Conservation, Sustainable Management of Forests and Enhancement of forest carbon stocks in developing countries
RIPS	Rural Integrated Project Support
SWOT	Strengths Weaknesses Opportunities Threats
UNFCCC	United Nations Framework Convention on Climate Change
URT	United Republic of Tanzania
VEO	Village Executive Officer
VNRC	Village Natural Resource Committee

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Summary

The current debate on climate change, especially with respect to the role of REDD-plus and the push for the recognition of participatory forest management as a carbon mitigation option represents unprecedented opportunities for forest communities to receive benefits from carbon sequestration activities. However, REDD-plus could generate potential social and environmental cost with some related risks if benefit sharing and governance issues are not well addressed from the very beginning. This study explores these issues in the context of a PFM site that is being prepared to participate in the REDD-plus mechanism. This study met these objectives through an extensive review of relevant literature and the implementation of practical research. The later was carried out through a case study of the Angai Villages Land Forest Reserve (AVLFR) in Liwale, Tanzania using semi structured interviews and a wide range of participatory rural appraisal methods. The findings of this study show that there is a strong commitment by the villages to manage the forest reserve as one entity for the benefit of their community. Despite the fact that there are no tangible cash benefits from the reserve at moment, all is being done to create the necessary structures that would guarantee equitable benefit sharing through a strong inter village union called MUHIMA. Furthermore, there is a good dose of local democracy with local leaders held accountable by their subjects. The resource itself is in a fairly good state and under current PFM arrangements; the villages are entitled to 100% benefits. With respect to REDD-plus benefits, the expectations are high within the villages despite the fact that they barely understand what the benefits would be. The overall benefit sharing arrangements between PFM communities and the central government regarding REDD-plus is still under discussions.

Keywords: *Benefit sharing, Governance, Participatory Forest Management, REDD-plus, AVLFR*

CHAPTER ONE

INTRODUCTION

1.1. Background

In recent years, evidence of anthropogenic warming of the climate system as a consequence of greenhouse gas (GHG)[1] emissions including CO_2 (Carbon dioxide) into the Earth's atmosphere is unequivocal (IPPC 2007a). Climate change is now considered as one of the most serious threats to sustainable development, as its impacts would adversely affect human health, economic activities, physical infrastructure, food security, natural resources and biodiversity. The expected dramatic increase of the planet temperature from 4˚C to 7°C in the next 50 years (IPCC 2007b) will cause catastrophic social and environmental consequences. Experts have identified and estimated that 75-80% of GHG emissions come from industrial sources especially from the burning of fossil fuels, while the remaining 20-25% has been linked to deforestation and forest degradation of the tropical forest (Watson et al. 2000; IPCC 2001; Baumert et al. 2005; UNFCCC 2007; Engel and Palmer 2008; CCBA 2008). There is thus the need for mitigation and adaptation, with a growing international consensus for action (Guarigata et al. 2007; Seppälä et al. 2009).

Under the aegis of the United Nations, negotiations have been ongoing for more than a decade now to define a universal climate regime within the framework of the United Nations Framework Convention on Climate Change (UNFCCC)[2]. A number of emissions reduction mechanisms have been proposed to help countries meet their commitments within the Convention. However, it was only in 1997 at the Conference of Parties (CoP) 3 of the UNFCCC held in Kyoto – Japan that binding commitments did prevail through the Kyoto Protocol (KP)[3]. Under the KP, mechanisms such as the Emission Trading Schemes (ETS), the Clean Development Mechanism (CDM) and the

[1] GreenHouse Gases (GHGs) are natural and industrial gases that trap heat from the Earth and warm the surface. The Kyoto Protocol restricts emissions of six greenhouse gases: natural (carbon dioxide, nitrous oxide, and methane) and industrial (perfluorocarbons, hydrofluorocarbons, and sulphur hexafluoride).

[2] The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty produced at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992. The objective of the treaty is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. www.unfccc.int

[3]The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. KP now covers 189 countries globally, but less than 64% in terms of GHG emissions. As of November 2009, the United States is the only signatory nation that has not ratified the Protocol.

Joint Implementation (JI) were proposed in which developed countries referred to as Annex 1 countries are required to reduce their GHG emissions by an average of 5.2% on the 1990 levels for the first commitment period of 2008-2012. It is worth noting that of these three mechanisms only the CDM is relevant to developing countries. Another important outcome associated with the KP is the recognition of Land Use, Land-Use Change and Forestry (LULUCF) activities by the Parties as part of their efforts to implement the protocol. The eligible LULUCF activities under the CDM were limited to *Afforestation* and *Reforestation* (A/R) projects. These activities are believed to result in new, additional sink through sequestration in areas where there has been no forest in living memory.

At the UNFCCC CoP 13 held in Bali – Indonesia in 2007, countries agreed to create a mechanism for Reducing Emissions from Deforestation and Degradation (REDD) as a potential component of a post-2012 climate change regime (UNFCCC 2007). The REDD mechanism then developed very quickly with spreading recognition that deforestation and forest degradation account for a significant percentage of GHG emissions globally, and that reductions needed to avoid the consequences of climate change are so large that they will not be achieved without reducing forest loss and degradation (Watson et al. 2000; IPCC 2001; Murdiyarso and Skutsch 2006). In December 2009, at the UNFCCC CoP 15 held in Copenhagen - Denmark, REDD-plus was debated and progress was made towards its inclusion as a climate change mitigation option (UNFCCC 2009; UN-REDD Newsletter 2010). In the meantime, there are currently several REDD projects being implemented in many tropical countries all over the world with a majority in Latin America. About 17 projects are already operational and some 5 at initial stages (examples include Noel Kempff – Bolivia, Transamazonia – Brazil, Maya Biosphere – Guatemala, Sociobosque – Ecuador). Some of these projects are already generating carbon credits for sale in the voluntary market while others are carried out as pilot projects to test the effectiveness of the mechanism (Brown et al. 1999; Murdiyarso and Skutsch 2006; Rafli et al. 2007; Juma 2008; Cenamo et al. 2009; Johns and Johnson 2009).

1.2. Forest and Climate change

The relationship between forest in general and tropical forest in particular and global climate change have received considerable scientific and political attention lately (Shukla et al. 1990; IPCC 1996). According to the Global Forest Resource Assessment (FAO FRA 2006), forest covers one third of the total earth's land surface (4 billion hectares), of which around half of the four billion

hectares of forest is found in the tropics and subtropics. Forest plays an important role in reducing the concentration of CO_2 through the ability of trees and soil to capture and lock up atmospheric carbon in a process called carbon sequestration. The absorb CO_2 is converted to carbon and stored in the wood biomass of the tree. Forests account for almost one-half of the global terrestrial carbon pool or reservoir. Afforestation, reforestation and restoration increase forest carbon stock by sequestering and storing carbon from the atmosphere as new forest grow. Natural standing forests maintain forest carbon stocks and transfers and act as carbon sinks under current climate (Eliasch 2008). Tropical forests are known to have high carbon stocks perhaps as much as 50 percent more carbon per hectare than forest in other regions (Houghton 2005). Land-use, land-use change and forestry activities have been singled out as major sources of carbon emissions and an active contributor of global warming. The Intergovernmental Panel on Climate change (IPCC)[4] estimates that about 1.6 billion tons of carbon is released annually due to land-use change of which the major part is traced from tropical deforestation. Annual CO_2 emissions from deforestation in tropical and subtropical countries accounts for up to a fifth of global emissions, the second largest source of all GHG emissions (Baumert et al. 2005). Emissions from deforestation and forest degradation takes place when carbon stocks deplete and is released into the atmosphere through change in forest and other wood biomass, forest and grassland conversion, abandonment of managed lands as well as forest fires (Engel and Palmer 2008). Annually, between 1.6 -2.4 pentagrams of carbon are released into the atmosphere from tropical forest clearing (Watson et al. 2000).

The main causes of deforestation[5] and forest degradation[6] can be categorized into direct or proximate causes and underlying causes (Kaimowitz and Angelsen 1998; Geist and Lambin 2002); and intra and extra sectoral factors (Contreras-Hermosilla 2000). Direct causes include agricultural expansion, wood extraction, and infrastructure extension. Underlying causes include macro-economic factors (such as market demand, currency devaluation, trade policies, fuel and transport subsidies), governance factors (forest tenure and institutions, inappropriate forest law and weak law

[4]The IPCC was created in 1988. It is open to all members of the United Nations and world meteorological organization. The role of the IPCC is to assess on a comprehensive, objective, open, and transparent basis the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential effects, and options for adaptation and mitigation

[5]According to the FAO, deforestation is the conversion of forest to another land use or the long term reduction of the tree canopy cover below the minimum 10% threshold.

[6]Degradation generally refers to changes within the forest which negatively affects the structure or function of the forest stand or site, and thereby lower the capacity of the forest to supply products or services.

enforcement), and other factors (cultural, demographic and technological). Most causes do not operate within the forestry sector itself, but originate predominantly in relation to agriculture (for food, fibre or energy), or through infrastructure development, industrial fibre demands. Activities outside the forest sector usually contribute much more to deforestation than timber extraction does. Deforestation and degradation thus usually result from a combination of these factors and the different causes of deforestation interact in complex and variable ways (Kanninen et al. 2007). The figure below depicts this complex and variable interactions.

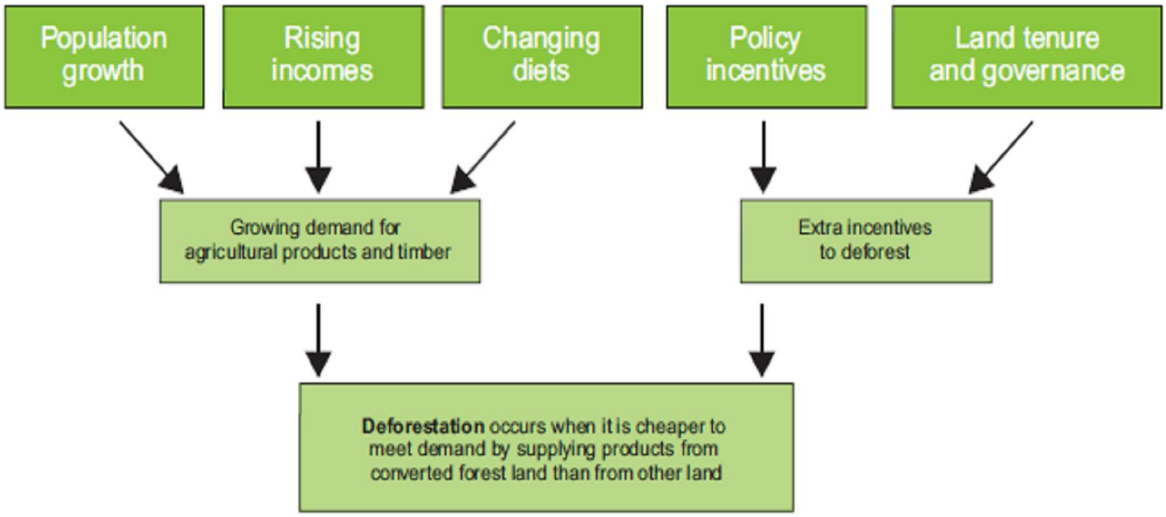

Fig. 1: Underlying drivers of deforestation

Source: Eliasch 2008

The response to the problems of deforestation and forest degradation in many developing countries in the tropics has been the devolution of forest areas to local communities. Devolution is seen as a cheap and efficient way of forest conservation. Different forms of devolution are currently in practice and vary from country to country. In Tanzania for example, the devolution of forest areas to local communities takes the form of Participatory Forest Management (PFM).

1.3. Problem statement

The current discussions on climate change, especially with respect to the role of REDD projects and the formalization of REDD-plus[7] as a climate change mitigating measure, and the agreement to

[7]The term 'REDD-plus' is used when referring to the full range of various possible forestry carbon-related activities listed in the Bali Action Plan (Decision 1/CP.13), such as forest conservation, sustainable management of forests, and enhancement of forest carbon stocks. In this study REDD and REDD-plus are used interchangeably.

provide positive incentives to support REDD-plus presents enormous potential benefits for forest communities. It also presents unprecedented potentials for raising incomes, land rights securing and social development. On the other hand, as a consequence of the increasing pressures on and value of forest lands connected with the creation and commercialisation of carbon credits, REDD-plus projects are expected to generate also potential social and environmental cost with related unprecedented risks of conflict between stakeholder groups and interests if benefits and cost sharing as well as governance issues are not properly and well addressed from the very beginning.
However, the identification and prioritization of all these benefits, which can be expected as environmental, economic and social benefits, the cost (real and potential) and the risks are still premature. As Angai[8] Village Land Forest Reserve (AVLFR) prepared to embrace the REDD-plus mechanism, expectations are high on the benefits such a mechanism will provide as an added value to PFM in improving local livelihoods. This is so because the local communities have been patiently waiting to reap the expected benefits from PFM activities which have long overdue (Sundström and Mustalahti 2010).

Our understanding of and knowledge about the dimension and contents of these benefits, costs and risks, how they should be properly assessed and who are the stakeholders and actors in PFM is still fragmented and incomplete. Also possible equitable benefits and costs sharing mechanisms based on 'good governance' principles to be adopted in REDD projects implementation are still highly varying with no one guideline commonly accepted and a proliferation of models/standards with very few common elements based on few ongoing selected REDD projects.

AVLFR was chosen for this study because some of the Angai villages (Mihumo, Ngunja and Ngogowele) have received training on participatory carbon monitoring as part of an ongoing participatory action research project entitled *"The role of Participatory Forest Management in Mitigation of and Adaptation to Climate Change: Opportunities and Constrains"*[9]. The aims of the project are to analyse how the communities could benefit from improved forest management through international funding for REDD, and to contribute to the empirical and theoretical debates

[8]The name ´Angai` means poisonous roots. It serves as food during periods of food shortages.

[9] This Action Research project in AVLFR is promoted by Dr. Irmeli Mustalahti of the Institute of Development Studies, University of Helsinki, Finland. The project started in 2009 and is expected to end in 2012. For more information on the project, visit https://blogs.helsinki.fi/tzredd-actionresearch/

on local people's participation in the reduction of carbon emissions by improved forest management and avoided deforestation. The project also aimed at providing an understanding of livelihood diversification strategies related to forest management and adaptation to climate change. The project is undertaken in close co-operation with research partners from the University of Sokoine, Tanzania and researchers from Institute of Development Studies at University of Helsinki (Finland), Danish Centre for Forest, Landscape and Planning at University of Copenhagen (Denmark), the Centre for Climate Change Economics from University of Leeds (United Kingdom) and the Clinton Climate Initiative of the Clinton Foundation (Tanzania). The present study was carried out within the framework of the above mentioned project description.

1.4. Objectives and research questions

The main objectives of this study are to explore benefit/cost sharing and governance issues related to implementation of PFM as well as REDD-plus activities using two villages that make up AVLFR as case study. In exploring these issues, attention is focused on how these benefits/ costs would be shared among the different stakeholders involved. Governance issues are analysed with a focus on attributes of good governance.

To meet the above mentioned objectives, the study addressed the following specific research questions:

1. Who will benefit or is expected to benefit from PFM and possible REDD-plus payment in the future?

2. What are the expected benefits and costs and possible risks from PFM and carbon monitoring activities and how would they be shared?

3. What are the key-aspects to be considered in formulating proper benefit sharing mechanism? (e.g. who are the actors, what are their expectations, how are they currently organized – i.e. community-based forest management system, decision making process which kind of contractual agreements are needed between different actor in e.g. community level, district and national authorities in case of carbon monitoring activities and possible REDD payments in future? What could be the effective and efficient benefit sharing

mechanisms/arrangements for adopting the principles of good governance in the REDD project implementation?

1.5. Outline of the thesis

This thesis consists of seven chapters and is structured as follows:

Chapter1: Introduction contains background information on climate change and the development of climate change mitigation options within the UNFCCC; the links between forest and climate change; the problem statement; the objectives and research questions, and the outline of the thesis.

Chapter 2: Conceptual framework introduces and discusses the key concepts used in the thesis. This include Community based forest management, the origin and evolution of the REDD mechanism, the current state of REDD negotiations, the links between CBFM and REDD, REDD and forest governance and the rational for benefit sharing.

Chapter 3: The context and case study presents a detail description of PFM and REDD activities in Tanzania. A detailed description of the case study area in further presented.

Chapter 4: This chapter discusses the research approach, the research strategy, a detailed description of data collection methods and the framework for data analysis.

Chapter 5: Findings and discussions introduces the case study villages with a socio-economic description, a look at the stakeholders/actors involved with AVLFR an analysis of benefits (current and expected), cost and risks associated with PFM and REDD is presented. The chapter further discuses benefit sharing in the context of AVLFR by use of a well developed framework. The chapter ends with a look at governance and governance challenges with a particular attention on elements of good governance.

Chapter 6: This chapter focuses on the limitations of the study.

Chapter 7: The final chapter presents the conclusions and recommendations of the study.

CHAPTER TWO

CONCEPTUAL FRAMEWORK

Much of the current discussions on the formulation and agreement of a global climate regime, centers on the role of forest in climate change most especially forest in developing countries. With local communities managing an important proportion of forest in many developing countries, it is worthwhile to begin these analyses by presenting the key concepts used in this study. In this regard, the following concepts are discussed: Community-based forest management, the REDD mechanism, the current state of REDD negotiation at the international level, improved forest management in the context of REDD, the links between CBFM and REDD , the issue of governance with respect to REDD and finally the rational for benefit sharing.

2.1. Community-based forest management

Community-based forest management (CBFM) has been on a rise in recent years in many developing countries as a policy option to combat deforestation. Since the publication of the Brundtland Report in 1987 and the Rio Earth's Conference in 1992, CBFM, have been promoted not only as a way of improving local livelihoods and of recognizing local claims to rights over forest resources, but also as part of a worldwide move toward the devolution or decentralization of governance of forest resources. It is broadly recognized that without local people having a significant stake in the management of local forest resources, the efforts of the forest departments in protecting forest will often be ineffective (FAO 1992). The main drivers of CBFM are the continued loss of forest and the added pressure for action exerted through global environmentalism launched with the Rio Declaration of 1992 (Wily 2002). According to White and Martin (2002), 22% of forests in tropical countries are managed by communities and there are predictions that it would be the dominant forest management regime in developing countries in the future (Smith and Scherr 2002). Recent figures estimates that worldwide, there are at least 350M hectares of forestland owned by communities and indigenous groups (Sunderlin et al. 2008). As reported by Maraseni et al. (2005) CBFM is known by different names around the world such as *Community Forests* (Nepal, Mexico, Thailand, The Gambia, Cameroon), *Village Forests* (Malawi, Mali, Benin), *Social Forestry* (Philippines, India), *Participatory Forest Management* (Tanzania), *Joint Forest Management* (India). The definition and purpose of the concept varies between countries

but they all share similar characteristics in terms of (i) local community based management of the forest resources, (ii) decentralization of power to the people, (iii) defined property right and inclusion of and usage of traditional values and (iv) ecological knowledge in resource management (Kellert et al. 2000). The viability of each management approach depends on the characteristics of the resource systems and their contexts; formal property rights arrangements, informal practices of use and governance, and the relations of power and inequality. CBFM contribute substantially to the livelihoods of millions of rural people in the developing world. It is estimated that forest provides substantial livelihood benefits to more than half a billion people, of which many of them are very poor (World Bank 2004).

The change in foresters' attitudes towards local communities and their role in forests experienced nowadays is said to have began in 1978 when the theme of the Eight World Forestry Congress was 'Trees for People'. From this moment, a number of programmes have been created to encompass these new thinking of social forestry, agroforestry, community forestry, participatory forest management (Colchester et al. 2003; Colfer 2005; cited in Murray 2009). Recent scholarships on CBFM championed by Elinor Ostrom[10] have shown that communities can manage forests sustainably in different contexts where forest policies at macro levels enable local governance efforts. This is in sharp contrast to earlier studies that suggested that CBFM leads to degradation and the tragedy of the commons (Hardin 1968; 1998).

2.2. The REDD mechanism: Origin, evolution and role in global climate change mitigation

The global causes and consequences of climate change imply the need for international collective action for an efficient, effective and equitable policy response. The first attempt of placing a price on the social cost of emissions by stabilising the amount of GHG in the atmosphere was seen in the UNFCCC's Kyoto Protocol mechanisms (Engel and Palmer 2008). The CDM allows entities in non Annex 1 countries[11] to develop offsets projects leading to verified emissions emitted from Annex 1

[10]Co-winner of 2009 Nobel Memorial Prize in Economic Sciences "for her analysis of economic governance, especially the commons" with Oliver E. Williamson.

[11]Under the UNFCCC nations fall into two categories: developed countries (Annex I countries) and developing countries (non-Annex I countries). In accordance with the principle of 'common but differentiated responsibilities', Annex I countries have greater commitments to enacting policy and reporting than non-Annex I countries have, and most have committed to reduce emissions under the Kyoto Protocol.

countries. The certified emission reductions (CERs)[12] generated are then transferred to Annex 1 countries at a price fixed by the carbon markets. Reducing GHG emission requires both adaptation and mitigation measures such as carbon storage and capture and reducing deforestation. None of these measures on its own can achieve the UNFCCC's goal (Pascala and Socolow 2004; cited in Engel and Palmer 2008). However, it was thought that conserving forest carbon could likely be an important part in the climate change solution if it proves to be cost effective compared to other mitigation options. Thus during the negotiations that led to the Kyoto Protocol, a range of options for increasing carbon stock and removing carbon from the atmosphere including reducing emissions from deforestation (RED) was discussed but RED was finally excluded from CDM.

The issue was reintroduced in 2005 at the CoP 11 in Montreal-Canada, when Papua New Guinea and Costa Rica submitted the first official proposal for reduced emission from deforestation in developing countries. The proposal read as follows:

> *Papua New Guinea and Costa Rica, on behalf of many supportive nations, call upon the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol (KP) to take note of present rates of deforestation within developing nations, acknowledge the resulting carbon emissions, and consequently open dialogue to develop scientific, technical, policy and capacity responses to address such emissions resulting from tropical deforestation* (UNFCCC 2005).

From this moment, several steps have been taken towards a full- fledged climate policy mechanism that include and addresses the loss of global forest carbon stocks and sinks. In 2007 at the COP 13 held in Bali- Indonesia, the Subsidiary Body for Scientific and Technological Advice (SBSTA) mandated to conduct research on the feasibility of the inclusion of REDD as a viable climate change mitigation option, reported that REDD had the potential to be included as a climate change mitigation. The conference adopted the decision 1/CP.13: Bali Action Plan, and decision 2/CP.13: Reducing emissions from deforestation in developing countries: approaches to stimulate action

> *'The Conference of the parties [...] decides to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through long term co-operative action, now, up to and beyond 2012 [....] by addressing inter alia: Policy approaches and positive incentives on issues relating to*

[12] A CER is a unit of Greenhouse gas reduction that has been generated and certified under the provisions of Article 12 of the Kyoto Protocol which describes the CDM

> *reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries'*(UNFCCC 2007).

This decision placed REDD-plus on the agenda for a post-2012 climate agreement. The UNFCCC CoP 15 in Copenhagen reiterated this commitment and stresses the importance of providing financial incentives to developing countries to curb deforestation and degradation.

> *"We recognize the crucial role of reducing emission from deforestation and forest degradation and the need to enhance removals of greenhouse gas emission by forests and agree on the need to provide positive incentives to such actions through the immediate establishment of a mechanism including REDD-plus, to enable the mobilization of financial resources from developed countries"* (UNFCCC 2009).

REDD is a mechanism whereby countries are compensated for preventing deforestation and degradation that would otherwise occur (Chomitz et al. 2006). The concept is led by a coalition of forest-rich developing countries which propose that financial incentives be provided to assist developing countries to voluntarily reduce emissions by slowing down the rate at which primary and production forests undergo deforestation and degradation. This is because available evidence shows that the potential carbon savings from slowing tropical deforestation could contribute substantially to overall emissions reductions. There are also possible co-benefits from the realization of natural forest carbon values including other forest environmental values such as biodiversity (Engel and Palmer 2008). The mechanism will directly affect 1 to 1.6 billion people who depend on forests and who are among the worlds' poorest (Wollenberg and Springate-Baginski 2009).

REDD plays an important role in global climate change mitigation and is now considered as part of portfolio of mitigation options alongside agreement containing stringent curbs in global GHG emissions. The reasons behind this inclusion are (i) REDD is considered a low-cost mitigation option and can provide the necessary incentives to bring more emitters into a collective post-2012 climate agreement. Given its relative cost effectiveness compared to other mitigation options, including REDD in a global strategy to combat climate change increases the likelihood of both getting industrialised countries and developing countries on board; (ii) REDD credits can contribute most in a climate change mitigation scenario of high stringency, in the event of considerable global

warming which could trigger a chain of reaction of forest die-off and carbon released (Chomitz et al. 2006; Nepstad et al. 2008 cited in Engel and Palmer 2008; Michaelowa and Dutschke 2009).

However the REDD mechanism just like other forestry mechanisms such as timber certifications, payment for environmental services (PES) posed enormous challenges. For the REDD mechanism to be effective, emissions reductions must be additional[13], that is, emissions reference levels must not be set above the business-as-usual scenario. Further, the emission reductions must be permanent[14]. Assigning liability in the case of non-permanence is necessary if REDD credits are to be made fungible (interchangeable) with carbon credits from other sectors. There is equally the challenge of leakage[15] and that of a crediting baseline or reference levels[16] (Angelsen 2008). Concerns have also been expressed by environmental NGOs such as Greenpeace that the inclusion of forest conservation in a market-based mechanism for reducing greenhouse gas emissions would crash carbon prices by swamping the market with cheap credits, thereby derailing the global effort to tackle climate change[17].

Despite these challenges, there are few REDD projects already running either as projects already generating carbon credits or as pilot projects to test the mechanism readiness. Most of the successful REDD projects launched so far entails full protection of forest either through the creation of a national park, a reserve or protection area. Examples include the Noel Kempff Climate Action Project in Bolivia, the Ulu Masen Ecosystem REDD project in Aceh Indonesia, the Juma Sustainable Development Reserve project in Brazil and the Bio Bravo Climate Action Project in Beliz (Brown et al. 1999; Murdiyarso and Skutsch 2006; Rafli et al. 2007; Juma 2008; Johns and Johnson 2009). Others are based on changes to forest management, such as for example Belgica

[13]Additionality is the requirement that an activity or project should generate benefits, such as emissions reductions or carbon stock enhancements that are additional to what would have happen without the activity (i.e., the business as usual scenario).

[14]Permanence refers to the duration and irreversibility of a reduction in GHG emissions.

[15]In the context of climate change, carbon leakage (also emissions displacement) happens when interventions to reduce emissions in one area leads to increase in emissions in another area.

[16]A crediting baseline or reference level is a benchmark below which emissions must fall before a country or project is rewarded for reductions, e.g., before it can sell REDD-plus credits.

[17] http://news.mongabay.com/2009/0330-greenpeace_redd.html.

REDD project and the Maderacre and Maderiyja Madre de Dios Amazon REDD project in Peru (Brotto 2009; Murray 2009).

2.2.1. The current state of REDD negotiation[18]

Since its initiation at COP 11 in Montreal in 2005 and its formalization in 2007 and 2009 with the Bali Action Plan and the Copenhagen Accord, negotiations are still ongoing between the CoP members to define and shape the modalities of the mechanism. The following five key areas are currently under discussions: (i) scope and scale of REDD; (ii) financing and benefits distribution; (iii) monitoring, reporting and verification (MRV); (iv) stakeholder involvement and (vi) environmental and social co-benefits. Consensuses have been reached in a number of issues within these key areas but there are still many unresolved issues.

With respect to scope and scale, there is a general consensus that REDD/REDD-plus activities could form an important part of mitigation efforts of developing countries. There is also a general agreement that the implementation of these activities should generate co-benefits or sustainable development benefits in host countries. There is also agreement that REDD activities should be based on measurable and verifiable emissions reduction as well as an agreement that REDD should be implemented at the national level rather than at subnational levels. However, consensus has not yet been reached on whether there should be a primary set of measures for deforestation/degradation, and a secondary set for other forest-based mitigation options. The Bali Action Plan talks of actions that promote the 'enhancement of forest carbon stocks' without a clear definition of these actions. There are also unresolved issues relating to the definitions of forest degradation, forest conservation, sustainable forest management and enhancement of carbon stocks.

Within in the areas of financing and distribution of benefits, there is agreement that an effective financial framework is needed for the provision of financial resources and investment to support enhanced action on mitigation, adaptation and technology cooperation. There is agreement that financial resources should be new, additional, adequate, predictable and sustainable and that the generation of these resources should be based on the principles of equity, common but differentiated responsibilities and respective capabilities. However, there is a range of views on the roles of the public and private sectors in generating financial resources to support enhanced action.

[18] This is based on a background document prepared by CIFOR for the UN-REDD sponsored support to regional groups. http://www.un-redd.org/Publications/tabid/587/Default.aspx

There are also differences in ideas and proposals for approaches to the generation of financial resources that include policy approaches, positive incentives, non market approaches as well as a combination of both market and non market approaches. In relation to equitable distribution of funds, the majority of proposals currently under discussion reward historically high emitters and exclude low emitters. This is a major issue to be resolved.

With respect to issues concerning MRV there is agreement that measurement and reporting of voluntary actions by developing countries in climate change mitigation need to include information on the implementation of voluntary mitigation plans, programmes and actions. There is also a consensus that MRV should take reference emissions and reference levels into consideration. Consensus has been reached on the fact that MRV should be based on national forest inventories and unbiased periodic reviews to assess the application of agreed modalities including a review of the data. However an outstanding unresolved issue is related to what to monitor (all five approved carbon pool or some). There is also no consensus yet on what constitutes a reference level. Another unresolved issue is whether monitoring should be based on gross or net emissions.

In relation to issues of stakeholder involvement, there is a compromise that calls for the need to engage local people in the consultation process of developing REDD projects and the national REDD scheme. The issue is left to be fully addressed when the modalities of REDD will be decided.

Finally, despite the fact that the Bali Action Plan clear indicates that REDD activities should provide environmental and social co-benefits, there is disagreement on whether and how social (at national and community level) and environmental co-benefits should be mandated in the design of the international REDD-plus regime. Some favour keeping REDD-plus simple while others favour a pro-poor approach arguing that failure to specifically include co-benefits objectives in REDD-plus design will ensure failure of the programme.

2.3. Improved Forest Management for climate change mitigation

At the eighth meeting of the of the Ad hoc Working Group on Long-term Cooperative Actions (AWG-LCA) in Copenhagen, Parties advanced agreement on the scope of REDD-plus towards the inclusion of reducing emissions from deforestation, reducing emissions from forest degradation, conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks. In this regard, paragraph 4 of the REDD-plus draft decision text --/CP.15 request

SBSTA to undertake a work programme to identify and assess LULUCF activities that have the potential to contribute to the mitigation of climate change. This process is predicated on the development of definitions for each of the five general REDD-plus actions. This work is expected to be concluded and reported to the COP at its eighteenth session in 2012 (UNFCCC 2009). Nevertheless, ongoing researches have shown that substantial reductions of global carbon dioxide emissions can be achieved by improving forest management (IFM) in the tropics (Putz et al. 2008). Drawing from a study in Malaysia, Putz et al. (2008) demonstrated that carbon stocks in forest with improved management are predicted to be at least 30t ha^{-1} higher than those in conventionally logged forest. A similar study in Brazilian Amazonia, estimated the benefits of improved timber harvesting practices at 7t C ha^{-1}. In both cases, improved management reduced carbon emissions by approximately 30%, relative to conventional logging. These authors concluded that the potential global contribution of improved tropical forest management to carbon retention is substantial and argue that this cost-effective approach to mitigation should be included in any new climate change agreement. Smith and Applegate (2001) have also argued in favour of IFM by pointing out that carbon trading can be used to stimulate adoption of IFM activities such as reduced impact logging to support sustainable forest management initiatives. Nevertheless, not all activities under the IFM umbrella can demonstrate measurable difference to the long term increase in GHG benefits compared to business-as-usual practices. Voluntary Carbon Standards (VCS)[19] have identified sets of IFM activities that can demonstrate these long term GHG benefits based on IPCC AFOLU (agriculture, forestry and other land use) guidelines. These activities include: conversion from conventional logging to reduced impact logging (characterised by improved selection of trees for harvesting based on inventoried knowledge concerning tree location and size); conversion of logged forests to protected forests (protecting currently logged or degraded forest from further logging as well as protecting unlogged forest that would be logged in the absence of carbon finance). The extension of rotation age of evenly aged managed forest (for example pine and teak plantations) and the conversion of low productive forest to productive forest are also important IFM activities in this regard.

[19] Voluntary Carbon Standard is a standard setting organisation founded by the Climate Group, the International Emissions Trading Association (IETA) and the World Business Council for Sustainable Development. http://www.v-c-s.org/

2.4. CBFM and REDD

Currently, land-based forest sequestration activities are not included in the CDM of the Kyoto Protocol. Only afforestation and reforestation (A/R) are eligible and rewarded with regards to forestry climate change mitigation options in the framework of KP of the UNFCCC. With the recognition of REDD, Land Use, Land-Use Change and Forestry (LULUCF) and other forest based mitigation option being pushed for approval, there are equally calls from some parties for CBFM to be included as GHG mitigation option in developing countries (Klooster and Masera 2000; Skutsch 2003 and 2005; Mareseni et al. 2005; Murdiyarso and Skutsch 2006; Zahabu 2008; Karky 2009). According to the IPCC a sustainable forest-management strategy aimed at maintaining or increasing forest carbon stocks in the long term, while producing an annual sustained yield of timber, fiber, or energy from the forest, will generate the largest sustained mitigation benefit (Robledo et al. 2008).

In this regard, several scholars have explored the potentials for CBFM as an instrument both for carbon saving, benefits through carbon sequestration and for climate change adaptation. Skutsch (2003) explored the potential for CBFM as an instrument for carbon saving and for adaptation under the Kyoto Protocol. Based on three case studies from Nepal, Senegal and Tanzania, she concluded that many communities involved in CBFM transform unsustainable management of existing natural forest to sustainable management. Maraseni et al. (2005) using CBFM in Nepal, argued that since enhanced natural regeneration and forest preservation activities are considered under CDM project activities, CBFM should be considered as well since it contributes to achieve the objectives CDM program as well as provides biodiversity benefits. Klooster and Masera (2000) have demonstrated the amount of benefit CBFM had contributed to the forestry sector in Mexico in terms of carbon and livelihoods and stress the necessity and relevance for its inclusion in REDD as a climate mitigation option. The authors argue that under adequate social arrangement, forest management slows and reverses deforestation, mitigates carbon emissions and provides economic alternatives to converting forest to pastures and field crops. Murdiyarso (2005) underscores the importance of carbon sequestration project through land use, land-use change and sustainable forest management and concluded that it could demonstrate a win-win situation from the point of climate change and sustainable development if the project are properly designed and implemented. He argued that these projects conserve and/or increase carbon stocks while at the same time improve rural livelihoods. Zahabu (2006a and 2006b), in the framework of the Kyoto Protocol Think Global

Act Local project (K:TGAL)[20] have demonstrated in two separate case studies from Tanzania (Handei Village Land Forest Reserve and Kitulangalo joint forest management area) with empirical data how carbon stock in the forest is increasing as a result of management practices by the villagers. Murdiyarso and Skutsch (2006) promotes the idea of carbon benefits from community forest management by analysing 13 case studies from around the world to show how different forest management practices for different reasons have the potential to provide carbon sequestration benefits. There is mounting evidence that CBFM can deliver on multiple outcomes i.e. carbon storage, livelihood benefits and biodiversity conservation (Chazdon 2008; Ranganathan et al. 2008; cited in Angelsen 2008). CBFM can help sequester and store carbon without adversely affecting the livelihoods and equity benefits that is generated from community forests (Chhatre and Agrawal 2009). The potential of REDD and CBFM in the future can be summarized with the following quotation from Murdiyarso and Skutsch (2006) *'a new era is dawning for community based forest management. The carbon market, both under the Kyoto Protocol and the emerging voluntary market open the potential for participation of the rural poor in the global endeavour to mitigate the impacts of global climate change through atmospheric carbon sequestration. Such activities could enhance livelihoods and reduce poverty while supporting environmental conservation at global and local level'*.

However, "*can REDD benefit community-based forest management*?" The response to the question is certainly difficult which is why many studies are being carried out to look at the social implications of the REDD mechanism on forest communities. At the moment, the literature on this subject is sparse, since the concept is still very new. Nevertheless, many studies have analysed the benefits of PES[21] schemes and if REDD-plus is considered a form of an 'international PES', (Wunder 2009; TEEB 2009) then such analyses could be applied to REDD-plus.

According to Grieg-Gran et al. (2005), the introduction of market based mechanisms for environmental services has the potential to benefit rural service providers, in economic terms if the

[20]Kyoto: Think Global, Act Local (K:TGAL) is a research and capacity building program, financed by the Netherlands Development Cooperation, which is investigating the possibilities and potential for Community Based Forest Management of existing natural forest to be included as an eligible carbon mitigation activity under international climate change agreements in the future. It is also exploring the value of CBFM as a climate adaptation strategy. http://www.communitycarbonforestry.org/

[21]According to Wunder (2005), PES can be defined as a voluntary transaction where a well-defined environmental service is being 'bought' by an environmental service buyer if and only if the environmental service provider secures environmental service provision. In REDD-plus, PES refers to a results-based system in which payments are made for emissions reductions or carbon stocks enhancements relative to an agreed reference level.

payment received more than compensates the opportunity cost of giving up a more rewarding (but less environmentally friendly) land use. Additionally, there might also be aspects of the transaction that go beyond the amount of income. These can be benefits such as diversification of income sources, reliable and steady payments, provision of training and better internal organisation among service providers. However, these transactions can impose costs, for example, increased competition for land or social tension because of jealousies from community members that do not receive payments.

Smith and Scherr (2002) have analysed the livelihood benefits and risks associated with carbon forestry projects within the CDM framework of the Kyoto Protocol. Working on the question "C*an forest carbon projects deliver livelihood benefits?*" they examined the benefits and risks under different forest carbon projects types and concluded that multiple use community management of natural forest (which is our concern) presents some livelihood benefits such as subsistence and cash income to forest dwellers, ecotourism activities . However poorly designed and underfinanced projects that fail to produce sustainable livelihood can pose a livelihood risk with various consequences. They added that where forest enterprises are community owned or managed, equity problems may arise in relation to distribution of local use rights, products or income.

Scherr et al. (2004) have in a very general manner presented the potential benefits and risks associated with payment for ecosystem services. They categorize the benefits in terms of financial and non financial ones. The first category includes regular direct payments with high reliability. Because these payments are supplemental income, it can serve as a strong incentive for conservation. With regards to non financial benefits, producing and protection ecosystem services for outside buyers can have important co-benefits such as high quality water supply, the establishment of new forest resources such as fuel, medicine, and improved air quality due to reduction of fire.

Drawing from data of carbon values from five CBFM areas in Tanzania (Kimunyu, Mangala, Handei, Haitemba and Warib) with a total area of 1154.5ha comprising four villages (Gwata, Ludewa, Mgambo and Ayasanda) Zahabu and Jambiya (2007) have estimated that local communities could receive financial benefits of up to US$ 6,500 annually (if carbon is priced at US$ 5 per ton of CO_2 in the voluntary market) from the sale of their forest carbon credits gained through REDD-plus activities. Apart from selling carbon credits, the authors argue that selling other environmental services like biodiversity and water protection is also possible with sound

forest management. They concluded that the logical incentive package for community based forest management would be to 'bundle' different forest services and sell them together. This would result in adding more values to CBFM projects and provide more benefits and tangible incentives to the local communities.

In one of the most comprehensive study done this far on strategies to involve forest communities in the global climate policy, Zahabu (2008), explored the cost and benefits of PFM projects and the expected changes if they become carbon projects. Analysing data from four villages engaged in PFM in Tanzania, he observed that significant costs are incurred to facilitate communities during the process to establish a PFM and if such projects become carbon projects and enter into carbon trading, some additional activities related carbon measurements, verification and marketing will inevitably be required attracting additional 'carbon transaction cost'. This would mean some current benefits that involve biomass removal from the forest such as harvesting for timber, building poles, firewood collection and grazing need to be reduced. Despite these costs, the author estimated that depending on the price of carbon on the regulated market, even villages with small forest areas (20 to 50 ha) could earn about US$30 per household while better forest-endowed villages (>1000 ha) might earn US$438 per household. This means carbon projects could therefore provide significant income generation opportunities at village level even though the amounts look small and meager.

With respect to risks, it is worth mentioning that there are in general very few studies available. The focus so far has been on the benefits with less on risks and costs. This notwithstanding, critics of the mechanism have pointed out that REDD-plus poses a threat to the gains made from decentralization that is recentralisation of forest governance through the proposed national approach (Phelps et al. 2010). According to a recently published report by the Global Forest Coalition (GFC)[22] on the realities of REDD in twelve developing countries in Africa, Asia and Latin America, market based payment for environmental services like REDD-plus will exacerbate many of the social and environmental problems that already exist in local communities and will lead to the marginalization of economically less powerful groups in forest policy including indigenous people, women and the poor in general (GFC 2009). Based on an early publication titled *Life as a Commerce*, GFC has analysed the impact of market based conservation mechanism on communities and their governance. They concluded that market based PES mechanisms have positive benefits only in

[22] The Global Forest Coalition (GFC) is an international coalition of NGOs and Indigenous Peoples' Organizations involved in international forest policy. www.globalforestcoalition.org

theory and that it is impossible to avoid the erosion of community governance over forest resources when these mechanism are implemented. In simplistic terms, they indicated that local communities are not strong enough to defend their community's interest against powerful corporate interest driving market based projects on their land. According to the Eliasch (2008), REDD presents a danger of customary rights violations in the interest of inward investment, and abusive contracts and land speculation to the detriment of community interests. The Review indicated that without clear tenure and use rights, sustainable forest management will be impossible and carbon finance may increase social conflicts. Peskett and Harkin (2007), have also emphasized that without clear land and carbon rights, REDD would be of high risk to the poor thus stressing the importance for binding agreements in assessing and negotiating benefit distribution.

Murray (2009) in a recent study on the social and economic implication of the Belgica REDD-plus in Peru found that the project had three potential implications on the community in the areas of agriculture, education and social health services. The author indicated that limitations on agricultural expansion may impact the essentially agricultural based community, employment opportunities and diversity may make education less desirable. The table below presents a set of multi-benefits and multi-risks associated with REDDS project's services for local livelihoods, local economy development and forest ecosystems according to some of the existing studies and reports.

Table 1. Potential impacts of environmental service markets for local livelihoods, economy and forest ecosystems

Possible benefits	*Possible risks*
Natural assets	
- Higher forest values due to improved management - Higher productivity and more sustainable farming and forest systems for local livelihoods (e.g. food, firewood, medicines, .) - Conservation of intact habitats for forest plant and animal species, conservation of species and varieties (i.e. various features of biodiversity) - Reduced fragmentation - Restoration of local ecosystem services of forest and agro-forestry (e.g. watershed maintenance, pollinator species, soil erosion control)	- Lost use values (e.g timber and NTFPs) if harvesting restrictions are imposed - Lost options for forest conversion to agriculture - Replacement of native non-forest habitats by forest plantations or by non-native forest management practices - Risks of expansion of genetically modified trees
Human assets	
- Education and training opportunities on forest and project management, negotiation, enterprise development… - Improved business and market organization in local communities - Technical assistance to local community	- Additional marginalization of poor people and/or minorities (i.e. women) who have less capacity/possibility to capture educational and skills development opportunities - Reduced health and income if the poor are excluded from NTFPs collection for domestic consumption and disposable income
Social assets	
- Increased tenure security where markets spur rights formalization - Strengthening of community-based institutions - Additional resources for community social investments - Introduction of innovation - Improvement of social capital through reinforcement of local networks and traditional communication channels - Opportunities for maintaining and enhancing local and traditional knowledge and cultural identity	- Loss of rights to land access and/or to harvest products or environmental services - Loss of land ownership rights when a large (global or national) entity purchasing land for selling ecosystem services - Increasing land grabbing or other forest-related crimes where effective legal frameworks lacking - Higher competition for land causing displacement of the poor or women who often lack formal property rights (increasing marginalization of poor or women) - Erosion of cooperative arrangement due to increased inequality - Loss of control and flexibility over local development options and directions where pre-defined long-term and not properly designed contracts are signed
Financial assets	
- New income from sales of environmental services (i.e. carbon credits) - Higher income from selling forest related sources (i.e. ecotourism, recreation activities, NTFPs, timber and firewood) - Improved security and stability of income due to diversification - Employment opportunities - Development of community-company partnership	- New restrictions on forest exploitation and conversion which result in income loss - Reduced flexibility arising from long term land use contracts hampers livelihood responses to short-term shocks - Limited income and employment opportunities for poor, women and other minority groups - Market-based approaches are complex yet lucrative, encouraging fraud and corruption while discouraging community participation
Physical resources	
- Infrastructural development: transport, marketing, health care services, schools and training centres, …	- Dismantling of infrastructure compromising the environmental service, e.g. roads

Source: based on Smith and Scherr (2002), Scherr *et al.* (2004), Grieg-Gran *et al.* (2005), von Scheliha *et al.* (2009)

2.5. REDD and forest governance

Governance has been defined as the interactions among structures, processes and traditions that determine how power is exercised, how decisions are made on issues of public concern, and how citizens or other stakeholders have their say (Graham et al. 2003). The nature of governance greatly depends on the institutional rules for decision making and the capacity of people to participate in decision making processes that affect them. It also depends on the distribution of power, i.e. the power to make decisions with or without the consent of others. Good governance is a normative concept used to emphasize that improvements to governance as usual are sought and to highlight that the ultimate goal of governance is to benefit society (Robledo et al. 2008). In this respect, some attributes have identified that are designed to maximize benefits for both natural resources and livelihoods. These attributes are stakeholders' participation, equity, accountability, transparency and information flow, decentralization and efficiency and effectiveness (Mayers and Bass 1999; Borrini-Feyerabend et al. 2004a; Macqueen and Mayers 2006; cited in Swiderska et al. 2008). Good governance of forest resources and the participation and empowerment of forest-dependent people will substantially rely on the consideration of their priorities when institutional frameworks are defined.

As regards REDD and governance, it is recognized that REDD-plus requires multilevel governance involving multiple actors to make it acceptable to stakeholders with different interest and to reduce risks of problems (Forsyth 2009; Global Forest Coalition 2009; von Scheliha 2009; RRI 2010). Multilevel, multiactor governance or participatory governance (Secco et al. 2010), which is based on actors, scales and interests, can boost the participation of local people (see Box 1 for different typologies of participation) and agencies that often compete with each other and consequently could reduce potential conflicts.

Box 1 - Typology of different levels of participation

The level with the least participation is the *Manipulative participation*, which can hardly be called participation, since at this level; representatives of the villagers do not have any influence or power.

On the second level, the *Passive participation*, villagers are informed about decisions made by authorities, but their opinion is still not considered.

The *Participation by consultation* refers to a form of participation where villagers are consulted when professionals need some questions answered, but the professionals are not obliged to listen to the response.

A forth level of participation is the *Participation for material incentives*, where the villagers contribute to a project by providing resources, but are still not involved in decision making of any kind.

In the fifth level, *Functional participation*, the participation by the villagers is used as a tool for the professionals to

achieve their goals, though still not solely for the benefit of the villagers.

The sixth and the seventh level of participation; the *Interactive participation* and *Self-mobilization* are the highest levels of participation in the typology. They describe interactive forms of participation, with *Self-mobilization* as a form of participation where the villagers are making the initiative independently.

Source: Hobley (1996)

The approach in achieving governance could be a nested approach, deliberative networks and institution or legal pluralism (Forsyth 2009). In a nested approach, rules are set for forest use that provides forest users incentives to follow the recommendations for REDD-plus. This approach is predicted to work best where the objectives of REDD-plus is to maximize carbon sequestration and to provide rewards for stakeholders that is clearly established and accepted by all parties. Legal pluralism according to Forsyth (2009) is the coexistence of various forms of governance at any given time across a variety of scales. The proponents of this mode of governance believe that it is a realistic and workable form of multilevel governance in complex resource landscape such as where forest and smallholder agriculture coexist just like in REDD-plus landscapes. In the deliberative approach, focus is on how global concerns about GHG can be reconciled with local concerns about forest and land use. It allows stakeholders (both local and policy advisers) to negotiate common objectives and practices for environmental policy. The table below presents the characteristics and the advantages and disadvantages of the three approaches to multilevel governance for REDD.

Table 2. Approaches to multilevel governance

	Policy objectives driven from above		**Policy objectives driven at local level**
Type of governance	**Nested institutions**	**Deliberative networks and institutions**	**Legal pluralism, including CBFM**
Main mechanisms	Actors create rules for enforcement and monitoring, in coordination with higher authorities	Policy is shaped by open discussion and participation by various stakeholders	Recognize coexistence of formal and informal governance regimes at different scales as practiced by communities
Main advantage	Clearly defined rules	Dynamic, localized and encourages learning	Reflects the complexity of local rule making
Main disadvantage	Does not always acknowledge local perceptions of forests or local political processes	Civil society might be dominated by elites and the state	Does not always relate to urgent global task such as controlling emissions

Source: adapted from Forsyth, 2009

These modes of governance are based on the extent to which actors participate in shaping rules about forest use, and to what extent each form of governance reflects different interest. According to some scholars participatory governance is necessary and important to ensure that REDD-plus

effectively achieves co-benefits. The role of local networks of stakeholders and their governance capacity will be fundamental, based on evidence from a recent study on 80 forest commons in 10 countries across the tropics Chhatre and Agrawal (2009) concluded that *"greater rule-making autonomy at the local level are associated with high carbon storage and livelihoods benefits"* . With respect to good governance for REDD-plus, the Governance of Forest Initiative (GFI)[23] have indicated that good governance has to with the way decisions are made, the involvement of actors and stakeholders beyond government as well as the forest sector and taking into consideration the context (GFI 2009). GFI have developed a widely accepted set of principles of good governance of forests and a comprehensive set of indicators for measuring and assessing its quality. The draft conceptual framework and practical toolkit are quite complex, including 94 indicators defined on the basis of multiple cross-links among 5 'principles' of good governance (Transparency, Participation, Accountability, Coordination and Capacity), 3 governance 'components' (Actors, Rules and Practice) and 4 'critical issues' in the forest sector (Forest tenure, Land use planning, Forest management, and Forest revenues and economic incentives). The scholars behind this initiative have warned that, failing to tackle problems of weak institutional capacity and coordination, accountability, transparency, and public participation may exacerbate current conflicts over the use of forest resources and risk creating perverse outcomes for forest dependent people, forest ecosystems, and the global climate. They observed that any potential REDD-plus mechanisms are more likely to succeed if they are designed to incentivize and support various stakeholders to improve governance of forests.

According to Saunders and Reeve (2010), many stakeholders engaged in developing the rules for REDD-plus believe that monitoring governance of the forest sector and of the REDD-plus mechanism itself is as important as the system that is ultimately designed to monitor carbon and as such should be given equal emphasis. They argued that this is because 1) the high-risk context in which many REDD-plus activities will take place; and 2) the fact that, while much deforestation and logging is driven by a legal response to financial incentives which credit more value to, for example, palm oil plantations than natural forest and which can (in theory) be readjusted by REDD-

[23] The initiative is based on the collaboration between the World Resources Institute and two Brazilian organizations, Imazon and the Instituto Centro de Vida (ICV). More than 50 experts, mainly from international research centers and NGOs, have participated to the development of the first draft of 'The Governance of Forests Toolkit' (GFI, 2009).

plus payments, there is also a significant proportion in many REDD-plus candidate countries which is illegal.

2.6. The rationale for benefit sharing

In a growing number of developing countries today, more forest area is being designated for use by local communities and indigenous people. There is also an increase in private sector investment in forestry. Globalization of forest industries and the forests' significant commercial value has made the private sector the principal source of finance in forest production in most countries (World Bank 2009). As a result of this new dynamics, legislations are being introduced to ensure that local partners share in the benefits of forest operations and participate as active stakeholders in the sustainable use of forest resources. Afforestation and reforestation activities and mechanisms to reduce GHG emissions such as REDD, including sustainable forest management (SFM) and forest restoration, seek to increase forest carbon sequestration, and their success or failure relies in many respects on the effective cooperation of forest dependent people. These recent developments are giving partnerships and benefit-sharing arrangements between local and outside partners greater prominence than they have generally had in the past. The significance of these collaborative arrangements is increasing whether the local partner is a community, a user or producer association, or a group of individual landholders, and whether the outside partner is a private firm, a government agency, or a nongovernmental or civil society organization (World Bank 2009). The rationale for benefit sharing in carbon forestry related activities can be summarized with following quotation:

> *"Projects that do not benefit the local partners involved, or that fail to earn the trust of those communities are unlikely to succeed. Long-term and stable partnerships between outside parties (e.g., investors, government, NGOs, or donors) and local partners therefore warrant priority in both the design and the implementation of carbon-related forest interventions. Among the most promising types of arrangements to formalize these partnerships are benefit-sharing arrangements"* (World Bank 2009*).*

According to World Bank (2009), Benefit sharing arrangements can make local partners stakeholders with an active interest in the project's outcome, and can serve as compensation for the local cost incurred in providing the global good of reducing GHG emissions.

The World Bank further pointed out that appropriate benefit sharing should supports long-term viability, reduces risks, and extends the development impact of the activities through its contribution to poverty reduction. The best way to share benefits depends on the local context.

Benefit sharing should be open, verifiable, and should serve legitimate beneficiaries. Ideally, it should look beyond compensation, towards promoting broader social and economic development of the beneficiaries. However, benefit sharing has its shortcomings. Benefit sharing arrangements are often victim to elite capture, and where consultation and information sharing is inadequate it can result in communities signing away their rights and foregoing long term benefits (Barr et al. 2006). In situations where it involves cash transfers, they are often spent on nonproductive consumption especially where supporting financial institutions are lacking (Fischer 2007).

2.6.1. A conceptual framework for analysing benefit sharing in CBFM

According to Mahanty et al. (2009) benefit sharing in CBFM can be analysed under two broad categories i.e. *benefit flow* and *benefit sharing*. The analysis of *benefit flow* examines the role played by three key aspects of resource governance (i) property rights, (ii) permits and (iii) taxes or royalties) as well as the resource endowment (size, condition and productivity) in shaping the scale and timing of benefit flow. *Benefit sharing* (community level distribution of benefits) analyses focus on the influence of local governance (e.g. governance bodies and processes, participation) and community conditions (e.g. social rules and norms, internal differentiation) in mediating who gains. The figure below presents this analytical framework.

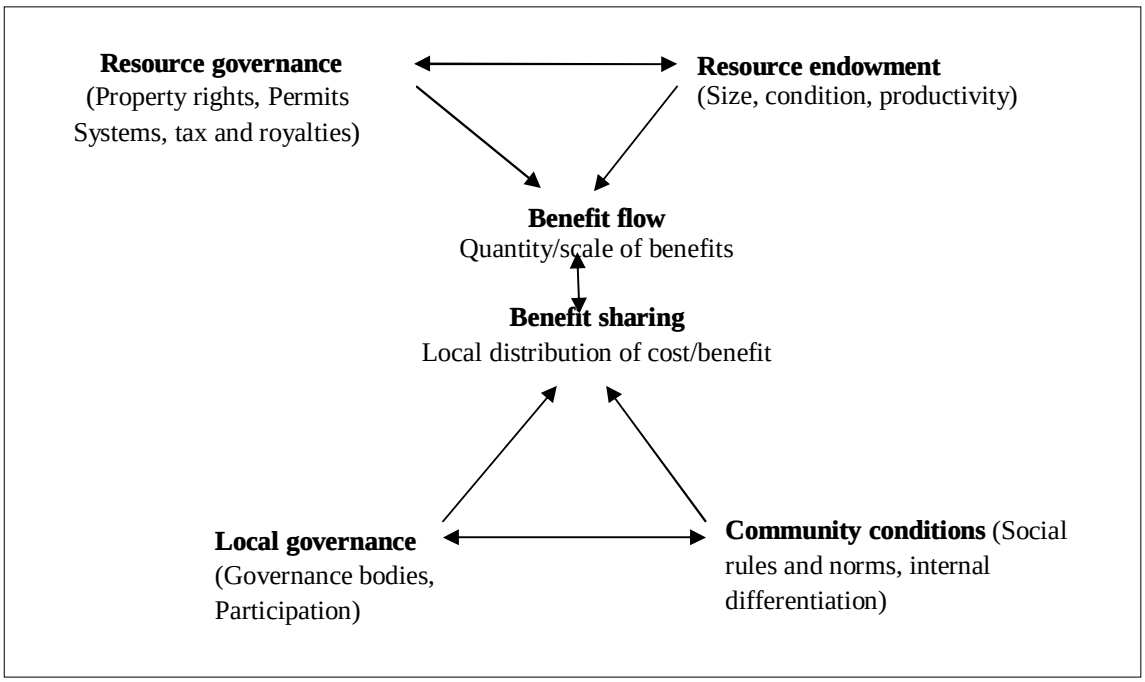

Fig. 2: Analytical framework for benefit sharing in CBFM

Source: adapted Mahanty et al. 2009

CHAPTER THREE

THE CONTEXT AND CASE STUDY

This chapter presents the context of the study. It discusses the key concepts presented in the preceding chapter in the context of Tanzania in general and AVLFR in particular. A detailed description of the case study area is further presented.

3.1. Forest resources and forest management in Tanzania

Tanzania has a total area of about 94.5 million hectares out of which 88.6M ha are covered by landmass and the rest is inland water. According to the FAO (FRA 2006), the country has a total of 34.5 million ha of forestland (about 38% of total land area) out of which 16 million hectares comprise of reserved forest, 2 million hectares are forest in national parks and the remainder 16 million hectares (47% of all forested land) are unprotected forest in general land[24] (URT 1998; Malimbwi 2002; URT 2006). The forests provide a range of benefits, from ecosystem services to timber and non timber forest products (NTFPs) primarily within local villages and households. The value of these forests is high. The combined value of forest goods and services is estimated at $ 2.2 billion which is equivalent to 20.1% of Gross Domestic Product based on 2006 prices (URT 2009). Forest in General Land are largely "open access" and characterised by insecure land tenure, shifting cultivation, harvesting of fuelwood, poles and timber, annual wild fires and heavy pressure for conversion to other competing land uses such as agriculture, livestock grazing, settlement and industrial development. The annual rate of deforestation is estimated at 412,000 hectares mostly occurring in forests in general land (FAO 2006; URT 2009). However, reports and studies on the assessment of different forest conditions have revealed a lot of human disturbances also inside the forest reserves including illegal harvesting for building materials, firewood collection, encroachment of forest areas, illegal mining, thus indicating that not only forests in general land are diminishing but also that of reserved forests is deteriorating as well (Zahabu 2008).

3.2. The emergence and current status of PFM in Tanzania

Tanzania has a high deforestation rate. After the failures of conservation programmes in addressing the problem of deforestation by the Government of Tanzania and the international community in the

[24]General land as used here means all public land which is not reserved or village land (URT, 1999) including unoccupied or unused village land.

past, it has presently been realized that the continuing deforestation is due to the failures of the past conservation approaches. These approaches were aimed at bringing more forests under state tenure and protection as reserves or parks established with a typical top-down approach (Kajembe 1994; Kiss 2004). By excluding local communities from forest management this approach resulted in increasing deforestation (Wiersum 2004). This problem coupled with limited financial and human resources for the forest sector led to the emergence of a new policy: PFM. The involvement of local communities in natural resource management started in the mid 1990's with a number of pilot activities in the north and western parts of the country (Wily 1997). These experiments demonstrated a viable engagement of local communities in forest management and triggered their inclusion in the forest policy and legislations in the late 1990's (URT 2006).

PFM is a general term that comprises different legal arrangement under which villages and local communities are involved in forest management and governance (Blomley and Iddi 2009). PFM is implemented in Tanzania in two distinct models: JFM and CBFM. Both models operate in accordance with the *Village and Ujamaa Villages Act* of 1975, and the *Local Government (District Authorities) Act* of 1982, which empower the village councils to make rules in the form of by-laws, recognized in courts of law, which facilitate management of village land and village forests (Kihiyo and Kajembe 2000). Under JFM, villages or local communities can manage forests jointly with the forest owner, be it the central government or the local government, a private forest owner, or an NGO. JFM is based on a Joint Management Agreement (JMA) between the village or the community and the forest owner. The JMA defines the roles and responsibilities of each party as well as the distribution of the costs and benefits of forest management and use. Under Community Based Forest Management (CBFM) a Village Land Forest Reserve (VLFR) or a Community Forest Reserve (CFR) is established on unreserved village land. CBFM gives the village or the community the right to manage the forests and to retain 100 per cent of the revenue acquired from sales of forest products. However for a community or village to benefit from the CBFM arrangements, this area has to be properly mapped and demarcated. Forest management plans have to be prepared and approved by villagers, the local government and the Director of Forestry. Village forest committees or Village natural resources committees have to be elected to manage the forest, and village by-laws have to be prepared, providing for rules and sanctions pertaining to forest management and use. In case of non compliance of this management rules, the District Council or Director of Forestry can revoke the rights of villages or communities to manage their forest. Both the current National Forest

Policy of 1998 and its subsequent Forest Act of 2002 recognize the role of community involvement on sustainable forest management and use (URT 1998; 2002). This is demonstrated by the three policy objectives of PFM which emphasizes on (i) improved forest quality through sustainable management practices, (ii) improved livelihoods through increased forest revenues and secures supply of subsistence forest products, and (iii) improved forest governance at village and district levels through effective and accountable natural resource management institutions (URT 2003a).

Statistics from a study carried out in 2009 (Blomley and Iddi 2009) show that PFM is operational in over 2,000 villages and on over 4 million hectares (more than 11%) of forestland. A further breakdown in the current statistics reveals that there are 395 Village Land Forest Reserves (VLFRs) under CBFM covering a total area 2.35 million hectares in 1,460 villages. According to another study, in 2001 there were only 78 VLFRs under CBFM with a total of 186,292 hectares (Malimbi 2002). Comparing statistics indicates an exponential increase in forest area and number of participating villages. This increase have been attributed to change of forest policy and legislation and the contributions of both local and international NGOs, local government and bilateral development partners in the spread of CBFM in the country (Blomley 2006). The table below presents the currents status of PFM as reported by the latest study mentioned above.

Table 3. PFM in Mainland Tanzania in 2009

Joint Forest Management (JFM)		**Community Based Forest Management (CBFM)**	
Area of forest	1.77 million ha	Area of forest	2.35 million ha
Number of Forest Reserves	246	Number of declared or gazetted village land forest reserves	395
Number of villages	863	Number of villages	1,460
Number of villages with signed JMAs	155	Percentage of villages on mainland Tanzania	14%
Number of districts	58	Number of districts	63
Most common forest type under this management regime	Montane forest and mangroves	Most common forest type under this management regime	Miombo, acacia and coastal woodlands
% of forest reserved by central or local government	13%	% of unreserved forests	12%

Source: Blomley and Iddi 2009

Most of these PFM project have been implemented often with significant donor support, thus raising questions on the sustainability of PFM activities when the support comes to an end (Mustalahti 2009). The speed under which CBFM are established is low due to limited financial and human resources among other factors, and it is thought that assessing the global carbon financing mechanisms could potentially facilitate the process by providing the needed financial resources (Zahabu 2008). According to some reports and studies, PFM is a promising forest management strategy in curbing deforestation and forest degradation. Forests under PFM are reported to have recovered under community management due to decrease in encroachment and unregulated activities such as charcoal burning and illegal timber harvesting (URT 2006; Hamza and Kimwer 2007; Blomley et al. 2008). Despite these improvements on the forest resources, PFM is still to provide tangible benefits to communities involved. Scholars have postulated that for PFM activities to be scaled up there is need for tangible incentives (Kiss 2004; URT 2006) most preferably cash benefits (Zahabu 2008).

Sound forest management activities like those under PFM, generate a number of environmental services such as carbon sequestration, water catchment, scenic beauty and biodiversity which can be valued and paid for by various consumers of the services. Financial resources from PES can be one of the options for providing the required tangible economic benefits and hence incentives for the participation of local communities and other stakeholders to manage the resources sustainably (URT 2009). With a growing market for forest carbon and an international mechanism to provide compensation for carbon stocking by countries, local communities have an unprecedented opportunity to receive tangible economic benefits for their involvement and actions in PFM. It is also worth mentioning that forest management benefits go far beyond direct economic benefits. Improved forest management could have positive impacts on food security, energy and water security, rural development and biodiversity conservation in Tanzania. Table 4 below highlights some of the major forest management benefits to development in Tanzania.

Table 4. Examples of major forest management benefits to development in Tanzania

Policy Area	Benefits
Economy	Revenues from REDD-plus payments, employment, taxes, trade in forest products under SFM
Food security	Ensuring agricultural productivity by maintaining irrigation and soil fertility requires the conservation of forest catchment areas
Energy security	Forest supports most of Tanzania's energy supply: hydroelectricity constitutes 80% of all electric power generation, 93% cooking energy is derived from wood based fuels
Access to water	Forest preserve the sources of many urban water supplies, including Dar es Salaam, Tanga, Moshi and Morogoro
Rural development	Many rural Tanzanians are forest dependent in terms of income generating activities and acquiring subsistence goods and services. Forest carbon trading could and will bring direct financial rewards to rural communities
Climate change mitigation	A large proportion of Tanzania GHG emissions comes from the high rate of deforestation (approximately 400,000 ha annually)
Climate change adaptation	Controlling deforestation will be increasingly important for agricultural adaptation and erosion control
Biodiversity conservation	The eastern Arc Mountains and Coastal Forests are among the top ten global biodiversity hotspots, and are important for tourism

Source: Milledge 2009.

However, despite all these benefits and advances made in forest resource management, sustainable forest management is still to be fully realized due to among others factors, poor governance at local as well as district, regional and national levels. At the local level, key governance issues concern (i) corruption (ii) elite capture and/or (iii) minority marginalization in terms of access to forest resources (iv) low accountability (v) lack of transparency (vi) low participation (vii) weak law enforcement (Mndolwa et al. 2009; Nuru et al. 2009; Raphael and Swai 2009). At higher levels, the main issues are (i) corruption (ii) weak law enforcement (iii) accountability (Milledge and Elibariki 2005; URT 2009).

3.3. Tanzania's National REDD strategy

Tanzania has a high potential to benefit from REDD-plus. It is estimated that the deforestation and forest degradation rates are 400 000 ha and 500 000 ha respectively per year. The main drivers of deforestation and forest degradation are wild fires, agricultural expansion, livestock grazing, unsustainable logging and fuelwood collection, illegal mining, pit sawing, illegal harvesting for building materials, firewood harvesting and charcoal making. These drivers are mainly linked to the expansion of human use of the natural environment to supply food, building materials and cooking fuel (Burgess et al. 2009). These deforestation and degradation rates vary considerably between the

various forest types in Tanzania as well from one region to the other. The current total national emissions from deforestation and net degradation are estimated to be 126 million tons of CO_2 (Zahabu 2008). In order to benefit from REDD crediting, the government of Tanzania is in the process of developing a national REDD strategy. However a national REDD framework was published in 2009 which serves as a vision towards the development of the national REDD strategy. The national REDD strategy would serve as a reference guide to the implementation of REDD activities in the country. Box 2 below presents some excerpts from the general policy framework for REDD in Tanzania.

Box 2: Selected excerpts of the national REDD framework

…The government of the United Republic of Tanzania considers the REDD policy a viable option that can provide opportunities for the country to meet its obligations of managing her forests and woodlands on a sustainable basis and at the same time respond to poverty reduction initiatives accordingly. In this respect the government is envisaging to participate in the future REDD policy and in its development.

The entire forest estate within the country or most of it, will then be needed to participate in order to contribute to the national efforts of reducing deforestation and forest degradation. This calls for the contribution of different forest regimes e.g. national parks, forest reserves, community forests, and private forests indicating a large number of different stakeholders to be involved.

A fair and transparent payment mechanism need to be established in order to provide incentives to stakeholders within the country; in other words, to enable the state to account in a fair way for gains and losses and to reward stakeholders who are responsible for reductions in carbon losses.

The REDD policy is still very new and its introduction in Tanzania will require changes in forestry management and governance system in-terms of the institutional arrangement, policy, legal framework and land tenure…

Source: URT 2009.

The National REDD framework recognizes PFM as a fundamental part of efforts to develop REDD-plus in Tanzania (URT 2009). This is so because of the steady progress made in the implementation of PFM and the positive impacts observed at the local levels in terms of livelihoods and improved forest cover, thus reducing emissions of greenhouse gases caused by deforestation and forest degradation (TFCG 2009). However the exact details how REDD would work is still very sketchy. According to Zahabu et al. (2008), REDD policy is likely to be undertaken nationally. This would be done by developing national level reference scenarios for the entire country, a system of 'nested baselines' i.e. *an interlocking set of baselines that covers the whole country and sums to the national baseline* is needed. Nested baselines are necessary to operationalise REDD internally for the different geographical regions and to account for different forest regimes e.g. national parks,

forest reserves, community forests, and private forests. They argued that this system is needed in order to provide incentives to stakeholders who are responsible for reduction in carbon losses within the country. With nested baselines, individual management regimes will then be credited depending on their mitigation level in the commitment period.

However, while REDD financing has the potential of providing stronger local level incentives for forest management at local level in Tanzania, a number of obstacles and potential threats exist that need to be addressed if REDD is to work for communities and the forest. According to TFCG (2009), REDD payments should provide valuable income directly to community level managers to support long term forest management and protection; transparency systems are needed at village levels that allows the REDD benefits to be shared in an equitable manner as well as any REDD agreement should include safeguards that recognize and protect biodiversity and multipurpose functions of the forest to local people.

3.3.1. The current state of REDD activities in Tanzania[25]

As indicated above, Tanzania is well advanced in its efforts to participate in the REDD mechanism. Presently a number of pilot projects and in-depth studies are being carried with support from the Royal Norwegian Embassy, Tanzania. Examples of these in-depth studies and pilot projects include (i) a study on the modalities of establishing and operationalising a national REDD Trust Fund, (ii) a study on the role of REDD for rural development in Babati and Kilosa Districts, (iii) a comprehensive review of the legal and institutional framework in the context of REDD, (iv) a study on the development of a business case for carbon trade through the REDD initiative, (v) a pilot project on making REDD work for communities and forest conservation in Tanzania, (vi) a pilot project on combining REDD, PFM and Forest Stewardship Council certification (FSC)[26] in South Eastern Tanzania, (vii) a pilot project on community based REDD mechanism for sustainable forest management in semi arid areas . The results of these in-depth studies and REDD pilot projects are expected to feed into the national REDD strategy. Figure 3 below is a map of Tanzania showing REDD pilot projects sites and the project implementer.

[25] This is based on a report prepared by the National REDD Secretariat, July 2010.

[26] FSC certification is a process by which an accredited independent third party organisation certifies that forest management practice(s) or forest product conforms to FSC agreed standards and requirements.

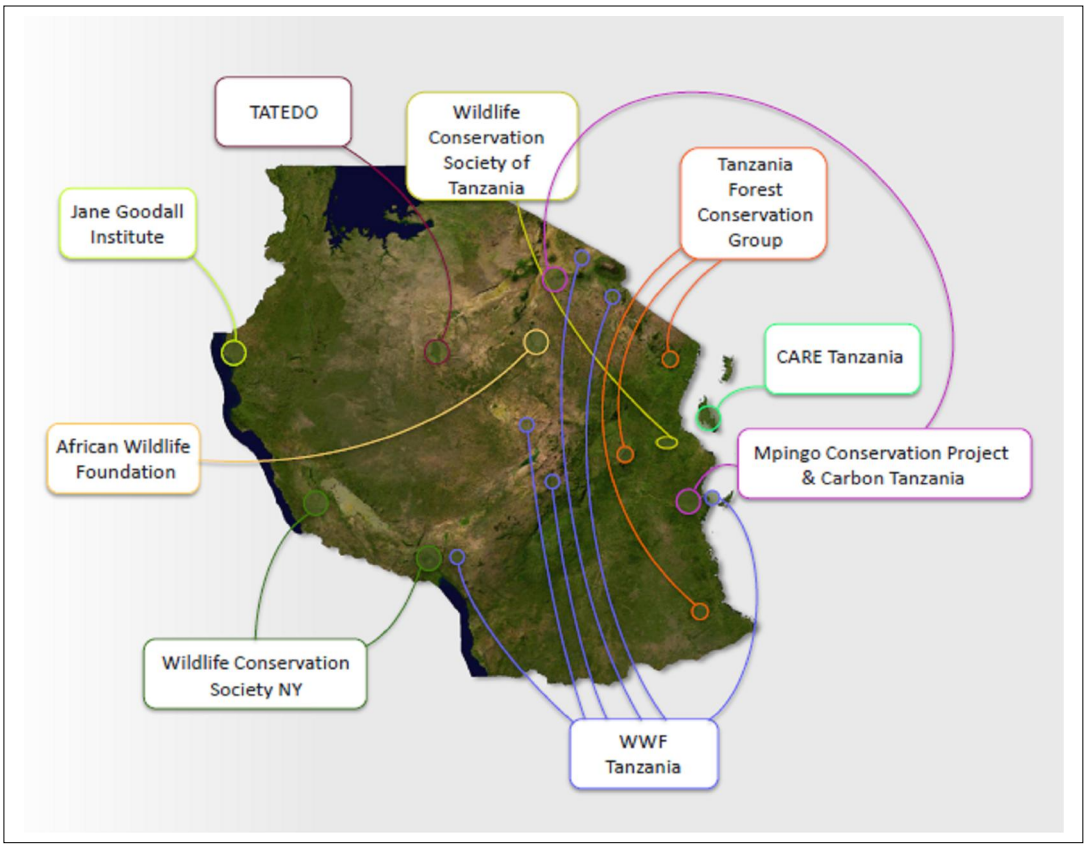

Fig. 3: Map of Tanzania showing REDD pilot project sites

Source: http://www.reddtz.org (accessed online on August 2010)

However a major challenge of REDD implementation is related to MRV. Tanzania intends to establish a robust participatory and functional MRV that will monitor rural livelihoods, conservation of biodiversity, key governance factors related to REDD implementation as well as assess the impact of the REDD strategy on the forest sector (URT 2010). In this regard, the following ongoing activities have been initiated to provide the necessary capacity and tools for the establishment REDD MRV: (i) a national forest inventory is currently underway within the framework of the National Forest Resource Monitoring and Assessment (NAFORMA) programme; (ii) the government of Tanzania is organizing technical meetings and consultation with international partners and national REDD institutions and experts; (iii) the National Carbon Accounting System (NCAS) is under development based on the Australian model and finally community level carbon monitoring system implemented in Morogoro, Tanga and Mayera within the Kyoto: Think Global Act Local Project. This project is based on training PFM communities in the use of small hand-held computer with global positioning and geographic information systems equipment that enables accurate forest strata and boundary mapping – a prerequisite if carbon saving are to be verifiable.

Evidences from the K:TGAL projects suggest that communities can effectively participate in carbon stock measurement and monitoring if well trained. Local people's knowledge is very useful in identifying the different tree species as well as their location in the forest. Additionally in terms of cost, there is a considerable reduction of cost of assessments done by communities over time as opposed to professional doing the assessments (Zahabu 2008).

3.4. Angai Villages' Land Forest Reserve (AVLFR): the long road to PFM and the prospect of REDD-plus

Section 33 (2) of the Forest Act (2002) allows for a number of villages to own and manage a Village Land Forest Reserve. This provision of the Forest Act is certainly the main precursor for the birth of AVLFR. AVLFR the subject of this case study research is one of the largest PFM areas in Tanzania, comprising of 132, 420 ha of Miombo[27] woodlands. It is owned and managed by 13 villages. Miombo is characterised by trees in the sub-family Caesalpinoideae, especially species in the genera *Brachystegia* and *Julbernardia* and has been described as "arguably the most important wildlife preserve in the world ... in respect of its animal and plant life alike." However miombo is a heavily human-influenced landscape and is everywhere under threat from increasing fragmentation with an estimated 1.4M ha of woodland lost annually in countries where it is the dominant vegetation (Campbell et al. 2007). AVLFR has a long history (see Box 3 below for a brief history). The current total population is estimated at 26,956 inhabitants and the average forest area per person considering AVLFR alone is estimated at about 5 ha. AVLFR is a large contiguous and generally intact forest with little known deforestation or degradation. This is believed to be as a result of two factors namely PFM initiatives undertaken by the surrounding villages in recent years and the distance from the villages to the forest reserve – most of the surrounding villages are located more than ten kilometres from the reserve (RIPS 2001). This presents opportunities in maintaining and enhancing a large carbon sink.

[27] Miombo is one of the major dry forest-savannah biomes of the world. It covers much of southern Africa, stretching from mid-Tanzania across to Angola, and down to the northern edge of South Africa, and constitutes the single largest vegetation type in East Africa.

Box 3: Short history of AVLFR[28]

The history of AVLFR described by many as the *'Angai proces'* can be traced as far back as 1993 when the District Council of Liwale proposed to gazette Angai forest as a Local Government Forest Reserve (LGFR). This decision was in line with the national policy which encourages District Councils to generate income. To achieve this objective, the local authorities sought the assistance the Rural Integrated Project Support (RIPS) – a development cooperation programme between the Governments of Tanzania and Finland that was operating in the region at that time. RIPS supported the idea on improving sustainable forest management and was willing to assist on condition that instead of simply setting up LGFR, RIPS could support the 13 village councils to come more involved in sound forest management. They based their argument on the fact that people's participation in forest management could improve the incentives for local villages to protect forests and trees, thereby preventing the degradation of forest resources.

In 1995, it was agreed that four villages (Ngunja, Ngongowele, Nahoro and Nangano) could be selected as case study villages to start a pilot project with aim of introducing a PFM model in the area, and to ensure sustainable use of natural resources and a clear system of collecting local taxes. During workshops to evaluate the progress made in the pilot case studies, villagers and local authorities fail to reach consensus on how revenues should be divided.

In 1997, the villages in a series of meetings disapprove of any decision to make Angai forest a LGFR. Their disapproval was based on the fact that they were unable to collect taxes from logging operations because of intimidation by high ranking district officials, border dispute between Nahoro and Lilombe, and the decision by the district council to reduce the amount of tax levied on sawn plank from 100 to 60 Tsh (Tanzania shillings). In 1998, RIPS and the local authorities agreed on number issues aimed at continuing the process. This include among others, a letter to the 13 villages explaining the process; a summary of the logging license procedure to be sent to the 13 villages; attending and taping the villages general assembly meetings discussions on Angai forest when held by the District forest Officer; the district Forest Officer is expected to report on a weekly basis to the district natural resources officer of all extension activities in Angai villages and the institution of a standard system of village receipts in Angai villages. None of these engagements were respected by the local authorities and in 1999 they reverted to their initial idea of establishing LGFR.

In 2000 new impetus was injected into the process with the arrival of a new staff with mission to facilitate the PFM activities and build local capacity. There was renewed dialogue between the various actors and a consensus was reached between the villages and local authorities. In 2001 AVLFR was approved and the villages land certificates issued under the terms of the Forest Act (2002) and the Village Land Act (1999).

In 2005, the Angai VLFRs was demarcated: when the boundary process was finally over and land certificates were handed over in August-September 2005. However, the forest management plans[29] and by-laws have not yet been made.

Since then and up to the time when this research was conducted, the PFM process is stalled because of lack of forest management plans which is very important as it provides visibility on available species of trees and harvesting plans. Efforts are currently underway to break this logjam.

According to some initial estimates, the Miombo woodlands of AVLFR are believed to have high carbon storage capacity. A feasibility study to assess the potential of AVLFR for a community

[28] This history is based on Mustalahti (2007) Msitu wa Angai: Haraka, haraka, haina baraka! Why does handing over Angai forest to local villagers proceed so slowly? Gould, J. and Siitonen, L (eds). Anomalities of Aid, University of Helsinki, Finland. Institute of Development Studies, University of Helsinki, Finland. 177-196.

[29] According to the Forest Act (2002) the Village Council is obliged to prepare a Forest Management Plan and submit it to the District Council having jurisdictional control over the area. The forest management defines the management objectives to be used to achieve the sustainable management of the forest resources over the period for which it is prepared. It is a prerequisite for exploitation of the forest.

REDD project commissioned by the Clinton Climate Initiative (CCI) found that there is significantly higher carbon stocks in the different woodland types of AVLFR than what has been estimated for typical miombo woodland (CCI 2009). Mukama (*forthcoming*) in a recent study on carbon stock in three of the thirteen villages making up AVLFR found that there were more than 134 different tree species with most of the dominant tree species having high carbon stocks. Below is a table presenting the villages with ownership of AVLFR.

Table 5. Villages with AVLFR ownership.

Village Name	Population (inhabitants)	Total village Area (Ha)	Un reserved Village Land Area (Ha)	Reserved Village land AVLFR (Ha)	% of reserved village land	% each village portion of AVLFR
Nahoro	1,623	58,393	17,454	40,939	70	29.4
Nangano	712	15,297	12,696	2,601	17	1.9
Kibutuka	1,800	15,514	10,112	5,402	34.8	3.9
Kiangara	1,825	16,968	14,672	2,296	13.5	1.6
Kitogoro	1,103	12,949	5,524	7,425	57.3	5.3
Mtawatawa	1,077	18,151	6,390	11,761	64.8	8.4
Mikunya	1,683	18,938	17,310	1,628	8.6	1.2
Liwale B	5,759	29,298	22,163	7,135	24.4	5.1
Likombora	1,463	31,759	11,904	19,855	62.5	14.2
Mihumo	3,015	29,555	17,763	11,792	39.9	8.5
Ngongowele	2,320	116,959	108,674	8,285	7.1	5.9
Ngunja	1,186	19,200	12,574	6,626	34.5	4.8
Lilombe	3,390	81,493	67,818	13,675	16.8	9.8
Total	**26,956**	**464,474**	**325,054**	**139,420**		

Source: FBD, 2008; Liwale Natural Resources Department, 2009 and Author's elaboration

In view of REDD-plus implementation, representative of some villages have received training on participatory carbon monitoring as part of an ongoing research project. The aim of the research project is to contribute to the REDD MRV debate, especially on how local communities can participate in the forest carbon measurements and monitoring at project level. In so doing, supporting the national efforts of developing community level carbon monitoring systems.

Furthermore AVLFR have the potential of benefiting from the FSC group certification recently obtained by some communities in neighbouring Kilwa District under the Mpingo Conservation project[30]. With FSC certification, there is the possibility of getting a premium price and better

[30]The Mpingo Conservation Project (MCP) is a Tanzanian NGO working on conservation and development. MCP holds the first Forest Stewardship Council (FSC) certificate for community-managed natural forest in Africa. http://www.mpingoconservation.org.

market access for forest products and services (Secco 2009 pers.com.). Research have shown that many of the forestry practices implemented on FSC certified forestland lead to reduced carbon emissions compared to areas with non certified operations (Griscom et al. 2009). Examples of these forestry practices include reduced volumes of harvest per unit area through the practice of sustainable harvesting (FSC P &C 2000-P 5.6); increased forest areas under conservation and restoration through a greater provision of conservation zones, protected areas along rivers and streams, areas of protected high conservation value forest and areas for forest restoration (FSC P&C 2000-P 6.2, 6.3, 6.4, 9, 10.5). According to Putz et al. (2008) reduced impact logging methods help avoid deforestation and have been estimated to represent possible emissions reductions of at least 10%. Measures to prevent unauthorised activities and fire through the implementation of preventative management systems, personnel training programs and monitoring and mitigation measures that reduce the impact of unauthorised encroachment and extraction, illegal logging, wildfires and pest and disease outbreaks also lead to reduced carbon emissions (FSC P&C 2000-P7.1, 7.3, 8.1, 8.2). Furthermore, research has shown that FSC Standards can address up to 70% of REDD-plus design issues (Brotto 2009). It is worth mentioning that due to the lack of forest management plans, the PFM process is not yet completed and the villages are still to access the benefits from the forest.

Despite all these potentialities, shifting cultivation on the village land and forest fires are currently the major challenges for the villages. It is estimated that between 14,155 – 42,465ha of forest are disturbed by forest fires every year (CCI 2009). Wildfires are known to be a major cause of forest degradation, which often acts as a catalyst for deforestation (Griscom et al. 2009).

Fig. 4: Land clearing for shifting cultivation and forest fire – two major causes for concern in AVLFR

Photos: Author collection 2010

However, agricultural intensification is imminent with the recent construction of two irrigation dams. These dams have been constructed as part of the nationwide *Kilimo Kwanza* policy (a policy to transform Tanzanian agriculture sector from a traditional into a modern and commercial sector).

3.5. Description of the study area

The study was conducted in Angai Villages Land Forest Reserve (AVLFR). This forest reserve is located in Liwale District, Lindi Region of South-eastern Tanzania. Liwale is one of the six districts in Lindi Region of Tanzania, situated between latitude $8^0$0' and $10^0$50' and between longitude $36^0$50'E and $38^0$48'E. The other districts are Kilwa, Lindi rural, Lindi urban, Ruangwa and Nachingwea. Liwale borders Rufiji District in the North East, Ruangwa and Kilwa districts to the East, Nachingwea and Tunduru districts to the South and Ulanga District to the West. Liwale is among the districts with lowest population density in Tanzania mainland; the average population density is about 2 people per km^2. Temperatures in Liwale District vary between 20^0C and 30^0C with mean temperature of 25^0C. The rainy season starts from end of November to the beginning of April. Average annual rainfall ranges from 600mm to 900mm. Liwale is one of the districts containing largest remaining wild stands of miombo woodland in the country. It contains large areas of unprotected woodland on open (public) land whose management is largely dependent upon the surrounding communities. It is estimated that the district has 1,736,100 hectares of forest. There are two forest reserves namely AVLFR and Kiperere. Kiperere is a registered forest reserve under the Central Government with a total area of 87,000 hectares (Kaale and Anna-Leena 2005).

AVLFR is owned and managed by 13 surrounding villages (refer to section 2.6 for list of villages and their corresponding forest areas that make up the forest reserve). The total land area of the 13 villages is 464,474 ha. Each of the 13 neighbouring Village Governments set aside a forest area together creating the 139,420 ha reserve making it one of the largest PFM areas in Tanzania. It is comprised of essentially the miombo woodland with high value tree species such as *pterocarpus angolensis* (locally known as *mninga*), *Julbernardia globiflora* (locally known as *mtondo*) and *Dalbergia melanoxylon* generally known as African Black Wood (locally known as *mpingo*). Agriculture is the major economic activity in the area and accounts for about 93% of income for households. Other economic activities with percentage of income contribution in brackets include business (4%), employment (2.3%) and forests/tourism (1%) (CCI 2009). According to District Planning Department, estimated income per capita in 2005 and 2008 was Tshs 105,000 and 75,000

respectively. Decreased income per capita places the district in the category of poorest districts in the country.

AVLFR has suffered from changes in rainy seasons which, according to local farmers, are shorter and comes late. The villages deal with pressures from shifting cultivation, forest fires, illegal logging and food shortages. Based on historical accounts by the villagers the impacts of global climate changes are very much visible in the area.

Fig. 5: Majuni pond has dried out completely while Angai river has drastically reduced in discharge.
Photos: Author's collection 2010

AVLFR was selected as a case study area for this research for three reasons: (i) it is one of the largest PFM areas in Tanzania and the villages have title deeds and enjoy full ownership of the forests. Angai villages are among the 80 villages out of the 18,000 villages that make up Tanzania with title deeds (Kaale Per. Comm. 2010)[31]; (ii) representatives from three villages, Mihumo, Ngongowele and Ngungja, have received training in participatory carbon monitoring and have established permanent carbon monitoring sample plots in their village forest management area. This is currently part of a research project with long term aims of development into a community REDD type project; (iii) Angai is a selected site in the Tanzanian Group on Earth Observation –Forest Carbon Tracking National Demonstration Project. Satellite and aerial Lidar measurements taken in Liwale under this project will complement ground measurements carried out by the community residents. Two of the three villages (Mihumo and Ngongowele) were chosen as case study villages because the inhabitants have a relatively good knowledge on carbon forestry issues and also

[31] Presentation by Mr. Bariki Kaale from UNDP during MUHIMA meeting with village representatives from the the 13 Angai Villages Liwale, 21-22 May 2010.

because Ngongowele presents an interesting case with competing land-use issues. Figure 6, 7 and 8 below presents maps of Tanzania, the region and the study area respectively.

Fig. 6: Administrative map of Tanzania

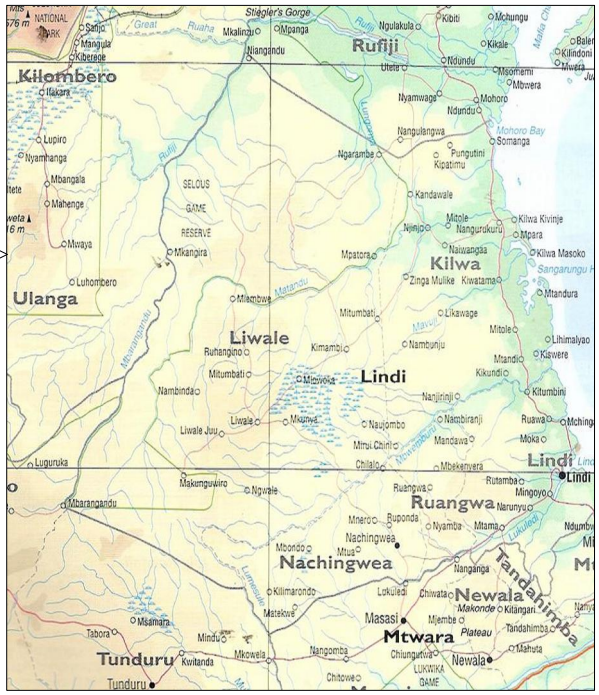

Fig.7: Map of Lindi region indicating Liwale District

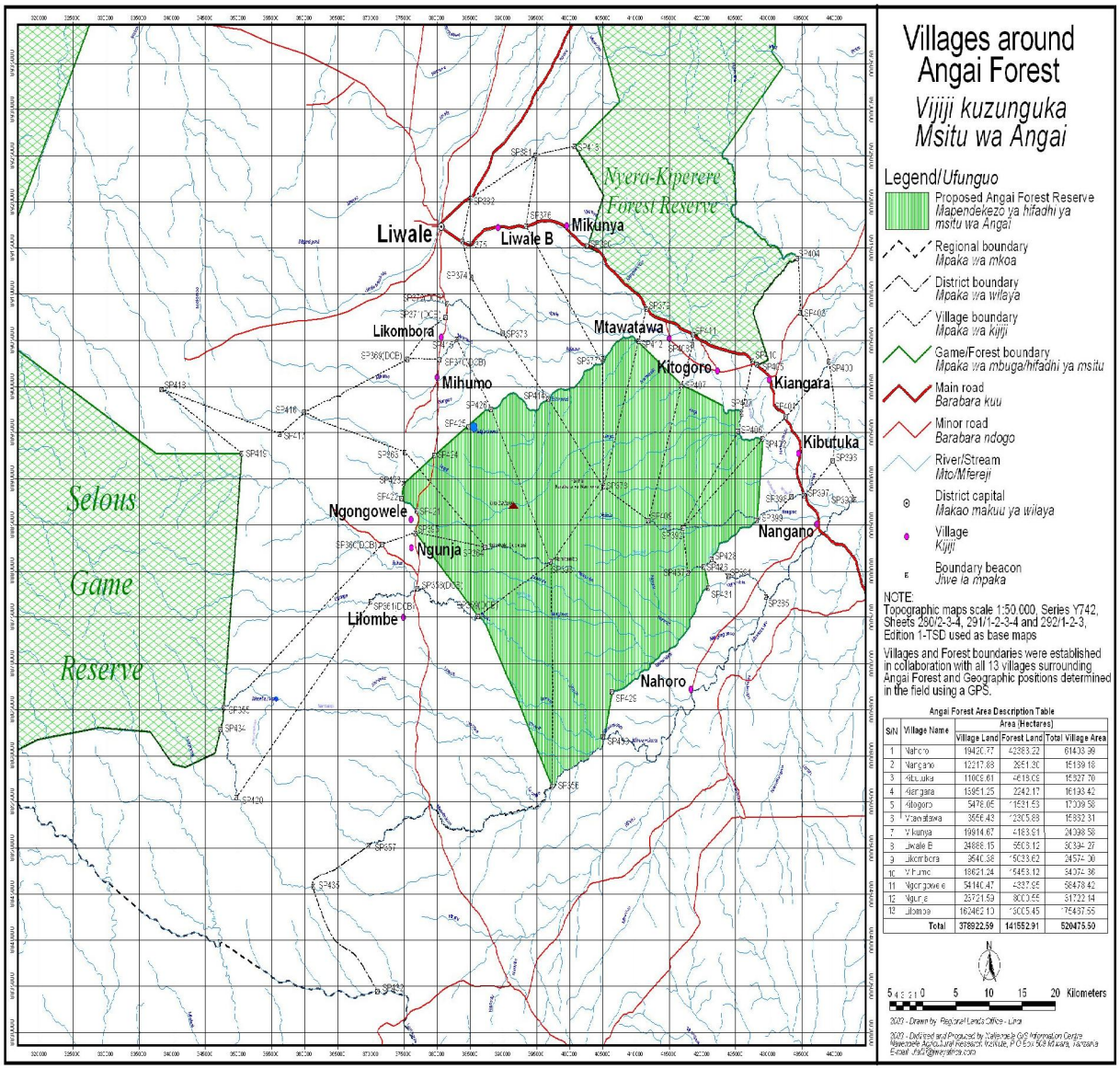

Fig. 8: Map of AVLFR indicating village forests of respective villages

CHAPTER FOUR

METHODOLOGY

This chapter presents the methodological approach adopted for this study. This study was carried out in three phases. The first phase consisted of a thorough review of relevant literature which led to a conference paper presentation in Helsinki[32] and another conference paper accepted for presentation in Berlin 2010[33], the second phase was dedicated to field data collection in Dar es Salaam and Liwale, Tanzania that lasted for nine weeks and finally the third and last phase consisted of analysis and discussion of the data collected from the field.

4.1. Research approach

As mentioned above, this research started with a thorough review of relevant literature. According to Boote and Beile (2005), a thorough, sophisticated literature review is the foundation and inspiration for substantial, useful research. It gives a meaningful context to the ongoing study within the universe of already existing research and sets the basis for logical discussion, analysis, contemplation of implications or anticipation of further research. In the framework of this study, an extensive literature review was undertaken using desktop research to identify and analysed relevant existing literature on the key concepts linked with the study. This includes peer review articles, reports, theses and other unpublished and gray literature.

Data collection focused on obtaining data from the case study villages that provided information on the various stakeholders involved in forest management for the purpose of REDD-plus, the expected benefits, costs and risks and the governing institutions within the community. The study adopted some elements of ethnography in data collection.

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[32]The paper titled *"Building a participatory research method for analysing benefit sharing mechanism and governance issues in PFM-REDD related projects: A case study in Tanzania"* was presented as part of Working Group II (Climate change, energy and environmental risks) during the Conference on Crises Conflict and Development: Multifaceted perspectives to security, held in Helsinki, Finland 11-12 February 2010. **http://www.kehitystutkimus.fi/conference/working-groups/wg2**

[33] A paper titled "Benefit sharing mechanisms and governance issues in Participatory Forest Management-REDD related projects: A Community Forest case-study in Tanzania" has been accepted for presentation at the forthcoming 'Berlin Conference on the Human Dimensions of Global Environmental Change' scheduled for the 8-9 October 2010. The paper will be based on the findings of this study.

4.2. Research strategy

The research strategy used in implementing the empirical research is a case study. A case study is an empirical inquiry that investigates a contemporary phenomenon within it real life context (Yin, 2009). Given the nature of this study i.e. investigation of a contemporary phenomenon (the REDD mechanism) in a complex environment such as AVLFR where a variety of stakeholders perspectives are sought and where the underlying research philosophy is based on interpretive understanding of the issues, a strategy that meets the needs of this research is a case study. The case study approach emphasizes depth of study, is based on assumptions that reality can only be understood through social constructions and interactions, and the context in which the phenomena under study are situated is complex (Biggam, 2008). These attributes of case study strategy fits perfectly well with the objectives of this study.

4.3. Description of data collection methods

This study was essentially qualitative in nature. Several qualitative methods were used such as semi structured interviews, Participatory Rural Appraisal (PRA)[34] methods, beneficiary assessment, informal discussions, participant observation as well as participation in village meetings. This was complemented with secondary sources of information.

4.3.1. Semi structured interviews

Semi structured interviews (SSI) were used to obtain information from key informants. The key informants were selected based on their knowledge and experience on issues of interest for the study (Carvalho and White, 1997). The focus on these interviews was on the understanding of the PFM process, REDD-plus issues, the nature and typologies of benefits derived from the forest (current and expected), the management of the forest reserve by individual villages as well as in a group, the distribution of benefits/costs and on local community governance. SSI was conducted with experts and local leaders. The key informants interviewed ranges from academics, policy makers and members of the local community. Few informal interviews were conducted with randomly chosen villagers to cross checked issues raised during interviews with the village establishment. Though the interviews offer more interaction and enabled the use of prompts for in-

[34] Participatory Rural Appraisal is a family of approaches and methods to enable local people to share, enhance, and analyse their knowledge of life and conditions, to plan and to act. (chambers, 1992)

depth understanding between the respondents and the interviewer, it was time consuming. There were also high risks of incorporation of errors introduced by the way questions were raised and interpreted. In all a total of sixteen key informant interviews were conducted (see annex 1 for list of persons interviewed).

4.3.2. PRA methods

Selected PRA methods were used in this study. The choice of the methods used was based on the kind of information of interest to the study. In this regard methods such as Venn diagram, groups and focus group discussions, visioning and pathways, scenarios, transect walks, pair wise ranking were employed. These exercises were carried out following a well defined methodology (Chambers 1997, cited in Mikkelsen 2005; Asia Forest Network 2002; Evans et al. 2006)

Venn Diagrams is a stakeholder analysis method where participants visually represent relationships between stakeholders and their relative importance by arranging cut-out shapes. In the Venn diagram exercise, a group of eight participants (4 male and 4 female) identified and summoned by the village chairman and representing the village government in Mihimo were asked to identify stakeholders and actors interested/involved in the management of AVLFR. Then they cut out circles of paper, one circle representing each stakeholder. Finally they were asked to arrange the circles to show relationship between stakeholders.

Several groups and focus groups discussions were held with villagers, members of village government and different village user groups. Separate discussions were held with a selected group of participants representing different interests in the villages. Open ended questions were asked on a wide range of issues including among others ownership of the forest reserve, the importance of the reserve, current and expected benefits from the forest reserve, challenges in managing the reserve as individual villages as well as in a group, the REDD mechanism, the PFM process and so on.

Visioning and Pathways are group activities where participants think about a desired future and develop action plans and strategies to reach it. Visioning and pathways as well as scenario exercises were carried out during some of focus group discussions. Participants were asked write down their vision for the forest reserve and indicate pathways and strategies they intend to adopt to achieve their stated vision. As part of these discussions, the facilitator crafted three scenarios for discussions. These scenarios include (i) the current status quo of no real benefit (ii) unsustainable logging for immediate benefits with its consequences and (iii) completion of the PFM process and

Carbon benefits in future. Participants discussed these different scenarios and decided on which among the three is most suitable and why.

In the pair wise ranking groups of participants represent different interest were asked to identify the benefits (current and future) they get or expect from the reserve. After identifying the benefits, they were asked to compare the benefits against one another and a priority ranking made. They were further asked to provide explanation for the choices made.

Transect walks in the company of the villagers were made in the villages and into the forest reserve to see the state of the forest reserve and the use of village land. During these walks, questions were asked on issues such as illegal logging, climate variability, importance of the reserve.

In all, a total of six PRA exercises were carried out. The participants were selected with the help of the village chairman and village executive officers. Gender was taken into consideration during the selection of participants. Participants were selected from both the old and newly created villages.

4.3.3. Beneficiary assessment

Beneficiary assessment (BA) is an approach to information gathering which assesses the value of an activity as it is perceived by its principal users. The approach is qualitative in that it attempts to derive understanding from shared experience as well as observation and gives primacy to the centrality of the other person's point of view. According to Salmen (2002), BA is a systematic inquiry into people's values and behavior in relation to a planned or ongoing intervention for social and economic change with aims to reveal the meaning people give to particular aspects of their lives so that development activities may better enhance people's ability to improve their own living conditions. In this study, BA was used to assess the direct and indirect benefits as well as expected benefits from PFM activities, carbon monitoring and possible REDD payments. The BA was done in the form of a focus group discussions comprising eight participants, five of which have receive training on PFM and REDD. Participants were asked questions on the importance of the training received and the impact of such training on their lives and their community at large.

4.3.4. Informal discussions

Informal discussions were held with some opinion leaders in the villages. This includes the primary school head teacher, head of village dispensary, head of the different village user groups and religious leaders. The aim of these discussions was to get their opinion on the village governance,

relationships between villagers and villages. These discussions helped in cross checking and triangulating information gathered during interviews and focus group discussions.

4.3.5. Participant observation

Part of the data collection was done through participant observations and attendance of the villages general assembly meetings. The researcher was embedded in the case study villages to observe how the villagers interact with one another. Attention was also devoted on the degree of interaction between the governing structures and the ordinary villagers on a daily basis as well an understanding on how the villages are governed.

4.3.6. Secondary data collection

Secondary sources of information such as consultancy reports on the Angai process prepared by RIPS, the draft Memorandum of Understanding (MoU) between the thirteen villages, feasibility study on the potential for a community REDD type project commissioned by Clinton Climate Initiative and several other gray literature were reviewed as part of this study. These reports and studies provided a fuller and richer picture of the local context and conditions, the processes, actors and the current state of affairs.

4.4. Reflections on the choice of methods and the data collection process

This study initially aimed at looking at the benefits/cost and risks to households for their participation in PFM and REDD-plus activities with the aid of a combination of both qualitative and quantitative methods in data collection. However due to the fact that field realities turn out to be different from what was initially planned, changes were made on the research objectives. These changes led to changes in the research methods. However frustrating this was, it gave the researcher an opportunity to be flexible and to quickly adapt to new ideas as well to examine new avenues for the study. Since the study was carried out within the framework of an action research project, participatory methods played a preponderant role in the data collection. Although the data collected through these participatory exercises differ in some extent from interviews and observations, this study attempts to bridge the gap by grouping ideas into points of convergence and divergence.

4.5. Framework for data analysis

As stated above, the study is essentially qualitative in nature and the analyses of the data obtained through the methods described above revolve around the idea of themes. These themes are a reflection of the overall objectives of the study: *currents and expected benefits from the forest, benefit, benefit sharing/ costs sharing modalities, stakeholders involve in PFM and eventually REDD, local governance.* The data analysis consists of description, analysis and interpretation of the collected data. The figure below presents the various stages in qualitative data analysis process.

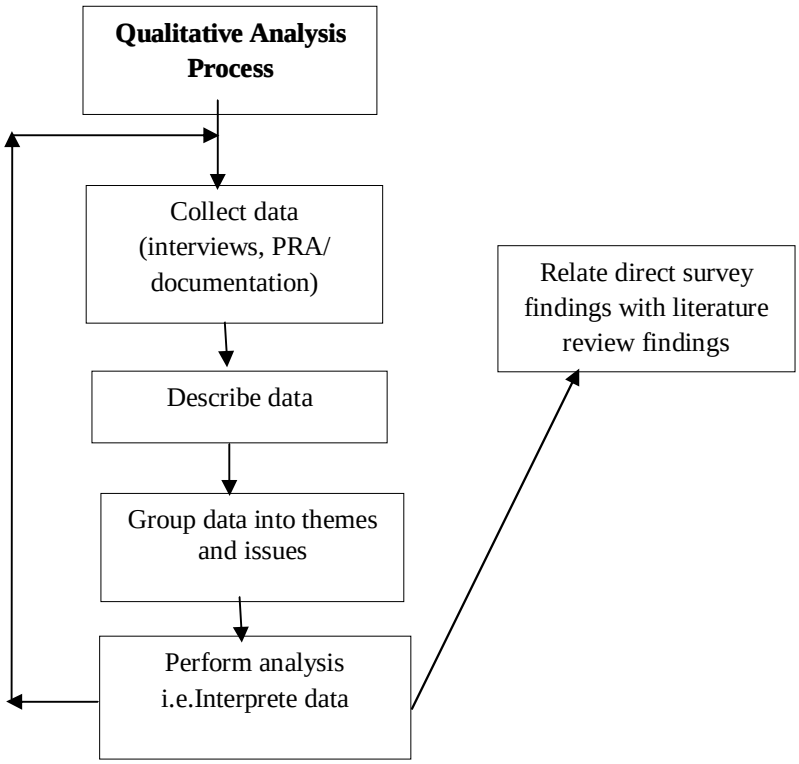

Fig. 9: Qualitative data analysis process

Source: adapted from Biggam, 2008.

4.6. SWOT Analysis

The collected data is further analysed using the SWOT analysis framework. SWOT is a strategic planning tool used in evaluating the strengths, weakness, opportunities and threats involved in a project (Houben et al. 1999). Strengths relates to the possible tangible and intangible attributes internal to an organisation (in this case the AVLFR communities) and which are under her control. Weaknesses are factors within the organisation control but which detracts her ability to achieve it

desired goals. Opportunities represent external attractive factors that represent the reason for an organisation to pursue a desired goal while threats are external factors beyond the organisation control which could place the organisation mission at risk.

	POSITIVE/ HELPFUL to achieving the goal	**NEGATIVE/ HARMFUL to achieving the goal**
INTERNAL Origin facts/ factors of the organization	**Strengths** Things that are good now, maintain them, build on them and use as leverage	**Weaknesses** Things that are bad now, remedy, change or stop them.
EXTERNAL Origin facts/ factors of the environment in which the organization operates	**Opportunities** Things that are good for the future, prioritize them, capture them, build on them and optimize	**Threats** Things that are bad for the future, put in plans to manage them or counter them

Fig. 10: Overview of a SWOT Matrix

Source: http://rapidbi.com/created/SWOTanalysis.html (accessed September 2010)

CHAPTER FIVE

FINDINGS AND DISCUSSIONS

This chapter presents the findings of the case study described in the previous chapter. The findings are presented in a structured manner beginning with a socio-economic profile of the case study villages, a description of stakeholders involve in the Angai PFM/REDD processes, description and discussions on the current and expected benefit and benefit sharing using the analytical framework developed by Mahanty et al. (2009). A discussion on governance and governance challenges is further presented. The chapter ends with a SWOT analyses.

5.1. Socio-economic profile of case study villages

As mentioned earlier, two villages have been selected for this study: Mihumo and Ngongowele. The following is a presentation of the socio-economic profile of the two villages.

Mihumo village[35]

Mihumo village is a recognized and registered village with village certificate no. 4569 issued in May 2005. The village owns and manages 11,792 ha that is about 8.45% of AVLFR. Administratively the village is found in the Mihumo Ward, Liwale District. According to the village government statistics, the village has a total of about 700 households (statistics of January 2010). The total population of the entire village is estimated at 3,015 inhabitants. Historical accounts indicate that the villagers of Mihumo once lived within the present day forest reserve and were forced to move to the current site during the *villagisation* process in 1967. The main economic activities in the village are subsistence agriculture, petty trading, carpentry, bee keeping and local handicraft. Wealth class in the village is very visible from the nature of houses. Well-off and middle income household are built on permanent materials while poor households live on semi permanent material. Figure 10 below depicts the various categories of houses found in Mihumo.

[35] Mihumo in this study refers to Mihumo village and the newly established Darajani village. Villages have the 'legal' rights to split up when the number of households reaches or exceed 250. Some observers attribute the splitting up of villages to political manipulation by some political elites.

(a) Poor (b) Middle (c) well-off households

Fig. 11: Categorisation of wealth based on nature of houses in Mihumo Village

Photos: Author's collection 2010

The village government headed by the Village Chairman (VC) and members of the seven specialised committee (Security and safety, Welfare, Plan economic and finance, Health, Natural resources, Education and Water) managed the affairs of the village on a daily basis under the supervision of the Village Executive Officer (VEO).

Forest management activities are the responsibility of the Village Natural Resource Committee (VNRC) composed of twelve members (8 men and 4 women). Currently forest management activities are limited to forest patrols and fire fighting. Forest patrols are done once every month and can run for about a week. Lack of patrol equipments is the major challenge encountered by the VNRC members in executing their functions.

In terms of forest benefits, the locals derive a number of benefits from the forest reserve but most especially from the forest on the village land commonly referred to as *open area*. These benefits include fees paid by researchers, licence fees for timber harvesting, non timber forest products (such as mushroom, honey and local medicine), and timber for subsistence use. During the transect walk into the forest, many pit sawing sites were spotted and questions asked about these pit sawing activities (Figure 11 below). It was revealed that the former members of the VNRC carried out some illegal harvesting activities and derived some illegal benefits from the timber sawn.

Fig. 12: Remnants of pit sawing in Mihumo portion of AVLFR.

Photos: Author's collection 2010

By introducing REDD-plus, illegal logging will increase elsewhere most probably on the unreserved village land thus the problem of leakage. This is why measures to introduce REDD in AVLFR were coupled with initial steps towards long-term, integrated land-use planning. In the village land certificate, the village land is divided into four categories of land use activities: settlement, agriculture, grazing and forestry. In terms of land use agriculture is seen as the most important both food and cash crop cultivation. Cash crop such as cashew serves as a major source of income while maize, cassava and rice are vital food crop. Other important land use activities include firewood collection, poultry, and forest and water conservation. Fishing, hunting, collection of medicinal plants and beekeeping are considered secondary land use activities while vegetable gardening, collection of NTFPs such as *Hangadi* and *mingoko* are considered least important (Sundström 2010).

Ngongowele village[36]

Ngongowele village is located in Ngongowele ward, liwale District. It borders Mihumo in the North and Ngunja in the South, AVLFR in the East and Selous Game Reserve in the West. It is equally an officially recognised village with certificate no. 4570 issued in May 2005. Ngongowele village has the largest village land area among the Angai Villages that is 116,959 ha of which 8,285 ha form part of AVLFR. The total population of the village is estimated at about 2320 inhabitants and is composed of 386 households. No histories of migration have been recorded in the village according

[36] Ngongowele in this study refers to Ngongowele village and the newly established Mikuyu village.

to the Village chairman. Subsistence agriculture, fish farming and bee keeping are the main sources of revenue for the villagers. Crops grown include cassava, rice, maize millet, beans. Due to the presence of an extensive flood plain of the Ruhuu River, an irrigation dam has been constructed as part of the national drive for food sufficiency. With an estimated 600 ha of land to be irrigated when the canals are fully operational; the project is expected to considerably boost agricultural production and eventually improve the livelihoods of the villagers as rice production is expected to increase from 5-6 bags (80kg) /ha without project to 30-35 bags (80kg)/ha with the project. This is also expected to intensify agricultural production and reduce the rampant shifting cultivation which is the main and current driver of deforestation.

Fig.13: Irrigation project in Ngongowele Village

Photo: Author's collection 2010.

Just like in Mihumo, forest management activities in Ngongowele are the responsibility of the VNRC and are basically forest patrols. However, there are conflicting accounts with respect to the frequency of these patrols between the head of the VNRC and one member of the committee interviewed. The head of the VNRC claimed that forest patrols are made thrice a month. This claim was challenged by one of the committee members who asserted that the last forest patrol was done in July 2009. Lack of patrol equipments, adequate training and transportation means (the forest reserve is some 10-15km away from the village) are the major challenges faced by the committee in carrying out their duties.

The forest is very important to the villagers of Ngongowele as it provide timber for their construction needs especially village offices, NTFPs, serves as their water source and is used for rituals. It is worth mentioning that due to the distance between the village and the forest reserve, most if not all of the benefits cited above are derived from the forest on the village land that is not part of the reserve.

In terms of land use, according Sundström (2010), the villagers in Ngongowele consider the following land use activities as very important: settlement; cultivation of food crops such cassava, maize and rice; firewood collection; irrigation; conservation of water resources and goat keeping. Cashew and simsim – both major cash crops in the area and timber and pole harvesting were considered secondary meanwhile artisanal mining; beekeeping and pottery making were considered as least important. Table 6 below presents a summary of the basic information of the two case study villages

Table 6: Basic information of case study villages

Village name	Mihumo	Ngongowele
Administrative Ward	Mihumo	Ngongowele
Population (inhabitants)	3,015	2320
Number of households	700	386
Main economic activities	Agriculture, petty trading, beekeeping	Agriculture, beekeeping, fish farming
Number of specialized committees	7 (Security and safety, Welfare, Planning, Natural resources, Education andWater)	4 (Natural resources, Education, Health and Water)
Village land area (ha)	17,763	108,674
Village land area in AVLFR (ha)	11,792	8,285
Forest management activities	Forest patrols and fire fighting	Forest patrols
Major land use	Agriculture and settlement	Agriculture and settlement

Source: Author's elaboration

5.2. Stakeholders/actors involved in the Angai PFM/REDD process

In one of the PRA exercises conducted as part of this study, the participants identified six different categories of stakeholders/actors with interest in the forest reserve, the PFM and REDD processes. These stakeholders/actors are (i) the local communities (ii) the District Natural Resource Office (DNRO) (iii) the Central Government (iv) donors/international NGOs (v) businessmen/loggers and finally (iv) researchers. According to the participants, these stakeholders/actors are involved for different reasons. To the communities, the forest reserve is source of everything for their

livelihoods as it provides both financial and non financial benefits such as the various ecosystem services. To the DNRO, it is part of the forest patrimony under the district. In the context of PFM, the DNRO serves as service providers to the community and are expected to receive 20% of the financial benefits that is derived from the forest as payment for services rendered. They are also required to control and monitor the implementation of the PFM procedures as indicated in the national PFM guidelines. To the central government, Angai is very important in it national carbon accounting strategy in view of REDD implementation. As indicated above, it is one of the three demonstration sites in the country where carbon tracking is aimed to be carried out for the purpose of REDD mechanism. To donors/international NGOs, Angai represents a long history of commitments dating as far back as 1993 with the Rural Integrated Project Support finance by the Ministry for Foreign Affairs of Finland. Presently the Clinton Climate Initiative are funding the development of forest management plans and capacity building of the inter village union called MUHIMA. These activities are expected to be strengthened and consolidated with Ministry for Foreign Affairs of Finland funding in the framework of the forthcoming LIMAS programme[37]. To businessmen/loggers, AVLFR is rich in valuable timber species which can be exploited and sold to near and far away markets where there is demand for these woods. To researchers, AVLFR is very unique. It is one of the rare examples in Africa where communities have been granted title deeds and management rights over a huge forest area (139.000 ha) with very valuable tree species. The fact that thirteen villages that are not homogenous in land area and demographics are managing the forest reserve as an entity is in itself very interesting from a research point of view. This is even more interesting with the advent of REDD-plus where communities are expected to demonstrate emissions reduction by foregoing some of their traditional/customary activities. According to the community members, in order of importance are the communities, followed by the central government, the DNRO, donors, researchers/visitors and the least important are the businessmen/loggers (see Venn Diagram below - Figure 13). Their justifications for these rankings are as follows: the central government is the policy maker; the policies are then implemented by the DNRO in conjunction with the communities. The implementation of the policies is often with the help of donors. Meanwhile researchers/visitors pay research permits and fees to the village

[37] LIMAS is an acronym that stands for Lindi and Mtwara Agribusiness Support project. The project has as goal to increase income generation opportunities for rural communities in selected Districts of Lindi and Mtwara Regions, by improving the quality of agro-forestry production and processing. It is expected to commence in September 2010

when they come visiting and they learn from them as well. Businessmen/loggers are the least important because they in most cases make logging deals with the District authorities with little knowledge of the villagers. Of all these stakeholders/ actors involved in the Angai process, in the context of PFM, the communities are the primary beneficiaries. The Forest Act empowers communities to retain 100% of the revenues from the sale of forest products. However, in many case, the communities have chosen to share a portion (about 10-15%) with the district in return for services provided such as extension, advice and technical support (Blomley and Iddi, 2009). In the context of REDD, what is certain is that communities and the central government will benefit but the modalities for the benefit sharing is still unknown.

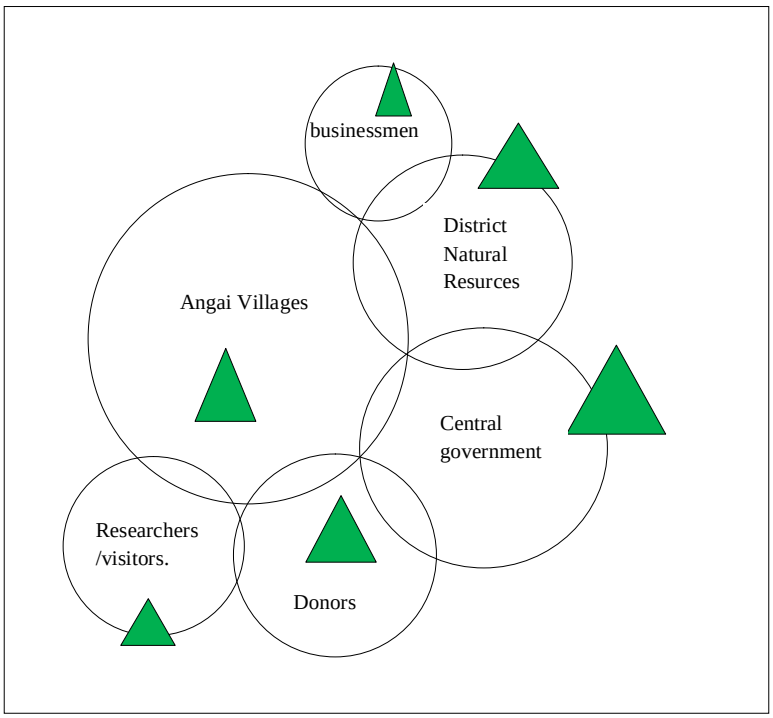

Fig. 14: Venn Diagram of stakeholders/actors involved in AVLFR

Source: adapted from Evans et al. 2006. This Venn diagram was drawn by villagers of Mihumo.

5.3. Current and expected benefits, costs and risks from PFM and REDD activities.

Angai villages just like other forest dependent communities depend a great deal on the forest and forest resources for their basic livelihood needs. The forest provides both financial and non financial benefits to the villages. Information gathered from interviews indicate that at moment the forest provides essentially non financial benefits such as NTFPS (wild vegetables, honey, wild fruits especially *hangadi* in periods of huger stress), timber for subsistence use only, bush meat,

local medicines and environmental services like water resources. The financial benefit receive currently is in the form of fees paid by researcher and visitors who visit the forest (see Table 7 for the different categories of benefits). According to the Forest Act of 2002, forest under community ownership and management can only be exploited within the PFM framework if the communities have a forest management plan, harvesting plans and by-laws regulating the use of forest resources. Because of the lack of forest management plans and it accompanying harvesting plans, the villages cannot exploit the forest through timber licensing for financial benefits. Expectations are high within the communities that in the future they will receive financial benefits from timber and most especially carbon credits with coming of REDD-plus. This in their opinion will reward their conservation efforts.

Table 7: Categorization of present and expected benefits from the reserve as expressed by the villagers

Mihumo	Ngongowele
1. Climate related benefits	1.Water
2. Financial benefits (researchers, timber and Carbon)	2.NTFPs
3. Subsistence benefits (NTFPs)	3. Timber (for subsistence)
4. Rituals	4. Financial (researchers, timber and carbon)
	5. Rituals

The information reported above is based on a Pair wise ranking exercise. It is important to note that while there are quite consolidated economic instruments to assess the value of water services from forest for example (PES mechanism) even if they are complex; there are no experiences in assessing the economic value of rituals.

It was also interesting to observe that financial benefits from the forest reserve are not a major priority for both the village leaders and ordinary villagers. In separate PRA carried out with village leaders and ordinary villagers, environmental services such as water provided by the forest came out as the most important priority (see Annex 4 for full results of Pair wise ranking exercise reported in Table 6 above). This priority was also affirmed during the visioning/scenario exercise. Participants in these exercise indicated their willingness to be pursue sustainable forest management practices through the ongoing PFM process in order to benefit from sustainable timber harvesting and carbon payments in the future. This is partly because of the water stress that is being observed within nearby communities such as Kibutuka. Due to the water problems, there is a growing

awareness of the benefits of sustainable management of the forest not for the direct financial benefit but for the other environmental services (water, biodiversity, micro climate) that it provides. Though there seems to be a general agreement on the important of the forest for the provision of environment services, during discussions in the framework of a MUHIMA meeting, there were differences in opinions regarding priorities for the reserve. This is in part because there have been illegal logging which have benefit a few individuals. In Mihumo for example, the previous village government and some individuals participated in illegal logging in the end of 2009 and early 2010.

Another important benefit that Angai villages get as a result of the forest reserve is related to training. This benefit was surprisingly not mentioned during the PRA fora. This is probably because few villagers have benefited from training as beneficiaries are mostly village government members and members of the VNRC. Some members of the village government and the members of the VNRCs have received training in forest inventory as part of the carbon monitoring in view of REDD. A beneficiary assessment conducted with people who have received some form of training and those who have not reveal that despite lack of information sharing, there is increase awareness within the villagers of the importance of the sustainable management of the forest reserve. However, awareness does not always mean a change in behaviour. Long term follow up is very important and needed.

In terms of cost associated to PFM activities in AVLFR, there are no real cost incurred by the communities at the moment. The only cost mentioned are cost associated with provision of food and daily allowances to members of natural resources committee when they conduct patrols. According to one estimates, these allowances ranges between 2000-5000 Tsh (1.5-3.5USD) per day depending on the availability of funds in the coffers of the village government. However as observed by Zahabu (2008), PFM areas engaged in carbon production will have to grapple with other direct cost linked to measurement, verification and marketing of carbon credits.

In terms of risks, very little is known by the communities of the risks they faced when there are fully engaged in PFM activities and eventually REDD. The only risk according to one of the Village chairman interviewed would be the restriction of bee keeping activities within the forest reserve. Bee keepers are accused of causing bush fires. However as pointed in Zahabu (2008), when communities engaged in REDD, some current benefits that involve biomass removal from the forest such as harvesting of timber both for subsistence and commercial use, fuelwood collection will need to be reduced. In the case of Angai, this is not a problem because such benefits can be derived

from the village land but then the problem of leakage becomes important. Even the experts interviewed were unaware of any risk. According to one of the experts interviewed, communities can effectively participate in REDD-plus if they are well informed of the opportunities and challenges and risks from the very beginning. However, when asked about the concerns that REDD-plus is threatening decentralization in forest governance through the national approach, the head of the National REDD Task Force responded categorically with these words: " … *the national approach is just for reporting, it doesn't reverses the decentralization process or the gains made through decentralization…*"

Comparing the findings with the generic list of possible benefits and risks associated with REDD project services for local livelihoods, local economic development and forest ecosystems reported in Table 1 above, one can conclude that the expectation of the communities are similar with those expressed in existing studies and reports. The villagers are already receiving education and training on forest management activities and there are ongoing activities aimed at strengthening the community-based institutions through capacity building activities. Similarly, the villages are expecting new income from sales of environmental services (carbon) and higher forest values due to improved forest management. Furthermore, the villages are currently enjoying some of the major forest management benefits reported in Table 2 such as access to water and energy security through wood based fuels. However, with national approach to REDD-plus, there is the risk of loss of land ownership rights, loss of rights to land access, marginalization of poor people and fraud and corruption.

5.4. Benefit sharing in the context of AVLFR

> *"…We can only talk of benefit sharing when there is something to share. So far there hasn't been any real benefit from AVLFR to be shared among the villages…"* VEO - Ngongowele.

The above statement summarizes the state of affairs when it comes to benefit and benefit sharing within the context of AVLFR. Even though there is currently no real benefit to be shared because the PFM process is not yet completed, it is worthwhile situating AVLFR in context and analysed the current situation of the resource, the policy environment and the local governance to determine how these benefits will be shared when it start to flow and the challenges the villages faced in designing equitable benefit sharing. To do this, this study analyses the situation of Angai using a

conceptual framework developed by Mahanty et al. (2009) adapted to for benefit sharing in collaborative forest management (see section 2.6).

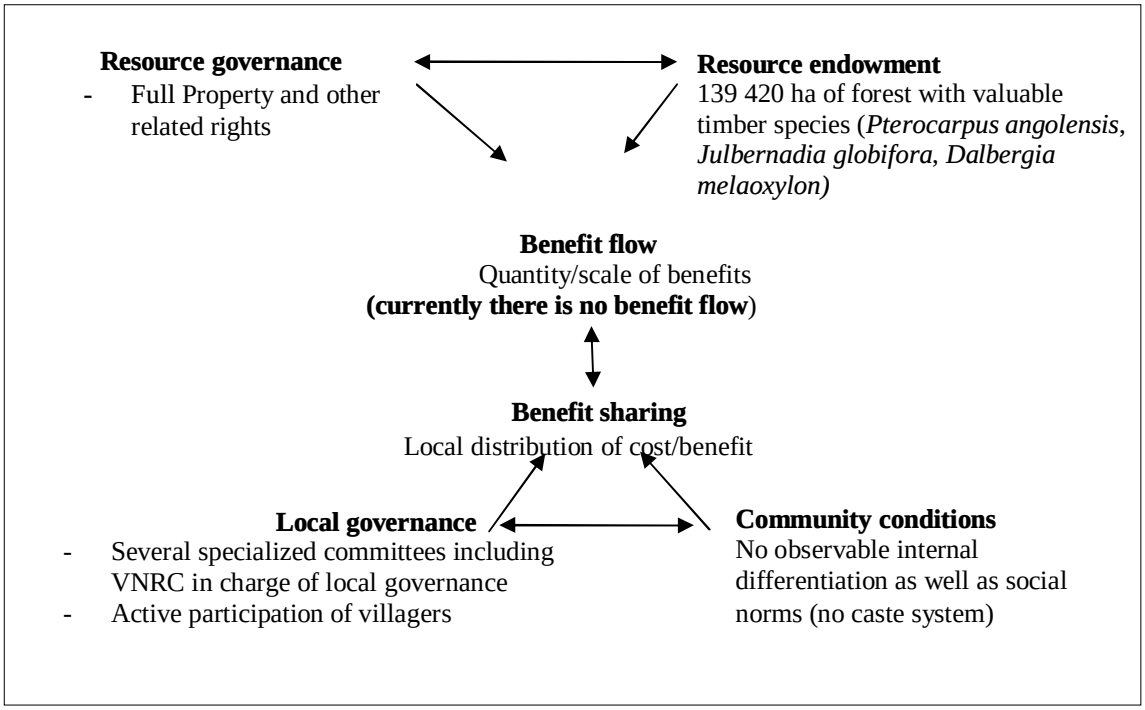

Fig. 15: Benefit sharing conceptual framework for AVLFR (adapted and modify from Mahanty et al. 2009)

Benefit flow

Angai communities enjoy full ownership rights and in perpetuity of the resources when it comes to property rights. However, the question of carbon right which is a very recent development is unclear. This question was unfortunately avoided by experts interviewed working in the government. Nevertheless, according to one expert, carbon rights depend on the current tenurial arrangement. Research has shown that there is a direct correlation between incentive to invest by communities and the duration of ownership rights. Shorter periods generally provide a lesser incentive for investment by communities (Agrawal and Ostrom, 2001). With such certainty there is the incentive for Angai communities to invest in management activities to enhance forest conditions. With respect to policies and legal framework for forest use, the Tanzania forestry legislations are very progressive and supportive to CBFM. Section 78 (3) of the Forest Act provides for the waiving of state royalties on forest products originating from PFM areas. This means the villages are not bound by government timber royalty rate, thereby permitting them to sell their timber at prevailing market prices. The same Forest Act in Section 65 (3) entrust management and

harvesting decisions of commercially important or endangered tree species to village administration.

In terms of resource endowment, the quality of the forest is very good with valuable timber tree species. Despite the repeated occurrence of forest fires, a transect walk into the forest confirmed the generally good state of the forest expressed during interviews. A recent study also concluded that AVLFR is in very good condition in terms of productivity (Mukama *forthcoming*).

Fig. 16: Partial view of AVLFR

Photo: Author's collection 2010

This is in contrast to CBFM experiences elsewhere such as Nepal, where the government allocates degraded forest to communities (Acharya 2002). With the resource endowment unquestionable and a favourable policy environment in terms of laws there is every ingredient for the benefits to flow to the communities. It is worth noting that there is currently no benefit flow.

Benefit sharing

With respect to local governance conditions (governance bodies and participation), the findings indicate that there is active participation on the part of the villagers in village committees, committee meetings as well as in the village general assembly meeting. Data from interviews revealed that most of the members of natural resources committee were new. This is explained by the fact that the most of the previous committee members were voted out due to lack of accountability and transparency in the management of the committee.

In terms of community conditions (social norms rules and norms, internal differentiation), no observable internal differentiation as well as social norms and rules among the villagers was

noticed. In Tanzania, there is no caste system in villages as in countries in Asia. From these analyses it is fair to say that all the necessary conditions are present for both the flow and equitable distribution of the benefits.

Presently a lot of discussions are taking place on ways to develop the capacities of the Angai communities with the modalities of benefit/cost sharing having a pride of place. According to a recently proposed Memorandum of Understanding (MoU), benefit and cost sharing shall be decided upon by the inter village union *Muungano wa Hifadhi ya Msitu wa Angai (*MUHIMA) whose board will comprise of five representative from each of the thirteen villages. Section 6.3 of the MoU stipulates:

> *MUHIMA Board will discuss and formulate a transparent and equitable system of distributing costs and benefits accrued from Angai Forest based on the approved management plans and annual work plans.*

Although nothing is certain on how the benefit/ cost sharing will be done, what is certain is the challenges it poses to the villages. This is evident from the difference in opinions expresssed by the village executives in the two case study villages. While one of the executive thinks that the benefits should be shared in function to the village forest area that is part of AVLFR, the other proposes 10% for MUHIMA, 60% villages and 30% for the VNRCs. The very fact that there are huge differences in terms of forest area between the villages (for example Mikunya has 1,628 ha while Nahoro has 40,939 ha) and complains that some villages have illegally exploited and logged their portion of AVLFR makes benefit sharing a major challenge.

When asked how they intend to distribute the benefits within the village, there was a unanimous approach to benefit distribution- investment in village development and social infrastructure. Benefits that have been received so far through logging licenses on village land have been used in building village government infrastructure. This is a similar approach to benefit sharing practice in Cameroon where the royalties paid by timber concessionaires are channelled back to the communities through the funding of rural development iniatives defined by the communities (Morrison et al. 2009). However as Blomley and Iddi (2009) noted, there are high chances of inequitable distribution and the risk of elite capture in CBFM than in JFM due to upfront payment required for harvesting permits. See box below for the pros and cons of cash payments.

Box 4: Sharing Benefits – Pros and Cons of Cash Payments

Some project designers choose cash where the output is a market commodity that is easily measured and produced by individual or small team effort. Some used cash payments for environmental services, based on keeping the land in particular uses.
However, cash is sometimes a problem. Cash payments can be difficult to trace and verify, unless they are made through a banking system or placed in a trust subject to outside auditing. When cash goes into the hands of community leaders, communities are not always able to hold them accountable. Corruption becomes a concern. If the payments go to heads of households, they may not benefit the women or youths.
A community may prefer the alternative options such as productive goods e.g. beehives, extension services, credits, employment opportunities etcetera. Often these arrangements can advance the long-term prospects of the community and contribute to poverty alleviation more sustainably than cash payments

Source: World Bank 2009

In the framework of REDD, the modalities for benefit sharing between PFM communities and the central government is still unclear. A study has been commissioned to look at benefit sharing issues and there are indications that the approach of benefit sharing would be case study specific. However, two of experts interviewed pointed out that the model that will likely be adopted is the current model used in JFM. This model attributes 60% of the benefits to communities and 40% to the Central government. The governmet of Tanzania intend to adopt the nested approach and is pushing for the creation of a carbon fund from which communities will be rewarded for their performance (actual reduction in GHG emissions) or effort (efforts made in reducing deforestation). However, there are concerns regarding this model of benefit sharing in JFM because experience show that most of the communities are still to receive their 60% share due to bureacratic bottlenecks at the Ministry of Finance. These worries can be summarized by the following statement made by one of the experts interwiewed:

> *"... the national approach in terms of benefit sharing is not the most appropriate because of the transaction cost involved. More importantly,with the current delays experienced with JFM, money going through the treasury would be very difficult to flow to communities..."*

5.5. Governance of AVLFR

As mentioned in the description of the case study, AVLFR is forest reserve made up of forests belonging to thirteen villages aiming for single management. Currently each of the villages manages its portion of the reserve on a daily basis through the work of the various VNRCs.

5.5.1. Institutions involved with the management of AVLFR

Key local institutions involve with the management of AVLFR include the village governments of the thirteen villages, the thirteen village natural resources committee and the inter village Union *Muungano wa Hifadhi ya Msitu wa Angai* known by the acronym MUHIMA. These institutions are under the oversight of the various village assemblies (see Figure 15 below). This oversight is stipulated in the Local Government Act of 1982. The Act puts the village assembly at the centre of the village government structure and encourages participation by considering all person aged 18 and above to be part of the village assembly.

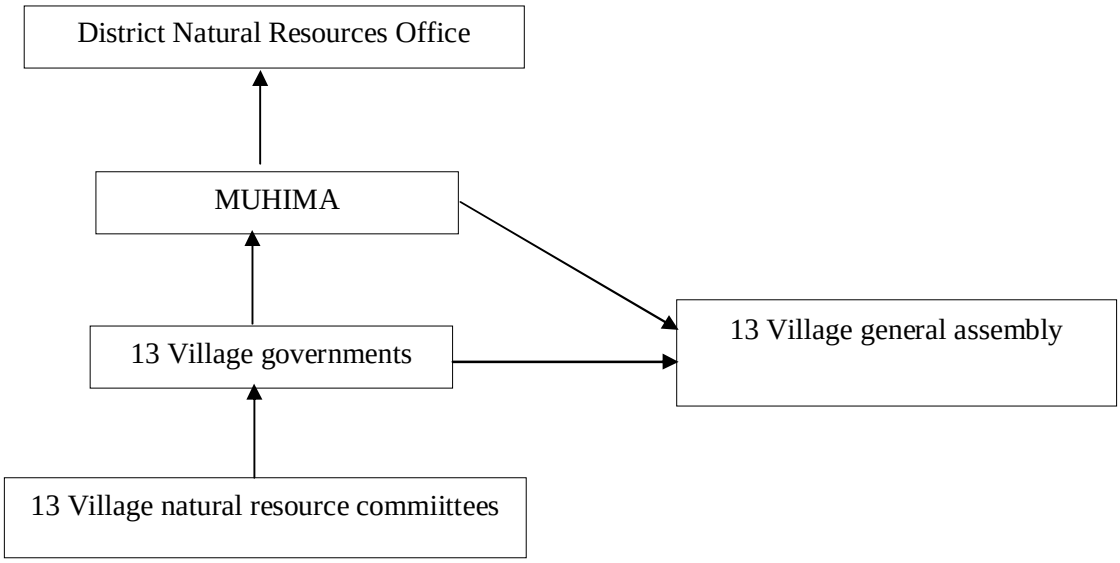

Fig. 17: Institutions in charge of managing AVLFR and its reporting structure

According to the prescriptions of the Prime Minister Office for Regional Administration and Local Government (PMO-RALG), the Village Government is in charge of overseeing development activities at the local level (village); ensuring local law and order; enforcement of local bylaws; co-ordination of local planning, overseeing land use planning and allocation. These different tasks are executed by specialized committee that report to both the village government and the village general assembly. One of these specialized committees is the village natural resources committee. (VNRC). The VNRC is a sub- committee of the village government.

According to the community-based forest management guidelines, each village must elect members of VNRC to manage its forest. This management responsibility is legally prescribed by Section 33 (1), (2) of the Forest Act. The responsibilities of the VNRCs are to support environmental conservation through primarily forest protection (forest patrols) against illegalities and fire fighting. In addition to this, VNRCs are responsible for educating the villagers on forest management issues. In regions where CBFM is fully operational, VNRCs play a key role in planning harvesting, provide permit and supervise the collection of fees. The committee is also empowered to fine defaulters of illegal activities. In the current context of Angai their responsibilities are very limited because the PFM process is yet to be completed. Presently, while much is being done to build and develop the capacity of MUHIMA, each VNRC is responsible for the management of its portion of the reserve without any coordination. Due to the current lack of coordination in forest protection efforts, Mihumo VNRC does patrols once every month, meanwhile in Ngongowele, there are contradictory accounts on the frequency of forest patrols between members of the VNRC.

This brings to light the importance of an inter village governmental union. The Forest Act in its Section 38 (3) permits villages to established joint village forest management committee. This committee does not need to be registered as an association but can operate as a union subject to provisions under the Local Government Act of 1982 (Blomley, 2006). It is against this backdrop that from the conception of AVLFR, RIPS propose the creation of MUHIMA. MUHIMA is in part a reflection of the fact that ecosystems do not conforms to legal and administrative boundaries (Blomley and Iddi, 2009 cited in Sundström, 2010). However, after several years of total inertia due to lack of office space, no running budget, low capacities of the out-going executives, poor leadership and irregularity in meetings there is some glimmer of hope with the ongoing capacity building activities sponsored by CCI and the prospect of its continuation with the coming of LIMAS. The role of MUHIMA is to coordinate sustainable management of the AVLFR across the 13 villages and help ensure equitable distribution of cost and the benefits accrued. As Kaale (2010) noted:

> "*... Sustainable timber harvesting and long term funding from sale of forest carbon credits might offer a mechanism for expanding and sustaining the AVLFR which will in turn improve sustainable forest management and contribute to poverty reduction in Liwale District. However for this to be achieved, all the necessary institutional, legal and technical arrangements need to be in place. In this regard MUHIMA becomes a critical institution in addressing the above requirements, along with the 13 VNRCs and the broader village governments (village assemblies) through which all village*

residents will be informed about, participate in and share benefits of sustainable forest management...”

MUHIMA does have a crucial role to play as a community level institution and there is unanimity amongst the villages of this role. According to the MoU currently under discussions, MUHIMA will comprise of 65 members drawn from the thirteen villages (that is 5 members from each village) called the MUHIMA board. From the 65 members, 17 members plus a coordinator (hired by MUHIMA) will make up the executive committee. The executive committee can form specialised sub committees to implement specific activities when need arises (see Figure 18 below for the proposed organisational chart of MUHIMA).

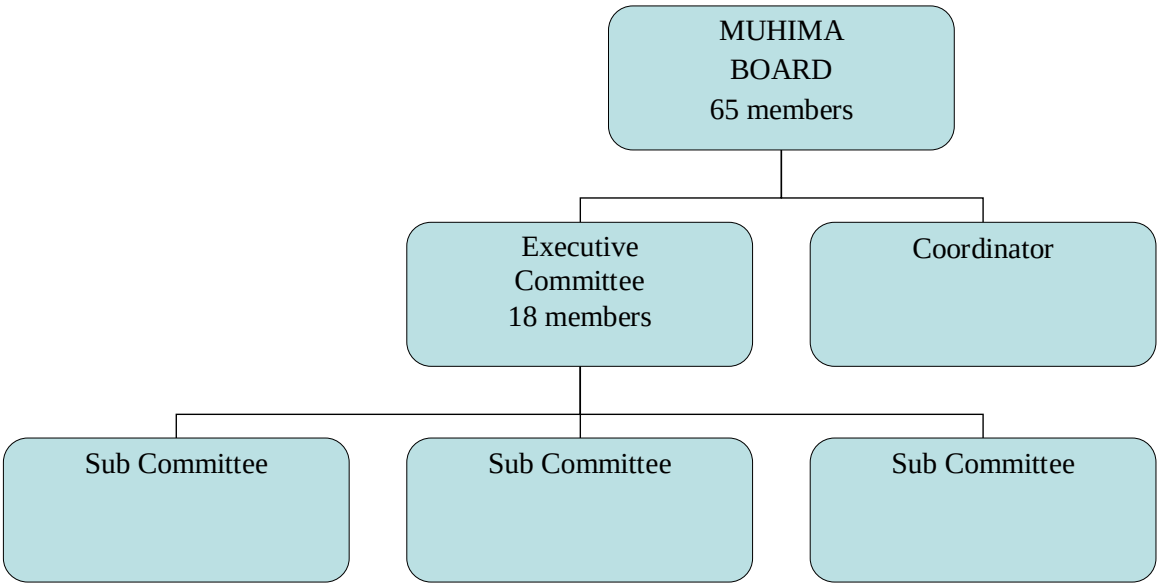

Fig. 18: Proposed organisational chart of MUHIMA

Source: Author’s elaboration

According to the Acting DNRO and DFO for Liwale District, there is a strong commitment by the villages to manage the forest jointly. This was acknowledged by the villagers during a meeting of the stakeholders aimed at assessing the progress of AVLFR process and to chat the way forward held in June 2010. The villages recognised the need of acting together to increase benefit and reduce transaction cost, in settling disputes and conflicts, in strengthening security of the forest reserve (protection of the resource) and last but not the least the belief that *unity is strength*.

5.5.2. Elements of good governance for PFM/REDD in the context of AVLFR

Attributes of good governance as identified in chapter 2 section 2.4 includes among others participation, equity, accountability, transparency and information flow, efficiency and

effectiveness. Data gathered from the two of the thirteen villages for this study reveals that with respect to ***participation***, the villagers actively participate in voting of the village government and members of the various village committees. The village general assembly votes the members of the village government for a mandate of five years, and members of the various committees for a mandate of three years. Major decisions in the village are subject to the village assembly for deliberation and approval. Even though the participation of women during the village assemblies meeting attended leaves much to be desired, their presence could be felt. Participation by the villagers in the PFM and REDD process is fairly important. The overall level of participation can be classified as *interactive participation* according Hobley's (1996) typology of different levels of participation. This is off course the rationale for CBFM. It also fits well into the concept of participatory governance necessary for REDD-plus to be effective.

In terms of ***equity***, there is equal opportunity for men and women and representation of the various age groups in elections for village positions. However, there is no written obligation or criteria on gender but as the Village Chairman of Ngongowele puts it *"gender is taken into consideration when the election outcome tends out to gender biased"*.

With respect to ***accountability***, each specialized committee has a timetable for conducting meetings in which the minutes are presented to the village assembly for scrutiny. With effective democracy at the village level through the election of members of village government and village committees, there is room for leaders to be held accountable by the villagers. As pointed out by Ribot (2002) cited in Blomley 2006, for devolved natural resource management to be successful, accountability mechanisms should work in a downward direction with elected leaders being accountable to those they represent. Evidence of this was notice with a noted 75-80% renewal of the current members of the VNRC in Mihumo village. In Mihumo, Village general assembly meetings are held quarterly, village government meetings are held monthly meanwhile extra-ordinary general assembly or village government meetings can be held when need arises. There is also a system of reporting in place. Reports of every meeting both in the village government and committees are presented to the village assembly with copies send to the Ward Executive Officer (WEO) and the District Executive Director (DED). Whether these reports are well written or submitted on a regular basis is difficult to tell.

As regards ***transparency***, evidence of records of payment receipts can be found in the VEO office. Receipts were issued for money paid for research permits as part of this study and the amount was announced during one of the village assembly meetings. However, researches have shown that

mismanagement of funds by the VNRCs is a common practice in Tanzania. In Mihumo, for example, the majority of the former members of the VNRC were voted out of office for lack of transparency and accountability.

Information flow is a major impediment in the governance at village and to the entire Angai process. Members of the VNRC that have received training have failed to share or disseminate the acquired the knowledge with other villagers. When asked why information received from training is not being shared or disseminated, the trainees responded that the villagers expect payment in the form of per diems to be trained. This was confirmed by the fact that this researcher was confronted with the same attitude during meetings for the participatory exercises. However, the Village Chairman of Mihumo indicated that plans are underway to persuade training beneficiaries to disseminate the knowledge acquired with the support of the village government. The whole issue of payment for training according to the Mihumo VC is linked to the poverty situation within the village and changing the mindsets of dependency is difficult (old habits die hard).

Data is lacking with respect to efficiency and effectiveness. This is because both the PFM and REDD process are not yet fully operational. Table 8 below presents a summary of governance issues in both case study villages.

Table 8: Recapitulative of the observable indicators of good governance attributes in Mihumo and Ngongowele.

good governance attributes	Observable indicators
Participation	Well-consolidated procedures (formal and informal) for deliberative decision making processes; Every villager aged 18 and above is electable without any discrimination
Equity	No special provision but issues of equity especially gender are always taken in consideration in elections and other related activities
Transparency	Reports and records of revenue collection available.
Accountability	Clear reporting system; village government and specialized committees are accountable to the village general assembly; Village general assembly serves as supreme decision making body.
Information flow	Main cause of concern with respect to local governance. Little or no information flow noted. Poverty is blamed for lack of information dissemination.
Capacity	No special provision but the village has the capacity to formulate and implement important decisions
Efficiency	Not applicable
Effectiveness	Not applicable

Source: Author's elaboration

It is worth mentioning that the analyses of good governance made above are not based on the GFI tool kit approach. This is because; the GFI indicators are too generic and complex in nature and aimed at providing a practical tool for civil society organisations to independently, systematically

and comprehensively diagnose the integrity of institutions and processes that govern forests in developing countries, as a basis to advocate for reform.

5.5.3. Governance challenges of AVLFR

The main challenge in the governance of AVLFR is how to make MUHIMA an effective community based organisation. This is a major problem in a region where the governance of community-based organizations has been emerging as a major challenge to the effective management of resources and the equitable distribution of the benefits from wildlife (Child et al. 2007; cited in Bond et al. 2010). As pointed out by Bond et al. (2010) a common characteristic of community based organisations (CBOs) in East Africa is that executive activities and representative functions are blurred in an effort to keep down cost. In such an obscured management structure, community representative occupy executive functions such as secretary or treasurer. This always creates governance problems. In the AVLFR context, the current MoU under discussions fall short of overcoming this challenge as exemplified by section 5.2.1 which stipulates that:

> *The elected five MUHIMA representatives from each participating village will jointly form the MUHIMA Board. Members of the Board will elect their Chairperson, Deputy Chairperson, Secretary and Treasurer...*

Low level of education among the villagers is another challenge. As pointed out by the DFO, the low level of education among the villagers is making participation difficult. Another governance challenge is the fact that elected representatives once voted out of office are unwilling to share the knowledge they acquired by virtue of the position they held. Evidence of this comes from the unwillingness to shared information received during training and workshops. However, lack of financial resources is to be blamed for this attitude.

Other challenges worth mentioning include among others lack of commitment from the villages (no ownership of the process), there is a dire need for financial and human resources to drive the process, the vastness of the reserve poses management challenges as seen from difference in opinions regarding forest patrols between the different villages .

5.6. Putting AVLFR into perspective for PFM/REDD: A SWOT Analysis

AVLFR is confronted with a variety of internal and external forces which on one hand can comprise potential stimulants or on the other hand can constitute potential limitations to achieving the PFM/REDD objectives. Table 8 below presents a SWOT (Strengths, Weaknesses, Opportunities

and Threats) analyses. The SWOT analysis presents a synthesis of some of what has been discussed above and in the preceding chapters and the opinions of the researcher based on field notes.

Table 9: SWOT Analysis of AVLFR PFM/REDD project

Strengths	**Weaknesses**
• Documented legal and ownership rights over huge resources with valuable timber species. • Strong commitments from the villages in managing the reserve jointly through MUHIMA • Common and shared determination with respect to the management of the reserve from both the village leaders and ordinary villagers • High potential for REDD-plus (CCI, 2009; Mukama, 2010)	• Still unclear benefits/costs? • Potentially high transaction costs especially in benefit sharing mechanism? • Risks of leakages? (illegal logging) • Low educational capacity of the community • Lack of awareness by certain villagers of ownership of the reserve • Shifting cultivation and problem of wildfires • Lack of transparency can lead to elite capture of benefits
Opportunities	**Threats**
• Chosen site for National demonstration activities for forest carbon tracking in view of REDD • Possibility of joining the FSC group certification recently obtained by some communities in neighbouring Kilwa District • Opportunities of funding from donors (CCI, LIMAS etc) • Commitment to support the process from the district authorities notably the current District Commissioner • Strong and enabling policy and legal environment	• Fears that REDD-plus threaten to reverse the gains made from decentralization • Low or decreasing prices of carbon credits on the market in the future year? • Low credibility of those systems not based on strong standards?

Source: Author's elaboration

From the above analyses, there are significant positive points (strengths and opportunities) for AVLFR and the communities to benefit from PFM and eventually REDD. The positive aspects outweigh the negative ones. Even though there are some weaknesses and threats, these weaknesses can be mitigated. This is currently being done through the ongoing capacity building and environmental education dispensed to the community. As a matter of fact, this study was carried out as part of an action research and part of its mandate was to accompany the communities in their drive toward SFM for equitable benefit sharing through education and participation.

CHAPTER SIX

LIMITATIONS OF THE STUDY

Just like any other research or academic endeavour, this study has its limitations. The main limitation of this study centre on the research strategy adopted for empirical study – the *case study* approach. Case study research strategy have been criticised by many for its lack of generalisation, reliability, bias and its dependence on interviews as main source of data. This study submits to the criticisms related to the fact that the results cannot be generalised as it focussed on two of the thirteen villages that make up AVLFR. However, in this study, the researcher sacrifices immediate generalizability for depth of study. Additionally as more empirical studies have and or are been carried out in AVLFR (Sundström 2010; Mukama *forthcoming*; Bolin 2010) there is room for incremental generalizability over time. In terms of reliability, this research work met the test of reliability by providing details of the appropriateness of the case study strategy adopted as well as the data collection techniques used. The issue of bias/ reliance on interview as a major of data was dealt with by talking to a wide range of stakeholders and personalities from different interests (villagers, government officials, NGOs as well as academics). Another limitation linked to the issue of choice of case study villages has to do with lack of sufficient funding and logistics problems to cover all thirteen villages. Angai villages are very far from each other and this posses huge logistics problems most especially transportation. Other limitations include inadequate empirical data from certain topic area such as risk of REDD to communities, and the whole issue of knowledge about REDD among the villagers; no training for the translator/interpreter. The translators/interpreter used had little or no knowledge of the subject matter. Many a time, the researcher had the feeling that the questions were not understood by the respondents judging from their response. This problem was overcome by reformulating and repeating the questions several times. Getting access to all research subjects wished for was also a problem. Due to reasons beyond the control of the researcher, not all key informants wished for were available for interview. Some of the key informants were busy with the ongoing national forest resource inventory and were unavailable for interviews despite several phone calls made and repeated assurances.

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

There is no doubt today that benefit sharing and governance issues are crucial for PFM and REDD to succeed. As a cornerstone for success, this exploratory study has attempted to explore these issues in the context of AVLFR. The objective of this study was to explore benefit/cost sharing, risks and governance issues in participatory forest management related to REDD by means of a case study of AVLFR. The specific objectives were (i) identify the beneficiaries of PFM activities and possible carbon payments in the future (ii) identify and analyse these benefits (present and expected), cost and possible risk from PFM and REDD activities and how they would be shared (iii) exploring governance issues from a good governance perspectives. The following conclusions were derived from this empirical study.

To begin with, despite the presence of a multitude of stakeholders/actors involved with the management of AVLFR, the villages will be the main beneficiaries in when the PFM process is completed. This privilege is backed by provisions of the Forest Act of 2002 and other legal instruments. With respect to REDD, much is still under discussions but what is certain is that the beneficiaries will be the communities and the government. The findings indicate that the central government will become an important and powerful actor with the adoption of the national approach to REDD. However, other actors such as donors are playing an important role to help the communities stand up to the challenges of PFM and eventually REDD through organizational and capacity building activities.

With respect to benefits and benefit sharing, presently no tangible benefits (most especially financial) from the reserve are flowing to the communities. This is essentially due to the fact that management plans and by-laws are not yet ready. The current benefits are in the form of NTFPs and environmental services such as water and biodiversity. Due to the fact that the PFM process is still to be completed, there is currently little or no cost incurred by the communities in managing the reserve. What is interesting is that the resource is in a fairly good state. The findings also indicate that with the current composition of the villages and village governance, there is the possibility that benefit sharing would be equitable even though elite capture remains a major cause for concern. The current priorities of both the village government and the ordinary villages on the management of the reserve fits well into the goals for REDD and there is high expectations for REDD within the

communities. However, shifting cultivation and wildfires are the two most important challenges for AVLFR communities if they want to fully participate and benefit from REDD. The only risk known to the communities for their participation in PFM and REDD is the restriction of beekeeping activities in the reserve despite fears that REDD is threatening decentralized forest management. Benefit sharing under a REDD regime would likely be 60% for communities and 40% for the government.

Concerning governance and elements of good governance, the findings indicate that there is a good measure of good governance in the way the governing structures are currently working. The current level of participation can be described as *interactive participation*. Currently all PFM and REDD initiatives are externally driven. However this falls short of the type of participation wished for that is *self mobilization* – where the villages take up the initiative independently. Transparency and information flow are equal areas where the villages are lacking behind in their drive for good governance. It is also important to highlight that there is some transaction cost associated with good governance in project such as REDD-plus. With a firm commitment by the villages to manage the resources jointly within the framework of MUHIMA, the major governance challenge is how to make the union effective in a context of low educational capacity of members of the Angai Community. With the contribution of donors this challenge is might be addressed.

Summing up, even though it would be naïve to say benefit sharing under the current arrangement would be equitable, the current dispositions in terms of governance for PFM and eventually REDD look promising and could lead to fair distribution despite the challenges.

In the light of the above finding, the following recommendations can be made.

- As part of the stakeholder consultations for REDD implementation, Angai communities should be fully engaged with a clear knowledge of the benefit they would derived from their participation in the mechanism. Very little is known by the villages of the importance of the reserve to the national REDD objectives.

- The current modalities of selecting community members for any sort of forest management training should be revised. Trainings should be extended to non members of the VNRC to increase information access to the broader community.

- Any benefit sharing arrangement at the community level (that is between the villages) should take into consideration the size and state of the resource in each village. This would serve as disincentive to illegal logging reported to be carried out in the reserve of some villages.

- The thirteen VNRC and village government are encouraged to join MJUMITA and benefit from the capacity building programmes currently being undertaken nationwide for all stakeholders involved REDD. With MJUMITA membership, they would also benefit from the carbon cooperative currently under discussions which can permit them to sell their carbon credit to the Voluntary Carbon Market.

- Future research should explore the issue of forest patrols to ascertain that claims made are actually true. This is equally important for good governance.

This study has attempted to present a general picture of the readiness of PFM sites in general and AVLFR in particular to embraced the REDD-plus mechanism with special focus on benefit sharing and governance. The findings can help shape and improve local governance to guarantee equitable benefits/costs sharing among participating communities engaged in PFM and REDD-plus.

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Annexes

Annex 1 – List of persons interviewed

Names	Function
Prof. Pius Z. Yanda	University of Dar es Salaam, Director Institute of Resource Assessment and Head of the National REDD Secretariat
Mr. Manyika Freddy	Head of National REDD Task Force, Division of Environment, Vice President's Office
Mr. Charles Meshack	Executive Director Tanzania Forest Conservation Group (TFCG)
Mrs Rahima Njaidi	Executive Director MJUMITA
Mr. Charles Ng'atigwa	Principal Forest Officer, Forest and Beekeeping Division
Mr. Nassoro Mzui	DFO and acting Head of the District Natural Resource Office, Liwale
Mr. Ramadhani Kazimoto	Head of Irrigation Scheme Ngongowele
Mr. Mohammed Emedi Seif	Village Executive Officer Mihumo
Mr. Rashid Hemedi Kikoweka	Representative of Mihumo ward in the District Council
Mr. Juma Mohammedi Kimwaki	Village Chairman Mihumo
Mr. Zuberi Abdallah	Head of VNRC Mihumo
Mr. Abdallah Lemba	Former head of VNRC Mihumo
Mr. Mohammed Ali Seif	Village Chairman Ngongowele
Mr. Juma Abdallah Mmkage	Village Executive Officer Ngongowele
Mr Juma Timtim	Ward Executive Officer Ngongowele
Mr Ahamadi Kindamba Ndondwa	Secretary VNRC Ngongowele

Annex 2 – Sample checklist of interview questions

Village Chairman and Village Executive Officer

1. How long have you been the head of the village?
2. Number of households in the village
3. What are the main economic activities of the village?
4. How are the villagers allowed to use the forest reserve? (is the whole village involved?)
5. What are the management purposes of the forest?

6. Who are the different stakeholders / institutions involved in FM in the village? (DFO, VNRMC, MUHIMA, NGOs)
7. How often do you meet these various stakeholders? For which purposes? (what is your relationship with the various stakeholder)
8. How is the village involved in forest management?
9. What kinds of benefits does the village derive from the forest?
10. Who decides how these benefits should be distributed?
11. How are the benefits distributed among villagers?
12. What kinds of forest management activities bring cost to the villagers
13. How are the cost shared among villagers
14. What are the problems experienced in managing the forest?
15. How does the village resolve these problems?
16. How is the village currently organized (the various institutions of the village)?
17. How are decisions made in the village?
18. How are conflicts solved among villagers? (by the villagers themselves or external assistance)
19. Have you heard about REDD?
20. Do you expect REDD to bring additional benefits? (Yes or No)
21. Which kind of benefits?
22. How will these benefits affect the villagers?
23. What kind of costs?
24. How are these costs affecting the villagers?
25. Do you think there are some risks associated with REDD?
26. What kind of risks?
27. How will these risks affect the villagers?

Experts

1. What is your domain of expertise?
2. AVLFR is being prepared for REDD via Community Carbon Monitoring activities, what are the expected benefits to community from this activity?

3. What do you think are the costs (real and potential) for the community as a result of their involvement in REDD activities (in terms of activities)?

4. What do you think are the risks (real and potential) for the community as result of their involvement in REDD activities?

5. Does the current policy framework allow for effective costs and benefit sharing for all stakeholders involved in REDD activities? Can you provide some evidences of the legislation?

6. Do you think there are some institutional issues both at macro and micro levels that need to be address to ensure effective costs and benefits sharing issues for all participating stakeholders?

7. In your opinion what are the challenge with respect to REDD and how can they be addressed?

8. What kind of contractual arrangements are suitable for this kind of activity involving many stakeholders at different levels?

9. In your opinion, what are the key aspects to be considered when formulating proper cost and benefit sharing mechanism among the various stakeholders?

10. What are the potential for REDD-plus in Angai? (in no ask of another area as example)

Forest administration

1. How long have you been the DFO in Liwale?

2. What is your role in REDD implementation process in AVLFR?

3. What do you think are the benefits that REDD will bring to the community different from that expected from PFM?

4. Do you know of any risks (real and potential) to the community as a result of REDD?

5. What costs are expected to be borne by the community for participating in REDD activities?

6. Do you think the current organizational setup of the community allows for equitable cost and benefits sharing?

7. Do you receive complains of conflicts among and between villages in the community? If yes which kind of conflicts? (on REDD plus activities)

8. How are such conflicts resolved?

9. Do you think the current modes of decision making takes into consideration representativeness (women and youth) of the views of the villagers?

Annex 3 – Sections of Forest Act (2002) mentioned in the text

Section 33 (1) (2)

33.-(1) A village council, may by resolution-
(a) declare an area of village land to be a village land forest reserve;
(b) submit an application to the Director through a local government authority for a declared village land forest reserve to be *gazetted* as a village land forest reserve;
(c) negotiate a joint management agreement or other arrangement with the Director, some other person or body with respect to the management of a village land forest reserve;
(d) establish a committee to manage a village land forest reserve or allocate the duties of managing a village land forest reserve to an existing committee of the village council.

(2) Where a village land forest management committee is established, it shall-
(a) be informed from the membership of the village assembly;
(b) be informed with due regard to gender balance;
(c) elect a chairperson annually from amongst its members;
(d) be the principal village body concerned with the management of a village land forest reserve;
(e) report on a regular basis to and take account of the views of the village assembly on its management of the village land forest reserve.

Section 38 (3)

(3) Where two or more villages make an application to the Director for his consent to their managing a *gazetted* village land forest reserve jointly, the village councils of each village shall determine by a resolution approved in the village assembly in the same terms to-

(a) submit a joint application to the Director to manage the *gazetted* village land forest reserve on the basis of a joint management agreement or other arrangement between the village councils submitting the application or between those village councils and such other persons or bodies as those villages may propose; and
(b) establish a joint village forest management committee composed of not more than five persons elected from each village council.

Section 65 (3) on the conservation of trees, wild plants and animals
(3) If any general land referred to in any order made under subsection (1) ceases to be general land the provisions of any such order shall cease to apply in respect of such land

Section 78 (3)
(3) No royalties shall be required for the harvesting or extraction of forest produce within a village forest reserve or a community forest reserve by the resident of the village or the members of a Group as the case may be unless such a requirement is specifically provided for any agreement under which they are managed.

Annex – 4 Result of Pair wise Ranking of benefits from the forest reserve in Mihumo and Ngongowele

1) Mihumo

Financial benefits				
Climate related benefit	**Climate related benefit**			
Subsistence benefits	**Financial benefits**	**Climate related benefit**		
Rituals	**Financial benefits**	**Climate related benefit**	**Subsistence benefits**	
	Financial benefits	**Climate related benefit**	**Subsistence benefits**	**Rituals**

Ranking results
Climate related benefit = 3
Financial benefits = 2
Subsistence benefits = 1
Rituals = 0

Explanations
Climate over financial: financial benefits can only come from a food and favourable climatic conditions where the trees can grow and thrive. Water is very important for daily need and rains for agriculture. Climate related benefits are fundamental for the provision of all other benefits.
Financial over subsistence: subsistence benefits are seasonal while financial benefits can be harnessed year round.
Financial over rituals: To perform rituals demands money (cost of buying stuffs for the ritual ceremony, paying the specialist ritualist, etc)
Climate over ritual: improved weather conditions affects agriculture which provide food used during ritual ceremonies. When there are food shortages, there are no ritual events.
Subsistence over rituals: subsistence benefits such as *hangadi* are in difficult periods and they are needed before rituals are performed.

2) Ngongowele

Ranking results
Water = 4
NTFPs =3
Timber (subsistence) =2
Financial = 1
Rituals =0

Water					
NTFPs	Water				
Rituals	Water	NTFPs			
Timber (subsistence use)	Water	NTFPs	Timber (subsistence use)		
Financial benefits	Water	NTFPs	Financial benefits	Timber (subsistence use)	
	Water	**NTFPs**	**Rituals**	**Timber (subsistence use)**	**Financial benefits**

Reasons
Water is the source of life and is very important to their livelihoods more every other benefits derived from the reserve
NTFPs are used for food and provide a source of income especially beekeeping
Timber (subsistence) is important for construction of houses
Financial benefits is not as important because of fears of elite capture
Rituals are the least important because every other benefit is needed before rituals can be carried out.