

NORWEGIAN UNIVERSITY OF LIFE SCIENCES



**(NOT) A REDD LIGHT DISTRICT?  
REDD policies and Implementation of a REDD programme in Kilosa  
District, Tanzania**

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## **DECLARATION**

We, Cecilie Dyngeland and Håvard Almeida Eriksson, declare that this thesis is the result of our research and sources of information other than our own have been acknowledged. This work has not been previously submitted to any other university than the Norwegian University of Life Sciences (UMB) for award of any type of academic degree.

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## **Abstract**

This study focuses on the globally emerging REDD+ programme as a way of tackling climate change, and it looks at challenges and implications for implementation at the Tanzanian national level and at the local level through a case study in Kilosa District. Through semi-structured livelihood interviews and literature reviews we map how REDD would fit within existing national institutional structures.

With main funding from Norway and NICFI and with support from UN-REDD and FCPF, a REDD Task Force has been created in Tanzania, a Draft Strategy published, and the National Climate Change Steering Committee and the Forest and Beekeeping Division selected as the main coordinators and managers of REDD in Tanzania. A National Carbon Monitoring Centre and REDD Trust Fund will be made functional to handle MRV and the subsequent financial flow. Much work still remains and policy reform and alignment is necessary especially in ensuring clear property rights and an equal benefit sharing system; stakeholder involvement and national leakage, ownership needs to be increased further both horizontally and vertically; and special care needs to be placed on capacity building and good governance.

TFCG and MJUMITA have started implementing PFM as the basis for a REDD policy and they have embarked on establishing village leakage strategy plans to identify the main drivers of deforestation and identify additional benefits to serve as incentives and reduce forest dependence, which overall contributes to 31% of overall income and for one village as much as 54%. However, some important REDD components appear to be lacking, and at present. Not much work has been carried out on building MRV capacity, establishing payment mechanisms or dealing with overall leakage. Pastoralists in the area are still not consulted and additional involvement from them and other stakeholders and district departments is critical. There are huge challenges on creating efficient and equitable benefit sharing system as those with the highest income are very much involved in forest product extraction and other profitable income generating activities they may be extra attracted to REDD money resulting in elite capture.

Many of them are often linked to bigger networks of forest product trade. The areas closest to Kilosa Town have the most unsustainable forest use, but also the worst conditions for agriculture. Therefore, improving agriculture here could help, whereas the more remote areas have a much more sustainable use of their forest. They are in a lot poorer and have worse livelihood conditions. We expect that the pilot project can improve livelihood conditions but we worry about its ability to reduce net-carbon emissions, pm account of leakage and high opportunity costs.





**Key terms:**

Reduced Emissions from Deforestation and Forest Degradation, Resource Regime Framework, Sustainable Livelihoods, REDD Pilot Project, Kilosa District, Tanzania



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## **List of Abbreviations and Acronyms**

CBFM	Community Based Forest Management
CDM	Clean Development Mechanism
CoP	United Nations Conference on Climate Change
DED	District Executive Director
DNRO	District Natural Resource Office
DoE	Division/Department of Environment
EIAs	Environmental Impact Assessments
EMA	Environmental Management Act
FBD	Forestry and Beekeeping Division
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program
GHGs	Greenhouse Gases
IIED	International Institute for Environment and Development
IPCC:	Intergovernmental Panel on Climate Change
IRA	Institute of Resource Assessment
JFM	Joint Forest Management
JMA	Joint Management Agreement
LGAs	Local Government Authorities
MJUMITA	Tanzania Community Forest Conservation Network
MNRT	Ministry of Natural Resources and Tourism
MRV	Measurement, Reporting and Verification
NAFORMA	National Forestry Resource Monitoring and Assessment
NAPA	National Adaptation Programme of Action
NCCSC	National Climate Change Steering Committee
NCCTC	National Climate Change Technical Committee
NEMC	National Environmental Management Council
NFBKP	National Forest and Beekeeping Programme
NICFI	Norwegian International Climate and Forest Initiative
NLP	National Land Policy
NLUPC	National Land Use Planning Commission
NTFPs	Non Timber Forest Products
PEER	Public Environmental Expenditure Review

PFM	Participatory Forest Management
PFRA	Participatory Forest Resource Assessment
PMO-RALG	Prime Ministers' Office Regional Administration and Local Government
PRA	Participatory Rural Appraisal
REDD	Reduced Emissions from Deforestation and Forest Degradation
R-PIN	Readiness Plan Idea Note
RRA	Rapid Rural Appraisal
SLA	Sustainable Livelihood Approach
SUA	Sokoine University of Agriculture
TFCG	Tanzania Forest Conservation Group
ToR	Terms of Reference
UNFCCC:	UN Framework Convention on Climate Change
VEO	Village Executive Officer
VFRs	Village Forest Reserves
VLFRs	Village Land Forest Reserves
VNRC	Village Natural Resource Committee
VPO	Vice Presidents' Office
WEO	Ward Executive Officer

# CHAPTER ONE – INTRODUCTION

## 1.1 Introduction

Since the 1990's, when the Intergovernmental Panel on Climate Change (IPCC) released its first Assessment Report, increasing attention has been paid to climate change and according to the 1992 UN Framework Convention on Climate Change (UNFCCC), "the international community should strive to prevent dangerous anthropogenic interference with the world's climate system" (UNFCCC 1992, p. 4). After the release of the IPCC's fourth assessment report it became apparent that it is very likely that emissions from human activities have caused most of the observed increase in globally averaged temperatures since the mid-20<sup>th</sup> century and according to the Stern review, "*If we don't act, the overall cost and risks of climate change could be catastrophic and be equivalent to a loss of 5 % of the world's economy annually, now and forever*" (IPCC 2007; Stern 2007).

Together with the burning of fossil fuels deforestation plays a crucial role in climate change and release more CO<sub>2</sub> than the combined global transportation sector (Chiesa, Dere et al. 2009). Approximately 18-20% of current global carbon emissions is a direct result of deforestation annually, as the removal of trees account for the release of carbon back into the atmosphere from their stored form (United Republic of Tanzania 2009). In an attempt to respond to climate change emissions, there have been several environmental agreements and protocols, including the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol (Boyd 2009). Through the Kyoto Protocol some mechanisms have been developed to reduce emissions, such as the Clean Development Mechanism (CDM), which "*allows developed countries to offset emissions through energy or forest projects that mitigate carbon dioxide (CO<sub>2</sub>) from the atmosphere and allows developing countries to voluntarily participate in efforts to reduce GHGs in returns for payments from developed countries*" (Boyd 2009). However, only afforestation and reforestation activities were accepted under the CDM, excluding avoided deforestation as an emission reduction strategy (United Republic of Tanzania 2010).

As a result, the concept of Reduced Emissions from Deforestation and forest Degradation (REDD) were launched in Bali 2008 as a mechanism to be included in a post 2012 regime. Later another + was added to the acronym thereby including sustainable management, conservation and enhancement of forests, hence being referred to as REDD+. However, since it is still in development another + could be added in the forthcoming future. In this study we refer to it as only REDD, mainly to avoid confusion. Many developing countries are currently in the process of establishing REDD readiness initiatives to be able to meet the new climate regime that will be in place within the next few years and benefit from the opportunities that REDD potentially presents.

Tanzania is one such country and in 2008 they started to develop a National Strategy and Action Plan for REDD, forming a National REDD Task Force to initiate a strategy process and oversee all REDD activities (United Republic of Tanzania 2009). Following the Bali Road Map, Tanzania is currently exploring and identifying a range of actions, ranging from pilot activities to addressing the drivers of deforestation relevant to national circumstances (United Republic of Tanzania 2010). The Bali Road Map further affirms that several safeguards should be promoted and supported when implementing REDD, including the recognition *“that the needs of local and indigenous communities should be addressed when action is taken to reduce emissions from deforestation and forest degradation in developing countries”* (UNFCCC 2008). However, due to discriminatory considerations of the term “indigenous people” in Tanzania, it is instead addressed via the concept of “forest – based communities” (United Republic of Tanzania 2010).

Nevertheless, the whole idea of participatory approaches towards forest management is not new in Tanzania, a topic that will be frequently addressed in relation to future REDD activities. Tanzania’s experiences along forest management ranges back to the colonial era of “fortress preservation” and the exclusion of people (Woodcock 2002; Kistler 2009). In the early 1990’s a number of Participatory Forest Management (PFM) pilot project were launched marking a change in policies and legislations (Massawe 2008). Today, Tanzania is a signatory to the Declaration on the Right of Indigenous Peoples, and PFM in Tanzania is seen as a success story and as a key REDD entry point (Blomley and Iddi 2009; United Republic of Tanzania 2010).

As a result of the ongoing REDD readiness initiative, in 2008, Tanzania and Norway signed an bilateral agreement of up to NOK 500 million over a period of five years supporting research, education and the development of pilot areas for reduced deforestation (The Government of Norway 2009; Forconsult 2010). In August, 2009, Tanzania Forest Conservation Group (TFCG) in collaboration with Tanzania Community Forest Conservation Network (MJUMITA) received the first of nine pilot contracts that were to be signed by a number of NGOs across Tanzania (The Government of Norway 2009). It focuses on two project sites, one dealing with coastal forest in Lindi, and the other is found in Kilosa, focusing on forests alongside the eastern arc mountains (United Republic of Tanzania 2010).

Through a project called POVSUS – REDD, a project which will include research on REDD in five selected countries, we have looked at the general REDD process in Tanzania coupled with the REDD pilot project led by TFCG and MJUMITA. However, in this study we look at one of the project sites - the one found in Kilosa District, Morogoro. Our objectives of the study were to analyze the current process of implementing REDD on top of existing policies and legislatures in Tanzania, and evaluate the Kilosa pilot project where we identify existing institutions of the local communities, assess how their livelihoods might be affected by REDD and finally look at people's perception towards conservation and REDD initiatives.

This first chapter gives an introduction to Tanzania and its land use and forest management strategies before we provide an overview of the evolution of REDD as a concept and how it has been approached by national policy makers. The problem statement and aims of the study follows, before the objectives and research question will be presented together with the structure of the thesis.

## 1.2 Background

Tanzania, which is located in Eastern Africa, is the largest country in this area with a total land size of 950,000 km<sup>2</sup>. Classified as a least developed country, 80% of its 38 million inhabitants are occupied in agriculture, with the majority of them being small holder farmers deriving their livelihood from subsistence farming and environmental incomes.



**Figure 1: Map over Tanzania**

Source: (Lonely Planet 2011)

With only approximately 5% of the land being classified as arable, (Vatn, Vedeld et al. 2009) coupled with the country's reliance on traditional methods for production, and with a need for favourable weather patterns, Tanzania suffers from low labour productivity and low agricultural output (World Bank 2009). Still, the agricultural sector has been growing for the past years, both in value-added terms and in land converted and used for agricultural production, the latter often argued to be due to the country's increasing population which has an annual growth rate of 2.8% (World Bank 2009). The land use distribution of Tanzania is as follows:

**Table 1: Land use distribution of Tanzania**

Type of land use	Area (1000 ha)	%
Grazing land	48,740	51.7
Small holder cultivation	3,880	4.1
Forests and woodlands	33,555	35.6
Urban development	1,600	1.7
Inland water	5,900	6.3
Large-scale cultivation	585	0.6

Source: (Milledge, Gelvas et al. 2007)

### 1.2.1 Forest situation Tanzania

Out of its total forest and woodland area, Tanzania's forest estate consists of different forest types containing different values in terms of biodiversity, social attributes, and carbon densities (Burgess, Clairs et al. 2009). The predominant forest type is Miombo woodlands, which account for more than two-thirds of the total forest and woodlands in the country (Nduwamungu, Bloesch et al. 2009). Dominated by trees of the genera



Brachystegia, Julbernardia and Isoberlinia (Leguminosae, sub-family Caesalpinioideae) the woodlands is the largest more-or-less contiguous block of deciduous tropical woodlands and dry forests in the world. In Tanzania most of it is found in the southern and western regions of the country. It is divided into dry and wet Miombo woodlands on the basis of annual rainfall, with those areas receiving less than 1000 mm rainfall annually classified as dry woodlands, occurring in Central Tanzania, and the wet Miombo with more than 1000 mm rainfall per year, and found in South Western Tanzania (Abdallah and Monela 2007).

Millions of rural and urban dwellers in Tanzania rely heavily on forests and woodlands as part of their livelihood and to cover their basic human needs such as food, shelter, health and spiritual well being. From the forest they collect fodder for livestock, medicine, fuel wood, fibers and materials for construction and craft making. The forests also provides services of cultural and spiritual values, climate regulations, soil formation and conservation, water conservation and quality improvement, reduction of wind velocity and control of wind erosion (Abdallah and Monela 2007; FAO 2010). In addition, in periods of food shortages, often caused by droughts having led to crop failure, the local communities often rely on wild fruits and nuts from the forests for consumption or collection of other forest products which can be sold or exchanged for food as a way of survival (Abdallah and Monela 2007).

On a national level the forestry sector accounts for about 10% of Tanzania's registered exports, while it is estimated to contribute to around 2.8% to the annual GDP, however this figure does not include fuel wood which accounts for 95% of the annual wood consumption and is used predominately for cooking (Vatn, Vedeld et al. 2009).

In terms of energy supply in Tanzania, only 10 percent of the population has access to electricity and only 2 percent of those in rural areas (World Bank 2009). Even though Tanzania has considerable amounts of alternative sources of energy, for instance natural gas, solar energy, hydroelectricity and coal, these are poorly developed and are too affordable for most of the population, and thus, the majority of people have to rely on firewood, charcoal, kerosene and coal to meet their energy needs (Abdallah and Monela 2007). Thus, when it comes to energy consumption, which is very low

even in comparison with the rest of Sub-Saharan Africa and other low income countries, around 90% of comes from wood fuels and biomass products, a rate which is one of the highest in the world (World Bank 2009). Charcoal making as an income generating activity is now also becoming more and more lucrative. Given the low technology and capital needed to make charcoal, many rural dwellers are doing this to supplement their income from farming. In addition, given the increasing demand from a growing urban population some also switch to charcoal production as a full-time income generating activity (Ibid).

There are plenty of drivers of deforestation and degradation in Tanzania, many of them said to be closely linked to national economic development and population growth (Burgess, Clairs et al. 2009).

However, it is important to differentiate between proximate and underlying drivers of deforestation and forest degradation. When it comes to proximate factors, which concerns specific activities on the ground, the main driver of deforestation is land clearing and conversion of forest to agricultural land. As the productivity on already established agricultural land has decreased and the population increased, the incentive and profitability of land conversion for agriculture has resulted in substantial forest cover loss (Vatn, Vedeld et al. 2009). The second key proximate driver of deforestation is collection of fuel wood and charcoal production to cover the energy needs for the majority of Tanzanians. Two things are however important to emphasize in this regard, the first being that fuel wood and charcoal production is often a natural bi-product of land clearing for agriculture and therefore it is important to distinguish between motivations behind the deforestation (Vatn, Vedeld et al. 2009). For instance, when the Tanzanian Ministry of Energy and Minerals stated that charcoal production was the main driver of deforestation, and estimated that in 2002 as much as 458,743 ha of forests were cleared as a result of this activity alone (Chiesa, Dere et al. 2009), whether deforestation happens as a result of charcoal making or charcoal was produced from the residues from land clearing for agriculture is not deliberated upon. The second aspect is that fuel wood collection (and to some extent charcoal production) is an important driver of both deforestation and forest degradation. This can also be said for grazing, which is, according to Vatn et. al. the third main proximate driver of deforestation, and a significant driver of forest degradation as

livestock populations increase in Tanzania (Vatn, Vedeld et al. 2009). Other drivers of deforestation and forest degradation in Tanzania which often is mentioned includes unsustainable logging, illegal mining, pit sawing, illegal harvesting for building materials and bushfires (Burgess, Clairs et al. 2009; Chiesa, Dere et al. 2009; United Republic of Tanzania 2010).

The proximate drivers listed above are in one way or another often influenced by underlying factors. In Tanzania there are particularly two main underlying factors, which are important to note, namely weak tenure regimes and political decisions. For instance as the structural adjustment programs of the 1990s resulted in the removal of state subsidizes of agricultural inputs such as fertilizers, slash and burn practices became more of a necessity to survive for small scale farmers, and thus leading to more clearing and degrading of forest for increasing agricultural land. In addition, weak tenure regimes on local and community levels and the issue of corruption also within national agencies and institutions in terms of resource use and management has played a part in failing to address the issue of deforestation and forest degradation (Vatn, Vedeld et al. 2009).

### **1.2.2 Evolution of land and forest management in Tanzania**

When evaluating the forest situation in Tanzania two sets of data are of particular importance: data on the sizes and types of its forest and woodland areas, and data on the levels of deforestation and forest degradation. In Tanzania however, this is quite difficult as there are variations in both recorded annual rates of deforestation and degradation and the forest and woodland sizes that these numbers are based on. In addition, the various studies and forest inventories from which the available data comes from are from different times. There is therefore a great need for a more current and overall assessment of the forest situation in Tanzania, something which the Readiness Plan Idea Note (R-PIN) of the Forestry and Beekeeping Division also highlights (United Republic of Tanzania 2009). In this R-PIN though they have gathered some of the available data on forest loss divided by forest type, as can be seen below:

**Table 2: Forest loss divided by forest type, 1990-2000, Tanzania**

Forest type	Historical Area	Area 1990	Area 2000	Percentage loss (%)
Miombo Woodlands <sup>1</sup>	40% of land area (rough estimate)	Only partial data	Only partial data	-13%
Acacia Savanna	No data	No data	No data	
Eastern Arc Mountains <sup>2</sup>	17,992 km <sup>2</sup>	3,550.90 km <sup>2</sup>	3,531.8 0 km <sup>2</sup>	-1 %
Kenya/Tanzania Mountains	No data	No data	No data	
Eastern African Coastal Forests <sup>3</sup>	136379 km <sup>2</sup>	7,042 km <sup>2</sup>	6,841.5 km <sup>2</sup>	- 7 %
Guinea-Congolian forests	Below 5000 km <sup>2</sup>	No data	6,700 km <sup>2</sup>	
Mangrove forests <sup>4</sup>	No data	1,095.93 km <sup>2</sup>	1,081.38 km <sup>2</sup>	-2 %

*1 – Data from a partial sample of miombo in Eastern Tanzania (FBD 2005) Forest Area assessment for the Eastern Arc Mountains.. Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar es Salaam. www.easternarc.or.tz*  
*2 – FBD 2005 (ibid)*  
*3 – Tabor, Mbilinyi and Kashigali ( in prep). Forest area assessment for the coastal forests (this assumes that all this ecoregion was originally forested)*  
*4 – Wang et al 2003. Remote Sensing of Mangrove Change Along the Tanzania Coast. Marine Geodesy, 26:35 –48, 2003*

Source: (United Republic of Tanzania 2009, p.7)

When it comes to deforestation and forest degradation in Tanzania as a whole, the available data is also varied. Experiences and estimates from various sources has placed the annual national deforestation rate between 130,000 and 500,000 ha, for instance figures from FAO in 2008 indicated an annual deforestation rate of about 412,000 ha. According to the R-PIN this may be close to the actual figure, but they highlight the need for a more detailed and overall forest inventory of Tanzania to confirm that. In addition, in terms of tenure system, most of the deforestation happens on general land, i.e. open access, and some in village lands. This is also the case for forest degradation, which is documented to have a rate of 500,000 ha annually. Given that there is no legal protection within this tenure system, which makes up about 49% of total forest land, it is open for human activity, and has meant a steady decline for forest and woodland areas in Tanzania (United Republic of Tanzania 2009).

When it comes to deforestation and forest degradation trends in comparison with other countries, according to the World Banks country brief on Tanzania from 2009, Tanzania has experienced a deforestation rate of 1.1 percent annually from 1990-2005, which puts it at a rate twice that of the other low-income countries which have an average of 0.6 percent (World Bank 2009). This is not to say that Tanzania has not

been trying to deal with the issue, however, many years of efforts to halt these trends have not been as successful as hoped, something which have affected the livelihoods of many Tanzanians who depend on the forests and woodlands for their livelihood.

As with much of sub-Saharan Africa, conservation and preservation of natural resources have been carried out in Tanzania ever since pre-colonial times, albeit in different ways as time passed. Before the colonization period it was done on the basis of setting aside and protecting areas for times of need or emergencies, but during the colonial era the notion of conserving nature to guarantee access to it in the future was replaced by the idea of exclusion and division between nature and humanity and an approach commonly known as “fortress preservation”. By this, huge forest areas were gazetted as Forest Reserves under state authority, which constrained access or use of products within the reserves, by local people. This was also a way to reduce deforestation and it continued also after national independence. Poaching and illegal exploitation still continued, and in the 1980s a new policy approach emerged (Kistler 2009).

As public confidence in the government’s ability to own and manage the Forest Reserves diminished, the local communities demanded to become more involved in the management of their resources. Also within the theoretical debate on forest management a participatory approach gained ground. In early 1990s a number of participatory forest management pilot projects, which transferred the ownership and management responsibility from central to village government, were launched in Tanzania. Parallel with these pilot projects a review of the country’s forest policy was made, as was reforms within Tanzania’s economic and political sphere, all of which set the stage for a favourable legal environment for PFM (Blomley, Pliegner et al. 2005). Of particular importance was the National Forest Policy of 1998 and the Forest Act of 2002, both of which makes PFM a main national focus (Massawe 2008). In many ways Tanzania is now seen to be in the forefront of PFM in Africa, and in a report published by the Forestry and Beekeeping Division (FBD) it states that as much as 2,300 villages covering over 4 million hectares of forest land is either being established or operating under PFM in 2008 (Blomley and Iddi 2009).

The three main objectives of PFM in Tanzania consists of improving forest quality, improving livelihoods, and improving governance by putting an emphasis on sustainable management through effective and accountable institutions at village and district levels (Blomley, Pliegner et al. 2005). In Tanzania it consists of two major approaches – Joint Forest Management (JFM) and Community Based Forest Management (CBFM). JFM is a form of participatory forest management where both village representatives and government manage the forest together, and it usually takes place under already established State Forest Reserves. The state, whether central or local government, will then for the most parts continue to own the forest but will manage and share returns with communities living adjacent to the forest (Blomley, Pliegner et al. 2005). CBFM on the other hand is managed solely by villagers, where they take full ownership and management responsibility over forests which are within their jurisdiction, also known as Village Forest Reserves (VFR) (Massawe 2008). In accordance with the Tanzanian Village Land Act of 1999, the forest and village land first has to be surveyed and registered and the management responsibilities will fall under the village council which is elected by the community (Blomley, Pliegner et al. 2005). The ways in which this is done is through establishing a land use plan, which divides up the village land into different land uses as put forward by the Land Use Committee Act of 2007.

The two decades of experience that Tanzania has had with PFM and community participation in forest management, coupled with much evidence of its effectiveness and success in recovering forest areas, is something which is now being transferred onto Tanzania's REDD framework. PFM will then become very fundamental in terms of developing REDD in Tanzania as the idea is to integrate REDD and the aspect of carbon storage onto already existing and/or expanding PFM arrangements in the country (United Republic of Tanzania 2010).

### **1.2.3 Evolution of REDD**

With the adaptation of the Kyoto protocol developed countries were allowed to invest in emission reduction projects in developing countries through the Clean Development Mechanism (CDM) as a way to reach their goals of emission reductions with the help of saleable certified emission credits. The activities that were accepted

under the CDM were afforestation and reforestation initiatives. Avoided deforestation as an emission reduction strategy on the other hand, were excluded (United Republic of Tanzania 2010). As a result, negotiations started at CoP 11 of the UNFCCC in Montreal in 2005 after a formal proposal by a coalition of rainforest nations to include avoided deforestation in a post 2012 regime (Holloway and Giandomencio 2009). Following the recognition that forest clearing and degradation cause almost one fifth of global Green House Gases (GHG) (Milledge 2009), it was originally conceived as a simple instrument of tracking rate of loss of forest area and rewarding reductions in rate of loss and came to be known as Reduced Emissions from Deforestation (RED). Another D was however soon thereafter added when it became apparent that degradation would have to be included (Skutsch 2011).

In many ways then, REDD can be described as an attempt to address global commons and, or market failure by paying forest owners for keeping their forest, thereby adding value to the forest and the carbon sequestration and storage it represent (Angelsen and Hofstad 2008). At CoP 13 in Bali in 2008, REDD was proposed to be a part in the official negotiation agenda for a post 2012 regime, and became something that would be negotiated under the so called Bali road map (United Republic of Tanzania 2010). During these negotiations both developed countries and developing countries discussed how they could take appropriate mitigation actions to reduce the greenhouse gas emissions. They agreed that the developed countries should help the developing countries in form of technological transfers, capital building and financing. They also agreed that the measures would have to be measurable, reportable, and verifiable (MRV) (United Republic of Tanzania 2010).

At CoP 14 in Poznan in late 2008 it was argued that REDD as first conceived could have a perverse incentive structure in the long term as it would reward the “sinners” rather than the “angels” (Skutsch 2011). As a result, another + was added to the acronym, where three additional terms were included – sustainable management of forest, forest enhancement and forest conservation, thereby turning it into what some see as a potential win-win-win situation with reduction of carbon emissions, enhanced poverty alleviation and biodiversity conservation within one policy (Skutsch 2011; Vatn and Vedeld 2011). At CoP 15 in Copenhagen in 2009, REDD+ was fully adopted and included in the Copenhagen accord saying that “*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 2010). However, the CoP 15 in Copenhagen was considered a failure since it did not reach consensus about a final agreement on REDD+, thereby passing on the responsibility to Cancun and CoP 16 to finalise an agreement (Lang 2009).

Prior to the Copenhagen accord negotiators worked on a much more detailed text on REDD+, a text they hoped the parties would adopt as a guide for its future developments (Daviet 2010). In Cancun, 2010, they reached a consensus on an agreement that took this text and changed it in two ways. First it now states that REDD+ is not only about reducing emissions but also reversing/halting forest loss. Secondly, the agreement encourages all countries to find ways of reducing human pressures on forests (Austin, Daviet et al. 2010). Although the Cancun agreement now provide important guidance to all actors that are helping countries to prepare for REDD+ in the fast start period of 2010 – 2012, all actions will remain outside of UNFCCC until appropriate methods of financing and tracking national mitigation actions are completed (Austin, Daviet et al. 2010).

Meanwhile, a number of measures are being taken to support developing countries to prepare for REDD+. Through the Copenhagen accord developed countries agreed to give financial support of \$30 billion between 2010 – 2012 and \$100 billion every year after 2020 for climate change mitigation and adaptation activities (UNFCCC 2010). When the meeting in Cancun started in December 2010, the planned funds roughly reached the target for 2010 – 2012, but were hugely criticized to be “old money” rather than “new and additional” money (Reuters 2010; Fast Start Finance 2011). Additionally, the rich nations budgets were largely set up before the Copenhagen meeting making it hard to contribute with new and additional funds in 2010 (Reuters 2010). However, after Copenhagen, during meetings in Paris and Oslo, a coalition of developed nations pledged almost \$4 billion of new money to quick start REDD+ activities to further support and contribute to the UNFCCC process (REDD+ Partnership 2010). All put together, this funding will go on top of already existing



REDD+ “readiness” funding provided to selected pilot countries through programmes such as the UN-REDD programme, the World Banks’ Forest Carbon Partnership Facility (FCPF), the Forest Investment Program (FIP), the Interim REDD+ Partnership and through bilateral agreements such as the Norwegian International Climate and Forest Initiative (NICFI) (United Republic of Tanzania 2010).

The Copenhagen accord, followed by international funding pledges and by the Cancun agreement have served as a financial and political facilitator for REDD+ policies, plans and projects in selected developing countries (United Republic of Tanzania 2010). Together, the UN-REDD programme, FCPF, FIP as well as the Interim REDD+ partnership and NICFI now support REDD+ readiness and investment activities in 48 developing countries across Asia – Pacific, Latin America and Africa (UN-REDD Programme 2010; Fast Start Finance 2011; The Government of Norway 2011).

The potential scale of REDD+ is massive at the international level, but the scale of REDD+ must not be underestimated in relation to each countries specific challenges. Tanzania is currently one of these 48 developing countries that are working on REDD+ readiness initiatives and are currently in the process of developing a national strategy for REDD+ (Chiesa, Dere et al. 2009; United Republic of Tanzania 2009). With its own unique characteristics, Tanzania would therefore need to develop its own set of governance structures to achieve both effectiveness and efficiency. One such thing is to determine the most suitable funding mechanism of the REDD money Tanzania will receive; whether through direct governmental support, through a fund either separate or within the national administration, through a direct market oriented system, and/or a combination (Vatn and Vedeld 2011).

Despite countless possible pitfalls and challenges, a lot about REDD+ is however not new to Tanzania, and as we have seen, various aspects of REDD have been implemented through Tanzania’s PFM programme, which has helped demonstrate possible successful approaches (Milledge 2009).

#### **1.2.4 REDD in Tanzania**

Currently, Tanzania is in the process of establishing a National REDD programme. In 2008 the Government of Tanzania started to develop a National Strategy and Action Plan for REDD, and a National REDD Task Force was formed to initiate strategy development and oversee all REDD activities in the country (United Republic of Tanzania 2010).

Having already been a signatory of the UNFCCC which makes states commit to stabilize and reduce their carbon emissions on the basis of their pre-1990 levels, and after their signing of a letter of intent in April 2008 with Norway on a Climate Change Partnership, Tanzania started their work on “getting ready” for REDD. With their commitment of NOK 500 million to Tanzania over a five year period, Norway and the Royal Norwegian Embassy in Tanzania has played, and continues to play a leading role in this process and is focusing especially on supporting REDD pilot activities (The Government of Norway 2009).

Nine different NGOs, in cooperation with central and local governments, academic institutions and the private sector, have been selected and received funding to start up REDD pilot projects around the country to generate knowledge and experience on deforestation, carbon accounting, capacity building towards climate change challenges, and test out different REDD mechanisms. Some of these projects are already well on their way and are currently in the implementation process (United Republic of Tanzania 2010). In addition to the pilot projects, funds from the Climate Change Partnership are allocated to in depth studies, research and other capacity building activities to add further knowledge and competence on REDD (Forconsult 2010).

Following the initiative from Norway also other actors have become involved in the REDD readiness process in Tanzania. Tanzania has signed on to the UN-REDD programme and is now one of the nine countries which is receiving support from them for the development of REDD readiness. In addition Tanzania is also a member of the World Banks’ Forest Carbon Partnership Facility (FCPF), although from them they have not applied and will not receive any funding, but is a member primarily to keep updated on REDD+ on an international level and interact and share experiences

with the other FCPF countries (United Republic of Tanzania 2010). Apart from the MRV system, another important institutional development on REDD in Tanzania is establishing and making operational an independent National REDD Trust Fund in order to provide a clear and transparent system which can receive funds and payments for carbon credits (Forconsult 2010).

In order to bring sustainable and economic development through REDD, reviews of current legislations, policies and laws which can affect and be affected by REDD is also being focused on. For instance empirical evidence has shown that such projects can have implications on property rights and tenure systems, which further can place pressure on already diminishing supplies of land, both for productive use and human settlement (Bäckstrand and Lövbrand 2006; Quan and Dyer 2008; Cotula 2009; Sulle and Nelson 2009). In this regard, if REDD is to succeed in Tanzania, it is important that the funds for carbon conservation are transferred to the right people, which include the users and owners of land. It must therefore be clarified who the owner of a piece of land is, an ownership that should be enforceable in the legal system (Chiesa, Dere et al. 2009).

In December 2010 the first draft for the National REDD strategy came out. In its final version (2012) this document is intended to act as a guide for the preparation and implementation of REDD in order for them to benefit from a future internationally-approved system which deals with carbon trading based on demonstrated reductions of carbon emissions from deforestation and forest degradation. So far though, such an internationally approved system is not yet agreed upon and many questions still remain. For instance how will REDD be linked to existing national development strategies, how will REDD be funded, and how will the carbon which is stored and sequestered from REDD be monitored (United Republic of Tanzania 2010)? Agreements on these questions will in turn affect decisions made on the national level and the final REDD strategy for Tanzania. In this respect options are still open: whether it will be “effort-based” or “output-based” payments, whether to adopt a “fund-based” or “market-based” approach, and whether to adopt a solely national approach or a “nested” approach (TFWG 2010). The lessons learned and knowledge generated from the pilot projects and other research will also play a part in deciding on which design options to choose.

To sum up, together with Tanzania's well established PFM programme, a stable socio-political situation, its confirmed REDD Readiness funding from especially Norway and the UN-REDD programme, coupled with high rates of deforestation makes Tanzania strongly placed to develop and operationalize a national REDD programme (Richards, Blomley et al. 2009).

### **1.3 POVSUS – REDD and TFCG**

We have conducted our research in cooperation with a project led by the International Institute for Environment and Development (IIED) and in partnership with seven other organisations. The name of the project is POVSUS-REDD, which stands for *Poverty and sustainable development impacts of REDD architecture: options for equity, growth and environment*, and is a newly started project which will include research on REDD in five selected countries: Brazil, Ghana, Tanzania, Uganda and Vietnam.

Through POVSUS-REDD, in close collaboration with Sokoine University of Agriculture (SUA) and the University of Life Sciences (UMB) we have looked at the REDD process in Tanzania in general and the REDD+ Pilot project led by TFCG and MJUMITA (in Kilosa District in particular). TFCG has over 20 years of experience working with issues related to forest conservation and PFM in Tanzania and have their headquarter in Dar es salaam (TFCG and MJUMITA 2009). MJUMITA on the other hand is a network of over 150 community groups involved in PFM. It has been supported by TFCG since 2000 and is now an independent NGO (TFCG and MJUMITA 2009).

In 2009, as a step in the bilateral partnership between Norway and Tanzania, they jointly presented a project proposal to the Royal Norwegian embassy. Being the first to be approved out of nine NGO pilot project sites, a five year partnership project was launched in September 2009 focusing on two project sites: one along the coast in Lindi, and the other inland in Kilosa (United Republic of Tanzania 2010). Together the 9 projects are scattered all over Tanzania with a range of different approaches in the attempt to find out how to best implement REDD in Tanzania.

Due to both limitations of time and practical considerations we have focused on TFCG and MJUMITA's pilot site in Kilosa District, within which three pilot villages were selected. Kilosa District is a part of the Morogoro region and located in the Eastern Arc Mountains, a part of the Eastern Afromontane biodiversity hotspot (United Republic of Tanzania 2010). The aim of the project is *“to reduce greenhouse gas emissions from deforestation and forest degradation in Tanzania in ways that provide direct and equitable incentives to rural communities to conserve and manage forests sustainably”* (TFCG and MJUMITA 2009, p.9). TFCG have *“expressed an interest in integrating its experience with PFM with future opportunities under the carbon trade...”* thereby including their expertise on PFM as the way forward in both their pilot sites (TFCG and MJUMITA 2009, p.8).

#### **1.4 Problem Statement and Justification**

It is widely recognized that climate change is mainly due to emissions of greenhouse gasses, caused by human activities. The developed countries are now starting to look for viable options for providing emission compensation for its industries, and in this quest, REDD is being developed as a mechanism with a multifunctional – effect in gains; for climate, for biodiversity and as a pathway for sustainable development where local people receive gains. However, this is a new and emerging policy field with unknown outputs and outcomes both on international level and within a national context.

It is therefore a pressing need for country specific, data rich and comparative social studies to be able to address future challenges as well as present needs.

As many ask *“how can REDD mitigate climate change and contribute to biodiversity in Tanzania as well as contribute to sustainable development without compromising the most vulnerable groups in society?”*. Given the timeframe we had to work in we decided to focus only on how climate change could be mitigated while at the same time achieve equitable and sustainable development for local communities and not include the issue of biodiversity conservation as this would have been too broad of a scope. We therefore aim to investigate the concept of REDD both theoretically and

empirically in relationship to our chosen research area. Through an early evaluation from Tanzania we want to find out how REDD can come to look like at a national level and identify possible obstacles to the implementation of REDD, link it to the local level by looking at TFCGs REDD pilot project in Kilosa and analyse the local context to assess the challenges which can limit its success.

#### **1.4.1 Objectives and Research Questions**

##### ***1.4.1.1 Objective 1 - To identify and analyse how an environmental regime such as REDD will work in Tanzania***

- a) What will the possible REDD architecture on a national level look like?
- b) How will REDD interact with existing environmental and forest management structures?
- c) How will the institutional structure on the national level influence the implementation on the local level?
- d) What are the major challenges for an effective REDD implementation in Tanzania?

##### ***1.4.1.2 Objective 2 - To map out and consider the local context within which REDD will be implemented***

- a) What is the current livelihood situation?
- b) What is the level of dependence on the forest and its natural resources?
- c) What are the biggest livelihood challenges and what are their coping strategies?
- d) What are the formal and informal institutions in place in the pilot area?
- e) How is the land situation in terms of land rights, land use, and/or conflicting land interests?

##### ***1.4.1.3 Objective 3 - Will the REDD pilot project in Kilosa be successful?***

- 2 How is TFCG and MJUMITA ability to implement and run REDD?
- 3 How does TFCG and MJUMITA plan to implement and run REDD, and where in the process are they?

- 4 How do they interact with local government institutions?
- 5 What is the populations' previous or current experience with forest and biodiversity conservation and what is their view on REDD?
- 6 What are the major challenges for an effective REDD pilot project in Kilosa?

## **1.5 Structure of Thesis**

In chapter two, our theory is presented, first explaining the two approaches we use in our analysis, before we address REDD as a resource regime. In chapter three, methods are put forward explaining the tools used when collecting and analysing data. Chapter four gives an introduction on the local study area is contextualized, before introducing Tanzania's national structure for environmental and forest management in chapter five. From here on, our objectives are presented in three chapters, first by present the process of developing a national REDD architecture in Tanzania in chapter six, followed by an assessment of current livelihood situation and forest dependence in three REDD pilot villages in Kilosa District, Morogoro. Based on our findings, we do a real-time evaluation of the pilot project in Kilosa District in chapter eight. Lastly, in chapter nine, we present our conclusion and our recommendations.

## CHAPTER TWO – THEORETICAL APPROACHES

*In this chapter we go through our theoretical approaches. First we will present a resource regime framework and the relevant literature towards that. The framework will be presented in a step-by-step manner, where we first introduce the framework and then define relevant concepts. After this, we present our second complementary approach, the sustainable livelihood approach. We round off the chapter by putting some of the concepts we have presented into a REDD+ context. Lastly, after having firmly presented the relevant theory and putting it into context, we will illustrate how our objectives are connected to the theory.*

To be able to study environmental governance, one needs to focus on the dynamics of the resource, the actors and the institutions (Vatn 2011). In this respect, we here present a conceptual framework to be able to understand and analyze the socio – ecological dimensions when the current resource regime is changed from one state to another by introducing REDD+. Nevertheless, a framework needs to be anchored in theory, and for this we have chosen to use institutional theory.

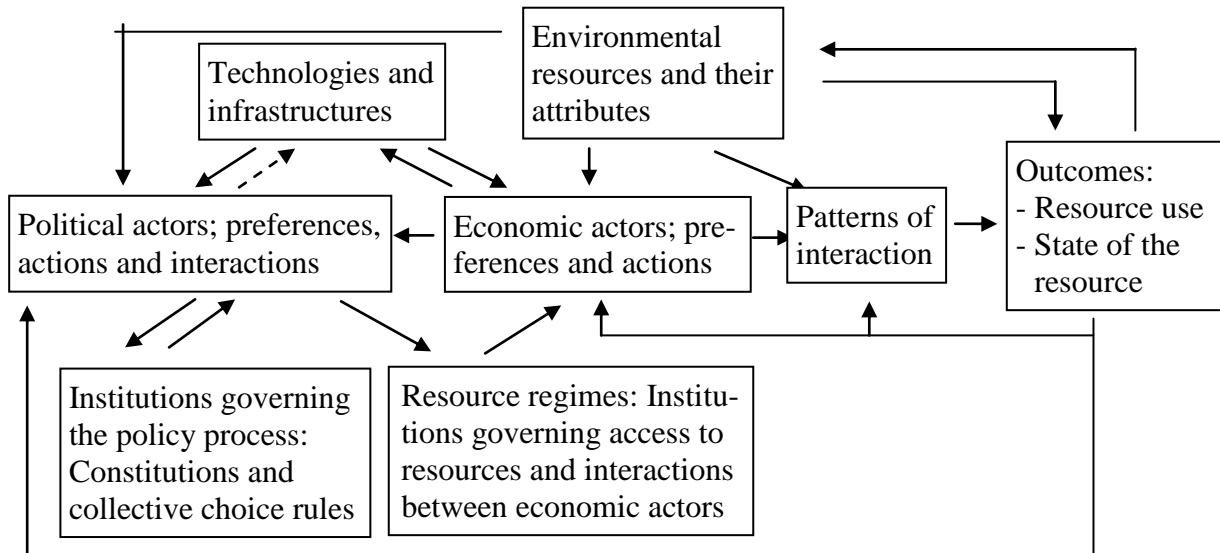
### **2.1 A Resource Regime Framework**

In our analysis of REDD+ we use a framework developed by Vatn (2005; 2011), which is inspired by the work of Ostrom (1990), Oakerson (1992) and Ostrom et al. (1994). It has its base within political economy and has emphasis on institutional dimensions in relation to environmental resources and its counter play using Young's (2008, p.26) concept of "fit" as a "*matter of the match or congruence between biophysical and governance systems*". If the regime does not fit the characteristics of the resource, problems could appear.

To help us analyse REDD in Tanzania, we distinguish between six concepts in our analytical framework: (1) Attributes of the resource and the infrastructure and technology available for resource utilization; (2) Institutions governing the policy process, including conventions, norms and formal rules; (3) Resource regimes that governs access to resources and interaction between actors (4) Political and economic actors and their preferences; (5) Patterns of interaction derived from choices made by



the actors; (6) Outcomes and evaluation affecting future policies and the resource itself. The six different variables are illustrated below will now be described one by one.



**Figure 2: A resource regime framework**  
Source: (Vatn 2011)

### 2.1.1 Attributes of the resources, available infrastructure and technology

The first two variables in the framework consist of the physical attributes of the specific resource and the technology and infrastructure influencing existing opportunities of use of the resource. According to Oakerson (1992), problems with common pool resources are rooted in constraints given in nature and available technology, because characteristics of the nature and the present technology establish limits and possibilities in the use of specific resources (Oakerson 1992). Therefore it is important to specify as precisely as possible in an analysis on REDD the limiting conditions that restrain natural regeneration.

The attributes of the resource will provide information on the choice of resource regime and which one might be suitable to maintain a benefit-stream. Nevertheless, we must note that it is how the resource is perceived that has this influence. The opportunities technology and infrastructure present, influence both political and economic actors. It might for example alter previous limiting conditions of a resource by “being out of reach”, if a road is constructed, making it more accessible and/or

introduce new technologies such as a chainsaw impacting forests resources, due to improved efficiency and decreased workload. It is here also worth mentioning technology in the form of recycling or the development of alternative technologies to reduce the demand and pressure on the resource. Resources can be renewable or non-renewable, and with REDD, the forest if not fully depleted is a renewable resource, which can regenerate. However as opposed to water, which is more or less a homogeneous resource, forests are hugely diverse where we can typically consider reproduction rate, its carbon sequestration abilities and its environmental services. With further analytical interests of the physical resource properties, we can follow Ostrom and Oakerson in determining three considerations:

*Subtractability*, is the degree to which more than one user can make use of the same resource (Oakerson 1992; Ostrom, Gardner et al. 1994).

*Excludability*, refers to the ability for a seller to exclude a buyer of a product unless a certain price is paid (Oakerson 1992).

*Indivisibility*, is whether physical characteristics of the resource boundaries limit coordination between users (Oakerson 1992)

### **2.1.2 Institutions**

The term institution is today widely used across several disciplines within social science including economics, philosophy, anthropology, sociology, politics, and geography. There is a range of different understandings of the concept across the literature (Hodgson 2006). The dispute is rooted primarily in the definition itself where some define institutions as organizations, others seeing it as rules (Vatn 2011). We will here stick to North's division between institutions and organizations to avoid confusion between the two. By saying that "*Organizations are made up of groups of individuals bound together by some common purpose to achieve certain objectives*" (North 1994, p.361), we thereby see organizations as an actor rather than an institution, regulated *by* the rules - institutions.

For those understanding institutions as rules there is also an important divide worth mentioning. From social theory we can divide institutions into two camps; the individualist perspective, where institutions are seen as constraints, and do not

influence the characteristics of the individual and the constructivist perspective where institutions influence perceptions, values, preferences and capabilities (Vatn 2005). Despite how it seems, the two may not be seen as opposed to each other. While the first suggests what happens in a society can be explained by looking at individuals and their choices, the other suggest it can be explained by the social structures instead (Ibid).

When we understand institutions as “rules” we will find North in one end as an individualist, defining institutions as “*the rules of the game in a society*” (North 1990, p.3), where institutions are just external rules establishing the way individuals interact, with one goal in mind: to maximize their own utility (Vatn, 2005). At the opposite end Berger and Luckmann can be placed, saying that: “*Institutionalization occurs whenever there is a reciprocal typification of habitualized actions by types of actors*”. Put differently, any such typification is an institution” (Berger and Luckmann 1967, p.54) meaning that both their individual capabilities and how they see the world are socially constructed (Vatn 2005). With such an understanding of institutions, we choose to combine the two definitions, seeing institutions as the rules that make up a society and defined by habitualized actions by individuals, where there is a reciprocal relationship on how individuals influence institutions as well as how institutions influence individuals.

Following Scott (1995), we can further categorize institutions into three different groups within a society - norms, conventions and legal rules (Scott 1995). Norms are acts supported by underlying values, and are typically rational oriented such as if someone do this, you do that. For a norm to become social a set of “behavior” must therefore be shared and sustained by other people (Elster 1989). If norms tell people *what* to do, conventions tell us *how* to do it and are typically there to solve a coordination problem. As an example, trying to preserve the environment can be a norm within a village, how this is done will be the conventions and practices. Finally we have legal rules which are in many ways different from norms and conventions since it is governed by third party sanctions, combining a certain situation with an act which is forbidden or required (Vatn 2005). As an example, legal rules can be explained if someone destroys other people’s property, a third party – the law, will give the victim the rights to claim a compensation for his or her loss.

### 2.1.3 Resource regime

The regime concept is in itself used in many different literatures where a various different definitions exist. It may be an environmental, transport, or a water regimes at local, national and international levels, but typically they all include actors, institutions, resources and technologies (Vatn 2011). Holtz acknowledge for example the car as a regime, based on the need to satisfy mobility, where you have the technological element of the car itself, combined with legal laws/regulations and consumer preferences that guides its use (Holtz, Brugnach et al. 2008). In the literature on international agreements an international regime is defined as a set of, rules, norms, and decision making procedures that produces some convergence in the actors expectations, thereby coordinating their actions (Chasek, Downie et al. 2006). The current climate regime is such an example where different nations interact with a set operational structure. Since REDD is planned to be part of a future post-2012 international climate regime, REDD can thus be referred to as an international resource regime. Within the field of environmental governance and resource regimes, Oran Young has been seen as a core scholar (see Young 1982; Young 2002; Young 2008) where his fit-interplay-scale triadic is presented as a set of analytical themes for environmental regimes. This can be applied to REDD where the problem of fit is referred to as “the matter of match or congruency between biophysical and government systems”, interplay is when “discrete regimes can interact with one another and that such interactions become more common and significant as the number of discrete governance systems grows”, and scale is “the extent to which institutional arrangements are similar and exhibit comparable processes across levels of social organizations ranging from the local to the global” (Young 2008, p.26).

We will refer to the concept of resource regime as explained by the institutional structures governing the use of resources. Due to this, we choose to emphasize the institutional context that is created by actors to coordinate and regulate actions when looking at resource regimes. Bromley’s definition reflect this where “*a resource regime is a structure of rights and duties characterizing the relationship of individuals to one another with respect to that particular resource*” (Bromley and Cernea 1989, p.5). With this assumption, it is especially important to remember two things; that there are rules governing access to the resource, and there are duties or rules concerning the relationship and interaction between individuals (Vatn, 2011).

There are many examples of rules that consider access and interaction, however, access rights are typically formed as property rights or use rights since it is central to any clear understanding of institutions and economic interests (Bromley 1989; Vatn 2011). It defines who has access to the resource and under what circumstances.

Property rights is a specific type of right of fundamental importance to resource allocation issues (Vatn 2005), and thus for REDD+, extremely important. A right is a social defined relation or “*institution, offering individuals or collectives an assurance that other people will behave in a specific way towards them*” (Vatn 2005, p.253). In Tanzania and Kilosa, such rights are not always clear and disputes over the right over access to resources occur frequently, especially over scarce and valuable resources such as access to water. In this sense, adding value by REDD to land with formerly little value can potentially create what can be characterized as a race for rights over resources. To have property is to have a claim to a benefit stream and is not an object such as land, it is rather a social relation that defines the property holder with respect to something of value (Bromley 1992). Hence, in the case with REDD, it is not the forest in itself that is of interest, but the services it provides.

As clarified by Bromley (1991), property rights can be divided into four different property regimes, characterizing different structures of rights and duties.

*State property* is where the ownership is in the hands of the state and where agencies have the right to determine the use and access of the resource with individual duties to observe.

*Private property* is where individuals own the land and have the rights to undertake socially acceptable uses, and refrain from socially unacceptable uses.

*Common property* is similar to private property, but the owners are a management group of individuals that has the rights to exclude non-members.

*Non-property/open access* is where no defined groups of users or benefit stream is available to anyone.

Since different property regimes can be seen as social instruments, particular property regimes are typically chosen for different social purposes (Bromley 1991), each with specific characters regarding transaction costs, legitimacy and motivation structures,

suitable for different social settings. So if valuable resources of high demand are under an open access regime, the resource will then most likely become depleted within a short period of time. It is important to note that to support such a property regime and guarantee a benefit stream, you would need a 3rd party, a role the state usually plays (see Bromley 1991; Oakerson 1992; Hahn 2001). However, norms may in many instances be as important as formal rules in regulating access to a resource since rights may be customary (Vatn 2011). Hence access to resources could take the form of use rights rather than a property right, creating a “bundle of rights”, where the state may have the right to manage the resource and a community the right to access it<sup>1</sup> (see Bromley 1989). In Tanzania and Kilosa for example, rural people around woodlands require ownership of or guaranteed access to land as a basic asset to ensure food security as well as employment and reduced poverty. However, most of the woodlands in Tanzania are neither managed nor protected and hence fall under jurisdiction of the Commissioner of lands<sup>2</sup> (Luoga, Witkowski et al. 2005). In this sense a “bundle of rights” is established where people have the right to access, and the state the right to manage it.

#### **2.1.4 Actors and governance structure**

Over the last decade, the concept of governance has gained momentum not only in the social sciences but is also to be found in a wide range of policy-making documents (Berger 2003). Governance must not be confused with government, where governance as opposed to the government has become an important process in describing and proposing strategies for policy making. Nevertheless, the real understanding of the concept is still not clear, where a range of definitions exists (Berger 2003). If we look into the historical context, the debate about governance arose during the financial crisis of the state, where political, social and economical sectors started to question its efficiency. After World War II and the development of a modern democratic state, there were a need of new policies due to an increased complexity where a traditional top-down position were weakened in favour of social changes, technical development, the market etc. (Jessop 2000; Loughlin 2004). So what *is* governance? To guide us, it can be defined as; “*combining different principles*

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<sup>1</sup> Homoré Honoré, A. M. (1961) points out 11 possible elements for full ownership.

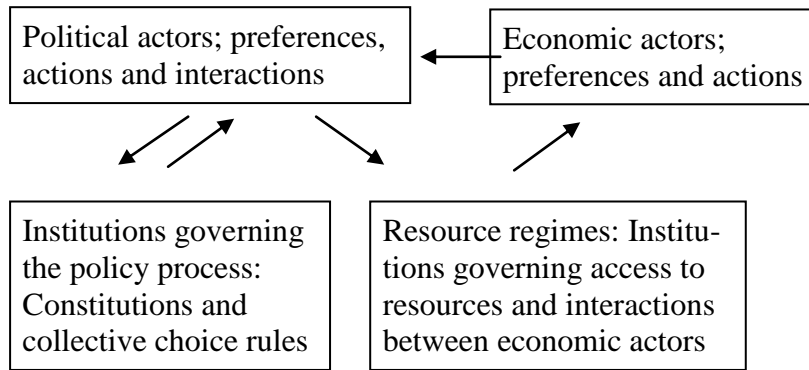
<sup>2</sup> According to the 1999 land act.

*for collective decision-making; ballot box, willingness/ability to pay, resource control and interests; which again has implication for efficiency, effectiveness and legitimacy of governance (rights, involvement). Governance reflect power relations in society” (Vedeld 2010, slide.3). So generally, with the help of Berger (2003) we can say that it refers to the discussion about how to steer the society and how to reach collective goals, and how this can be done in both efficient and equitable ways.*

Pierre & Peter (2000) suggest a division between governance as structure and governance as process. However, as suggested by Berger (2003), it is important not to only look at the structure itself, but also the process and the outcome. As with REDD+ policies, it is necessary to identify all involved actors as well as clarify the institutional structures it will operate in. Equally important is the process itself and how different actors interact within the structure. Here we first highlight governance as a structure, based on the work from Vatn (2005; 2011), referring to the inclusion of social actors under new conditions with different institutional arrangements.

#### ***2.1.4.1. Governance as structure***

While looking at governance structures and actors within this structure we chose to divide actors into two different groups: the economic actors that holds access rights to the resources and the political actors that who defines the rules concerning access to resources and transfer of products (see Vatn 2011). Due to this, we also add two types of institutions, a formal and an informal one, respectfully making up the resource regime where the rules govern the economic process, and the informal institutions governing the political process where rules are formed (Vatn 2011). Political actors will typically be at international, national and local levels, such as the World Bank, governmental agencies, and community councils. Economic actors may be of all the same levels, e.g. charcoal retailers and rural households. For REDD in Tanzania our focus will lie on both national and local level (See Figure 3)



**Figure 3: Governance structure**

Source: (Vatn 2011)

Drawing from existing literature (see Kooiman 1993; Pierre and Peters 2000; Bevir and Rhodes 2001; Hooghe and Marks 2001) we can distinguish five different governance dimensions that can be useful in an analytical context; governance as network, as inclusion of wider parts of the society, as multi-level government involvement, as new public management, and as hierarchies (Berger 2003).

#### **2.1.4.2. Governance as process**

It is important to look at governance also as a process since governance is not only about the institutional structures, but the interaction between them (Berger 2003). This process of policy making leads us in the direction of power, where “*Policy making is inherently conflictual, involving an uneven distribution of power and influence between different institutions and societal actors*” (Berger 2003, p.222). The state has a sovereign power within a society, and according to Vedeld (2002), the right and duty to steer resource use according to the interests of its citizens. Hernes (1978) defines power as “*the ability of an actor to realize his interests in the face of other actors*”. Nevertheless, in a democratic society it is usually also *how* this power is practiced which is of importance (Vedeld 2002). How a state chooses to treat its citizens is then reflected in the overall governance performance.



### **2.1.5. Interactions between actors/pattern of interaction:**

Within a resource regime (here a property regime) there are “rules” or different ways that the people may interact, and according to Vatn (2011) we can classify them into four groups. First, there is *exchange* between parties, often taking place in markets where goods and services are transacted. Second there is *command*, based on hierarchical power, normally associated with the state (but also with the firm) that will for example guarantee legally defined property rights. Thirdly, we have *community based interaction rules*, where opposed to exchange, they are personal, typically concerning norms on how we are allowed to intrude on each other lives, e.g. pollution activities. Finally, there are *no rules* where actors do whatever they like regardless of consequences for others such as climate effects and pollution in the case of REDD. If we combine these four interaction rules with the different types of property rights we will get different combinations that are all seen in practice (Vatn 2011). However, rules alone do not guarantee a certain pattern of behaviour. Before the rules become incorporated into society, they have to be enforced by an authority *and* followed by the users (Bromley 1989). With REDD for example, legally regulated forests to communities doesn’t automatically guarantee a sustainable use of its resources if no one follows or enforce its rules. People may continue to produce charcoal or clear forest for agriculture using existing community based interaction rules based on norms and values anchored deeply within their culture (or if they don’t have any other way of creating an income). This means that institutional arrangement combined with physical and technical attributes of the resource becomes important considerations when defining individual or group choice sets.

### **2.1.6 Outcomes**

From the patterns of interaction between the different elements presented above, one can produce an outcome subject to human evaluation. In this respect one can then determine if the outcome were as anticipated looking at the rate of success or failure. Since this study is an early assessment the future outcome of interest for the POVSUS REDD project will be if REDD results in reduced deforestation and forest degradation, something which will be determined some years later through a thorough evaluation process. According to Angelsen (2009) the outcomes of a regime such as REDD can be evaluated through the use of the 3Es+ criteria:

*Effectiveness*, refers to the extent to which goals are reached

*Efficiency*, measures the cost up against the gains obtained

*Equity*, refers to the distribution of costs and benefits

*Co-benefits* is where other benefits are produced out of the same goal, e.g. in addition to store carbon REDD could preserve biodiversity, improve livelihoods and prevent poverty.

Or as presented by Angelsen: *“Is the mechanism achieving its GHG emission targets (effectiveness)? Is this target achieved at the minimum cost (efficiency)? What are the distributional implications and co-benefits (equity and co-benefits)?”*(Angelsen 2008, p.18.)

Whether the different actors involved will deem the regime a success or a failure, it could result in a response where the institutional arrangement is changed (Bromley 1989), thus having an effect on both the resource and its attributes as well as people’s perceptions. Here we also see how the attributes of the resources correspondingly affect the outcome itself. Accordingly, the present arrangement of property rights and regimes that defines costs and benefits may be understood as a result of previously evaluated outcomes. However this change in regimes and institutions depends on political priorities and on existing power relations and rights previously explained. In the case of Tanzania, the natural resource sector has experienced several shifts in policies, institutions and structures up to today. It is this foundation which lies in front of a future REDD regime where its outcome deeply depends on political priorities, existing power relations, and established rights.

## **2.2. Description of the Sustainable livelihood approach**

*“A livelihood comprises the assets (natural, physical, human, financial and social capital, the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household”* (Ellis 2000, p.10).

A household is again in turn defined as a *“social group which resides in the same place, shares the same meals, and makes joint or coordinated decisions over resource allocation and income pooling”* (Ellis 2000, p.18)

In our study on REDD in Tanzania we look at how local livelihoods might be affected by REDD implementations. To do so we focus on the economic actors living adjacent to the forests and we will with the help of the sustainable livelihood approach assess households dependence on forest resources, and see how livelihoods might be affected by REDD policies. The livelihood approach can offer added value to the resource regime framework with attention to details at the level of livelihood, since the regime framework alone can be perceived as somewhat reductionist in attributing all motivations to economic or political interests. The livelihood approach does not assume this explicitly but allows both social and cultural issues to be considered equally (Schafer 2002).

Some researchers are critical to the livelihood approach, where for instance Ashley and Carney (1999) argue that issues concerning power relations and politics on a general level is under-emphasised or neglected. There are therefore no reasons why we cannot say that the political economy approach of the resource regime framework and the sustainable livelihood approach complement each other when assessing REDD both on a national and on a local level. Therefore we see the two, the political economy approach of the resource regime framework and the SLA as complementing each other and this are highly appropriate when assessing REDD both on a national and on a local level.

The sustainable livelihood approach builds on two wide dimensions, namely one social and one environmental. It first appeared in the 1980's with the work of Robert

Chambers<sup>3</sup>, who was a prominent critic of the top-down approach of development research and practice (Schafer 2002). During the 1990's it gained momentum with an increased focus of sustainable development and a view that there is a close connection between poverty and environmental degradation (Ellis 2000; Schafer 2002). Based on work from several organisations<sup>4</sup>, a framework was later adopted by DFID (Department For International Development) in the late 1990's to clarify the approach and its development (Carney 2002). More generally, it is based upon thoughts about poverty reduction and how people live their lives; on structural and institutional issues, and draw upon three decades of changing views of poverty (Ashley and Carney 1999). However, a variety of different frameworks exist, although anchored in the same conceptual understanding of poverty and its causes that underpins sustainable development<sup>5</sup>.

### **2.2.1 Forest income, SLA and REDD**

*“More than 1.6 billion people depend to varying degrees on forest for their livelihoods. About 60 million indigenous people are almost wholly dependent on forest. Some 350 million people who live within or adjacent to dense forests depend on them to a high degree for subsistence and income”* (World Bank 2004, p.16)

A fundamental question for REDD+ is to what extent rural communities are dependent on forests. The above quote gives us some ideas of the overall scale of such dependencies. Since REDD aims at compensating local forest managers in terms of carbon stored, the opportunity cost becomes essential since it will affect the level of incentives people will have. Calculating the forest income will therefore become of great importance to be able to establish an effective and efficient REDD+ regime.

Income diversification is a distinguishing feature of rural livelihood strategies in poor countries (Ellis 2000, p.4). Most households thus manage a broad portfolio of activities and income sources. However, as Ellis points out, there is a difference between diversity and diversification. Where diversity refers to the existence of many

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<sup>3</sup> Chambers and Conway (1992) also link the three concepts of capability, equity and sustainability together presenting them as a framework or paradigm for development thinking.

<sup>4</sup> CARE, UNDP, Oxfam and IISD were some of the early adopters of sustainable livelihoods methodologies.

<sup>5</sup> Hussein (2002) goes through and compare several livelihood approaches used by different agencies.

different income sources at a point in time, diversification interprets the creation of diversity as an on-going process, reflecting factors of both pressure and opportunity that cause households to adopt increasingly intricate and diverse livelihood strategies. This could be cultivating several types of crops with different capabilities or diversify the sources of income by e.g. collecting forest products for sales in addition to agriculture. In any given context, a combination of different sets of capitals results in the ability to follow a combination of livelihood strategies to sustain an outcome, mediated through institutional and organisational context. In order to create a livelihood households must combine the assets which they have control over. The more options you have the more likely it will be to enhance your welfare outcome.

According to Scoones (1998) and Ellis (2000) livelihoods are built on five different assets or capitals:

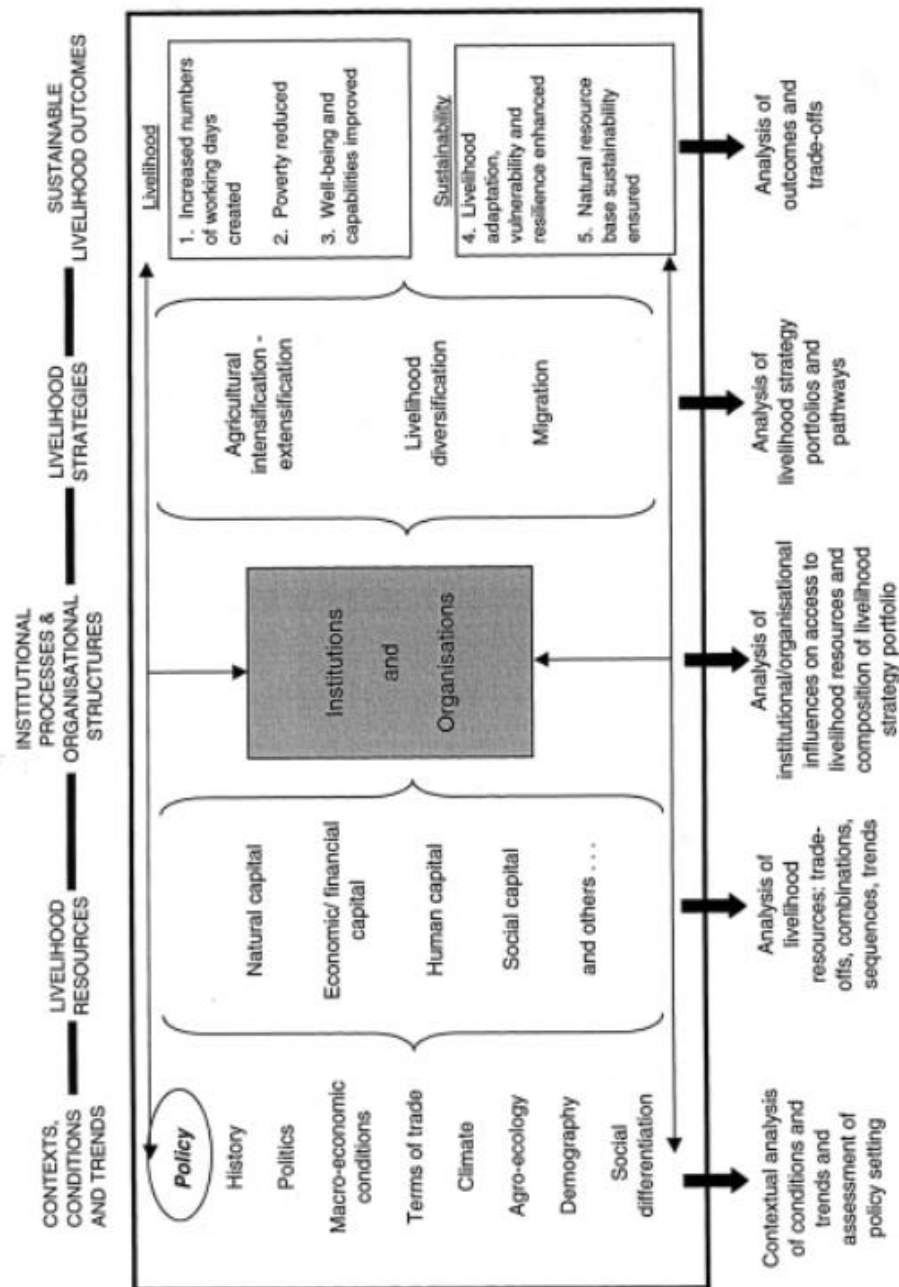
- *Natural capital* – the natural resource stocks (soil, water, air, genetic resources etc.) and environmental services (hydrological cycle, pollution sinks etc) from which resources flow and services useful for livelihoods are derived.
- *Financial capital* – the capital base (cash, credit/debt, savings, and other economic assets), which are essential for the pursuit of any livelihood strategy.
- *Human capital* – the skills, knowledge, access to labour and good health and physical capability important for the successful pursuit of different livelihood strategies.
- *Social capital* – the social resources (networks, social claims, social relations, affiliations, associations) upon which people draw when pursuing different livelihood strategies requiring coordinated actions.
- *Physical capital* – the capital created by economic production processes (roads, tools, buildings, agricultural fields' irrigation canals and machines)

Adding to this, when it comes to the extent of access to their assets, this is strongly influenced by their *vulnerability context*, which refers to the context and factors that people may have little or no control over, but which nevertheless affect their livelihoods. These factors are trends (such as population, resource, economic and technological), shocks (such as natural, economic and conflict) and seasonality (such as price, employment opportunities and food availability) etc. (Baumann 2002). When

existing institutions and organisations are taken into consideration on top of physical and contextual characteristics of a household one gets to where a livelihood strategy is developed. Here rural households have three livelihood options; intensify production, diversify livelihood conditions or migrate elsewhere.

Below is an illustration of the sustainable livelihood framework:

Figure 4: The Livelihood Framework



Source: (Scoones 1998)

Although income and livelihood are two separate things, the level of household income is often used to measure livelihoods and comprises of both a subsistence and cash aspect. While the cash component would include for example sales, wages and remittances, subsistence would include for instance the consumption of own agricultural produce and environmental resources. A total household income can thus be divided into five different income groups by (Ellis 2000):

- *Agricultural income* – refers to income from own-account farming, whether on owner occupied land, or on land accessed through cash and tenancy. Broadly defined agricultural income includes livestock as well as crop income and comprises of both consumption and cash income from the output sold.
- *Off-farm income* – refers to wage or exchange labour on other farms and also includes labour payments in kind.
- *Non-farm income* – refers to non-agricultural income sources such as non-farm rural wage employment and non-farm rural self employment
- *Remittance* – refers to income transfers between households, within households or from outside organisations or households in some ways.
- *Environmental income* – refers to income derived from natural resources, sinks, and processes created by nature rather than by humans. Environmental income will here be treated as forest income.

While we will use all of the income measures to identify overall diversification we will also use them to calculate an overall household income. However, due to REDDs forests focus, an extra emphasise on forest environmental income will be made. It has long been argued that environmental income is relatively more important to the poor, and as such, overuse and degradation will hurt the poor more than others.

Vedeld et al. (2004) distinguish between three different functions of forest income.

Safety nets – Forest products are used to overcome unexpected income shortfalls or cash needs.

Support of current consumption – Forest products are important to maintain the current level of consumption and prevent the household from falling into (deeper) poverty. This role would largely correspond with the term “coping strategy”

Poverty reduction – Forest products provide a way to increase household income sustainably (proven reduction) either through a “stepping up” strategy (accumulation of capital to move into other activities) or a “stepping up” strategy (intensification and specialization in existing activities)

The question then becomes:

*“Are the forest dependent because they are poor, or poor because they are forest-dependent?”* (Vedeld, Angelsen et al. 2004, p.18)

### **2.2.2 Links between socio-economic factors and forest dependence**

Vedeld et al. (2004) suggests some socio-economical household factors that may impact the role of environmental incomes among rural households. They include:

(1) *Age of household*: Younger households tend to get more resources from the environment than older households. This can be explained by younger households clearing more forest as a “start-up” activity to cultivate more land. Older households may also lack the physical strength that is often acquired. In household welfare studies an important aspect is then to examine the worker/consumer ratio which indicates the total number of people in a household that are economically active by looking at the relationship between the number of household members and those economically active.

(2) *Education*: Better educated households tend to have access to a wider range of income opportunities, and would thus not find it rewarding to get involved in forest activities. This we have to look at critically since in cases where the education is generally low, more educated households may have the capacity and means to go to the forest and transport their produce to a market. The difference would then be types of forest products that are taken that are of high return such as charcoal and timber.

(3) *Sex of household head*: In many cases female-headed households are poorer than male-headed households. For instance, the female-headed households might be widowed or divorced, and as a result the labour force will be smaller. This can be explained, by many female heads of households being widowed or divorced, or that the husband is working far away. In this way the labour force will be smaller.



(4) *Size of household*: The size of the household can be of significance if the household members are of a productive age. If the household consists of many adult members it could then be interesting to include it as a variable in a regression analysis. The sex of the members might also play a role here in terms of the gender division of labour.

(5) *Ethnicity*: is of relevance in areas where place of origin can be important regarding forest dependence. This can be complicated and difficult to establish, but in some cases migrants do not have the skills, experience and tradition of forest product collection. It could also be the opposite way around where due to lack of other opportunities such as available land, forest products may serve as “employment of last resort”.

Beyond the individual and household level, a number of factors at the village, district, or even national level are important determine factors of forest dependence (Vedeld, Angelsen et al. 2004). Such factors include access to markets, population density, legal framework, agro-ecological conditions, social institutions and different policy and legal frameworks. The availability of environmental resources often varies substantially between locations. If the household is located in a moist climate in Nepal or an arid in Tanzania therefore affect the potential production possibilities for the household. Such ecological variations can furthermore impact income possibilities in agriculture, where there can be a need to resort to forest products. In addition, the population-environmental nexus are important topics, especially in highly populated areas with fewer resources per capita. Within this framework, the institutions may be both formal and informal (Ibid).

Both the resource regime framework and the sustainable livelihood approach will be used in accordance with our objectives. Table 3 shows which approaches are used where. For the first objective, the resource regime framework will be used to look at REDD as a resource regime on a national level. In objective two we look at local livelihoods in the pilot project and will in this respect use the sustainable livelihood approach to do so. Lastly in objective three we use our findings and knowledge gained from objective one and two to evaluate the pilot project.

**Table 3: The progress for theoretical approaches in accordance with objectives**

Objective 1	Objective 2	Objective 3
To identify and analyze how an environmental regime such as REDD will work in Tanzania	To map out and consider the local context within which REDD will be implemented	Will the REDD pilot project in Kilosa be successful?
Resource Regime Framework	Sustainable Livelihood Approach	Resource Regime Framework

### 2.3 Environmental governance in the form of REDD

In this section, on the basis of the resource regime framework and its theories, we will look at REDD as a resource regime and as a new form of environmental governance.

To be able to study environmental governance, one needs to focus on the dynamics of the resource, the actors and the institutions (Vatn 2011). These are then the aspects we will go through. But first we need to establish what it is the REDD regime intends to accomplish. As mentioned before the idea is to reduce emissions from deforestation and forest degradation and increase the carbon storage of the forest by paying the local communities who are able to do this. With the added + in REDD this thought is expanded upon by adding: conserving and enhancing forest carbon stocks, and manage forests in a sustainable manner. Enhancement of forest carbon stocks is referring to forest regeneration and rehabilitation, negative degradation and emissions, and carbon removal, while managing forests in a sustainable manner refers to activities which cut emissions and boost removals (Vatn and Angelsen 2009, p.2.).

Many also see it as having the potential for added co-benefits, particularly biodiversity conservation and poverty alleviation, and thus the choice of governance structure will also affect the outcomes of these (Vatn and Vedeld 2011).

Within the REDD literature some terms make up a large part of the conceptual framework concerning REDD+, most of them being focused on issues for its success. In order to clarify what is meant by each of these in a REDD context, we first provide

a set of definitions to explain the most relevant ones, as these will be mentioned frequently in this paper:

**Table 2.3 Definitions of relevant terms in the REDD literature**

Additionality: *“Projects must demonstrate real, measurable and long-term benefits in reducing or preventing carbon emissions that would have occurred without the project. Alternatively, additionality in crediting systems means payments for reducing emissions to a level below the business-as-usual (BAU) scenario.”* (Angelsen 2008, p.135.)

Leakage: *“Carbon leakage is the result of interventions to reduce emissions in one geographical area (sub-national or national) that lead to an increase in emissions in another area. For example, if curbing the encroachment of agriculture into forests in one region results in conversion of forests to agriculture in another region this is considered to be leakage.”* (Angelsen 2008, p.140.)

Permanence: *“The duration and non-reversibility of a reduction in GHG emissions. Non-permanence can be seen as a form of inter-temporal leakage.”* (Ibid.)

Reference line/level: *“Reference line, or baseline, can refer to three concepts: (1) the historical baseline, that is, the rate of deforestation and forest degradation (DD) and the resulting CO<sub>2</sub> emissions over the past x years; (2) the projected DD under a business-as-usual (BAU) scenario where the baseline is the benchmark for judging the impact of the REDD measures and ensuring additionality; (3) the crediting baseline, or reference level, is a benchmark for rewarding the country (or project) if emissions are below that level.”* (Angelsen 2008, p.136.)

Transaction costs: *“Transaction costs are the costs involved in successfully connecting the carbon buyers and the carbon sellers.”*(Angelsen 2008, p.24.)

Opportunity costs: *“Compensation payments to forest owners for forgone profits.”*(Angelsen 2008, p.5.) *“Opportunity costs are the foregone economic benefits from the best alternative (non-forest) land uses, e.g., the minimum amount a landowner must be paid to be willing to stop deforestation and forest degradation/DD (compensation payment)* (Angelsen 2008, p.20.).

### 2.3.1. REDD on a global level

On an international level the REDD architecture is still not decided upon, but two structures with or without links to one another stand out as preferred international options for REDD. On the one hand incentives to reach the aims of REDD can be given through multilateral or bilateral public funding or it can be linked to carbon markets with market trading REDD credits (Corbera and Schroeder 2011). Although what is decided on an international level will influence how and which architectures will work on a national level, given the variations in national and local contexts it is made clear that a “one size fits all” approach on a national level will not work for REDD. Thus the structure and architecture under which REDD will operate might (and should) vary from country to country, depending on what is believed to be the best approach. It is still, however, recommended to try and keep the architecture flexible enough to adapt to a future global REDD structure (Vatn and Angelsen 2009).

One way to try and ensure this is the phased approach which is becoming an increasingly accepted approach and which divides the REDD process into three phases: in phase one, the “readiness phase” countries prepare their REDD strategy and start building capacity in MRV and start demonstrating activities; in phase two, the “more advanced readiness phase”, the countries implement policies and measures to reduce emissions; and in phase three, the “compliance phase” the countries then will start being compensated for their reduced emissions and increased carbon stocks on the basis of a pre-agreed reference level (Vatn and Angelsen 2009).

Of particular importance to make REDD work, both on an international and national level is the ability for monitoring, reporting, and verification (MRV) of carbon. As the main idea behind it all is to make performance-based payments, this can be done either by measuring emission reductions or by looking at stock enhancements and accumulation of carbon within the given forest. But there are still debates surrounding the specificities of such a MRV system, for instance concerning *what* should be monitored (which carbon pools), *who* should verify these measures (whether international or national entities), and *how* reference levels should be set (on which basis). There is a general agreement, though, that a common methodology needs to be used for monitoring, based on remote sensing and ground verification, that each

country needs a robust forest monitoring system capable to make the required verifications, and that reference levels needs to take into account national circumstances (Vatn and Angelsen 2009).

However, even with high focus on capacity-building activities, some are unsure if it will be enough for the developing countries to acquire sufficient capacity to correctly measure and perform the technical requirements of MRV and if they will be able to enforce proper restrictions to make such a system work (Hufty and Haakenstad 2011). Another issue in the REDD debate is at which level or scale accounting and incentive mechanisms should be provided. Three options have been highlighted: direct support to projects, direct support to countries, or a “nested” approach combining the two. A project approach, i.e. on a sub-national level, has the advantage of letting development countries start projects and activities early on and to attract investments from private actors, however it has been pointed out the inability this approach has in directly addressing the broader forces of deforestation and forest degradation. The second option, a national approach, has the possibility of doing exactly this, as it allows for national policy reforms, and can address issues such as leakage on a country-wide scale. However, to apply a national approach from the beginning can be difficult for many developing countries, as many suffer from weak governance structures. The third option, a “nested” approach, is by many seen as a solution to this, as a country is then able to start with a project approach and then work towards and implement a national approach when it is seen as feasible. Or it can allow for both approaches to coexist which means it can generate REDD credits both from the government and the projects. The challenge here though is how to harmonize these two levels (CIFOR 2008).

### **2.3.2. National institutional options and political actors**

While the above discussion on REDD is geared at the global and national level, there are also many issues and options specifically for national REDD architectures. And as the international discussion is reflected by various agendas and interests from different actors, so will various interests and perspectives naturally occur among national actors. This will ultimately affect policy formulation and implementation as the domestic REDD debate will be shaped by these variations. However, the direction it will take and the final outcome will depend on the inclusion of actors and the

degree of influence and power between them. For as there are actors belonging to different coalitions and networks, at different scales and arenas, whether state or non state actors, private or public, on a local, regional or national level, so do they vary in influence and power. And the power relation between them might be equally significant as it will play a part in deciding which actors get their viewpoints across and which don't. (Vatn and Angelsen 2009). Given the multitude of actors and the interaction between them the process of decision-making does not necessarily lead to optimal outcomes, and creating a most effective, efficient and equitable REDD regime is not a given. For instance high levels of involvement and commitment from various actors, such as key ministries such as the VPO-Doe and MNRT-FBD as well as the Finance Department, Energy and Mining Ministry and Agriculture and Livestock Ministry, relevant state and local NGOs and CBOs, and indigenous and forest dwelling communities, when developing a national REDD is seen as a prerequisite for a successful REDD. In many instances through, getting this commitment, being able to coordinate, consult, and create agreement among all stakeholders has proven to be lacking and very difficult to do, as it often requires very difficult compromises to be made (Vatn and Angelsen 2009).

There are particularly four types of national governance structures for REDD that has been put forward in the international literature on REDD. Those are (1) a market/project based system, (2) a fund outside the national administration, (3) fund in national state administration, and (4) budget support<sup>6</sup>, all of which focus on where (and through whom) the international funding will be channelled before it reaches the people on the ground. Vatn and Vedeld (2011) analyses these four options based on the 3E+ criteria: climate *effectiveness*, cost *efficiency* and *equity* outcomes, as well as their possibility to deliver on the stated *co-benefits* of REDD. Their analysis looks at research and evaluations of the four options done by various authors within the REDD literature, as well as draws on experiences of previous environmental governance schemes and structures as REDD itself is so new that extracting much practical experience and knowledge from it is limiting. An outline of his discussion is what follows, however, it is also important to keep in mind the national conditions which

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<sup>6</sup> This is besides the direct project support and/or "nested" approach which would not go through any national structure.

may be equally important in determining which option might be best for the given country.

#### ***2.3.2.1 Market/project based system***

The first option, a market/project based system for REDD is a system where actors, mainly firms from developed countries which have responsibilities of reducing their carbon emissions, will buy these reductions by funding local REDD projects in developing countries in a similar manner as how it works under the current CDM. Whereas the CDM system has been working on the basis of reforestation/afforestation activities, this is however not clear for REDD which at least for the time being will only include payments for reduced deforestation/degradation activities. However, there are also people in favour of expanding this system from a pure compliance market to also include voluntary payments from firms wanting to be more environmental friendly on their own accord.

The arguments in favour of this approach lies in its ability to attract substantial funding and delivering cost-effective solutions to REDD credits, as is it viewed to reduce the possibility of corruption from state administrations seeing as it will be purely market based. There is however, a possibility of corruption within the market, it might suffer from low state legitimacy, and might be weak on leakage and coordination across sectors. As a final argument against such an approach many expect it to be unable to deliver on the aimed co-benefits such as poverty alleviation and biodiversity protection.

#### ***2.3.2.2. Fund outside the national administration***

The second option for REDD is to direct the incoming money through a fund outside the national administration. This entails that the fund would operate independently from national institutions (e.g. it would be a new institution), but can be led by both non-governmental and governmental agents, however non-governmental actors are most often in majority, particularly if one looks at already existing Conservation Trust Funds around the world (Vatn and Vedeld 2011). The idea of such a fund is that it will direct money and resources to the specific projects or programs on the ground, whether run by the fund itself or by independent actors such as NGOs.

The arguments for this option is its high legitimacy among most main actors, its ability to attract funding (compared to fund a in state administration and budget support), its capacity of keeping transaction costs down as it goes outside of often rigid bureaucratic state administrations, and it has a lesser risk of corruption. Speaking against it though is the difficulty of sector-coordination and its limits when it comes to accountability and additionality.

### ***2.3.2.3 Fund within a national state administration***

The third institutional option is also in the form of a national fund, however in this case as a fund within the national state administration. Therefore instead of building a new and independent institution, a fund would be put under already existing national structures, and the capacities and competences of the present state administration could be utilized. A board consisting of various state administrative bodies and national NGOs would then have the responsibilities of REDD issues. As with the second option, funds would be directed to both programs run by themselves and by others, however as an addition, could also be directed to various state sector programs.

The arguments in favour of such a fund is its good transparency and accountability, its ability to ensure good sector coordination, to keep transaction costs down and the ability to deliver on co-benefits. On the other hand, it might be vulnerable to corruption, might have difficulties in attracting funding, and might have issues with additionality.

### ***2.3.2.4 Budget support***

As a final option, REDD money could also just be channelled directly to the state administration, and make up a part of the states' ordinary budget process, and then used according to the process and sector policies set by the state (Vatn and Vedeld 2011). The arguments in favour of budget support is that it has high legitimacy within the state, will probably be good in accountability and most likely best on sector coordination, as will it have a strong capacity to deliver on co-benefits. The arguments against it is it's vulnerability to corruption, possible issues with



transparency and the extra difficulty it might have in attracting funding compared to the above options (Vatn and Vedeld 2011).

As such, the individual “REDD readiness” countries might decide to build their REDD+ financial system in the form of either one of these options, with the national context being a great determining factor. However, a financial system for REDD is not the only requirement for its operationalisation.

### **2.3.3. Sub-institutions and policy approaches**

Besides the above mentioned options for an overall national REDD structure in dealing with the financial flow of REDD, there will ultimately also be needs for other institutions or sub-institutions to manage the flow of information and rewards downward to the local level and upward to the national and international level. The development of these institutions can as well be either within existing institutions (but with specific REDD responsibilities), or by creating new and independent ones. Besides a system and institution dealing with MRV of carbon, there will also be a need for other institutions or sub-institutions which deal with managing technical, financial, administrative and supervisory aspects of REDD. When and how urgent the need for these institutions depends on how far along in the REDD process the given country is (Vatn and Angelsen 2009).

It is also not just the institutional structure which makes up and is needed to create and implement a well-functioning REDD regime. For many countries it will be necessary with policy reforms, both within the forest sector, concerning land tenure, and within other sectors, and there will most likely be a need for additional policy making and selection of various policy instruments. The selection of these instruments, i.e. the choice of policy package which will be used, might be equally important as it makes up the various ways in which power, resources, cost/benefits and relative wealth among actors and stakeholders is distributed, thus having a significant impact on various actors status, roles and interests.

The four main policy instruments which in one way or another make up the overall policy package are: 1) administrative instruments, which entails building institutions and assigning rights and duties to actors, 2) legal instruments, meaning creating laws,

regulations, prohibitions and rights to forest resource use, 3) economic instruments, providing economical incentives or disincentives such as taxes, subsidies or quotas and permits for use and extraction of forest resources, and 4) pedagogic instruments, whether through providing general information on for instance the important of forests, through particular information campaigns to deal with for instance specific drivers of deforestation and extension services helping with for instance sustainable forest management (Vedeld 2002). Not only will the formation and presentation of this policy package affect the response and acceptance (legitimacy) from various actors, but its set up will also influence the ability of REDD to achieve the 3Es, climate effectiveness, cost efficiency and equity outcomes, as well as its ability to deliver of its stated co-benefits.

#### **2.3.4 Forests as the environmental resource under REDD**

When analysing environmental governance through the form of REDD, and as laid forward by the Resource Regime Framework, an important aspect which needs to be looked at is the environmental resource itself. In the case of REDD this then concerns forest. Like any other resource forests have their specific dynamics and characteristics. On the one hand forests and their resources are stationary or non-mobile in nature, which makes them easier to demarcate and handle than mobile resources such as fisheries and wildlife management. On the other hand though forests are characterized by what is called indivisibility meaning that they cannot be divided into small forest patches without destroying or deteriorating the ecosystem and ecological services which the forests possess, unlike for instance agricultural production which can divide land without losing its productivity (Kant and Berry 2001).

In addition, forests do not exist in exclusion from its surroundings and human settlement, infrastructure and available technology might gravely affect the forest state. For instance, if a forest is far away from people and bad infrastructure makes it hard to access it might be very dense and in a good state which further makes it difficult to enter and use. Alternately a degraded forest might make it easier to utilize given that it is less thick, and if located close to human settlements or a road it will be also more accessible and prone to further degradation. In addition, if people have

access to motorized forest tools, such as a chainsaw, which improve efficiency and, the forest might be even further degraded. Ironically, a degraded forest will generally be able to store more carbon than a forest which is in a good state. Thus, in connection with REDD, and particularly a performance-based payment system, those communities which have not been managing their forests well will now be compensated for it, while those which have will not get the same benefits. The same issue applies for the differences in forest type. For whereas one type of forest, for instance tropical rain forest, will be able to store a lot of carbon, other types, such as Miombo woodlands, will not, thus creating an unequal benefit stream regardless of the actual effort success of the management (Local resource person 2010).

In connection with forests working as carbon sinks (ability for carbon storage), forests are vulnerable to both human induced and natural disturbances. Because it is not just human actions which degrade and destroy forests; also natural disasters and forest fires can destroy and disturb the forest system and have grave effects for the uptake and storage of carbon, as well as reduce and endanger the biodiversity in the area. The basis for payments, i.e. purely performance-based or also encompassing effort based aspects, can then have be greatly affected in this sense (Vatn and Vedeld 2011), especially if the former option is selected.

In addition to this, when thinking of the multiple benefits that REDD aims for, finding an area which has the possibility of great carbon storage does not mean the same area is rich in biodiversity. And in terms of poverty alleviation, compensating people for carbon storage does not necessarily mean they are then fully compensated for their reduced use of forest products i.e. covers their opportunity costs. Because the economical value of the forest does not merely include wood and timber products such as fuel wood for energy or timber products for the market. Local people also often rely heavily on Non Timber Forest Products (NTFPs) and environmental services the forest provides, such as clean water and perhaps even more so, the value the forest has as an area which can be converted into agricultural land. As a final point, forests are not used only by adjacent and surrounding communities, and for instance wood and timber products also belong to regional and global markets which brings with it additional (and external) actors with vested economic interest in the

forest (Vatn and Vedeld 2011). How well the payment system and institutional structure reflects this will also affect the outcomes and the success of the new regime.

### **2.3.5 Forest Property Regime**

When it comes to resource regimes for forests, particularly in developing countries, they are often the subject of a weak tenure system and/or disputed property rights, an insecurity which is often associated with deforestation and forest degradation (Vatn and Angelsen 2009). In many instances this dates back to the colonial era, and continued into postcolonial times where the state took ownership of forests without recognizing the rights of people living in or adjacent to the forests. Thus many forest dwellers have claimed and still claim customary rights to their forests and often reject state control over forests which they see as their own. In addition, there are instances where there are contested property claims between user groups within communities, particularly between forest dwellers and farmers. While forest dwellers claim customary rights over the forest, peasants or wealthy agriculturalists might clear the forest, either spontaneously or as a planned action, as they see it as unclaimed “wasteland”/unclassified public land, or as a way of demonstrating and defending their property claims. Conflicts often arise from this, and the ones who eventually get state recognition as having formal rights to the area is more often than not the more powerful group, leaving indigenous and marginalised people on the losing side (Vatn and Angelsen 2009).

As a resource regime is the sum of rights and restrictions for access and use of the resource, these rights and restrictions can range on a continuum from a pure private regime where local communities and other groups are completely excluded from all forest products; to state regimes where local communities might be excluded from all timber and nationalised non-timber products but might be allowed to harvest non nationalised non-timber products; to community regimes where people living in the community have access to all products but are often limited to certain quantities and harvesting times; and to an open access regime where there are no restrictions of any forest products on anyone (Kant and Berry 2001). However, it is important to distinguish between a *de jure* (formal) and a *de facto* (informal) condition. This entails mainly the ability to control access and use. For instance, while the state might

have the *de jure* right to restrict all access and use to a Forest Reserve, it might not be able to control illegal extraction and use of resources from various groups and individuals, resulting in more of a *de facto* open access regime which often results in conflict or inefficient management. There are also instances where a forest is legally under a state regime but where the adjacent community has their own set of rules concerning management and use, e.g. a *de facto* community regime although it is not formally recognized by the state. This formal recognition might happen eventually though, and there are many instances in developing countries where forests are under what is called a *joint regime*, normally between the state and local community. In many cases the community will then get a share of the timber and nationalized non-timber products while also having access to other NTFPs (Kant and Berry 2001).

In terms of REDD+, taking all of the above issues into consideration is key, and a growing body of literature and government concern is focusing on the effects insecure tenure systems can have on its success. As REDD is essentially about rewarding people for increasing the forest carbon stocks and work as an incentive for reducing deforestation, it is vital to know who then should get the payments and how to distribute them. How then can this be done so that those who play a part in the process, which is not necessarily only land holders of the trees and resources, are not left out and marginalized? If they are, REDD will run the risk of the current destructive activities to continue and leaving the new regime highly illegitimate by those which have the power to stop it (Vatn and Angelsen 2009).

### **2.3.6 Economical actors of forest resources**

The actors mentioned above are what in theory are defined as economical actors. As previously mentioned they include both local and external actors, and private and state, such as households and private firms, state firms and communities under private properties (Vatn and Vedeld 2011). When it comes to forest resources important economical actors are among others “forest-dwelling peoples and indigenous peoples, swidden agriculturalists, permanent small-scale farmers seeking new or additional land holdings, large and small-scale timber industries and their associated workers, and large and small-scale ranch operators” (Thompson, Baruah et al. 2011, p.102.).

When looking at economical actors the motivations of the actors and the interactions between them is key. When it comes to communities under common property and their dependence on forest resources it has previously been assumed that they all have the same dependence on forest resources and thus the same motivations in terms of use and management of a resource. As Kant and Berry (2001) and others have experienced, there is often a much greater heterogeneity within communities than what was previously assumed. Differences such as cultural, economic, ethical and social differences is often present which means that individuals within a community may have diverse preferences for (and dependence on) timber and NTFPs and favour different product mixes, which in turn affects their various priorities in terms of forest resource management. For instance, a small holder farmer might put more value on a forest area in terms of transferring it into agricultural land, while landless people, (often the poorest people in society), put more emphasis on the value of the resources within the forest and are much more dependent on them. There are also some who don't necessarily depend on forest resources at all nor have much interest in its management, for instance those who do not own or manage natural resources such as teachers or private operators (Vedeld 2002).

The dependence on forest resources and the availability of both the resources and of alternative sources is also an important motivational aspect for actors. Population pressure and reduced fertility of agricultural land might put pressure on forest resources and increase the competition between actors. Also the availability of alternative resources, such as alternative sources of energy instead of fuel wood, has a big impact on the dependency of forests. For instance, if the user cannot substitute away their direct dependence on fuel wood for another type of energy, either because there are no substitution available or because the alternative source is too expensive, the dependency and use of the forest is most likely to continue even if increased protection and control of the forest is implemented (Kant and Berry 2001).

Being able to understand and incorporate the complexities of local conditions into a national REDD structure is extremely important in order for said structure to work efficiently and effectively, and it will also affects how legitimate the regime will be perceived by the affected economical actors. Within the REDD literature, although many highlights the importance of participation of indigenous people and forest

dwellers in the REDD process, in many instances this participation seems to be lacking or inadequate, and a number of concerns have been raised due to this – that it inadequately represents management issues, that it undermines previous efforts to decentralise forest management, and that there might be contradictions between existing land tenure rights which will ultimately have an effect on the distribution and benefit sharing among REDD actors. In addition, as many have voiced concern over developing countries capacity to perform MRV, higher still is the concern when it comes to local communities participation in monitoring carbon. As a response to this some see it as justifiable and necessary to rather require centralized management for MRV on the ground as they are viewed as more capable and reliable than local communities at protecting national interest, in effect reversing previous efforts to decentralise management (Thompson, Baruah et al. 2011). And given the often unsecure tenure system, in addition to problems determining who should receive payments, if the value of forest increases through REDD there might be a danger of more powerful actors capturing large parts to gain access to its value often to the detriment of the less powerful forest-dependent poor. This might also bring with it increased conflicts as the competition over forest areas toughens and actors have more to win by gaining control (Cotula and Mayers 2009).

### **2.3.7 Ostrom’s Design Principles and Cleavers’ analysis of Participation**

As we have seen, establishing REDD as a resource regime is a very complex matter and many issues need to be taken into consideration. However, although REDD naturally will come with its own challenges, the basis for REDD, creating a sustainable management system for a common pool resource such as a forest, is not new, and many researchers have looked at the specific elements and structures that need to be in place for this to happen. Including many of the elements which have been looked at in detail above, the work of Ostrom on “design principles for long enduring Common Pool Resources” is perhaps the most widely used model for analysing the sustainability of a given natural resource management system. Here we present a modified version of her design principles, as laid forward by Vedeld (2002):

**Table 4: Modified design principles for long –enduring common-pool resources**

<b>Success Principles</b>	<b>Description</b>
Clearly defined physical boundaries	Clear relative to neighbours or competing uses
Clearly defined membership and rights	Multilayered rights system and may include the right to physical access the area, the right to withdraw resources, to manage or decide on use, to exclude others and to alienate others through sales or leasing
Congruence between appropriation and provision rules and local conditions	Should be a reasonable balance between what individuals contribute and what they take out
Collective choice arrangements	Most of affected people can participate in decision making
Effective monitoring procedures	Those who monitor and audit CPR conditions are accountable
Legitimate system for graduated sanctions	There are rules against violation. Sanction depends on the offence. It should be assessed and imposed by fellow users or accountable officials
Cheap/accessible conflict-resolution mechanisms	Conflict resolution should be swift, inexpensive and fair
Recognition of rights to organise	No challenge by external government authorities; if they come in and overrule local decisions, local authority is undermined

Source: (Vedeld 2002, p.19.) Based on Ostrom, 1990)

In effect, the less these various factors are in place, the less the chances are that the system in place is sustainable and will endure over a long period of time.

As one of the design principles “collective choice arrangements” states, participation plays a part in creating a sustainable resource regime. The debate within REDD also focuses on the importance of participation when establishing the programme and it is seen as particularly relevant when establishing the pilot projects. Therefore we outline some points of discussion concerning participation, as described by Cleaver in her analysis of participatory development (1999).



She argues that participation has become narrow and naïve and just seen as a “good thing” and therefore stresses the need of getting away from narrow project approaches where there is a lack of clarity around who is to be empowered; the individual, the community, the poor, the socially excluded or categories of people such as women. The same applies for what to be empowered in relation to; cash transfers, rights of resource access and level of control, right to participate in decision-making etc. As laid out participation can be summarised and viewed in terms of two overarching topics; institutionalism and model of individuals.

### ***2.3.7.1 Institutionalism***

Cleaver argues that discourses of participation have been strongly influenced by the new institutionalism. Here participation is seen as fundamentally ensuring an efficient delivery of development. This is interpreted as; allowing the exercise of sanctions for non cooperation, reducing cheating and free riding, increasing cooperation and social capital, denoting initiative and responsibilities, securing good citizenship and political engagement, enhancing collective endeavours, creating a sense of ownership, and can in this respect be seen as empowerment. She puts forward five specific issues to take into consideration.

Firstly, on *Formalizing and functionalism*, a point is made that although the importance of informal and formal institutions is recognized in the literature, formalized institutional arrangements are seen as more robust than informal ones. Mentioning Ostroms’ model, her design principles are thus referred to as a way of “crafting” and formalize the institutions to create a more robust system (clear boundaries, formal rules and sanctions etc.). This then warrants that there is a good understanding of the informal institutions which are to be formalized, and when REDD is to be implemented, how well the newly established formal institutions fit the already established norms and values for forest management will greatly affect the outcome.

Secondly, according to Cleaver there persists a *Myth of community*, where falsely a community is seen as unitary. There are strong assumptions that in any given situation there is an identifiable community, in consistence within its own natural, social and

administrative boundaries. She further emphasizes that by defining a community it will involve the identification of who are included or excluded. This can involve the exclusion of poor people, of some people not being invited, or of people not being allowed to or able to participate etc. Paradoxically then, participatory approaches may reduce conflict between implementers and the communities but lead to increased conflicts locally (Vedeld 2010). In addition, communities are often overlapping where interactions may cross boundaries and may be linked to kinship, churches or other religious groups.

Thirdly, Cleaver raises the point of a community as the place where *Power and process* is highly present. She argues that we may see “the community as the site of both solidarity and conflict, shifting alliances, power and social structures”. As a result, when implementing a resource regime such as REDD some groups might be in favour and willing participants while others might oppose it. Likewise, given the apparent power relations within a community, some might benefit more through the exclusion and detriment of others.

Fourthly, Cleaver makes a point entitled *The resourceful community* where she states that there is a “myth that communities are capable of anything, that all that is required is sufficient mobilization...” (1999, p.604). There might however be other factors more influential than mobilization, such as availability of time and access to resources such as funding or tools.

Finally, the fifth point put forward by Cleaver is called *Culture and foundationalism* within which culture is in different participatory development contexts seen as a constraint (for example, restricting the participation of women) and at the same time, the glue that keeps the community together (common values and norms) (Cleaver 1999).

Whereas the above mentioned issues which should be taken into consideration when employing participation are concerned with the role of institutions, Cleaver comes with another set of issues concerned with the individual.

### **2.3.7.2 Model of individuals**

In discussing what she calls model of individuals Cleaver criticizes the assumption made by Ostrom and others in terms of individuals and communities and the links to social structures. Cleaver argues that one often see references to the “rational economic man” when referring to individuals and collective action. At the same time assumptions are made that locals are “social beings” that are willing to act upon the interests of the whole community. By this “the complex positions of real individuals and real groups is lost” (Cleaver 1999, p.605).

She puts forward particularly three issues which need to be emphasized more.

Firstly, regarding *Incentives, rationality and participation* she stated that “It is assumed that people will calculate that it is sensible to participate; due to the assurance of individual benefits to ensure or, to a much lesser extent, because this is socially responsible and in the interests of the community” (Cleaver 1999, p.605). This is however not a given and individuals might have many different reasons to participate, or not participate for that matter.

In addition, when discussing *Located identities, differential costs and benefits*, she points out that “Little recognition is made of the changing social position of individuals over life-courses, of the variable costs and benefits of the changing of participation to differently placed people, of contending and complimentary concerns with production and reproduction” (Cleaver 1999, p.607). As such, factors like age, education, gender, class kinship, resource access and location all have bearings upon people’s perceptions on participation.

As a final point, concerning *Negotiation, inclusion and exclusion*, Cleaver stresses the links between inclusion and subordination where social norms and structures may result in that some groups, e.g. women or poor do not participate. An additional point is that members of a “community” may also mean the exclusion of people not allowed to or able to participate, i.e. some people are not invited or poor people are unable to participate.

## CHAPTER THREE – METHODS

*In this chapter, we present our methodology. First the study design is put forward, followed by the validity and reliability of the study. Next we describe our methods of data collection, before our data analysis is explained. Lastly we show what we consider to be limitations and challenges before we round up by mentioning some ethical considerations.*

Our study focuses on the social and structural aspects of REDD and combines both qualitative and quantitative methods to do so. The reason for this choice is our focus on people's livelihoods, perceptions and values and existing institutions in order to be able to analyze how a scheme like REDD will affect local peoples' lives. With the use of quantitative methods: a "strategy that emphasize quantification in the collection and analysis of data" (Bryman 2008, p.22), we will be able to address whole village opinions as well as manifest how people live their lives in accordance to their surroundings. By additionally using a qualitative approach, which is "the ways individuals interpret their social world using words... rather than quantifications"(Bryman 2008, p.22), we add another social dimension to our findings which is hugely necessary for placing individuals within the pilot villages in a wider context.

### 3.1 Study design

A research design provides a "framework for the collection and analysis of data" (Bryman 2008, p.31). In other words, it establishes the structure that connects the research questions to the gathering of empirical data, and ultimately to the conclusions drawn (Yin 2003). Within the field of environment and development there are several designs to choose from, but for the purpose of our study we chose to adopt a case study design. REDD in a Tanzanian context together with a specific REDD pilot project in the form of the TFCG and MJUMITA pilot project in Kilosa is the case we have chosen with the intention of an in-depth and detailed analysis of the two levels. But what exactly is a case? Different definitions exists and there are many important discussions around what a case is (see Ragin and Becker 1992). The most common use of the term 'case' within social science can however be associated with a

location, such as a community or organizations, but can also be about individuals and historical events (Bryman 2008).

According to Bryman a “basic case study entails the detailed and intensive analysis of a single case” (Bryman 2008, p.52). Nevertheless, it is here important to note that a case study can entail several cases, and a distinction is made between a single-case (such as the study of one community or organisation), or a multiple-case (containing a replication of study of example two or more organisations). In addition a further definition can be made between a case study which is holistic and one which is embedded. A holistic case study means that an entire unit (or units) is studied, be it for instance a community or an organization. An embedded case study on the other hand focuses on more than one unit, and is rather split into multiple units of analysis (Yin 2003).

In terms of Yins definitions our case is then a single and embedded case as it entails the analysis of one specific country’s experience with REDD, but also an analysis at both national and local level, i.e. the pilot project in Kilosa can be seen as a subunit of REDD in Tanzania as a whole.

There is still, though, one more important distinction to be made when in terms of what type of case we are working on. Also here Yin has provided with a distinction of different cases, shown below, however as Bryman points out “any case study can involve a combination of these elements, which can best be viewed as rationales for choosing particular cases” (Bryman 2008, p.56.).

Following Yins work our study does not fall under the first two categories, the *critical case* and the *extreme/typical case*, as those cases are chosen due to its ability to test a hypothesis, and because the case is in one way or another unique, respectively.

The third case however, the *representative/typical case* (by some also referred to as the *exemplifying case*) which “either epitomize a broader category of cases or they will provide a suitable context for certain research questions to be answered” (Bryman 2008, p.56.) can be applied to our case because many developing countries, not just Tanzania, suffer from unsustainable governance and management of its forests, and thus suffers from deforestation and forest degradation, which in turn makes them eligible or has led to them start implementing REDD. In addition, as “exemplifying cases allow for the researcher to examine key social processes... or is known to have implemented a new technology and he or she wants to know what the

impact of that technology has been” (Ibid.), this is highly the case for our study as REDD as a new approach is (being) implemented and our aim is to look at how this new approach will affect the local community in question. However, as REDD is so new, our case also encompasses elements of the *revelatory case* as this entails “when an investigator has an opportunity to observe and analyse a phenomenon previously inaccessible to scientific investigation” (Yin 2003, p.42.). Thus the way we see it our case is actually a mix of the two above categories. Yin also puts forward a fifth category and calls it the *longitudinal case* in suggesting that a case can be chosen because it has the opportunity to be investigated at a later stage. Our study in itself was executed and completed in one point of time, not at several stages, nor with the aim of doing later studies, and thus we do not see our case study to fit in this category. However the case does comprise a longitudinal element<sup>7</sup>, but as Bryman points out “many case studies comprise a longitudinal element, so that it is more likely that a case will be chosen both because it is appropriate to the research questions on one of the other four grounds and also because it can be studied over time” (Bryman 2008, p.56.)

### **3.2 Validity and Reliability**

In order to maximize the quality of the study one needs to take into consideration the issue of validity and reliability, more precisely: *construct validity*, *internal validity*, *external validity*, and *reliability*.

Internal validity focuses on whether a causal relationship is established, i.e. whether certain conditions can be proved to lead to other conditions. This however only applies for what is called exploratory or causal studies and not for those which is more descriptive or exploratory in nature (Yin 2003). In terms of our study it is mainly a descriptive and exploratory study where we identify and map the Tanzanian structure both before and after REDD implementation as well as assess the conditions on the ground. However, we have also included a smaller causal element to it, or rather speculation of causal relationships, i.e. what might happen and what might be the outcomes of the REDD implementation.

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<sup>7</sup> In fact one of the main objectives of POVSUS-REDD, for which we did the baseline study, is to return to the pilot project in Kilosa at a later stage to do a follow up study.

External validity, on the other hand, is concerned with whether or not the findings of the study can be generalized and can be applied to other cases or can be used as lessons learned or added knowledge in a larger context or body of literature (Angelsen, Larsen et al. 2011). We aim to do exactly this, to come with an early assessment of REDD on a national and local level which can prove to be useful information for other countries and projects in the same process of implementing REDD. However more so, our study might provide with useful insight to the implementing NGOs, TFCG and MJUMITA, either on issues that might have been overlooked or positive findings which can be built upon.

Finally, construct validity and reliability concerns itself with whether the right methods and measures have been used for the concepts being studied, and whether the operation of a study, particularly the data collection procedures, are replicable and will lead to the same results, respectively (Golafshani 2003; Angelsen, Larsen et al. 2011). We have tried to be as clear and consistent as possible in our concept definitions throughout our study, as well as tried to minimize possible data collection errors. We have also applied a triangulation of method and data sources in order to be able to cover all our objectives and in order to crosscheck the gathered information, and thus increasing the level of validity.

### **3.3 Methods of data collection**

Including our own approaches, we were provided with a set of different data collection tools by POVSUS-REDD. We were provided with a household questionnaire, one interview guide for Local Resource Person(s) and one guide for Focus Group discussions, all designed on the basis of Participatory Rural Appraisal (PRAs). In addition we were provided with a manual for all the research instruments, which in a clear manner went through the process of choosing study area, included the relevant definitions, and practical considerations when carrying out the research.

PRA evolved and spread in the early 1990's and can be described as "a growing family of approaches and methods to enable local people to express, enhance, share and analyze their knowledge of life and conditions, to plan and to act" (Chambers 1994, p.1253). PRA has many sources, the most direct being the Rapid Rural

Appraisal (RRA) that derived from rural development tourism and the many defects of large-scale questionnaire surveys. PRA and RRA have much in common, but with differs in the nature of the process and ownership of information. As part of a process of empowerment, in a PRA the information is more generated, analyzed, owned and shared by local people than an RRA. Among many other applications, PRA has been frequently used in natural resource management, in areas such as soil, water, forestry, fishery, wildlife etc.(Chambers 1994).

### **3.3.1 Literature review**

Our study includes a review of existing literature on REDD. Since the concept of REDD is new, it includes a review of literature on a general note together with studies done within Tanzania. Such a review is important in order to get a broader picture of REDD in Tanzania, thereby creating new thoughts and ideas that can be useful in understanding complex relationships. While looking at REDD at a national level within our first objective, we also have been looking at written policy documents and documents relevant to the REDD architecture in Tanzania.

### **3.3.2 Participant observations**

Participant observations helped us to add depth to our understanding of people, society and the landscape. It also helped us identify informants which could give us insights through interviews or informal conversations. This was particularly relevant for our second objective in generating knowledge on the local level. By frequently writing down our observations in our research notes it have additionally given us a rich source of data as well as explanations, which further helps our analysis.



### **3.3.3 Semi-structured and structured interviews**

The research interview is a prominent data – collection strategy in both qualitative and quantitative research (Bryman 2008). While a structured interview has a formalized limited set of questions, a semi-structured interview is more flexible, allowing us to bring up new questions during the interview as a result of what the interviewee answer. In every village selected we had structured interviews with key informants, already designed by POVSUS-REDD. In addition, we also developed our own interview guides to other key resource persons both locally and nationally, where the lack of formal structure allowed them to be more personal as well as giving us unanticipated insights and ideas. During these sessions, we chose to use a tape recorder since we felt it helped to create a more relaxed kind of conversation where we more easily could keep the interviewee’s attention. This in combination with actively using our field notes helped us to better understand the setting we were in, which is important, especially at an early stage of the process. Through our own research coupled with the guidance of our supervisor’s in Tanzania and Norway, we came in contact with people with knowledge relevant to our objectives whom we arranged interviews with. Informal interviews were also used but are something that can be seen as informal conversations and helped us foster low pressure interactions, allowing the respondents to speak more freely.

On a village level, with the help of an already prepared structured interview guide we also interviewed local resource persons in all of our selected villages to get a factual and overall overview of the situation in the village. This offered information of importance for the other parts of our study, particularly the questionnaire that followed, as we were then more aware of the local context.

### **3.3.4 Focus group discussions**

The focus group technique is a method of interviewing that involves several interviewees at the same time. We used this method as part of our PRA in all the selected villages. As stated by Bryman (2008), the focus group method is helpful to generate data through the interaction between informants, and to see how people respond to each other’s views rather than just the responses themselves. With an

active use of focus group discussions it helped us to gain insights into how local people see and express their general livelihood situation, their general attitudes, values and norms in relation to forest resource management use, what kind of ideas and suggestions they would have for possible REDD schemes in their local community, how they evaluate local governance and power structures, local informal and formal tenure rights, and equally important, how they interact and respond to one another.

To be able to capture this information we emphasized when preparing for the focus groups that we were interested in participants within different age groups, ethnicity, status and geographical locations to be able to best as possible reflect all the different segments within the population of a village. Additionally we asked for two groups in each village, one with men and one with women, ten in each. This division we saw as essential in allowing everyone to take part in a discussion, where everyone could have an opinion regardless of gender considerations. In combination, all this gave us useful information on the local context for each village and study area as a whole which further could be used when evaluating how effective/efficient REDD will be before concluding on what the introduction of REDD will mean to these communities.

### **3.3.5 Survey research, site selection and sampling**

We used a questionnaire as an instrumental part of our PRA to be able to map out different livelihood activities and strategies of households as well as their attitudes towards forest management and REDD. They were conducted as structured interviews where we located and talked with each respondent, either with the help of interpreters or assistants. Included in the questionnaire were questions on resource use, income and constraints, property rights, use rights and forest management, as well as questions on perceptions, attitudes and norms concerning resource conservation and the newly started REDD pilot project in their village. This questionnaire was coupled with both the focus group discussions and the key resource person interview in each village. By using a questionnaire we were then able to reach out to a larger number of households in a more time efficient manner and gave us quantifiable answers from which we would get a broader picture of the local situation.

Through survey research we needed to map out what kind of selection of the wider population was best suited to the investigation of the REDD pilot project in Kilosa District (Bryman 2008). The choice of method to best capture the population in the 14 pilot villages can be characterized as stratified random sampling. This is when a population is first divided into separate categories, then a random sample is made out of these again (Bryman 2008). By this we selected three villages in different geographical zones; one in the highlands, one in the plateau and one in the floodplains. In doing so we could capture the variety of the different circumstances that exists within Kilosa District, which has a profound effect on how people live their lives. In addition we selected two control villages that were not part of the pilot project; one that had already gone through a land plan exercise and introduced PFM, and another which were neighboring the project villages and thus had many similarities. The village that had already introduced PFM served as a comparison, but both are meant for the purpose of a follow-up study, which will take place in a few years time, but they were also useful in widening our perspectives while the pilot project is in its early stages.

In terms of the sample size chosen, if you “increase the size of a sample you would increase the precision of a sample” (Bryman 2008, p.179). It then depends upon “how much sampling error one is prepared to tolerate” (Bryman 2008, p.179). However, in our case, the sample size was also determined by natural constraints such as time and cost. The sample size set in this study was therefore on 60 in all villages – 300 in all, something that were thought as a sufficient sample size that to give an adequate representation these five villages. To acquire the 60 households needed in each village, we randomly generated number through Excel and matched them with complete lists of households in each village, given to us by the village leaders.

### **3.4 Data analysis**

The data collected from the questionnaires was first entered into MS Access, a database management system, for project purposes. The data was then exported to SPSS for data analysis.

### 3.4.1 Calculation of incomes

According to Vedeld et al. (2004) three different income measures are applied in terms of measuring resource values and environmental income: gross value, value added and rent. Value added equals gross value minus costs of capital consumption and inputs. If also labour costs and normal profit are subtracted, it yields the rent (Vedeld, Angelsen et al. 2004).

In all our income calculations, cost of own labour was not taken into account because of the difficulties associated with this, e.g. huge variations in labour prices. Costs of intermediate inputs and capital costs were also not included. All total incomes reported therefore equals the sum of cash and subsistence annual household incomes, and can thus in reality be seen as gross income.

Agricultural incomes; estimates the sum of both crop income and livestock income. When calculating the crop incomes, the market price of the crops grown by the households were used and multiplied with the actual yield for each household. On top of this, livestock income was added, and was calculated in terms of total livestock multiplied with the price of each livestock. Under livestock income, the produce were also added in the form of milk and eggs (multiplied with market prices).

Environmental income; included forest income from firewood, NTFPs, poles and timber and charcoal, both for subsistence and cash.

Non-farm incomes; this includes earnings from permanent employment at both small and large scales

Off-farm incomes; entails the value of earnings through income from employment on other households' lands, and are here considered as

Remittance; This is the value of income from cash transfers between households.

### 3.4.2 Statistical tests

In all statistical test we have used a  $p = 0,05$  when measuring level of significance. Several tests on income were carried out; including Chi-square for which were applied to test of independence between two variables. Through the use of inear models and ANOVA and linear models, Multiple regressions were done. Multiple Regressions model is used to estimate the statistic relationship between the dependent

variables (Ys) and the explanatory variables ( $X_1, X_2, \dots, X_K$ ) (Wooldridge 2002). It can be presented as:

$$Y = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_K X_{Ki} + e_i$$

$\beta_0$  = Regression constant

$\beta_1$  = Regression coefficient for variable  $X_1$

$\beta_K$  = Regression coefficient for variable  $X_K$

$K$  = Number of independent variables

$e_i$  = Residual (Error)

### **3.5 Limitations and Challenges**

We encountered quite a few limitations and challenges when carrying out our research, however, only those we consider the most limiting ones will be mentioned here.

Although probably the case for most master students, time and means became an issue. With a starting point of three months available to do the fieldwork, due to troubles with getting the right research permits which allowed us to go out in the field, coupled with problems within the project coordinators at Sokoine with getting funding on time, we in effect were left with just slightly more than two months to complete our fieldwork. In addition, given our tight schedule we did not have the opportunity to test the questionnaire before starting the data collection, nor were we able to cross-check and verify information as much as we had hoped to. This applied particularly to the very complex forest and land tenure system present at the village level, which we rather had to gain knowledge on as we went along and from there make the necessary adjustments and follow up questions. By using two assistants we were able to complete all the data collection we had planned. Through meetings every night to make adjustments in accordance with new knowledge gained, we however still feel that our dataset is of high quality.

Another challenge we had was in terms of language. Due to the fact that all communication had to be done in Swahili we were both assigned and made use of a translator. Regardless of the English capabilities of an interpreter, there is always a risk of loss of data when having to go through an extra person before the information

reaches you, and it can also cause for a more stop-and-start conversation where everything has to be translated before one can move on to follow-up questions or new questions. During our resource person interviews and focus group discussions we only relied on meticulous research notes as we felt the tape recorder made our participants uneasy. The notes were then used in transcribing the interviews the first chance we got, which then allowed us to build on the new knowledge for the rest of our data collection within each village, and gain back some of the cross-reference possibility which our limited time prevented us to do.

As stated, we made use of research assistants when in the field, given our workload and in order to maximize the efficiency of our data collection. The use of assistants, although it made it possible to cover more ground in a shorter period of time, increased the risk of misinterpretation or loss of details. The reasons for this could be because they were not as familiar with the aims and objectives of the research, might not have made as many follow up questions where needed, or tried to clarify inconsistencies and been as persistent in reformulating questions to get the information needed, as we might have been. However, by keeping an open dialogue between us we tried to minimize this risk.

On this note, we find it important to remember the role of the researcher and research participant. As Webb et al. (1966:13) points out, when a person is taking part in a scholarly search, and is aware of this fact, it might result in what they call the “reactive measurement effect” which might affect the responses given and the data collected (Bryman 2008, p.266.). These responses might include: *the guinea pig effect* where the research participants answers and behaves in a way he or she would not normally do because they want to create a good impression; *role selection* where they might answer in accordance to what they think the researcher wants to hear; or *measurement as a change agent* where their behaviour might be affected by the sole presence of having a researcher or “outsider” in their presence. The fourth component is what they call *response sets*, where the respondent consistently agrees or disagrees with the questions being asked regardless of the meaning or clear contradiction to previous answers (Ibid).

All these components we felt clearly at one point or another. We sometimes got the feeling that a few were consistently answering and placing themselves in an exaggerated “disadvantaged light”, perhaps while having the preconceived notion that we and our research were in a position to attract funding and aid to the area, and some would answer positively to all questions regarding forest law and by-law compliance perhaps fearing we were somehow connected to the district government or TFCG which prohibited certain actions. We were however, consistent in trying to get the most honest answers as possible, and would often reformulate or at a later stage repeat questions when we felt someone was being dishonest.

A further challenge came when measuring total household income. As a large part of our thesis is concerned with local livelihoods and forest dependence as these are important factors upon which REDD is evaluated, a very important part of our dataset was thus the various income sources each household relied on and their subsequent output and market value. Ensuring and achieving correct calculations based on correct kg measurements of output and correct value added to each product sensitive to market variations became, however quite challenging, particularly in terms of forest environmental income. When collecting the data we focused on kg collection/consumption and kg sold in one month for the four forest products (NTFP, firewood, poles and timber and charcoal). For NTFPs we did not record the weight of consumption but merely those who used it, and level of importance they placed on these products. For the other three products, the majority of households did not operate with kg but rather bundles (firewood), pieces (poles/timber) and bags (charcoal), and the size and weight of these could vary drastically. In addition, when it came to firewood many were not aware of how much they used, not in a week and let alone in a month, as they would often just go and collect it as the need arose. We therefore had to be very diligent when calculating the kg of each product for a month, and we had to base the weight on an average number of sticks and weight of a bundle. As firewood would be used on a day-to-day basis to cover their energy needs we did not see any problems with merely multiplying one month’s use with twelve to get a year’s consumption, although aware that some variations could occur between months. For charcoal and timber, however, this was not the case, and as many would extract these forest products only on occasion, for instance when the household had large expenditures coming up. Again we had to use our common sense and try to get a

picture as close to reality as possible. Therefore only those, which said they would produce charcoal or extract timber regularly, would be calculated into a year's extraction. The data we collected on poles on the other hand was more coincidental, by which we mean we were only able to capture the use/kg of those which had extracted poles around that time, even though as the local context dictate most households would use poles to build or mend their houses at one point or another. Finally we had to add the market value to the various products and when doing this we had to take into consideration the location we were in as the prices for products, especially charcoal, varied significantly according to location and depending on where and to whom they sold it different prices would be acquired. Again the weight of the charcoal bags could also vary. The same applied to some extent to agricultural products, which meant also here we had to gather prices depending on the location, and be careful when calculating the weight. Given these uncertainties we are aware that there might be either some under- or over-counting. However, as we consistently tried to be as meticulous as possible when collecting this data we still feel that we were able to capture a picture close to reality.

### **3.6 Ethical considerations**

In terms of ethical considerations we followed particularly two ethical principles: that of informed consent and that of confidentiality. Concerning informed consent, what is meant is *“that prospective research participants should be given as much information as might be needed to make informed decision about whether or not they wish to participate in a study”* (Bryman 2008, p.121.). As a result we gave out information of why we were there, what we were looking at, and for which purpose the information would be used, at the beginning of every session we carried out, whether it was a focus group discussion, local resource person interview, or a household interview. In addition, the research participants were in most cases already informed of this upon our arrival as they had been notified by either the village chairman or VEO. Before starting the interviews we also asked for permission to talk to them, and after the introduction round gave time to answer questions that they had.

When it came to the principle of confidentiality, which Bryman defines as a process where *“the identities and records of individuals are not identified and identifiable”*



(Bryman 2008, p.118.), we followed it to the extent that it didn't undermine the aim of our study. As the aim of the POVSUS-REDD project, for which we collected baseline data, is to assess the changes after having implemented REDD, we had to keep track of the people we interviewed in order for the project to be able to interview them again at a later stage. Therefore complete confidentiality in that regard was not possible. Partial household lists were also given to our helpers in the field when trying to locate our respondents, however they never had access to any of the information they gave us from the interviews. In addition, when inserting all the data into MS Access and SPSS, each respondent were given a respondent number, and from then on individuals were only referred to as such.

## **CHAPTER FOUR – LOCAL STUDY AREA**

*As one of two selected sites for TFCG and MJUMITAs pilot project, 14 villages in Kilosa District have been selected to take part in the project. We have looked at three of these villages, and as a way of putting them in context we will now present Kilosa District. This includes presenting its physical location, land characteristics along other geographical conditions. In addition, current land uses will be put forward including forestry and agriculture. In this regard, Kilosas' history of land use conflicts will also be emphasized as they still persist and affect many livelihoods.*

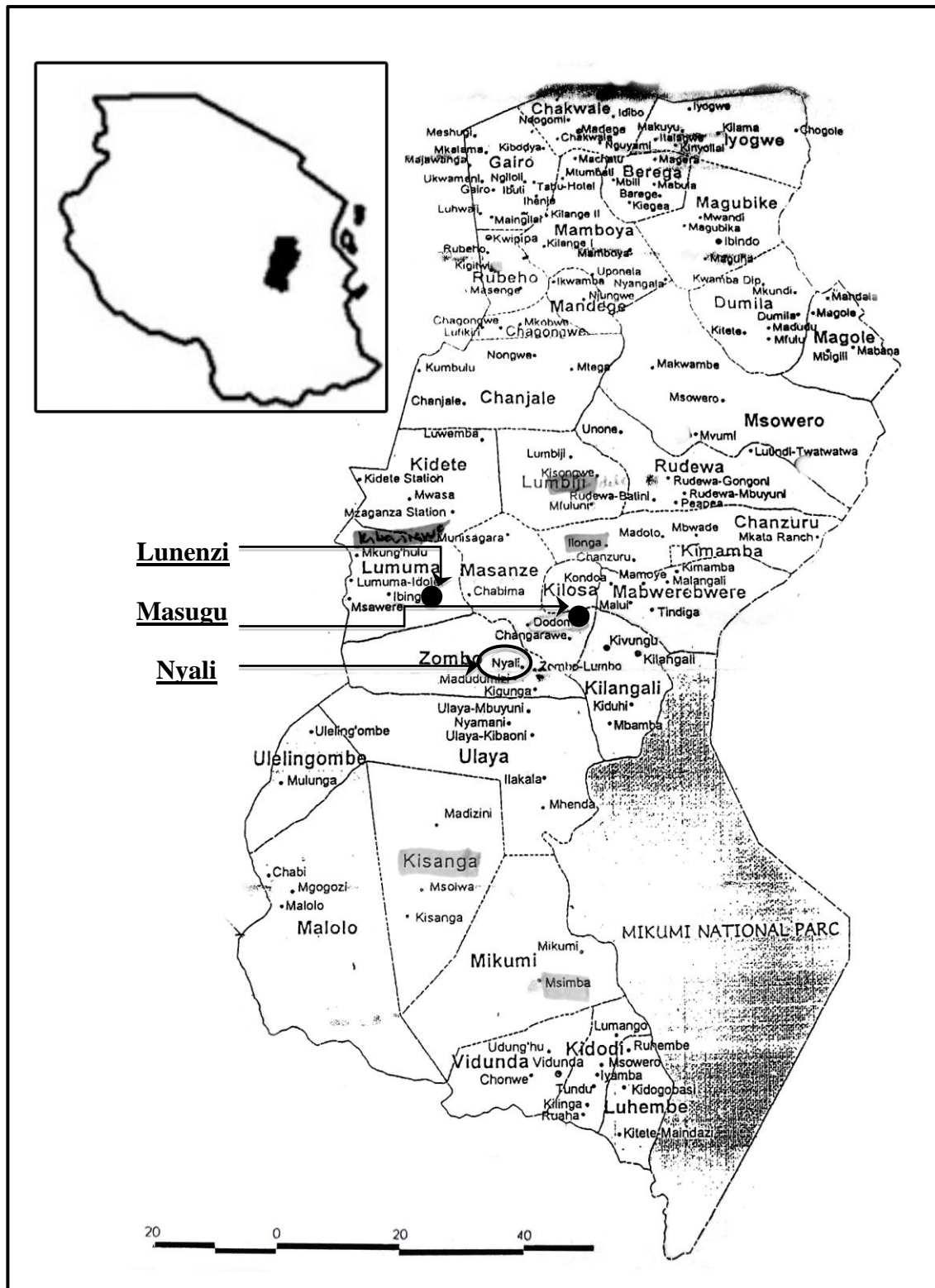
Kilosa is located approximately 300 km inland from the coast and Dar es Salaam, and is situated along one of the old East African caravan routes that stretches from Bagamoyo to the eastern part of today's Congo, where the towns served as 'slave calling stations' for the caravans to rest and refill their supplies (Benjaminsen, Maganga et al. 2009). Today, Kilosa is one of six districts within Morogoro region and makes up about 20% of the area in the region with its 14245-km<sup>2</sup> size.

The three villages which make up our local study area are; Masugu, Nyali and Lunenzi, which are all located in the western part of Kilosa, and fall under the jurisdiction of three different wards; Masanze, Zombo and Lumuma (see map). In addition, our control village, Zombo was the central village in Zombo ward, and then naturally also in the same area. The PFM village Lumango on the other hand was located further away in Kidodi, a ward neighbouring Mikumi National Park in the South. The villages can be seen encircled in the map below.

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<sup>8</sup>Many different numbers exists, so we chose to go with the official numbers from the district council.

Figure 5: Map over Kilosa District



Source: Adapted from Shishira et al. (1997)

The topography of the district varies significantly and can be divided into three zones: *Floodplains*, comprises both of flat and undulating plains extending to the foothills in the west with an altitude of about 550m. Several rivers, with the main big once being the Wami and Ruaha systems, incise the plains. The central parts are mainly occupied by Massai pastoralists and the soils are here comprised of poorly drained, black, cracking clays in the central parts and are subject to seasonal flooding's. In the peripheral western part, sedimentary fans are made up by black fertile soils making it fertile and suitable for a range of crops such as maize, cotton, sisal etc. (Kilosa District Council 2010)

*Plateau* is situated in the north of the district, and with an altitude of around 1100m, it is characterised by plains and hills and comprise of moderately fertile, well-drained sandy soils. Although these soils are highly erodible, the area is intensively used for maize production and livestock keeping (Kilosa District Council 2010).

*Highlands* runs from north to south on the western side of the district with an altitude up to 2200m. It is a part of the Eastern Arc mountain ranges which runs from Kenya and down through Tanzania and is represented in Kilosa by three mountains; Ukaguru, Rubeho and Vidunda Mountains (Kilosa District Council 2010).

Our three pilot villages were chosen explicitly in consideration of these three zones, all of which are located around Rubeho Mountains. Masugu is located in the floodplain zone just 20 minutes by car from Kilosa town, Nyali is located in the plateau zone with approximately 1 hour by car, while Lunenzi is situated in the highlands about 2 hours by car from Kilosa town followed by around 1,5 hours by foot.

#### **4.1 Population**

According to the (2002) census, there were 489 513 people living in Kilosa distributed over 105 635 households (average household size of 4,6<sup>9</sup>). Our three main villages was quite diverse in terms of population numbers, where Nyali were the most

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<sup>9</sup> The national household average is 5,2 people pr. household. Regional it is 5,4.

densely populated one with its 2622 inhabitants, followed by Masugu with its 760<sup>10</sup>, and Lunenzi's 630<sup>11</sup>.

The District has three major ethnic groups; (Wa)kaguru in the north, Sagala in the central zone and Vidunda in the South. However, many people from other ethnic groups have migrated to the area over the last decades adding to these three (Kilosa District Council 2010). This variety of different ethnicities became evident quite early during our fieldwork where we found many of the inhabitants in our villages originating from a number of different places.

## **4.2 Vegetation, wildlife and Climate**

The vegetation in Kilosa District is characterised by both Mediterranean and tropical types, depending largely on altitude along the south-north exterior. Typically it consists of Miombo woodland with grass and shrub covering the soil (Kilosa District Council 2010). Most of the forests are found on the western part of the District along the Eastern Arc mountain range where all the three pilot villages are located, more specifically around Rubeho Mountains. The Eastern Arc Mountain range contains several unique ecosystems with a variety of species. Many of them are endemic to the area, and is internationally recognised as an area with an exceptional concentration of different species that occur nowhere else on earth (EAMCEF 2011). Even though the Rubeho Mountains are generally poorer in endemic species than other areas of the Eastern Arc, less species rich mountains will still contain significant levels of endemic species (Burgess, Butynski et al. 2007). In addition, wildlife plays a significant role in Kilosa District through Mikumi National Park, being a main source of revenue to the government through tourism.

As for the climatic conditions, the western forests serve as an important catchment for the Wami River going eastwards, and three branches of the Ruaha River draining the southern end of the district (Shishira, Yanda et al. 1997)<sup>12</sup>. The rainfall varies from

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<sup>10</sup> Including both Masugu Juu and Masugu Kati.

<sup>11</sup> Our control villages were represented by a population of 3401 in the Zombo village and about 3000 in Lumango.

<sup>12</sup> Due to lack of more current information on Kilosa District, we refer to a land use and natural resource assessment from 1997 by Shishira and Yanda.

year to year, falling in two periods of the year – the short rains in November and December and the long rains from mid-February through April (Benjaminsen, Maganga et al. 2009). Nevertheless, local variations exist with a range of different climatic conditions. The climate is of a semi-arid type with an average annual temperature in Kilosa Town of 25C<sup>13</sup>, where annual rainfall differs from 1000mm-1400mm in the southern flood plains, 800-1100mm in the north, to 1600mm in the mountain forests (Kilosa District Council 2010).

### **4.3 Land use**

To be able to understand REDD on a local level we need to have an understanding of the existing historical, social and political background of Kilosa District in relation to its land use. In this way we can better understand peoples viewpoints and livelihood situation. The major land types in Kilosa can be divided into five different categories; agricultural land (37,5%) natural pasture<sup>14</sup> (33,5%), Mikumi National Park<sup>15</sup> (22,5%), Forest Reserves (5,5%) and urban areas, water and swamps (1%) (Kilosa District Council 2010). Both agriculture and livestock grazing are practised and found on general, village, and private lands, while Mikumi National Park and Forest Reserves are controlled areas and state owned.

#### **4.3.1 Agriculture**

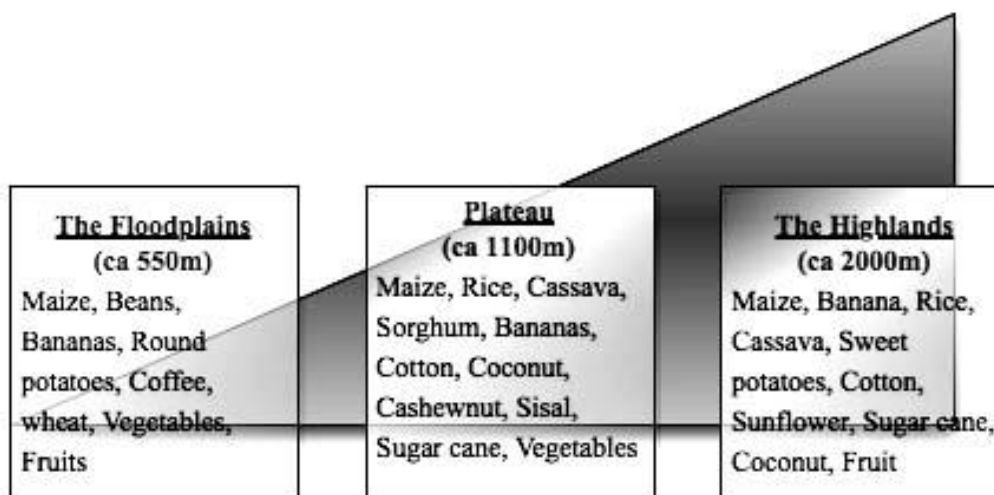
More than 80% of people in Kilosa depend on agriculture (Kilosa District Council 2010) and with its demographic conditions, ranging from a plateau characterised by seasonally flooded plains and hills, to mountainous areas with altitudes surpassing 2000m, Kilosa District offers a variety of agro-ecological conditions for farming (Maganga, Odegaard et al. 2007). The variation in the types of crops grown reflects the different agro-ecological zones, as seen below in figure 4.1.

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<sup>13</sup> With extremes in March (30C) and July (19C).

<sup>14</sup> Land covered by natural forest and woodland.

<sup>15</sup> Which is the fourth largest national park in Tanzania.



**Figure 6: Agricultural production zones in Kilosa**

Source: Adapted from: (Kilosa District Council 2010)

Maize is the main food crop grown in many areas, but is mainly cultivated in the North-western part. Rice is also an important food crop, mostly grown under rain-fed conditions in the flood plains, but is also to be found in small-scale irrigated rice farms (Shishira, Yanda et al. 1997). Other important food crops include millet, cassava, beans, bananas and cowpeas (Kilosa District Council 2010). Besides food crops, main cash crops are sisal, cotton, coffee, wheat, cashew-nuts, coconuts, sugar cane and tobacco. Some of the food crops are however also used as cash crops where the surplus production is sold (or when there is an acute need for cash). In addition to farming, a limited amount of inland fishing also takes place, for instance in ponds around Zombo ward, where approximately 400 people are registered and licensed to fish. This is however mainly undertaken on a subsistence basis.

The agricultural system is characterised by both small scale (about 90%) and large-scale farm holders (10%) where the average farmland is less than 1 hectare. The small-scale farm holders are subsistence farmers who produce mostly for domestic use, where only the surplus production is sold. There is a limited use of inputs such as improved seeds, fertilizers and/or manure, and the majority (95%) use hand hoe for cultivation (Shishira, Yanda et al. 1997; Kilosa District Council 2010).

Due to intensive production without the help of such agricultural input coupled with its climatic conditions, Kilosa District experiences a decline in soil fertility, where in

2006/2007 Kilosa District had to import as much as 24,000 tons of food to support its population (Kilosa District Council 2010). Such challenges make it difficult to sustain and/or improve the current agricultural production, and as a result, extensive land clearing has been carried out to provide new land for agriculture (Shishira, Yanda et al. 1997). Although agriculture also is practiced in the highlands, it is within the plains and plateau zones that most of the cultivation takes place. Because of this, these are also the zones that have traditionally suffered the highest rates of deforestation.

Large-scale farms occupy part of the suitable land for agriculture, and holds about 5% of the total land in the District. They comprise mostly of sisal estates and many of them are owned by Tanzania Sisal Authority or private companies such as Katani Limited (Kilosa District Council 2010). In Tanzania, the sisal land use is basically a large-scale high input monocropping system, dominating the drier areas below 900m above sea level. Sisal is a tropical crop endemic to Mexico whose leaves provide hard natural fibre used in the production of ropes, twines, sacks and carpets, and was introduced in Tanzania in 1893 by the German East African Company. Tanzania has good land conditions for sisal cultivation and performance, but due to transportation constraints and easy shipment, the first sisal estates were established along the coast. To meet the demand of German entrepreneurs, but also to build a network for political control in the rural areas, the German regime started the building of the Tanzanian railway into more favourable inland cultivation zones<sup>16</sup>(Kimaro, Msanya et al. 1994). The first line was the Tanga-Moshi line to the north reaching the Kilimanjaro areas, followed by the construction of the central line, which was constructed during the period 1905-1914 from Dar es Salaam to Lake Tanganyika going through Kilosa. This, in addition to the already existing caravan routes and later the Dodoma/Iringa highway, have since developed Kilosa town as a trading centre with easy access from the outside (Maganga, Odegaard et al. 2007).

With improved transportation facilities, sisal was introduced as an alternative crop in areas such as Kilosa, suitable for drier and hotter conditions, which facilitated the

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<sup>16</sup> The corogwe-Muheza zone in the north constitutes the center of sisal industry in Tanzania, followed by the Morogoro zone and the southern zone around Lindi-Mtwara.



establishment of more sisal estates. The production of sisal rose in the period before the First World War, but dropped in the years after. It picked up again with improved prices in the world market coupled with the new British administration's determination to revive the industry. Due to this, the production steadily increased, and when Japan invaded the Philippines and Indonesia during the Second World War, it brought upon an additional demand for hard fibres among the Allied countries. The market for sisal fibre continued to grow in the 1950's, and by the 1960's, Tanzania was the world's leading producer of sisal<sup>17</sup>, exporting 216.618 tons of fibre, which represented over a quarter of the country's foreign exchange earnings (Kimaro, Msanya et al. 1994).

However, following the 1960's, sisal production drastically dropped and in 1986, the production had declined by 86% to 30.151 tons (33.000 in 2008). This can be seen in relation to five developments; (1) Reduction of world market and prices mainly due to the introduction of synthetic polypropylene, (2) Nationalization of sisal estates after the independence of Tanzania in the late 1960's, (3) Inadequate research and development where prior to the nationalization of the estates the research had been funded and organized by the sisal growers themselves, (4) Poor marketing arrangement, where sisal now were marketed through an inefficient marketing system, and (5) Shortage of sisal cutters due to low salary and inadequate facilities and circumstances (Kimaro, Msanya et al. 1994). Former sisal estates have since the collapse reduced or stopped production and are currently facing various land use conflicts that are not yet resolved.

Since the collapse of the global sisal market, sugar production increased its commercial importance in the District, and first came into being in the 1960's through British and Dutch interests. Most are grown in Kilombero by Ilovo Sugar Company along Mikumi National Park (in the south), where huge tracts of land have been bought up<sup>18</sup>, as well as encouraging small-hold farmers to grow sugar cane themselves for sale to the sugar factory (Kilosa District Council 2010).

Because in many instances the banks have not withdrawn the deeds of these farms even though the former original owners could not manage their loans. In addition,

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<sup>17</sup> Contributing to nearly 24% of the total world production.

<sup>18</sup> Both from the government and from the surrounding villages.

where it is not established whether some farmland would be relocated to surrounding villagers or to be mortgaged to private investors to repay the debts owed by the estates (Shishira, Yanda et al. 1997). Former sisal workers and villagers around sisal estates have in some areas already started to cultivate the land, and with the unclear land rights, tension is being built up. There is not much land left for the expansion of agriculture, due to already extensive cultivation and the influx of pastoralists with their cattle, which leads to increased pressure on former sisal estate land. This, seen in relation to the uncertainty over future developments (e.g. if the former owners will come back) hence serves as a catalyst for future land conflicts.

### **4.3.2 Forestry**

Most of the forests are found on the western part of the district, particularly around the Eastern Arc mountain range, and include forest reserves, public forests and community forests (Shishira, Yanda et al. 1997).

The District has ten Forest Reserves<sup>19</sup> covering an area of 106,983 ha and are all managed centrally through the forestry and Beekeeping division. Most of them are located on steep slopes around the catchment area for the Wami river system, while the rest are found on gentle sloping terrain within and around Mikumi National Park. Besides these forest reserves there are governmental and privately owned soft wood plantations, comprising mainly of pines, cyprus and eucalyptus meant for the production of timber and poles (Shishira, Yanda et al. 1997). Community forests are found within villages while public forests are all forest outside the forest reserves, which are not controlled by villagers<sup>20</sup>. These forests are exploited for various purposes such as poles, timber, firewood and charcoal, but are also used for hunting wild animals. Outside of Mikumi National Park, it is the District Natural Resource Office that is responsible for the management of the district forests.

For long, concern has been raised in relation to the long-term sustainability of Kilosas' forest resources, and in the Rubeho Mountains along where the pilot villages

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<sup>19</sup> Ikwamba, Kihilihili, Mamboya, Mamboto, Mamiwa Kisara N, Mamiwa Kisara S, Palaulanga, Italagwe, Ukwiva and Uponera.

<sup>20</sup> Meaning that all forest not demarcated to a village will be seen as public forest and managed by the state.

are located, the total loss of forest cover have been estimated to be 82%, with a 10,3% loss between 1975 and 2000 (Hall, Burgess et al. 2009). Most of the forest was cleared before 1955 during the colonial era, and can be connected with the establishment of the many commercial farms and their production of sisal. Since 1975 however, rates of loss have actually decreased along three mountain zones; the lowland mountains (200-800m), the mountains (1200-1800m) and the upper mountains (>1800). In contrast however, between 1975 and 2000 the rate of loss of forest cover have increased in the sub mountain zone (800-1200m). This tendency, can be explained by people moving upwards from the lowland mountains that suffered the highest rate of forest loss before 1975, towards the sub mountain zone where the forest is more intact.

The two major forces of deforestation within Kilosa District are: forest clearing for agriculture and plantations and bio-mass for energy consumption much as a result of an increasing urbanisation and population (Shishira, Yanda et al. 1997; Hall, Burgess et al. 2009). In addition, timber production and bush fires are also seen as two other important and corresponding drivers of deforestation.

Tanzania and Kilosa heavily depends upon the forest as a source of energy as charcoal and firewood consists of almost 90% of the energy consumption nationwide (World Bank 2009). This nationwide demand for biomass energy have had huge effects on Kilosa District, where closeness to towns such as Dar es Salaam and Morogoro have facilitated it good access to large markets and resulted in extensive charcoal production. In this case business people come in from urban areas with licences bought from FBD, buying up what charcoal they can come over<sup>21</sup> of already produced charcoal from rural communities, and transport it back to the urban areas where they sell it to wholesalers. Besides charcoal production the forest provides energy in the form of firewood for rural households and brick making as well as for the Kilombero Sugar Factory that neighbours Mikumi National Park (Shishira, Yanda et al. 1997). Also playing a part in forest degradation is the location, with its easy access to and from urban areas, bringing up extensive forest extraction for commercial purposes. However, it is not only market conditions which plays a part in

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<sup>21</sup> The standard for a sack of charcoal set by the forestry and beekeeping division is 56kg. Licences are given out in accordance to number of bags.

the unsustainable use of Kilosas forests, but also the ways in which forest issues are dealt with nationally, and the legal framework which governs all Tanzanian forests.

With most of its population depending on agriculture, forest clearing for agriculture poses a major threat to forest resources (Kilosa District Council 2010). This is not necessarily due to land shortage but can rather be explained by declines in soil fertility and limited use of fertilisers. The expansion of agricultural land would then, first and foremost be a mean for increased production (Shishira, Yanda et al. 1997; Kilosa District Council 2010).

#### **4.3.3. Livestock keeping**

Kilosas Semi-arid climate and seasonally flooded plains covered by grass also offers good conditions for livestock-keeping<sup>22</sup> (Maganga, Odegaard et al. 2007). A vast majority of rural households in Kilosa are involved in both farming and livestock keeping activities. The emphasis has however mainly been on the main production activities for different groups of people depending on their culture (Ibid).

Kilosa is today one of the Districts in Morogoro Region with the highest livestock number, and according to Kilosa District Council (2010) the District contained approximately 347.029 livestock in 2006<sup>23</sup>. As an attempt to minimize conflict between farmers and livestock keepers, the land in Kilosa has been divided between land suitable for grazing (483.390 ha) and land for agriculture. Within the land set aside for grazing, there are 8 settlements identified as pastoral villages – Twatwatwa, Kiduhi, Madoto, Ngaite, Mfilisi, Godes, Mabwegere, Kwambe (Shishira, Yanda et al. 1997).

The livestock keeping systems are mainly agro-pastoralists, and it includes both extensive and intensive systems. The extensive system involves high mobility from one place to another in search for water, pasture and to escape diseases. These are

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<sup>22</sup> Livestock involves cattle, goats and sheep.

<sup>23</sup> An exact number is difficult to calculate since it is rare that livestock keepers give right figures of their animals when asked, due to, fear of tax among other reasons. Some livestock keepers also live in remote areas and migrate seasonally making them difficult to access during census.

communities such as the Maasai, Barbaig and Kwavi that keep large herds<sup>24</sup> mainly in the floodplains where the vegetation provides good vegetation sites also during the dry season. The intensive system involves permanent settlements with small-scale integrated animal and crop production with few animals, as well as large scale specialised livestock production systems in the form of ranches or diary farms. In Kilosa there are four private and two parastatal ranches. The private namely the Msagara Ranca at Kimamba, Christmas Estate at Kisanga, Senyagwa Ranch at Gairo and Omari Awadh at Chakwale, and the parastatal being Mkata and Madoto ranches, managed by the National Ranching Company (NARCO) (Shishira, Yanda et al. 1997).

### **3.4 A history of conflict between farmers and herders**

A core issue in Kilosa District can be described as disputes over land. Land use conflicts occurs over former sisal estates as mentioned and around the borders of Mikumi National Park, but the most prominent one can be said to be conflicts between farmers and livestock keepers. The source of the conflict have by many been describes as fights over property, scarce resources, water and pastures (Benjaminsen, Maganga et al. 2009). In December 2000, Maasai warriors attacked Rudewa Mbuyuni village, leaving thirty –eights farmers killed with additional destruction of properties, an event that became known through the media as the Kilosa killings (Benjaminsen, Maganga et al. 2009). With the wounds of this fresh in mind, another very serious fight between similar groups occurred 27 October 2008 in Mabwegere village of Msowere ward where another six people were killed, dozens of cattle stolen and property such as houses burned to ashes, resulting in the displacement of hundreds of people (Baha, Attito et al. 2008). The conflict over land between pastoralist and farmers became apparent to us especially during interviews in the villages we visited in the floodplains.

There is a strong local understanding by politicians, local administrators and farmers that the cause of these conflicts is the growing numbers of cattle. When pastoralist's village land is depleted they enter farmers' village territories to feed their herds. The picture is in reality more complex than this, but as a result of the long going conflict,

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<sup>24</sup>Some are also involved in agriculture for domestic use.

the District Committee in 2009 evicted more than 2000 livestock keepers and more than 20 000 livestock were taken by force and sold at the market in Dar es Salaam (Local resource person 2010). Most of the money vanished through the political system and very little was left to the affected livestock keepers, hence appearing as a modern form of slave trade.

If we look back at the history there are many different underlying causes of these conflicts. It can be traced all the way back to the colonial era of the 1890s, when the Germans introduced sisal plantations in the area, thereby initiating wage economy to the district. The British rule continued this practice and by the 1930s, conflicts between African communities and European settlers were evident. The plantations also attracted a number of immigrant workers from all over the country which settled down in and around the plantations. Today, many of the villagers around the former plantations are of these workers descendants (Benjaminsen, Maganga et al. 2009)

In 1964, Mikumi National Park was established, expanding in 1975, and in addition to the Forest Reserves (7,4%), conservation areas today cover almost one third of the district. On top of this, many were evicted from the wetlands in the north after large-scale agricultural development schemes were established during the 1960s, 1970s and 1980s, and as a result many pastoralists in-migrated into the district and towards the south (Benjaminsen, Maganga et al. 2009). During the same period of time, many Maasai pastoralists were also evicted. Concerning in-migration trends, it is important to note that during this period, many Massai pastoralists were evicted from their traditional grazing grounds that now had been made into National Parks, thereby forcing them to look elsewhere (Local resource person 2010). All in all Kilosa seemed attractive to many with its attractive agricultural land for both cultivation and livestock keeping coupled with abundance of rivers and water streams, thus supporting an influx of in-migrating peasants and pastoralists from all over Tanzania<sup>25</sup> (Baha, Attito et al. 2008). This is thereby the realities which the project have to take into account.

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<sup>25</sup> Mainly from districts such as Arusha, Singida, Mwanza, Dodoma, Shinyanga and Tanga

To sum up, Kilosa District can be characterised as an area popular both for cultivation and for livestock keeping. In large parts though, due to unclear land tenure after the collapse of private and state owned plantations. The influx of immigrants the area have also increased the competition over agricultural land and grazing area.

## **CHAPTER FIVE – TANZANIA NATIONAL STRUCTURE FOR ENVIRONMENTAL AND FOREST MANAGEMENT**

*In this chapter we go through existing governance structures both on national and local levels relevant for forest management and to REDD+. First a brief history of environmental management in Tanzania is presented, before we present the relevant governmental institutions on all levels, giving an overview of its organisation and legal framework. At the end we present the District Natural Resource Office in Kilosa, responsible for all forest related issues in the district, including REDD+.*

Historically the management of Tanzania's forests and natural resources has been characterized by a management system of extensive state control without any involvement from local communities and the people who most depend on forest resources in their day-to-day lives. Managed centrally through the Forest and Beekeeping Division (FBD) which lies under the Ministry of Natural Resources and Tourism (MNRT), this system was known to intervene without much consultation of local communities and to undermine local traditional institutions and prevent them from taking part in regulating resource use in any way, something which has later shown to have had limited positive outcomes (Hamza and Kimwer 2007). During the last few decades, though, restructuring and reform have been taking place within the environmental and forest management structure in Tanzania, and currently environmental management in general and the forest sector in particular operates under three parallel structures, the Forestry and Beekeeping division under the Ministry of Natural Resources and Tourism, the Regional Secretariat, which oversees all natural resources in the region, and Local Government Authority, which now often owns as well as manages local government forest reserves and their natural resources (Ibid.)

*This current structure of environmental and forest management in Tanzania, upon which REDD+ will be based, is what will be outlined below, with particular focus put on the major institutions, acts and policies which directs its management.*



## **5.1 Priority of environmental management in Tanzania**

In 1991 a Division of Environment was established and placed under the MNRT. However, in order to make sure environmental management issues received the necessary attention and priority within Tanzania, it was in 1995 transferred to the Vice Presidents Office (VPO). Much of this increased priority and political interests came as a result of global and national media and CSO coverage on environmental-poverty links. In addition, this interest was in tow with the redefinition of the Governments' role in environmental and natural resource management, where an increased emphasis was put on decentralisation. A process of devolving power and responsibilities from the central government to local authorities stated that "it shall be the objective of the local authorities in performing their functions to provide for the protection and proper utilization of the environment for sustainable development" (Mniwasa and Shauri 2001, p.9.).

Environmental issues has also later been integrated and harmonized more with its broader strategies on poverty reduction. For instance in more recent times, Tanzania's National Strategy for Growth and Reduction of Poverty, popularly called MKUKUTA, now has 14% of its targets relating to the environment and natural resource management. The strategy is a successor of the previous Poverty Reduction Strategy Paper, is informed by Tanzania's Development Vision (Vision 2025) and is committed to achieving the Millennium Development Goals (MDGs). Good governance and local participation in sustainable management is particularly emphasised, as is the role of environmental sources in generating income (Vice Presidents Office 2005).

The increased political interest of environmental issues has also been mirrored in the increased budget allocation to environmental issues, for instance the budget allocation to the environment was increased five-fold between 2005/06 and 2006/07 (Assey, Bass et al. 2007). The state budget allocation to several environment sub-sectors, including the forestry sector, has also increased somewhat, which we will look at in more detail below.

## **5.2 Office of the Vice-President**

The Vice-Presidents' office now consists of two line divisions, one for union matters and one for the environment, the division of environment having the overall responsibility for national and international matters related to environmental conservation and management. Also referred to as the Department or Division of Environment (DoE), it concerns itself with overall environmental policy and regulation, formulation, coordination and monitoring of environmental policy implementation in the country.

It is divided into three subject areas: Environmental Natural Habitats Conservation, Environmental Management of Pollution, and Environmental Impact.

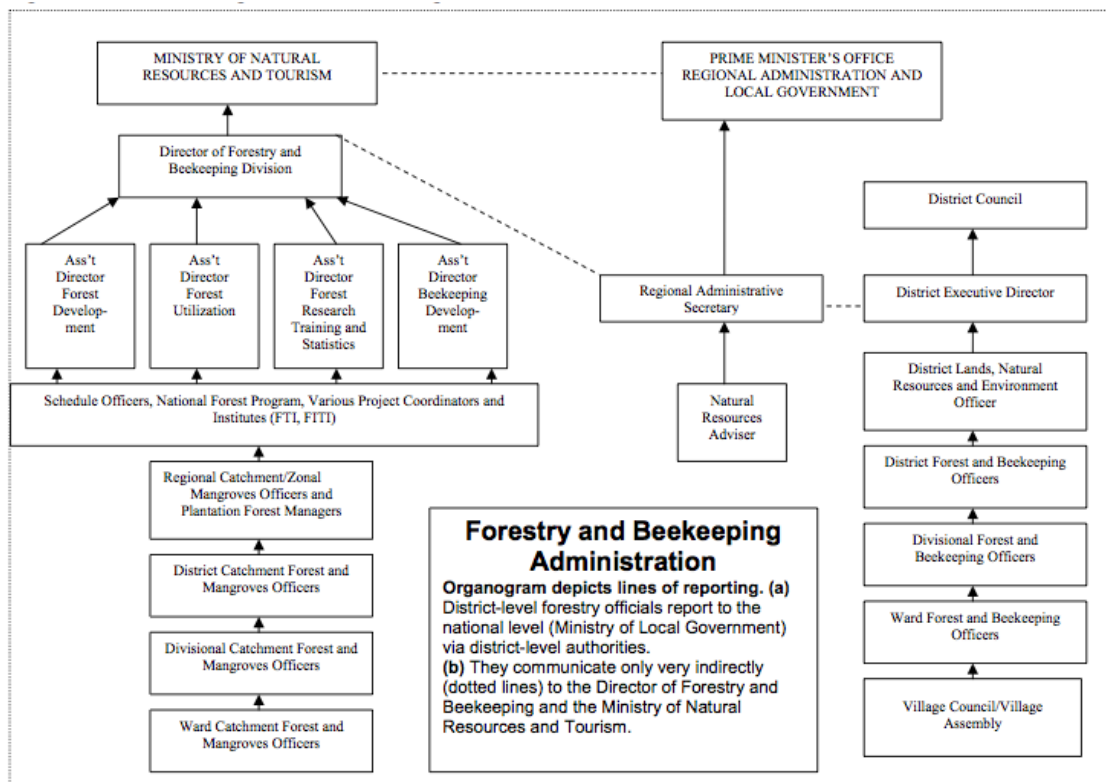
The policy which is currently used and towards which the DoE works, is the 1997 National Environmental Policy, which calls for the countries adaptation of “environmentally sustainable natural resource management practices in order to ensure that long term sustainable economic growth is achieved” (Mniwasa and Shauri 2001, p.4.). Also stressing decentralisation, the National Environmental Policy aims to promote individual and community participation in environmental action, and points out that local communities also have the responsibility of environmental management and should plan and implement programmes and projects that reflect their needs as well as foster sustainable resource utilisation (Ibid.). In addition, the legal and institutional framework for environmental management which the DoE follows is provided for in the Environmental Management Act of 2004. This act, repeals the National Environmental Management Act of 1983, and outlines the principles for management, impact and risk assessment, prevention and control of pollution, waste management and environmental quality standards. It also sets the guidelines for public participation, compliance and enforcement within environmental management. In terms of institutional framework, it provides for the continued existence of a National Environment Management Council (NEMC), and the establishment of a National Environmental Trust Fund (LEAD Journal 2007).

NEMC, which lies under the Vice-Presidents Office, was originally established together with the Environmental Management Act (EMA) of 1983, and functioned solely as an advisory agency to national environmental issues; however it was re-

established with the enactment of EMA 2004, giving it additional authorization, for instance within Environmental Impact Assessments (EIAs) which now became a mandatory practice, and for which the NEMC now carries out enforcement, review and monitoring. It also performs environmental research, collection and disseminating of environmental information, and facilitation of public participation in environmental decision-making (NEMC 2009).

As the EMA 2004 places the coordination of all environmental management issues under the Vice Presidents' office, this also includes issues on climate change and the adaptation and mitigation to address its impacts, where one such mitigation option could be in the form of REDD+. As a result of this a National Climate Change Steering Committee (NCCSC) and a National Climate Change Technical Committee (NCCTC) was put in place to oversee and guide the implementation of all climate change activities in the country (United Republic of Tanzania 2010).

In order to best deal with the effects of climate change a National Adaptation Programme of Action (NAPA) came out in 2006, where climate change related vulnerabilities in various sectors important for the economy and with particular focus on agriculture, were looked at. Priority areas in various sectors were subsequently identified and prioritised project activities within those sectors developed. In total this include 14 project activities, among others; (1) Alternative farming systems and water harvesting; (2) Explore and invest in alternative clean energy sources e.g. Wind, Solar, Biodiesel, etc. to compensate for lost hydro potential; (3) Afforestation programmes in degraded lands using more adaptive and fast growing tree species, and; (4) Establish good land tenure system and facilitate sustainable human settlements (Division of Environment 2006). Those responsible for implement these activities however, are other national and local government bodies such as Sector Ministries and Local Government Authorities under the Prime Minister's Office Regional Administration and Local Government (PMO-RALG). As our main focus is on forest management as a way of tackling climate change, we will now focus on the sector ministry with the overall responsibility over forests.



**Figure 7: Institutional Arrangements for Forest Management Tanzania**  
Source: (Profor 2008, p.136.)

### 5.3 Ministry of Natural Resources and Tourism and its organisations/agencies

Among the 21 ministries in Tanzania, it is the MNRT which specifically deals with natural resources, its conservation and sustainable use. In addition to looking after the country's cultural resources and developing its tourism sector, the ministry occupies itself with the development of appropriate policies, strategies and guidelines; formulation and enforcement of laws and regulations; and monitoring and evaluation of policies and laws within natural resource conservation and management (Ministry of Natural Resources and Tourism 2011). The ministry is divided into five sectoral divisions: Antiquities, Fisheries, Tourism, Wildlife, and Forestry and Beekeeping, but it also hosts a number of parastatal organizations and agencies institutions which support the Ministry in achieving its national objectives and Ministerial strategic plan. Those working with forest issues include: Tanzania Forestry Research Institute (TAFORI) which focuses on conducting, co-ordinating and promoting research on forestry issues and sustainable forest management; Forestry Training Institute (FTI) and Forestry Industries Training Institute (FITI), the former providing capacity building within sustainable development and management of trees, forests, bee

resources and the environment, and the latter on capacity building within wood processing industries such as logging; and Tanzania Tree Seed Agency (TTSA) which aims to provide high quality tree seeds for different uses, as well as providing technical support for raising seedlings (Ministry of Natural Resources and Tourism 2011).

### **5.3.1 Forestry and Beekeeping Division**

As one of the five sectoral divisions within the MNRT, the main responsibility of the FBD is the process of formulating and executing all legislation within forestry and beekeeping. They also have the mandate over the country's national forest reserves, and has authority over projects which serve the country as a whole, such as national forest plantations and water catchment forests (Milledge, Gelvas et al. 2007). In addition, they are the ones which collect revenue on forest operations and harvesting; issue licenses and permits regulating the harvest on forest products; provides training in forestry; and undertakes forest research (Profor 2008). The rules for revenue collection are set by a variety of guidelines and regulations such as the Charcoal Regulations of 2006, Guidelines for Sustainable Harvesting and Trade in Forest Produce 2007 and the New Royalty Rates for Forest Products from 2007 (Sander, Peter et al. 2010).

As with all national ministries and departments the FBD relies on state budget allocation to finance its operation and activities. This allocation has historically been very low, for instance the recorded budget allocation to the forestry sector in 1998 represented only 1% of the total Tanzanian budget (Forestry and Beekeeping Division 1999). The Environment Sector Public Expenditure Review (PEER) of 2004 highlighted this sectors, under-funding and the fact that actual disbursements did not match the sector requirements. For instance for the budget year 2001/2002 the FBD was short by Tsh 59m (approximately \$40.000) (The Vice-Presidents Office 2004). Therefore much of its funding comes from two other sources, namely donor country funding and revenue collection. As an indication of the importance of donor funding compared to state budget allocation for MNRT under which the FBD belong the budget summary for the financial year 2004/2005 is presented here:

**Table 5: Budget summary for ministries and departments 2004/2005**

<b>Description</b>	<b>Estimates (local)</b>	<b>%</b>	<b>Estimates (foreign)</b>	<b>%</b>	<b>2004/2005 Estimates</b>	<b>%</b>
Ministry of Natural Resources and Tourism	1,136,586,3 00	<b>6</b>	17,833,913,10 0	<b>94</b>	18,970,499,400	<b>100</b>
Total Ministries Department	222,933,754 ,000	<b>21</b>	824,026,207,8 00	<b>79</b>	1,046,959,961,800	<b>100</b>

Source: (Catalyst 2004).

The third main funding comes from revenue collection, for instance from timber/logs, flooring wood, charcoal production, tree seeds and licensing and registration of dealers of forest products. However, as stated both in the PEER of 2004 and in a later TRAFFIC report there are severe under-collection of revenue at all levels of government, within the MNRT-FBD as well as local government (The Vice-Presidents Office 2004; Milledge, Gelvas et al. 2007). The source of financing is also affected by the fact that not all of the revenue collected stays in the sector, and 32% is taken to the National Treasury. This lack of financial resources is quite worrisome, as it still persists in current times, and as the MNRT itself has reported, without adequate financial (and managerial) capacity it has led to the inability to institute sustainable forest management, resulting in improper tending and harvesting schedules and can ultimately lead to policy failures (MNRT 1998).

The FBD is divided in four sections, headed by Assistant Directors, namely: Forestry Development, Beekeeping Development, Forest Utilisation and Research, and Training and Statistics. Institutions and agencies under the FBD include the Tanzania Forest Fund (TFF), established as a result of the Forest Act of 2002, and the Tanzania Tree Seed Agency (TTSA), which is semi-autonomous and lies within the boundaries of MNRT and under FBD. In addition, the Tanzania Forest Services (TFS), a semi-autonomous government Executive Agency was to be established as a result of the 2002 Forest Act. The TFS is as of yet not fully operational, and when it will, is uncertain (United Republic of Tanzania 2010). When it is it will take over some of the operational roles and functions of the division. This transfer of authority will include the management of forest and resources on general lands and the management of all

national forest reserves, i.e. both natural forest reserves and national plantations<sup>26</sup> Like the other sub-sectors of the MNRT, the FBD is also guided by its own sector policies, in this case the National Forest and Beekeeping policies of 1998. Further, The National Forest and Beekeeping Programme (NFBKP) from 2001-2010 guides the policy implementation, and the Forest Act No. 14 of 2002 and Beekeeping Act No. 15 of 2002 provides the legal framework for management of the countries forest and beekeeping resources (Ministry of Natural Resources and Tourism 2011).

The main goal of the Forest Policy of 1998 is to “enhance the contribution of the forest sector to the sustainable development of Tanzania and the conservation and management of her natural resources for the benefit of present and future generations” (United Republic of Tanzania 2011). To reach their goal, the main objectives are put forward as:

*“to preserve a sufficient forest area under effective management to ensure a sustainable supply of forest products and services in the future; to accomplish a sustainable forest-based industrial development and trade to increase employment and foreign exchange earnings; to conserve forest biodiversity, water catchments and soil fertility and subsequently ensure ecosystem stability and; to manage and develop the forest sector in collaboration with other stakeholders in order to enhance the national capacity”*(Ibid, p.91).

This participation of stakeholder includes interested donor communities, the FBD, the private sector, various NGOs and CBOs, and local governments (Ibid.). Two of the policy statements clearly show the focus on broad stakeholder inclusion. First, it highlights the need for clear ownership for all forests both on central, local and village level and for proper allocation of management responsibilities to government, private individuals as well as villages. Secondly, to further cooperation, it encourages joint forest management between central, private or local governments. Not less important,

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<sup>26</sup> In the TFS Framework Document of 2010 the date when this agency trends into full effect is not stated, or rather is left blank. United Republic of Tanzania (2010). Tanzania Forest Service framework document. Ministry of Natural Resources and Tourism. Dar es Salaam.

it also encourages local participation in forestry activities and clearly defined forestland and tree tenure rights for said communities<sup>27</sup> (Hamza and Kimwer 2007).

The NFBKP constitutes the main approach for achieving the above mentioned aims and objectives. While stressing the important links between forestry and other sectors it has taken on a more comprehensive approach to ensure sustainable forest management than previous programmes had done. This included considering policy developments in relation to land, environment, water, energy and agriculture when preparing and implementing the ten year programme (Ministry of Natural Resources and Tourism 2011). Under the NFBKP it was identified as a priority activity to undertake a National Forestry Resource Monitoring and Assessment (NAFORMA) given the unknown state and trends of the country's forestry resources. The project is intended to develop a complete baseline information of its forests which is needed in order to support monitoring and assessments of national forest resources as well as national policy processes within the forestry sector (Ministry of Natural Resources and Tourism 2011).

However, given its high priority and importance it was decided to establish the project as a separate project, outside of the NFBKP, something which was done in 2008. According to its project document the completion date was set to be the 31 December 2010. However, a revised document has prolonged the completion date to 31 December 2012.

Seven development projects and five forestry and beekeeping related sub-components remained under NFBKP though, such as Participatory Forestry Management (PFM – 2002/09). As an extension of the NFBKP programme, which ran out in 2010, came the NFBKP Implementation Phase 2, from 2009 to 2011, which adapts the same programme design elements of NFBKP. It includes four development programmes: Forest resources conservation and management; Institutions and human resources; Legal and regulatory framework; and Forestry-based industries and sustainable livelihoods, all of which includes several sub-development programmes. For instance under Forest Resource Conservation and Management, a sub-programme for “addressing climate change issues through reduced emissions from deforestation and

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<sup>27</sup> Policy statement nr.5 and nr.39.



degradation (REDD)” is found, as well as a programme for land use planning, and the programme of legal and regulatory framework includes the review of the National Forest Policy upon which the new NFBKP for the period 2011-2020 will be established (Forestry and Beekeeping Division 2008). The NFBKP Phase 2 is supported by Norway (NORAD) through their support of the Management of Natural resources Programme from 2008/09 – 2012/13 which goes beyond just issues of forestry and beekeeping, and also focuses on governance, revenue collection and participatory natural resources management as well as data and management information systems (Ibid.)

The Forest Act No. 14 of 2002 and Beekeeping Act No.15 of 2002 were enacted as instruments to help implement the policies of 1998. In addition to the call for and establishment of a Tanzanian Forest Fund (TFF), one important outcome of the Forest Act of 2002 was particularly the legal introduction and support of PFM. The Act supports PFM in two main ways: it enables local communities to declare and gazette forest reserves and make by-laws, and it allows for communities to enter into agreements with the government (central or local) for joint forest management agreements (Blomley and Iddi 2009). As PFM will play a big part in REDD+, an outline of the process of establishing PFM follows, as well as the forest categories which PFM is based on

#### ***5.3.1.1 Tanzania’s forest categories and PFM***

As a result of the Forest Act Tanzania has now six different forest categories based on different ownership and management. They are as follows:

1. National Forest Reserves (NFRs) which are owned and managed by the central government in general, and through the FBD in particular. These NFRs are either for strictly conservation purposes such as catchment forests, or for production purposes of products such as timber or fuel wood, and can be either natural or plantation forests.
2. Local Authority Forest Reserves (LAFRs) are also formally gazetted forest reserves, whether for protection or production, but in this regard done so by local authorities and under the management control of district councils. For

those districts having LAFRs it often serves as a major revenue source either from charcoal or timber extraction.

3. Village Land Forest Reserves (VLFRs) are forest reserves established for forests within village boundaries and subsequently managed by the Village Council on behalf of the villagers. After having completed a certain process (see PFM guidelines below) and the area is declared a VLFR a legal transfer of rights and responsibilities is made to the village government. Depending on the management plan and by-laws attached, and whether or not the reserve is for protection or production, villagers will then gain formal legal rights to harvest timber and forest products and can collect and retain all of the forest royalties from various forest products. Previously they would be governed by national and district regulations on harvesting of reserved tree species and regulations concerning timber and charcoal extraction, as would they have to share the royalties collected with either the local or central government. They are now also allowed to arrest and fine those not following their rules governing the VFR (Akida and Blomley 2007).
4. Community Forest Reserves (CFRs) are also found on village land and will work in the same way as a VLFR except that it does not include the whole village as such, but rather a community or subgroup within the village. A CFRs can for instance be managed by a group of beekeepers, charcoal producers or timber operators.
5. Private Forests can be either small-scale production of trees on private land, such as households establishing small woodlots on their land, or it can be large-scale private forestry enterprises which are leasing either village or general land for the purpose of planting trees, in most cases for timber or poles.
6. Forests on general land concerns non-gazetted or non-reserved forests on the land category general land, as stated by the Land Acts. These forests are under the jurisdiction of the FBD. Forests on general land, which in practice have no legal protection but rather open-access use rights and insecure land tenure, constitute 51% of all of Tanzania's forest land and is the main areas where deforestation and forest degradation takes place (Akida and Blomley 2007). However, such numbers varies immensely, depending on the definition used.

The Forest Act thus sets the framework for six different types of forest management and lies forth the terms for each category as to how to establish and declare forest reserves for protection and management (Profor 2008). To make the process easier and clearer the FBD in 2007 also published PFM guidelines for CBFM and JFM as well as guidelines for Participatory Forest Resource Assessment (PFRA). However since the FBD itself is not responsible for implementing the activities itself, it is mainly relevant for local government staff and foresters or other PFM facilitators such as NGOs or the private sector. A brief outline of the process is as follows:

**Table 6: CBFM and JFM Guidelines**

<p><b>Stage One: Getting started</b></p> <ul style="list-style-type: none"> <li>• District level: select the villages for PFM, brief district staff, create a District PFM Facilitation team</li> <li>• Village level: District PFM team meet with Village Council and Village Assembly and establish a Village Natural Resource Committee (VNRC)</li> </ul>
<p><b>Stage Two: Assessment and Management Planning</b></p> <ul style="list-style-type: none"> <li>• Identify and agree on the boundaries of the village and village forest reserve</li> <li>• Carry out a PFRA with the VNRC and measure and assess the forest and consult stakeholders and natural resource users</li> <li>• Develop a village management plan and village by-laws draft</li> </ul>
<p><b>Stage Three: Formalising and legalizing</b></p> <ul style="list-style-type: none"> <li>• VNRC presents the draft to the Village Council and Assembly for approval</li> <li>• Village chairman takes the draft to the Ward development committee</li> <li>• The Ward development committee inform the neighbouring villages in ward about the location and rules of the new village forest reserve</li> <li>• Together with the district PFM team the VNRC takes the draft to the District Council for final approval</li> </ul>
<p><b>Stage Four: Implementing</b></p> <ul style="list-style-type: none"> <li>• Awareness raising among village members concerning the management plan and by-laws</li> <li>• Strengthen the VNRC and its ability to hold meetings, undertake patrols, perform record-keeping and monitoring of the forest, and methods to deal with forest encroachment</li> <li>• Starting afforestation activities if there are any</li> <li>• District monitoring and supervising and acting as conflict resolution if necessary</li> </ul>
<p><b>Stage Five: Revising and gazetting</b></p> <ul style="list-style-type: none"> <li>• Three years after implementation the forest management plan is reviewed and revised if necessary</li> <li>• If want to they can request the FBD to officially gazette their VLFR</li> </ul>
<p><b>Stage Six: Expanding to new areas</b></p> <ul style="list-style-type: none"> <li>• CBFM villagers can expand their VFR if they want</li> <li>• Neighbouring villages or others in the district can request CBFM</li> <li>• If so priorities needs to be balanced, action plan created, an administrative framework and support system set up and a budget set</li> </ul>

Source: (MNRT-FBD 2007, p.13.)

The only real difference in the process between CBFM and JFM is in step 3 when under JFM a Joint Management Agreement (JMA) has to be made and agreed upon between the two involved parties. For whereas CBFM will leave the sole responsibility of management on the village government and villagers, this is not the case with JFM, and since two parties are jointly managing a forest reserve they then have to define and agree on how management costs, benefits and responsibilities are to be shared. Many JFM processes have been delayed or halted completely due to this as in many instances the JMA has not been agreed. This is when it comes to forest reserves managed for timber production purposes. The result has often been what Blomley (2009) calls a *de facto* management at the local level but where the benefits to the local community is not given as the share is still not decided upon. As a result, it will in most cases not be sustainable as time passes and local villagers are still not paid for their efforts. The MNRT has proposed several ways in which this issue might be solved:

- From the combined revenue, 40% goes to the village government and 60% to the district or central government
- The revenue from fees paid for illegal activity is retained 100% by the village government
- The revenue from equipment or forest products confiscated under patrols within the forest reserve is retained 100% by the village government, or
- One Timber Royalty payment by those wishing to harvest timber made to the FBD/District Council while a Local Management Fee is paid to the village where the forest under JFM is located, thus creating a benefit share of 60/40, respectively, of the current Timber Royalty rate (Blomley and Iddi 2009).

However, to our knowledge the Ministry of Finance and Economic Affairs have as of yet, not approved any of these proposals.

## 5.4 Tanzania local structure for environmental and forest management

Remembering back to the institutional structure of national forest management in Tanzania (see Figure 7 p.105), a parallel structure of forest management exist in Tanzania where all forest which is not state forest of national importance, e.g. catchment forests, will be managed by Local Government Authorities (LGAs) under PMO-RALG.

The LGAs, whether district, ward or village authorities, are the ones which have the day-to-day forest management responsibility (Hamza and Kimwer 2007). In order to get a clear picture of how environmental and forest management works on a local level, we also have to take into consideration the local political and administrative government structure in general which is governed by its own acts and policies, as well as the legal framework in relation to land use, all of which plays a part in and affects the forest management. The structure of Prime Ministers' Office, Regional Administration and Local Governments (PMO-RALG) institutions and administration, is as follows:

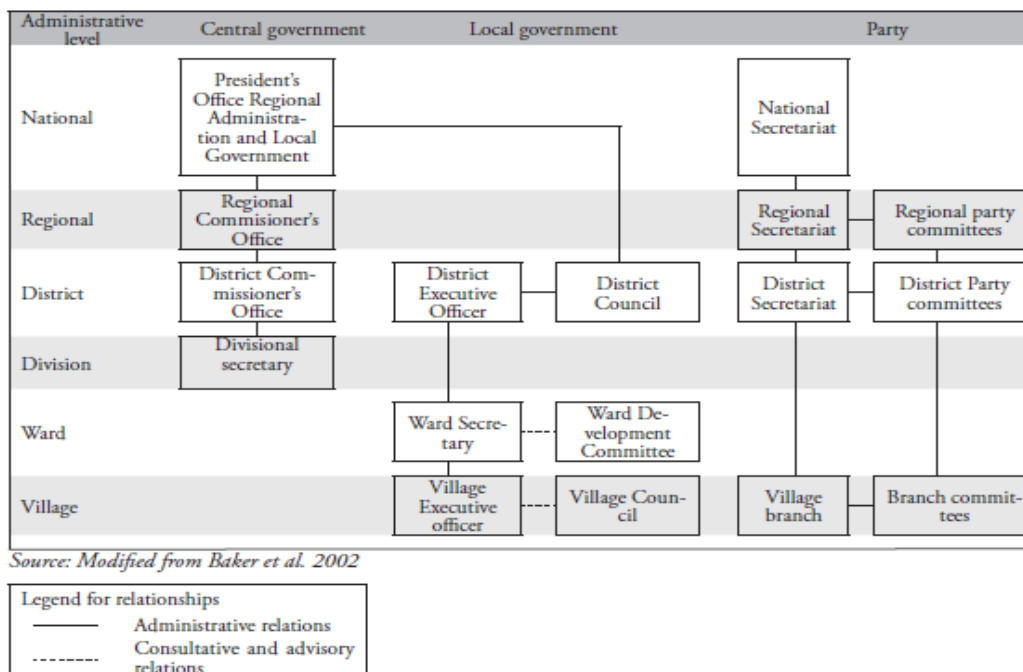


Figure 8: Local Government Structures in Tanzania

Source: (Nathan, Lund et al. 2007, p.7.)

In order to get the clearest picture of how forest management fits in the mix of all the other policies and acts relevant we will first present the administrative structure from the highest to the lowest local government level, then outline the most relevant land acts, and finally present how local forest management fits in this complex structure.

#### **5.4.1 The Regional Administration in PMO-RALG**

For the purpose of explaining the link between the Central Government and MNRT-FBD with what is commonly known LGAs (Local Government Authorities) it is worth mentioning the role of the Regional Administration. At its most basic it refers to “the subdivision of the geographical territory of the United Republic of Tanzania into Central Government administrative units and the functioning of the established structures in those subdivisions” (PMO-RALG 2004). It is divided into 25 regions, and its overall function is twofold; firstly it acts as a link between Central Government Ministries, Departments and LGAs; and secondly it facilitates and assist the LGAs in undertaking their responsibilities. The region has one political head, the Regional Commissioner (RC), and one civil service head, the Regional Administrative Secretary of the Regional Secretariat (RS). The RC has the District Commissioner (DC) as its principal assistant, while the RS has the District Secretariat and District Executive Director (DED) under it (Ibid.). As such, its functions are more of a facilitator than an implementer when it comes to environmental and forest management policy, acts and programmes. It is the RS which provides the district authorities with information, guidance and assistance and then reports back to the MNRT-FBD. On the other hand, the MNRT-FBD provides the role of a technical advisor on forest and natural resources issues to the regions. The reporting line and structure which governs the LGAs, is a set of acts made as a result of the central governments focus on decentralisation, and a few are of particular relevance, and will therefore be mentioned briefly.

#### **5.4.2 Local Government Authorities (LGAs) – Structure and legal framework**

The idea of decentralisation and devolution of power within environmental and forest management did not occur in a vacuum but was a result of a much larger decentralisation process in Tanzania, the most relevant in our respect, dating back to

the 1970s and 1980s. Firstly, as part of the “villagisation” process in Tanzania from 1973-1976 (known in Kiswahili as *Ujamaa*) where millions of rural people were moved into village centres, came the establishment of Village Councils. Stated in the 1975 Village Act a village council was then to be elected by the Village Assembly (all village members above the age of 18), however as of yet it was not much involved in decision-making, which was still dominated by the ruling party. Thus, it was only perceived as an instrument of development plans coming from higher governmental levels (Brockington 2008).

However, the content of decentralisation policies improved during the 1980s, strengthening local governmental institutions, and between 1982 and 1984 local governments were constitutionally recognized through a series of Acts and amendments<sup>28</sup>, the second major acts coming in 1982 in the form of the Local Government Act (LGA), No 7 which concerns itself with District Authorities, and the Local Government Act, No. 8 focusing on Urban Authorities. Through the LFA, No 7, village, ward and district councils were established in the rural areas. The local rural government, now consisting of three main structures - District Councils, Ward Development Committees (WDCs) and Village Councils (Venugopal and Yilmaz 2010) - would from then on be responsible for: “planning, financing and implementing development programmes within their areas of jurisdiction...protect and properly utilize the environment for sustainable development...and make the necessary by-laws applicable in their areas of jurisdiction”(Mniwasa and Shauri 2001, pp.14-15.).

Further focus on decentralising the central governments’ role in local issues such as environmental and national resources management meant transferring more of the power and responsibility to LGAs as well as strengthening the structure of these authorities in order for them to be able to take on the extra responsibilities. With the thought that “local government authorities are to protect and manage the environment

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<sup>28</sup> The different laws in this period include: (1) The Local Government (Urban Authorities), Act 1982 (Act No. 8 of 1982). (2) The Local Government (District Authorities), Act 1982 (Act No.7 of 1982). (3) The Local Government Service Act, 1982 (Act No.10 of 1982). (4) The Local Government Finance Act, 1982 (Act No.9 of 1982). (5) The Urban Authorities Rating Act, 1983 (Act No.2 of 1983). These laws have since been consistently improved.

in their respective areas of jurisdiction” (Mniwasa and Shauri 2001, p.4.) the Regional Administration Act of 1997 initiated the decentralisation process by now allowing urban and district authorities to have direct authority over issues and interests in their areas of jurisdiction. In addition, adjustments resulting in the Local Government Acts in 1999 facilitated this transfer and increased the management responsibility by establishing an Economic Affairs, Works and Environment Committee under District Authorities. It was stated that “it shall be the objective of the local authorities in performing their functions to provide for the protection and proper utilisation of the environment for sustainable development” (Mniwasa and Shauri 2001, p.9.)

Further, in 1999, the Local Government Reform Programme was introduced with the view that public services facilitated by local government authorities would improve the quality and access of said services, and that by reorganizing and allowing greater freedom in organising their own activities it would increase the local communities’ accountability and responsibility for their own development (Ibid.).

As a result of these policies, acts and programmes listed above the LGAs now consists of councils at Village, Ward and District levels, elected by the local population for a five year period, and also includes a parallel set of civil servants appointed by PMO-RALG, namely a District Executive Director (DED), a Ward Executive Officer (WEO) and Village Executive Officer (VEO).

Intended to facilitate more sustainable natural resource management some have however pointed out the opposite, stating that the new institutional structure has played a big part in the declining role of local institutions and traditional values in terms of natural resources management as the traditional system of chiefs and clan elders, previously responsible land allocation and forest management has been replaced by the new Village Government. Therefore, as local beliefs about the value of protecting forests and traditional property rights have gradually eroded, it has influenced the use of common resources (Akida and Blomley 2007).



### **5.4.3 District, Ward and Village Government**

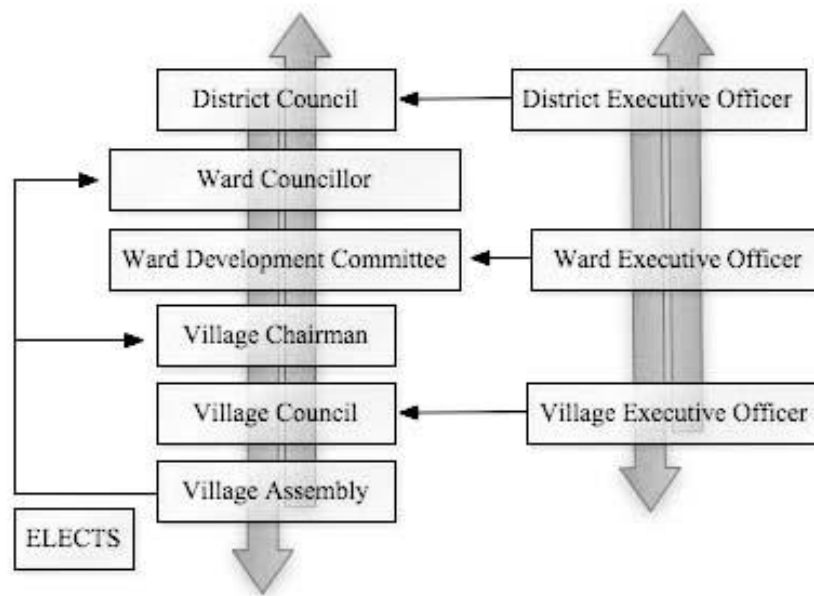
Starting at the district level, the most important decisions such as budgeting and planning are carried out by the district council, which consists of elected members from each ward in the area, members of the parliament representing constituencies in the council and other members of parliament whose nomination originates from political parties within the district. The DED is a non-voting secretary as well as accounting officer to the district council (Venugopal and Yilmaz 2010). Below the DED there are a number of Heads of Department, typically for personnel and administration; planning and finance; works; education and culture; trade and economic affairs; health and social welfare; agriculture and livestock development; community development; and natural resources (CLGF 2006). A decision that is taken by the district council is then enforced by the DED where he instruct his subordinate, the WEO to carry out a command, in turn reaching the village level and the VEO (Brockington 2008). One important fact to establish is that many districts also divides its area in divisions. However, these have no specific administration put in.

Below the District Council is the Ward Development Committee. As the ward is a technical and administrative unit and consists of several villages in the ward the Ward Development Committee consists of all the different village chairmen in the ward as well as the WEO and non-voting members from the civil society (Ibid.). The ward development committee's main responsibilities are to plan at ward level, coordinate development activities and link plans with the district level. In addition it is required to deal with disasters which might occur within the ward, and to manage environmental related activities which either comes from themselves or from the district or village level.

At the village level the village assembly elects a village council of 15-25 members and a village chairman every five years. As a village consist of sub-village chairmen these should be represented and those villages which still follow the traditional structure of "ten-cell households", where a group of approximately ten households elect a "ten cell leader" to represent them (known in Kiswahili as *Balozi*) are also represented (Kavishe and Mushi 1993). More recently it is also supposed to

encompass at least one-fourth of female members<sup>29</sup>. This together with the sub-village chairman, other council members and one village chairman, makes up the Village Council, in total about 25 members. A VEO appointed by the DED will serve as a non-voting secretary (Venugopal and Yilmaz 2010).

The reporting structure is as follows:



**Figure 9: Local Government Authorities, Tanzania**

Source: Adopted from: (Brockington 2008)

The areas of responsibility of the Village Council ranges from implementing programmes and coordinating activities set by the ward and district; to planning their own activities for the village; providing assistance and advice to its villagers within areas such as agriculture, forestry and horticulture; and informing them of- and encourage them to participate in various village activities. It is also responsible for resolving conflicts within the village, such as conflicts or disputes over land borders. If these are not resolved then the ward, and if necessary the district council will be involved. The village council also consists of four standing committees: one for finance, administration, planning and economy; one for works, and economic affairs; one for defence and security; and one committee for HIV/AIDS (Prime Ministers

<sup>29</sup> For example, if a village consists of 5 sub-villages, the village council will include 5 sub-village chairmen. In addition it will elect 7 women council members, and 12 council members (men or women), and one chairman. Together the village council will then consist of 25 members.

Office and Regional Administration and Local Government 2008). A village might have additional committees for services such as education, health, environment and forest protection. Other institutions on village level can include informal and traditional organizations and a village party branch (Mniwasa and Shauri 2001). The ruling party CCM, which previously dominated the local government system, now has structures parallel to the current local government and is not supposed to automatically be part of local government, however, as claimed by Nathan “party representatives are in reality still born members of the district council” (Nathan, Lund et al. 2007, p.6.). Now having described the LGAs structure and established authorities with the overall management responsibilities in Tanzanian rural areas, we will move onto the specifics of forest management within rural areas. However, as forest management also have to be viewed together with overall land management we will start with the land tenure system.

#### **5.4.4 Land Tenure and Management**

Also having a great impact on natural resource and forest management is the National Land Policy of 1995, and the following 1999 Land Act No.4, and 1999 Village Land Act No.5. As natural resource management depends on land tenure and the allocation of specific use rights, secure and clear land tenure is essential for sustainable utilization of land resources. The Land Acts together with the National Land Policy (NLP) set out to establish this, and as stated by the NLP, they intend to “promote and ensure wise use of land, guide allocations, prevent degradation and resolve conflicts”. The two land acts recognize three different land categories and are placed under different management authorities in each. In reality though, all land still belongs to the State and the President which holds the land in trust of its citizens. However, he has handed over the power to the Commissioner of Lands to delegate and modify land tenure status. As a result District and Village Councils have been handed much of the formal management responsibilities. This has been done in an attempt to formalize and legalize traditional and customary land tenure arrangements (Akida and Blomley 2007). The three land categories are as follows:

- *Reserved Land* includes among other forest reserves and national parks, i.e. all land which is set aside by the central government for conservation purposes.

This land falls under state property in terms of management responsibilities, and the management is defined according to the relevant land type law, for instance a forest reserve is governed by the Forest Act of 2002, and the FBD.

- Village Land includes all land inside the boundaries of a registered village, managed by the Village Council. This includes establishing the boundaries of forests, which in many instances stretches between two or more villages. It therefore has to be agreed where village boundaries will go, meaning where one village management stops and another begins. The Village Councils are required to divide the land into three categories: *communal land*, which is shared by villagers, such as grazing areas or forests; *occupied land*, managed by individuals or single families such as housing, cultivation, or business areas, and; *future land*, wherein a part of the village land is set aside for future use. Village land is guided by the Village Land Act No.5 and states that individuals, family units and associations which are ordinarily residents in the village can register for what is called Certificate of Customary Occupancy (Olenasha 2005) which may be held indefinitely. If the Village Council allows it these certificates can be sold (or given) to people, non-village organizations or corporations<sup>30</sup>, but only if it is in the best interest of the villagers. In addition, granted rights of occupancy, or deeds to land, can be given in all categories of land, however it is bound to a designated lease-period of maximum 99 years (Ibid.).
- General land is neither reserved nor village land, and guided by the Land Act No.4 where the Commissioner of Lands manages it on behalf of the central government (Akida and Blomley 2007).

In terms of village land, the Village Land Act also states that the Village Council has the right to make and implement its own by-laws concerning better management and administration of land within its jurisdiction. However, in order for them to be seen as legally binding they have to first be approved by the village assembly, by the Ward and the District Council. As the district also can set by-laws, for instance regulating the use of forest and forest products, these laws will then apply for all villages within the district boundaries, and it is the job of the village council to implement them and

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<sup>30</sup> The law does not allow ownership of customary lands by foreigners. They can however register institutions where the majority of shareholders are citizens.

make sure the general population follows them. A final responsibility that the VLA (in accordance with the LGA) places on Village Council is the duty to solve conflicts over village land. This might include conflicts over grazing and agricultural land or boarders. However, the losing party can easily appeal the Councils' decision to a conflict resolution body at a higher level, such as the Ward Tribunal Council (Ibid.).

Another effort to establish sustainable land is through the Land Use Planning Commission Act No.6 of 2007. Initially established in 1984 it was repealed by the 2007 Act after becoming aware of its limits and inefficiencies, particularly concerning the coordination of various land use activities done between different stakeholders such as NGOs, sectoral organizations and the government. Thus, in another effort to regulate and organize the use of various land areas what this act requires is that land uses are to be organized in a planned fashion, and divided into zones and specific use classifications such as agricultural land, settlement land, protected forest land and productive forest land. Through the Act the National Land Use Planning Commission (NLUPC) was established with the overall responsibility of preparing regional physical land use plans, to formulate land use policies, set standards, norms and criteria for sustainable use and for the maintenance of the quality of land (NLUPC 2010). A Land Use Planning Authority should be present at district level as well, and through guidance and technical help from the Regional Secretariat put particular emphasis on relevant stakeholder involvement and ensure "co-ordination and systematic physical development at the district level, ensure inter-sectoral co-ordination, and co-ordinate village land use plans" (NLUPC 2010, p.147.)

Because, also villages are encouraged to make their own land use plans, and through participatory land use planning the Village Council will act as the planning authority and manager of the village land. NLUPC and District authorities' level are there to assist and help the villagers in establishing these plans. In addition, in 2009 a National Land Use Framework Plan 2009-2029 was published. Given how it affects a number of different sectors and land uses it draws upon various policies and acts; the National Land Policy (1995), National Human Settlement Policy (2000), National Environmental Policy (1997), National Forest Policy (1998), National Wildlife Policy (1998), National Population Policy (2002), National Livestock Policy (2005) and National Land Use Planning Act (2007) (NLUPC 2009).

However, PFM places great emphasis on proper land use planning when establishing Joint Management Reserves or Village Forest Reserves, and in these instances cover all costs of making such plans. Because given the time consuming and expensive processes not many villages are able to do it without technical and financial assistance (Local resource person 2010).

As we have seen, decentralisation and devolution of power has been of great focus for Tanzania in the past decades, also in terms of natural resource management. For instance the Environmental Policy of 1997, section 104, advocates for the establishment of Environmental Committees at regional, district, ward and village level, a committee which then "shall be responsible for coordination and advising on obstacles to the implementation of environmental policy and programmes, promoting environmental awareness; information generation, assembly and dissemination (sic) on the environment relating to district, ward or village." (Mniwasa and Shauri 2001, p.13.). The Forest Act of 2002 further reinforces this at village level by encouraging the formation more specialized committees, which would work as an elected sub-committee of the Village Council (Blomley and Iddi 2009). However, the establishment of such committees is optional and thus not everyone has done it.

What we have seen is that there is a highly sophisticated legal framework for environmental and forest management in place in Tanzania. Even more so this is a framework which has attempted to devolve power and responsibilities to those living closest to and depending the most upon the resources itself in the belief that they will be most fit and able to manage their forest resources in a sustainable manner.

In order to get a more clear view on how such management can work in practice, and as a way of putting our pilot villages within a broader context we will now focus on the Kilosa Natural Resources Office which is the Kilosa District management authorities in charge of the forest and natural resources within the district.

## **5.5 Kilosa District Natural Resources Office**

Kilosa has a District Natural Resources Office, assisted by District Forest Officers in charge of all forest areas and forestry issues within their jurisdiction. As an employee of the LGA it reports to the DED. The District Council has the mandate to facilitate

forest management activities by planning and implementing forest programmes, and providing technical assistance and capacity building on the ground. The council is also responsible for measures to control soil erosion and desertification, regulate and control the number of livestock in the district, maintain forests and manage wildlife and to provide for waste management (Mniwasa and Shauri 2001).

Within their jurisdiction Kilosa district is represented by all six forest categories and have national forest reserves, catchment forests, private forest plantations, forests under JFM and CBFM, as well as general land forests. Although the Natural Resources Office is only directly involved in the management of the LAFRs they have the overall responsibility of communicating with and making sure the lower levels of LGAs (the WEOs and VEOs) are aware of, and implementing the activities and programmes set by the Forest Policy and Forest Act. They also make sure that the national rules and regulations and district by-laws regulating forest use is upheld. They are in charge of revenue collection and patrolling for illegal use, and serve as technical expertise and guidance to the villages when VLFRs or PFM is to be established and land use planning exercise carried out. This then warrants that a certain amount of forest staff is present in the district, especially as all divisions and/or wards should be represented by a forest officer. This, however, is not the case in Kilosa which has a severe shortage of staff including within the Natural Resources Office:

**Table 7: Kilosa District Departments and Staffing, Tanzania**

<b>Na.</b>	<b>Department</b>	<b>Requirement</b>	<b>Availability</b>	<b>Shortage</b>
1	Administration	425	392	33
2	Treasury	45	35	10
3	Planning	12	9	3
4	Trade	8	6	2
5	Education (Primary)	2384	2284	100
	Education (Secondary)	802	582	220
6	Health	842	760	82
7	Water	42	31	11
8	Works and Road	78	67	11
<b>9</b>	<b>Natural Resource</b>	<b>48</b>	<b>32</b>	<b>12</b>
10	Land	28	17	11
11	Community Development	58	40	18
12	Agriculture and Livestock	215	172	43
13	Cooperative	10	7	3
	<b>Total</b>	<b>4997</b>	<b>4434</b>	<b>559</b>

Source: (Kilosa District Council 2010)

Thus, out of the 9 divisions, 37 wards and 164 villages the natural resources and forestry staff are not able to cover all of them. In addition there is a lack of staff with the sufficient training and technical expertise. Within the Kilosa Township headquarter, where the district department is located, there are only three foresters with certified diplomas and they are assisted by two recently graduates within forestry. In addition they have only have one qualified forester in three of its nine divisions, the remaining six being managed by non-skilled people (Local resource person 2010).

This fact is not made any better by the lack of funding which cripples its operation. As we have seen, budget allocation to the natural resources sector has historically been very low compared to other sectors and this has particularly been noticeable on the local government levels. As the Public Environmental Expenditure Review (PEER) of 2004 showed, only 5% of the FBDs budget was allocated to forest management within the districts (The Vice-Presidents Office 2004). Therefore, for many districts as much as 95% of their funding rather comes from PMO-RALG, but also this money is very limited. The budget allocation to Kilosa District between 2006 and 2009 was USD 1.608 (Tsh 2.400,000), USD 2.412 (Tsh 3.600,000) and USD 3.000 (Tsh 4.480,000) respectively. Although it clearly shows an increasing allocation



to the office within this period, we were told since then, the office had not received and money at all from the District Council. Put forward as a reason for this was the Districts involvement in PFM efforts between 2004 and 2009 and which the department received funding for. Although the majority of it was earmarked for PFM activities the rest they were free to use as they saw fit (5%). This PFM programme has since then been put under a broader environmental programme which has as of yet not started. The often expensive and time-consuming nature of establishing a VLFR is reflected in their PFM progress report. Prior to the PFM programme which started in 2004, only between 10-15 (out of 165) villages in Kilosa had undergone this process (Mung'ong'o and Mwamfupe 2003). The progress document from 2008 showed that 27 villages were now involved in PFM.

However, during these 4 years, although 21 villages had carried out village and VFR boundary surveys, only 15 had carried out a PFRA and only 10 villages had also made a village management plan, an outcome of the land use planning exercise (Kilosa District Forest Office 2008).

Given the lack of funding from elsewhere the natural resources office depends heavily on district revenues, however the main source of revenue has to be sent to the Central Government, and the districts are only allowed to retain 5% of whatever sum above USD 670 (Tsh. 1 million) (The Vice-Presidents Office 2004). The rest is gathered by the District Council and then re-disbursed to the various departments. This funding, however, usually only go to the districts focus area, such as building schools or maintaining roads. Given the lack of funding to the natural resources sector, which similarly is the case in many other districts, the department cannot function efficiently. This is seen as a major contributor to the unsustainable management of its natural resources and forests, and to the district (and countries) high illegal use of natural resources, such as illegal charcoal and timber production. As the head of the natural resources department stated: "The government pays the salary to the staff, but how will they do their work without funding, that's the question. This is why there is so much illegal harvest in Tanzania, since people are taking advantage of a poorly funded sector" (Local resource person 2010). For as the situation is, given the lack of money to pay for transport and fuel, their ability to quickly act if they hear about specific illegal activities taking place, is severely restricted. Alternatively what they

must do is apply the District Council for funds, and given the bureaucratic hurdle, it will take up to 3 days before they receive it, meaning that by then, the illegal activities have most likely moved on.

Linked to this it also affects the ability to create new revenue, where without sufficient funding they are not able to enforce and control properly the process of permits, thus losing out on a lot of possible revenue, and continuing the trend of being under-funded. The lack of resources also affects their possibility to reach out to all the communities within their jurisdiction and to provide assistance and advice on sustainable forest management and their ability to monitor day to day activities, both because they lack enough staff on ward level which can carry out the work and because they lack funding to pay for transport and fuel.

From what we could gather, the rules which apply in the district (whether national or district by-laws) were as follows:

- Don't cultivate close to water catchment areas in the forest
- Don't set fire in the forest
- Illegal to take down certain endangered trees
- Pay for adequate licenses in order to extract timber and produce charcoal, as set by the new royalties rates for forest products from 2007.

As seen, the central government has done much to decentralize and devolve power and management responsibilities to those living closest to and depending most on (their) natural resources. This is reflected in all legislation, and together; the district, ward and village authorities are placed with the responsibility to manage these resources in a sustainable manner. Still though, it appears this management is not always practiced, and particularly within forestry, a lack of funds and staff persist, resulting in illegal and unsustainable forest extraction, and again high rates of deforestation and forest degradation (the level of corruption was here difficult capture).

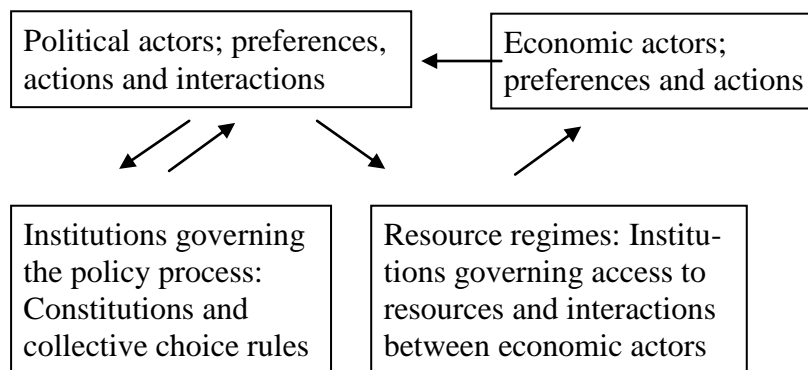
With the introduction of REDD+, such issues have to be dealt with, and will have direct bearings on its success. Following Youngs concept of "fit", we now move onto our first objective, which is to map out how the national REDD+ structure will look in Tanzania and how it will complement, or conflict with the current policies.

## CHAPTER SIX – REDD IN TANZANIA

*In this chapter we will go through the REDD strategy formation process, from the initialisation towards where we are today. A distinction between governance as structure and governance as process will be made, and by using a resource regime framework, we will first present the REDD process in itself before we describe the current strategy as put forward by the government of Tanzania (based on the first draft) together with its components. At the end we round up by presenting our own views on major challenges on the REDD strategy.*

The REDD process started after the signing of a letter of intent between Norway and Tanzania in April 2008, and since, Tanzania have gone through different stages in its development and formation of a National REDD Strategy. The first draft of this REDD strategy were put forward in December 2010, where it since have been a matter of attention and will enjoy inputs from various stakeholder up until a final strategy will be completed in late 2012.

With the resource regime framework we will assess how REDD policies can correspond to biophysical systems in Kilosa District. However, before looking at how rural households as economic actors interact with their environmental resources, we first have to look at the political actors.



**Figure 10: Governance structure**

Source: (Vatn 2011)

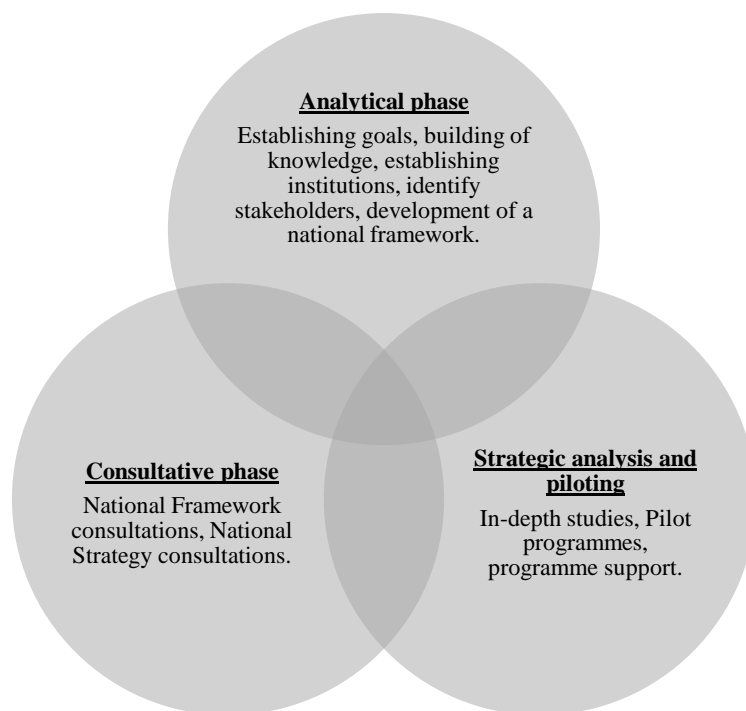
By this we can identify the institutions that govern the policy process as well as establishing how access to resources through resource regimes in the form of tenure and property rights affects resource access. Nevertheless, we have to emphasize that this process will in the end affect economic actors.

### **6.1 The governance process of REDD in Tanzania – patterns of interaction**

This process can be referred to as the inclusion of social actors under new conditions with different institutional arrangements (Vatn 2005; Vatn 2011).

As a step towards climate change adaptation and mitigation, the concept of REDD were launched within the forestry sector. It is closely linked to the current national growth and development strategies such as the National Forest Programme and the National Growth and Poverty Reduction Strategy Programme (MKUKUTA) and is meant to contribute to the improvement the livelihoods as well as achieving effective utilization and conservation of its natural resources.

The process of developing a national REDD+ strategy started on the basis of the development of a National Framework, which was released in 2009. A lot has happened since then, and for analytical purposes, Tanzania's REDD strategy development process is here divided into three main stages: a preliminary analytical phase, a strategic analysis and piloting phase and a currently on-going consolidation phase. By looking into these three phases we also hope to capture the pattern of interaction between actors throughout the process.



**Figure 11: Tanzania's REDD Strategy development process**

### **6.1.1 The analytical phase**

As described in chapter one, the REDD policy negotiation started in COP 11 in Montreal in 2005 and during the COP 13 in Bali in 2007 a decision was made to focus on REDD+ for inclusion in a post 2012 regime. Here it was also agreed to start pilot activities to support REDD as a climate mitigation measure. For Tanzania, REDD became a viable option which could provide opportunities in terms of meeting its obligations of managing its forests and woodlands and at the same time getting access to a stream of carbon credits which could be used in poverty reduction (United Republic of Tanzania 2009).

This all culminated in the signing of a letter of intent between the Norwegian Prime Minister and Tanzanian government in April 2008 marking the start of Tanzania's REDD process. Soon after the signing, three technical staff was assigned to the process<sup>31</sup>, and the Norwegian Embassy started planning for the support to the Tanzanian REDD process, including the development of several pilot projects (Norad 2011).

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<sup>31</sup> Two embassy staff and one consultant.

From the start, it was important to understand and build knowledge on REDD by identifying the potentials for REDD in Tanzania, assess capacities for its implementation, and to identify gaps and issues to be addressed (United Republic of Tanzania 2010). As a result institutional structure was established including the REDD Task Force and its secretariat, stakeholders were identified and addressed, scoping studies were conducted and the work on a National REDD Framework were started (ibid). Due to the formation of these founding areas in the progress of REDD, this stage were also characterized by power games between the government ministries and institutions. Here questions such as where the decision power should lie, identify goals, under which ministries and who should house the REDD secretariat were among many core issues that needed to be addressed.

#### ***6.1.1.1 National REDD Task Force***

One of the first thing done was to establish institutions that would help to facilitate the REDD process. By this, a National REDD Task Force were established to prepare and coordinate future REDD-related activities (Norad 2011). Its main purpose was to provide expertise and to administer the development of a National REDD Strategy thereby also improving the overall voluntary carbon market in Tanzania. It was formed in January, 2009 by the Vice President's office and the Ministry of Natural Resources and Tourism, and initially consisted of six members, mostly foresters - three were from the Vice President's Office – division of Environment, and three were from Ministry of Natural Resources and Tourism – Forestry and Beekeeping Division (Local resource person 2010; United Republic of Tanzania 2011). Recently two more members were added, one representing Zanzibar and the other representing Local Government (The REDD Desk 2011).

In February 2011, the Task Force were further broadened by the formation of five working groups; (1) Legal & Governance, (2) Monitoring, Reporting and Verification (MRV), (3) Financial Mechanisms, (4) Energy Drivers; and (5) Agricultural

Drivers<sup>32</sup>. Each working group is planned to comprise about six members drawn from relevant sectors depending on the issues addressed (FCPF 2011).

In March 2009, the Members of the Task Force came together for the first time with members from the secretariat in a six-day start-up meeting at Bagamoyo to review the National Framework. A draft version of the National Framework for REDD was here reviewed. This also acted as a point of departure for the team. The Task Force terms of references and overall working plan were also developed (United Republic of Tanzania 2009). Since then, the task force have been through a multi-stakeholder consultation process that would lead to the production of Tanzania's 1<sup>st</sup> draft on the National REDD Strategy (Mutarubukwa 2011). During this time, the task force has been working with various stakeholders and has also been involved in reviewing of the pilot proposals to the Norwegian Embassy. The Task Force was placed at the Institute of Resource Assessment (IRA), at the University of Dar es Salaam, which also hosted the secretariat.

Today, their overall responsibilities stretches far beyond the implementation activities funded by the Norwegian Embassy and they are fully engaged with every aspect related to REDD in Tanzania, ranging from study tours, directing scoping and in-depth studies to attendance at the international climate negotiations through COPs (Local resource person 2010). This to build knowledge on REDD. The Task Force is supposed to operate until the end of 2012 where a new global climate regime is thought to be in place and the Tanzanian government is ready to take over. However, how this will be done is still unclear since an exit strategy has not yet been decided upon (Ibid).

#### ***6.1.1.2 Stakeholder engagement***

The strategy formation process is characterised by different actors with different interests. How different actors are included or excluded in the process are therefore of crucial importance to REDD.

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<sup>32</sup> The terms of responsibilities for the Working Groups was formulated and adopted at the stakeholders meeting held at the Kibaha Conference Center in February 2011.

The REDD Task force and the REDD initiative have tried to involve a range of different stakeholder groups at different levels through the REDD strategy development process (United Republic of Tanzania 2010). The need of establishing Non – state umbrella organizations to handle the different stakeholder groups and their various ‘bundles of interests’ were emphasised early, and were seen as important in areas such as training. Future support will also be needed in registering changes in the carbon stocks. In the start it was therefore important to identify who was doing what and where, and by analysing their interests and commitments to participate in the REDD policy implementation the relevant stakeholders could be addressed (Ibid).

In this context, a stakeholder is referred to as an intended actor in the form of a person or organization. They can be national or political actors (e.g. administrators), international actors (e.g. donors), public sector agencies (e.g. ministries, forest managers), or interest groups such as conservation NGOs, civil society members, or ordinary users of natural resources. Stakeholders could be grouped into three different categories, namely primary, secondary and tertiary stakeholders (United Republic of Tanzania 2010). Primary stakeholders are those who will affect or be affected by the REDD policies and as they have inputs in these, they become either winners or losers. Secondary stakeholders are those who are caught in between in the implementation process, and the tertiary stakeholders are those that have conferred their interests in the policy, but were located far away and having either or no direct impact upon the REDD implementation or the operationalization of the policy (Ibid.). In Table 8 we present the relevant actors in the form of primary and secondary stakeholders.



**Table 8: Stakeholders involved in the process of establishing REDD+ in Tanzania**

<b>Primary Stakeholders</b>	<b>Secondary Stakeholders</b>
<b>Forest dependent communities</b>	RNE
<b>Communities with forest resources</b>	UNFCCC
<b>District Councils</b>	Ngezi-Vumawimbi Natural resources Conservation Organization, Pemba
<b>MJUMITA</b>	World Bank
<b>Forestry and Beekeeping</b>	Ardhi University
<b>Division</b>	Royal Norwegian Embassy
<b>Wildlife Division</b>	Forest Carbon Partnership Facility
<b>Tourism Division</b>	Clinton Foundation Climate Change Initiative
<b>Division of Environment</b>	Ministry of Land and Human Settlements
<b>National Environmental Management Council</b>	Valuing the Arc Programme
<b>Finance and Planning</b>	UN-REDD
<b>Ministry of Agriculture and Food Security</b>	Sokoine University of Agriculture (SUA)
<b>Ministry of Agriculture and Natural Resources, Zanzibar</b>	Institute of Resource Assessment (IRA)
<b>Department of Environment, Zanzibar</b>	University of Dar es Salaam
<b>Carbon Trading Companies</b>	Tanzania Forestry Research Institute
<b>CARE International</b>	Tanzania Natural Resource Forum
<b>Jane Goodall Institute Tanzania</b>	Tanzania Investment Centre
<b>Tanzania Traditional Energy and Environment Organisation</b>	Food and Agricultural Organization
<b>Tanzania Forest Conservation Group</b>	Jozani Environmental Conservation Association
<b>WWF</b>	South Environment and Development Conservation Association, Pemba
<b>Wildlife Conservation Society of Tanzania (WCST)</b>	Africare
<b>Mpingo Conservation project</b>	
<b>CARE</b>	
<b>African Wildlife Foundation</b>	

Source: Adapted and expanded (United Republic of Tanzania 2010).

As the strategy clearly states implementing REDD+ will involve a large number of stakeholders with different roles and responsibilities at different levels. As for the NGO's concerned with conservation for example, money from REDD will also support their aims and goals. We therefore put these as primary stakeholder since they are considered to benefit from the process.

### ***6.1.1.3 Stakeholder analysis***

The different stakeholders have been identified and a stakeholder analysis conducted. This are again expected to be used by policy makers and managers to identify the key actors in the time to come. Here we present a stakeholder analysis based on three stakeholder characteristics, namely the knowledge of the REDD policy, stakeholders interests related to it and the ability to affect the policy process. By this we will be able to identify key characteristics but also get an idea about the interaction between the stakeholders, where both are of importance in the establishment of a new REDD regime.

#### **6.1.1.3.1 Communication and information**

Being one out of five in-depth study reports that were conducted, the report on ‘REDD information needs, communication and REDD knowledge management provides important information on stakeholders knowledge of REDD and its policies. We divide the stakeholders into three distinctive categories; the government officials, research and training institutions, and civil society organizations (Regalia Media 2010).

##### ***6.1.1.3.1.1 Government officials***

According to LEAT (2010, p. 28) there is “an apparent lack of effective communication coordination system amongst key stakeholders in both the central and the local government sectors”. The involved officials can be found in the Vice President’s Office and its associated organizations under the Division of Environment. While the division of environment is responsible for coordination, it is however the National Environmental Management Council (NEMC), Sector Ministries and Local Governmental Officials that has the enforcement role. However, the way Tanzania’s environmental institutions are organized makes it difficult for citizens to gain access to information, and it is for example, not clear which part of the government or agencies that are responsible for environmental monitoring and compliance. In Tanzanian, all departments or ministries handles its own projects, including all environmental matters. These activities are not well coordinated with either the NEMC or the Division of Environment. According to Ringia and Porter (1999) the Division’s lack of clear guidelines has resulted in overlapping

responsibilities with NEMC, which also have set off an intense institutional struggle between these two agencies - both overseeing environmental issues in Tanzania. To complicate matters even more the Ministry of Natural Resources and Tourism has a mandate that partly overlaps those of NEMC and Division of Environment. Despite their coordinating responsibilities, even the NEMC and the Division of Environment have had difficulties gaining access to environmental information from other parts of the government, which can be interpreted as struggle over power. This clearly illustrates the reciprocal relationships between information and power.

Implementing REDD means that there is a need to develop an effective information and knowledge communication system (Regalia Media 2010). The District Officers who manage the forest resources plays an important role in policy formulation and implementation at both central and district levels.

They are therefore a core stakeholder when creating a REDD education and information communication strategy (RICS) and to review the already existing National Environmental Education and Communication Strategy (NEECS) to include REDD related issues. RICS and NEECS are planned to be supported and operational by 2013 (United Republic of Tanzania 2010). Training officials from the Ministry of Education and Vocational Training (MoEVT), together with its core organisations such as Tanzania Institute of Education (TIE) and The National Examination Council of Tanzania (NECTA) are responsible for forming the policies regarding the educational design. They are thus responsible to develop and approve textbooks as well as evaluate the learning process. In doing so, they need to have a complete understanding on all the policies as well as having extensive knowledge on the environmental and ecological foundation that forms the basis of REDD and RICS (Regalia Media 2010).

Where MoEVT is responsible for the curriculum design, NEMC is responsible for sharing information on RICS and collaborating with TIE in the monitoring of the REDD education implementation. However, to some extent, they also undertake research and develop training materials independently (Ibid).

Today, most District Forest Officers in Tanzania undertake environmental education activities and awareness rising as part of their tasks at hand (Ibid). The type of people

these officers work with are primarily environmental groups, primary schools, teachers, communities adjacent to the forest, individuals, NGO's, religious institutions, village natural resource committees, farmers, pastoralists, timber dealers, fishers, charcoal makers, village government, district authorities, central government, forest and beekeeping division and education institutes. To be able to distribute information to all these different groups, several communication strategies are used. Such means are meetings, seminars, leaflets, visiting people, letters and telephone. Others can be public gatherings, workshops, radio, festivals, practical training, songs, magazines, arts, hand-outs and messages on t-shirts. However, some means of communication, such as meetings, workshops and film screening are often acknowledged by forest officers to have a greater effect and are used more frequently (Ibid).

It is quite common to see district councils and forest officers collaborate with different institutions and NGO's. Few district councils produce their own environmental information and education and they are therefore dependent on receiving materials from external organizations or the central government. In addition, the forest officers often lack capacity to cover the wider population of a district, where also very few officers have received training on REDD. According to Regalia Media's (2010) in-depth study report, only 7 out of 51 government forest district officers had been trained on REDD. The needs of training are therefore pressing, where also communities, extension officers, village leaders and village natural resource committee's not should be forgotten.

#### *6.1.1.3.1.2 Research and training institutions*

The REDD implementation, education and training processes require support from research findings. This support at present is provided to the Tanzanian government by research and training institution that undertake research in all environmental management sectors (Ibid). The Climate Change Adaptation Mitigation (CCIAM) programme is one of the national efforts and was launched in November 2009 (CCIAM 2009). The programme is a collaboration between several academic institutions; Sokoine University of Agriculture (SUA), University of Dar es Salaam (UDMS), Ardhi University (ARU) and Tanzania Meteorological Agency (TMA), in

cooperation with various academic institutions in Norway under the coordination of the Norwegian University of Life Sciences (UMB) (CCIAM 2009). The main focus of the programme is to promote better management of natural resources and the environment through appropriate adaptation and mitigation strategies including REDD+ mechanisms. Through this initiative, it will produce a substantial amount of data on climate change as a whole and on REDD+ as well as improving REDD+ skills through training of Tanzanians (16 PHD and 50 MSC) (FCPF 2011). There is however a pressing need of information sharing between research institutions in order to make REDD succeed. To handle all the information that has and will be produced on issues related to REDD, not only by research and training institutions, but also by the civil society organisations, a core institution have to be put in place, responsible for gathering and sharing this information. The planning of a carbon monitoring centre with such functions are therefore currently under development in Tanzania.

#### *6.1.1.3.1.3 Civil society organisations*

At most times, civil society organisations are involved in information sharing with local communities at the grassroots level, but they are also involved in small-scale research. The research is practical, and applied where there is a need of knowledge on sociological issues related to forest management as well as knowledge on what motivates communities to carry out lobbying and advocacy for their interests (Regalia Media 2010). One important organisation being involved in the REDD process from the beginning is the community forest conservation network, MJUMITA. It consists of 72 affiliated community networks all across Tanzania and acts as a forum for capacity building, advocacy and communication to people living adjacent to forest resources. This is done through the sharing of knowledge, experiences and exchange of ideas on forest management issues among its member while uniting the forest communities giving them one voice (MJUMITA 2011). However, in some cases the relevant stakeholders are not organized, representing substantial problems for a full implementation of a REDD scheme. In addition, defining stakeholders can be difficult in itself since it often relates to the legality of different stakeholders use of the forest. What is legal is often unclear.

Global networks are not necessarily linked to local contexts and development partners are often in need of information from local sources such as local researchers, NGO's and civil society organisations such as MJUMITA. NGO's which are in the process of implementing the REDD pilot projects are also requested to have a component of communication and to develop a communication strategy. As a partner in one of Tanzania's nine REDD pilot projects, MJUMITA will thus work on awareness raising through media, drama groups, posters, training, newsletters and workshops as well as study visits at local, regional and international levels (Regalia Media 2010). Nevertheless, poor infrastructure poses huge challenges in getting information about REDD out to the communities. The roads often are in bad shape, radio is not well received and phones are outside of network coverage.

By looking into the knowledge of the REDD policy, we can see that there are apparent need of coordination of information within and between governmental officials, research and training institutions as well as civil society organisations. They all work at different levels handling different types of issues, but common for them all is that they are engaged in REDD related activities. Since knowledge and distribution of information are of crucial concerns for a REDD regime, efforts have to be made to address such issues. We have also seen that information regarding the REDD policy is controlled by key government institutions. We therefore have to stress the power dimensions which knowledge presents. For REDD to have an impact on rural livelihoods, people have to be synthesised on future resource regimes and its implications for their lives. In the next section we look at how different stakeholders' agendas and interests can be looked at.

#### ***6.1.1.4 Stakeholders interests***

The implementation of REDD will involve a large number of stakeholder groups with different responsibilities and roles at different levels. It is therefore important to clarify who is doing what and where, by analysing their interests and commitment to participate in REDD (United Republic of Tanzania 2009).

FORCONSULT's (2010) in-depth study on a national REDD trust fund attempts to present the involved stakeholders interests by grouping them into three categories; government, private sector and NGOs. They conclude that:

50% of the stakeholders that are involved are primarily interested in the funding mechanisms of REDD. Of these, almost 60% of the respondents were governmental while the rest came from NGO's and private sector.

23% of the stakeholders, declared that their interests were primarily on service provisions, focusing on assisting vulnerable communities in implementing REDD activities. NGO stakeholders dominated this group of respondents with a 75% representation. The remaining 15% came from governmental agencies.

12% of the stakeholders stated that their interests were in the potential governmental revenues from REDD, all of which were from governmental institutions.

The remaining 15% of the stakeholders involved in the REDD process were interested and motivated by more than one of the above (FORCONSULT 2010).

As we can see, most of the stakeholders are primarily interested in the funding mechanisms of REDD as well as the potential revenues gained from it. This indicates that it is mostly the funding mechanisms as well as the funds itself that intrigues people. The funding mechanism surely is important to REDD, but this also shows that there are mostly NGO's that are concerned with service provisions. Such provisions are today mainly provided through governmental institutions. It is therefore fascinating to see how this is can be outside of governmental concerns, and illustrate that the government are currently focusing on REDD as an income opportunity.

**Table 9: Various stakeholders' interests in REDD+**

<u>Eastern Arc Mountains Conservation Endowment Fund (EAMCEF)</u> is interested in a national REDD trust fund as a potential source of funding. They maintain the position that there is no need of a new institution for channelling REDD funds since they themselves are already working on similar activities.
<u>World Wide Fund for Nature (WWF)</u> is interested in evaluating ecosystem services in Tanzania's forests and support village land use planning, channelling funds to fight deforestation and degradation, carbon trading and tree planting.
<u>CARE</u> is interested in vulnerable people in the context of sustainable environmental conservation.
<u>South Environmental and Development Conservation Association (SEDCA)</u> , <u>Jozani Environmental Conservation Association (JECA)</u> and <u>Tanzania Forest Conservation Group (TFCG)</u> are interested in receiving funds and use it to assist communities in a conservation aspect.
<u>The Law reform commission</u> is interested in aligning a REDD fund into existing relevant policies.
<u>Forestry and Bee-keeping Division (FBD)</u> is interested in the funds as a source to build Tanzania's Forest Fund (TFF) and Tanzania's Forest Services (TFS) as well as for carbon trading.
<u>Tanzania Revenue Authority (TRA)</u> is interested in taxation issues accumulated from carbon trade.

Source: FORCONSULT (2010)

Even though governmental actors have different interests, sectoral policy overlaps and conflicts between and within sectors and/or sectoral ministries exist, and by poor law-enforcement, poor allocation of resources and manpower the situation is made even more serious (Mwakaje, Kahyarara et al. 2010). The overlapping responsibilities of the NEMC and the Division of Environment are here a good example. Another case of sectoral overlaps and "conflicts" within MNRT have been highlighted by Blomley and Iddi (2009) where both the Wildlife Policy and the National Forest Policy of Tanzania have developed different ideas about how to devolve management to the village level, although both were approved at the same time.

The forestry sector provisions for PFM builds on Tanzania's village-based land tenure system and local government structures (with key institutions being the Village Council, Village Assembly and the Village Natural Resource Committee) with the basic management tools being village by-laws and land use plans legally grounded in the Local Government Act and Village Land Act. The wildlife sector on the other hand contributes to local management through the establishment of Wildlife Management Areas. This policy actually requires a whole new set of community level



institutions (with the election of a Community – Based Organisation that gives the community user rights to the wildlife in the WMA) (Blomley and Iddi 2009).

In terms of decision-making power and also the different needs when developing and implementing REDD activities, conflicting interests are likely to emerge within and among governmental bodies e.g. ministries and between administrative units such as Village Councils and District Councils, District Councils and Central Government (Mwakaje, Kahyarara et al. 2010). Vedeld (2002) explains how individuals from for example different government agencies (e.g. forestry versus wildlife sector) will behave and act according to their own life modes<sup>33</sup>. Through a REDD policy formation process this can then help to determine and explain the different stakeholders areas of interests, and the underlying causes behind them.

Also individual factors such as the ability to secure and maximize own utility can play a crucial role in the REDD process. Conflicting interests may for example occur between politicians who seeks votes and environmental conservationist who seeks environmental protection. In fact, during our field trip to the PFM village – Lumango, the former chairman recently had been sacked due to (unpopular) strict environmental management of their forests.

As seen, different stakeholders have different interests. At the moment most of the focus concerns the funding mechanisms and the funds themselves derived from REDD. It does however help us to establish a picture about who the stakeholders really are. It will therefore be interesting to see if people will be concerned with the same things in the next few years. Overlapping and conflicting interests are exemplified with WMA's versus PFM, where it becomes apparent that coordinating of policies are crucial in the REDD process. It is therefore important that conflicting interests are dealt with early on in the process by functional compromising solutions for all actors. This is however easier said than done, and by looking at the power dimensions decision-making processes in Tanzania, there is no such thing as an easy

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<sup>33</sup> In most cultures, one can identify common sets of values and norms that constitute social institutions (structural relationships between individuals and society). People over time grow into society and its many institutions, which enable them to act in certain ways. There is reciprocity between individuals and society; institutions influence people, but people also influence them.

solution. In the last section of a stakeholder analysis, we thus address actors' abilities to affect the policy process.

#### ***6.1.1.5 Ability to affect the policy process – power aspects***

The process of policy making leads us in the direction of power, where “*Policy making is inherently conflictual, involving an uneven distribution of power and influence between different institutions and societal actors*” (Berger 2003, p.222).

After twelve years of support to the Tanzanian Management of Natural Resources Programme (MNRP) by the Norwegian government, totalling about \$60 million, independent consultants revealed in 2006 that up to half of these funds might have been lost through corruption and mismanagement (Jansen 2009). One of the main explanations why this could happen has been the lack of knowledge of the power structures at various levels of the state administration and in the villages (Ibid). Clearly there is too little knowledge about stakeholder abilities to affect a policy process in what Hydén (2006) calls the “power aspect of politics” in Tanzania.

A central issue in REDD is the question about how the financial flows will be managed and shared. The not yet established National REDD Trust Fund will here serve as a key mechanism to ensure oversight over this flow, in a way that contributes to the common good. In general however, collusion between private sector business interests, public institutions and political interests seem to be an on-going issue in Tanzania's forestry sector. Political accountability at both national and local levels is therefore essential (Bofin, du Preez et al. 2011). The most comprehensive study of the patterns of accountability, governance and corruption in the forestry sector in Tanzania was done by Traffic in 2007. It focused on illegal logging in Southern Tanzania and recognises the broad institutional and legislative framework for forests while revealing how this was undermined by corruption and supporting networks straddling the private sector and relevant ministries (Milledge, Gelvas et al. 2007). Similar involvements between political elites and business interests in the charcoal trade is described by The World Bank (2009) which allowed unregulated trade to take place. It is estimated that this account for 80% of the charcoal business with a value of

\$500 million and lost governmental revenue of \$100 million annually (World Bank 2009).

Since REDD will be partly based upon existing PFM schemes, how PFM has been managed is thus of huge importance. Cost and benefit sharing under PFM for example, differ significantly between its two tenure-based alternatives, CBFM and JFM. Under CBFM regimes communities are given the power to charge fines and confiscate illegal harvest, and the choice of retaining 100% of the revenue from the sale of forest products. Cost and benefit sharing under the JFM land tenure regime is however not clearly laid out in legislation, but MNRT has proposed<sup>34</sup> to the treasury that 60% of the harvest should be retained by FBD, and the remaining 40% will remain with participating communities (Bofin, du Preez et al. 2011). Given that JFM has been promoted for Tanzania's catchment forests in particular, this is of special relevance to REDD. Its value for the country as a whole is quite clear, as a water source, carbon sinks and the biodiversity it contains, but since most of Tanzania's forestland comes under District level jurisdiction, this is where an initial oversight will come. This may be technical from the Ministry, administrative from the District Executive Director, or political from the Village and District Council and Parliament. The power of the Village and District councils are, however, limited in reality since most villages will not be able to take PFM initiatives due to the cost and bureaucratic involved. In addition the District Administration may be unwilling to give away control of forests to villages due to the disputed definitions of what is Village Land and what is General land (Ibid).

At a national level the Parliament serves a limited role, but members of the parliament may be able to raise issues in a specific area of supportive voters. Issues of policy formulation and implementation are however hindered in two ways; firstly, by a split between the District Natural Resource Office and the Local Authorities Account Committee where forest issues are not high on the agenda, and secondly, the dominance of the FBD and development partners have led to that PFM is seen as a technical issue rather than of public interests (Local resource person 2010; Bofin, du Preez et al. 2011).

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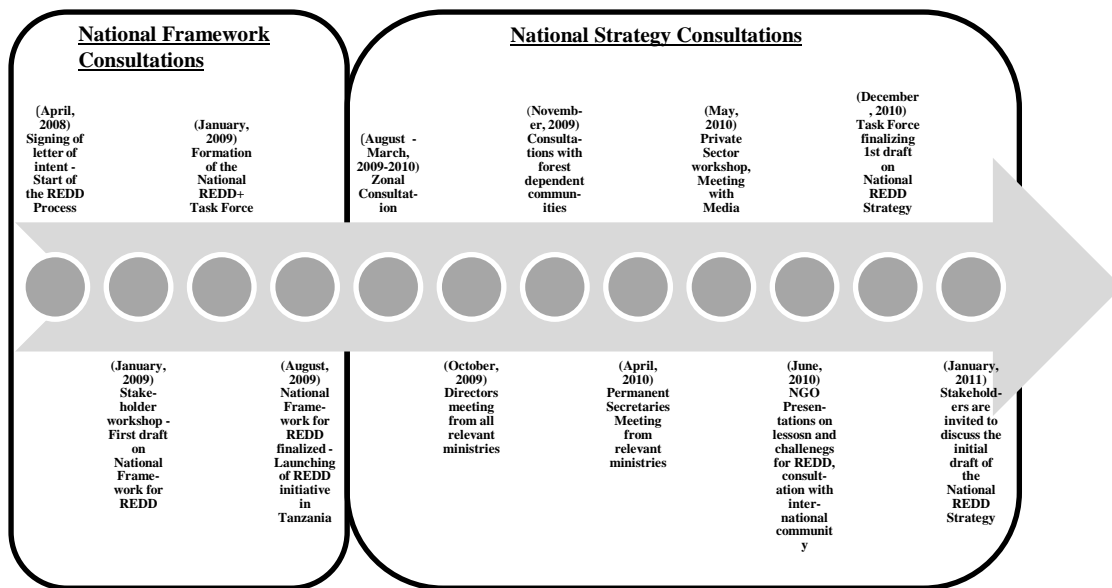
<sup>34</sup> This proposal has been with the Treasury since 2009 and has not yet been officially responded to.

In the analytical phase, we then have core institutions in the form of the National REDD Task Force together with its secretariat, which will serve as coordinating bodies until a strategy is completed at the end of 2012. The building of knowledge started through the initialisation scoping and in-depth studies as well as through study tours. However, it was the development of a national framework for REDD, that marked the starting point for the Task Force.

By the identification of stakeholders on various levels agents involvement in REDD were mapped out. Three stakeholder characteristics were used to see how these interact; knowledge of the policy, interests related to it, and the ability to affect the policy process. First, we saw how information about REDD is being spread, top-down, and at the same time identifying major challenges. Then, looking at stakeholder's interests, it became clear that most attention is directed on the funding mechanisms and the funds itself. However, conflicting interests could potentially be of major concerns when several agencies and ministries are included and addressed under the same REDD umbrella. Lastly, we looked at the power aspect and stakeholders ability to affect the policy process, and concluded that with unclear rules and the lack of knowledge of the power aspects of politics, a resource regime such as REDD could face serious issues with elite capture and corruption. In the next section we define yet another phase to consider in the governance process of developing a REDD strategy, namely the consultative phase.

### **6.1.2 The consultative phase**

REDD policies in itself does not guarantee a functional REDD regime. To include and create a feeling of ownership, political and economic actors on different levels have been consulted. As a core component in the process of developing a National REDD Strategy, there has been two major consultations: the first in the process of developing a National Framework, and the second in the process of developing the strategy (United Republic of Tanzania 2010).



**Figure 12: Consultation phases and activities, REDD+, Tanzania**

Adapted on the basis of the consultation and outreach plan (United Republic of Tanzania 2010).

### 6.1.2.1 National REDD Framework consultations

The first important step after Tanzania began its REDD readiness initiative was to develop a National Framework for REDD which would later provide inputs and guidance in the development of the National Strategy. It all started in January, 2009, when the Government of Tanzania, through the Ministry of Natural Resources and Tourism (specifically the Forestry and Beekeeping Division) arranged a four-day National Workshop at Kibaha Conference Centre. The objective was to develop a National Framework for REDD, enabling rational, functional and equitable structures and coordination efforts on forest management. Groups of key stakeholders and experts were invited and brought together including government departments, NGOs, the private sector, academic and research institutions (Ibid). Initially the workshop agreed on four key issues that seemed to require immediate attention in enabling Tanzania to prepare its Strategy:

1. REDD institutional arrangements and coordination mechanisms were proposed including the creation of a National REDD Technical Committee, a National REDD Coordination Office, National Carbon Monitoring Centre and a REDD trust Fund.
2. Establish carbon projects at local and national levels.
3. The criteria's for selecting sites for REDD pilots and implementing institutions in Tanzania.
4. Assign an in-depth study on fair and equitable mechanisms for sharing REDD related benefits and to engage a broad range of stakeholders.

This all culminated in a first draft on a National REDD Framework, which was handed over to the Task Force for further considerations. In August 2009, The National Framework for REDD was finalized, hence marking the launch of the REDD initiative in Tanzania. From here on, the work was started on a National REDD Strategy.

#### ***6.1.2.2 National REDD Strategy Consultations***

A number of awareness raising and consultative meetings have been held nationwide involving national, regional, district and local level representatives, the most important one shown in Table 6.3 below. To be able to involve regional, district and local level stakeholders a consultative plan was developed and carried out from August 2009 to March 2010. It divided the country into eight zones; Eastern zone, Western zone, Northern zone, Southern zone, Southern highlands zone, Central zone, Lake zone and Zanzibar.

**Table 10: Zonal consultation process, REDD+, Tanzania**

<b>Zone</b>	<b>Regions</b>	<b>Dates</b>
<b>Nothern Zone</b>	Manyara, Kilimanjaro and Arusha	1 – 7 August 2009
<b>Eastern Zone</b>	Tanga, Morogoro, DSM and Coast	8 – 9 September 2009
<b>Southern Zone</b>	Lindi and Mtwara	16 – 17 September 2009
<b>Southern Highlands Zone</b>	Iringa, Mbeya, Rukwa and Ruvuma	24 – 29 October 2009
<b>Lake Zone</b>	Mwanza, Kagera, Mara and Shinyanga	30 September 2009
<b>Central Zone</b>	Dodoma and Singida	15 – 21 August 2009
<b>Western Zone</b>	Tabora, Kigoma	6 – 7 October 2009
<b>Zanzibar</b>	Unguja and Pemba	19 – 20 October 2009
<b>Consultation with forest dependent communities and community based organisations</b>	Tanga	23 – 24 November 2009
<b>Consultations with Regional stakeholders</b>	Southern Africa Development Community (SADC)	23 – 25 March 2010

Source: (Norad 2011)

From here, consultations were conducted by a team comprising of two National REDD Taskforce members, alternating members from the REDD secretariat and two facilitators (in some zones a representative from the Royal Norwegian Embassy also attended). The participants were selected from a pool of regional and district level stakeholders associated with natural resource management. It included Regional Natural Resource Advisors, District Natural Resource Officers and District Forest Officers. Other participants came from relevant government institutions and NGOs, such as representatives from Jane Goodall Institute, TANAPA, CARE etc. as well as other natural resource conservation programmes in the relevant regions (United Republic of Tanzania 2009).

While the stakeholder meetings aimed at raising awareness about REDD and to develop a consultation and outreach plan, the workshops also aimed at identifying issues to be addressed in the process of developing and implementing a REDD strategy (United Republic of Tanzania 2010). Major issues raised during the consultative meetings were:

- Heavy community dependence on natural forest resources.

- To ensure a secure land tenure system, encouraging optimal use of resources.
- A need for harmonization or reforms of policies in order to accommodate the changes in natural forest resource use.
- Need for up-to-date, accurate and reliable data on forests.
- A clear and coordinated institutional framework at all levels to ensure equal cost/benefit sharing e.g. PFM vs. WMAs.
- Increased risk of land grabbing due to increase in the value of land.
- Disruption of existing gender relations with the introduction of a new “cash crop”.
- The need of addressing drivers of deforestation and forest degradation.

These challenges have since been a matter of attention by the pilot projects, a UN-REDD project, in-depth studies, NGOs and private sector projects, and have formed the basis of the REDD strategic options (Ibid).

As seen in Table 6.3 several other consultations have been done in addition to the zonal consultations. However, in December 2010, the first draft of the National REDD Strategy was released, and by the start of 2011, the secretariat to the National REDD Task Force invited public comments and feedbacks on the National REDD strategy. In fact, the strategy document states that “this draft Strategy has been produced for stakeholders Consultation and engagement for its consolidation” (United Republic of Tanzania 2010, p.6). In this sense, the first draft is just the start of a new round of consultations until its completion at the end of 2012.

By this, Tanzania has undergone an extensive consultation process up until now, a process that is quite unique seen in the context of environmental policy formation. It has involved national, regional, district and local level stakeholder groups throughout the process, and can thus be understood as a comprehensive way forward for Tanzania’s REDD strategy.

In the consultation phase, we have seen that there have been two major consultations during the strategy formation process. The first was the process of developing a National Framework, which started in January 2009 during a four-day National Workshop at Kibaha Conference Centre. Stakeholders were invited and brought



together including government departments, NGOs, the private sector, academic and research institutions. Here they agreed on four key issues: (1) Creation of key institutions (2) establish carbon projects, (3) criteria's for selecting sites for REDD pilots, and (4) an in-depth study on equitable mechanisms for sharing REDD benefits. Through the second phase, the process of developing the strategy, a number of awareness raising and consultative meetings was held nationwide involving national, regional, district and local level representatives. However the main consultative plan was developed in 2009 and divided the country into eight zones. During the same time, planning for in-depth studies and piloting were initiated. In the next section, which is the last of our three phases, we will thus present the strategic analysis and piloting phase.

### **6.1.3 Strategic analysis and piloting**

After the initialisation of the REDD process in 2008, the lack of capacity and information became apparent and thus needed to improve. A number of in-depth studies have therefore been undertaken in order to generate knowledge on some crucial areas for REDD where only limited information was available. Centrally in this, is five in-depth studies which have provided useful inputs to a National REDD Strategy (United Republic of Tanzania 2011). By following the Bali Road map, which requested parties to explore a range of actions to address the drivers of deforestation relevant to national circumstances, Tanzania decided to participate in implementing pilot activities (United Republic of Tanzania 2009). Tanzania therefore included pilots activities into the REDD strategy preparations. In addition, there are a number of on-going REDD programmes and projects that has been supportive of a REDD strategy from the start.

#### ***6.1.3.1 In-depth studies***

To review several areas that needed more research and help the development process of a National REDD Strategy, the National Task Force developed five thematic research areas that were to be advertised accordingly for public and private institutions to take part in. Out of 35 concept notes received, five institutions were shortlisted to develop full proposals, each in their different thematic areas (United

Republic of Tanzania 2010). In 2009, IRA contracted five in-depth studies where their findings were presented a year after, in August.

**Table 11: Studies commissioned under the REDD Framework, Tanzania 2010**

Study title and the institution in charge	Characteristics	Main findings
<p><b>Existing REDD Related Carbon Trade and Marketing opportunities in Tanzania,</b></p> <p><b>FORCONSULT and Sokoine University of Agriculture</b></p>	<p>Development of business case for carbon trade through REDD initiative: Documenting existing carbon trading in Tanzania Documenting opportunities for carbon marketing including negotiations, liability and contractual</p>	<ul style="list-style-type: none"> <li>• The carbon market in Tanzania is still in its infancy</li> <li>• PFM and WMAs contribute positively to REDD</li> <li>• REDD related project among private and public organizations have remained in the realm of ideas due to lack of technical and marketing support combined with lack of regulatory frameworks to support such activities.</li> <li>• Awareness of carbon trading and their development potential was lacking among individuals, and public and private organizations.</li> <li>• A reviewing the REDD models for Brazil, Indonesia and Madagascar shows that Tanzania has a comparatively high potential for carbon trade</li> </ul>
<p><b>Legal and Institutional Framework Review in the Context of REDD Interventions,</b></p> <p><b>Lawyers Environmental Action Team (LEAT)</b></p>	<p>Reviews Tanzania’s laws and institutional set-up pertaining to environmental management, land tenure, forestry conservation and related contractual arrangements</p>	<ul style="list-style-type: none"> <li>• The legal and institutional framework for REDD has not been adequately addressed by existing literature</li> <li>• Policies and laws are not explicitly clear on institutional and stakeholder mandates, procedures and benefit sharing mechanisms in relation to REDD</li> <li>• The existing framework lacks detailed implementation procedures, guidelines and regulations</li> <li>• There is no adequate coverage of REDD related issues in the provisions of the law</li> <li>• There are potential areas of conflict in the legislation governing natural resources and environment including the Forest Act, Village Land Act and the Local Government Act</li> <li>• Substantial amendments of the laws need to be undertaken to provide a robust foundation for REDD activities</li> </ul>

<p><b>Modalities of Establishing and Operationalising National REDD Trust Fund, and Associated Financial Flow Management,</b></p> <p><b>FORCONSULT and Sokoine University of Agriculture</b></p>	<p>An in depth review focusing on modalities for the establishment of a Trust Fund, its objectives, legal requirements, institutional arrangements, oversight/supervision, source of funds and use</p>	<ul style="list-style-type: none"> <li>• Many countries have national forest funds/conservation trust funds designed to provide a secure of finance for forest conservation</li> <li>• No country have so far established a National REDD Trust Fund (NRTF)</li> <li>• Organisation structure: There is a need of having a board of trustees</li> <li>• NRTF should be established as a semi-autonomous institutions answerable to the Vice Presidents Office</li> <li>• Funds should be received as grants and deposited directly to the NRTF</li> <li>• Payments should be based on cheque deposits of funds to beneficiary’s accounts</li> </ul>
<p><b>REDD Information Needs, Communication and REDD Knowledge Management in Tanzania,</b></p> <p><b>REGALIA Media Ltd</b></p>	<p>Serves inputs to a communication strategy by looking at the extent of knowledge which targeted stakeholders have on REDD, identifying existing information gaps</p>	<ul style="list-style-type: none"> <li>• The forest resource managing agencies have made attempts to address the conflict</li> <li>• Present policy and institutional environment on forests has had a large impact on the success of various participatory interventions</li> <li>• Poor inter-agency collaboration is an obstacle and that further places the entire forest resource under jeopardy</li> <li>• The present mechanisms are not equipped in dealing with the conflicting information on REDD/Forests, REDD knowledge management and need for Communication on REDD</li> </ul>
<p><b>The Potential of Reducing Emissions from Deforestation and Degradation (REDD) for Rural Development in Tanzania: Cases from Babati, Hai and Kilosa Districts</b></p> <p><b>Institute of Resource Assessment – University of Dar es Salaam</b></p>	<p>Role of REDD for rural development: Cost benefit analysis of different land uses in context of REDD Governance issues Role of REDD in reducing poverty Incentives and co-benefit sharing</p>	<ul style="list-style-type: none"> <li>• Cash income from forest resources ranged from Tshs 100,000 to 600,000</li> <li>• Respondents with relatively high level of education were reluctant to give up land for forest management</li> <li>• Those who acquired land by inheriting and by clearing the forest have more than one fold likelihood of giving up some of the land for the REDD related activities</li> <li>• Common tendency towards “elite capture”</li> <li>• Despite knowledge of by-laws people continued encroaching and degrading the forests. A reasons was the ineffective and corruptive legal system</li> <li>• Institutions responsible for management of forests and other natural resources have had a tendency to become lax due to interpersonal relationships, nepotism and corruption</li> </ul>

Source: (FORCONSULT 2010; FORCONSULT 2010; LEAT 2010; Mwakaje, Kahyarara et al. 2010; Regalia Media 2010; United Republic of Tanzania 2011)

### ***6.1.3.2 Pilot projects***

From the start, the Tanzanian government and the Royal Norwegian Embassy identified the need to develop demonstration to projects to gain hands-on experience with REDD (United Republic of Tanzania 2011), testing the following key aspects:

- Approaches to organizing REDD work at the local level with focus on governance and tenure Incentive schemes that provides equitable benefit sharing mechanisms
- Baselines and methods estimating deforestation, carbon sequestration and emission
- Participatory methods for monitoring, assessing, reporting and verification
- Approaches that address drivers of deforestation and forest degradation

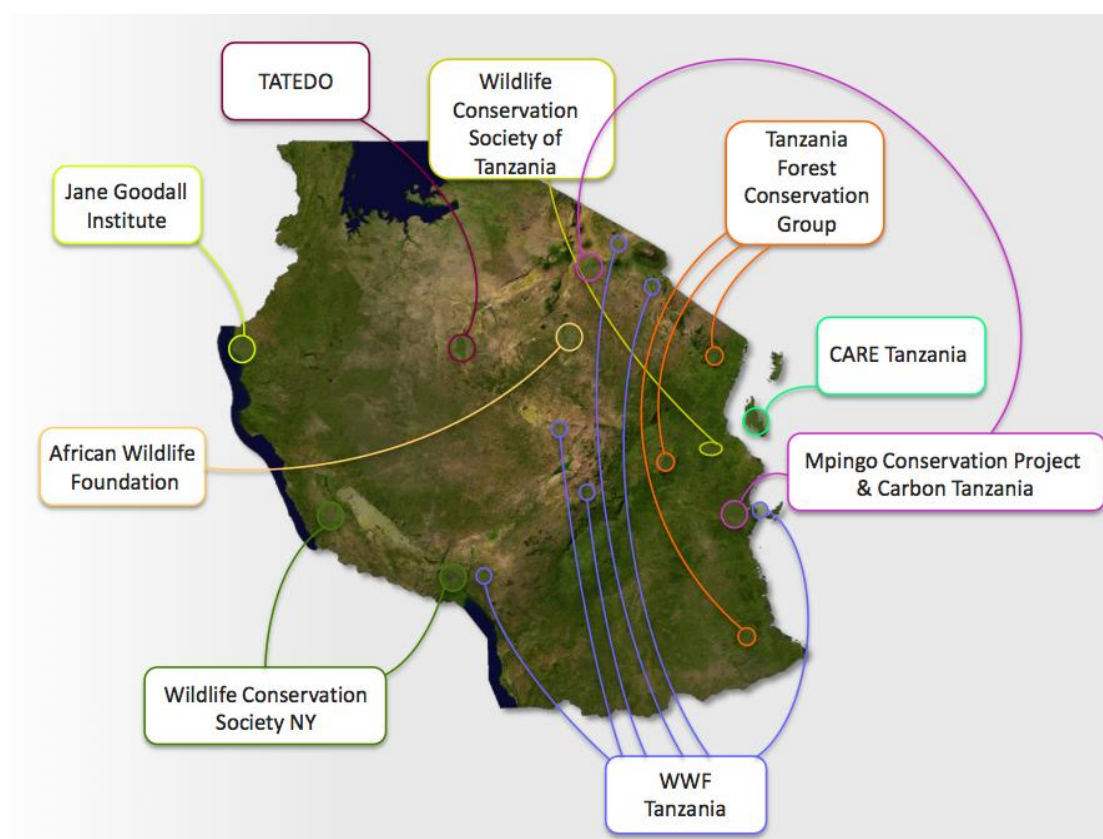
A portion of the funds from Norway's international climate and forest initiative were allocated for its purpose, and concepts note from Tanzania based NGO's were welcomed. Out of 46 concept notes from different NGO's, 10 were shortlisted by the embassy and the National REDD Task Force and requested to develop full proposals where only successful once would be funded. As of May, 2011, there are nine pilot REDD projects commissioned, but only eight of them are operational.

**Table 12: NGO REDD pilot projects**

<b>NGO's</b>	<b>Location, time and amount</b>	<b>Characteristics</b>
<b>TFCG/MJUMITA</b>	Kilosa District, Lindi Region Five years USD 5,914,353	Supporting the development of a Community Carbon Enterprise hosted within the existing Network of Tanzanian communities engaged in PFM.
<b>African Wildlife Foundation (AWF)</b>	Kondoa District Three years USD 2,061,794	Integrate REDD with Joint Forest Management in forest reserves
<b>CARE/HIMA</b>	Zanzibar Four years USD 2,012,752	Expansion on Community Forest Management Areas and strengthening relevant governmental institutions and CSO's/local NGO's and climate change capacities.
<b>The Jane Goodall Institute</b>	Kigoma/Rukwa Three years USD 2,759,641	The formation of inter-village forest conservation CBOs to manage forest on general lands in support of National REDD accounting program and sub-national forest carbon projects.
<b>Mpingo Conservation Project</b>	Kilwa District, Lindi Region Four Years USD 1,948,123	Implementing REDD through PFM approaches and incorporating standards for timber harvesting.
<b>TaTEDO</b>	Shinyanga Region Four years USD 2,012,752	Integrating REDD with private owned forest resources and the indigenous agro-pastoralist system called "ngitili"
<b>Wildlife Conservation Society (WCS)</b>	Mbeya and Rukwa Region Four years USD 1,192,000	Applying a PFM approach, together with both JFM and CBFM mechanisms, where they intend to address elements of ownership and sustainability through the creation of a fund to finance the activities.
<b>WWF</b>	Eastern Arc Mountains Three years USD 2,502,000	To establish baseline carbon plots with additional habitat types and vegetation/cover to enable more accurate estimates of carbon stocks in different forest types.
<b>Wildlife Conservation Society Tanzania (WCST)</b>	Mbeya and Sumbawanga	Not yet started

Adopted from: (Bofin, du Preez et al. 2011; The Government of Norway 2011; TZ - REDD 2011)

**Figure 13: Map over REDD+ Pilot Projects, Tanzania**



Source: <http://www.reddtz.org>

Among those who produced successful proposals and were selected in the process there were a high representation of conservation NGO's. This can be explained by the limiting factors Tanzania based NGO's are representing. When it comes to competence among NGO's in Tanzania, conservation is hugely represented. When then the 46 concept notes were received, many organisations were competing with similar proposals. Even though the embassy was asking for a larger diversion, what were received became natural limitations in itself. Nevertheless, it is questionable why the pilot projects only were intended for NGO's. Even though the pilot projects is seen as gathering information and expertise, it will most likely in the end be governmental institutions that will implement REDD. That no governmental agencies are conducting any of these pilots are therefore far from how the future might look like. It is simply not possible to have NGO's to implement REDD in all of Tanzania's 10.000 villages. How the NGO's are benefiting from REDD also needs to be addressed. It is intriguing to note that at once REDD becomes on the agenda, and where donors such as Norway comes in with its huge attractive bank accounts full of

money, NGO's will adopt to the donors requests at once. In fact, several NGO's have become experts in writing proposals in this ways. REDD can thus be put on top of existing agendas, thereby supporting underlying goals and aims of the NGO's involved. What will happen to the involved NGO's after the end of the project circle will therefore be of great interest.

Another question one might ask is what we could learn from these pilots? The intention, as mentioned is to gather information and explore a range of actions to address the drivers of deforestation relevant to national circumstances. However there are several limitations that will have an effect on the quality of the information derived from such pilots. Since the pilot projects are located all over Tanzania, issues such as leakage are of major concerns. If for example, one village stop producing charcoal to receive REDD funds, people may instead go to the neighbouring villages and continue their business there. It then also becomes a question of land tenure. Since the property regime in Tanzania is contested and characterized by overlapping policies and Act's, leakage will be even more difficult to control. In terms of REDD funds, one also have to consider the transaction costs such funds represent. Different NGO's have different opinions and approaches on how to best distribute money and give out money, e.g. if result or effort based. How this money best will be distributed from top-down however still remains to be seen, and might be some of the experiences one will get out of such a pilot exercise. During a meeting with a councillor on environmental/climate change at the Royal Norwegian Embassy in Dar es Salaam, Mr. Ivar Jørgensen, we confronted him with such challenges mentioned above. By this he responded that someone had to go first if any progress with REDD should be made, and that Norway is privileged enough to take the risks involved.

#### ***6.1.3.2 Supporting programmes***

In addition to the specific studies and projects listed above, among NGOs, the private sector and other sectors such as agriculture, mining and road construction, a number of political actors in form of programmes and projects are related to the REDD strategy development process (United Republic of Tanzania 2010). Lessons and experiences gained from the on-going pilot projects as well as analysing other

supportive projects and programmes have and will continue to facilitate Tanzania's 'living' REDD strategy.

Some of the most directly related programmes in support of the REDD strategy development process includes the UN-REDD Programme, Forest Carbon Partnership Facility (FCPF) and Valuing the Arc programme (Ibid).

#### ***6.1.3.2.1 UN-REDD***

The UN-REDD is the United Nations Collaborative Initiative on REDD in developing countries. The programme was launched in September 2008 to assist developing countries prepare and implement national REDD+ strategies and builds on the expertise of four organisations; the Food and Agriculture Organization (FAO), United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP). The programme currently has 29 partner countries of which 13 are receiving support to National Programme activities (UN-REDD 2011).

In Tanzania, UN-REDD and its quick start initiative began their work in November 2009, with a scheduled lifespan of two years. The \$4,2 million programme is funded by Norway and is undertaken in cooperation with the Forest and Beekeeping Division of the Ministry of Natural Resources and Tourism (Cosslett 2010). The aim is "to strengthen the capacity of the Government of Tanzania, NGO's and local communities to develop a comprehensive national REDD framework, and to implement, monitor and adapt interventions in support of the Strategy, to improve their efficacy" (UN-REDD 2009, p.8) During its first months of operation, key management arrangements were put in place, governmental counterparts were met to agree on objectives and activities were coordinated with the National REDD Task Force and other organizations and institutions. For the time after, and throughout 2010, different workshops were held, and a study on forest management practices was initiated (UN-REDD 2011).

#### ***6.1.3.2.2 Forest Carbon Partnership Facility***

The Forest Carbon Partnership Facility (FCPF) became operational in June 2008, and assists tropical and subtropical forest countries to develop systems and policies for



REDD+ and provides them with performance – based payments for emission reductions. Thirty-seven REDD countries have been selected in the partnership, where thirteen of these, including Tanzania, have so far submitted Readiness Preparation Proposals (RPP)<sup>35</sup>. The World Bank is in control of these proposals since it is viewed that they will eventually enter into readiness grant arrangements of up to \$3,6 million to assist in readiness efforts (FCPF 2011).

In its first two and a half years of operation, the FCPF have developed a framework and focused on the process for REDD+ readiness. It is however expected that a Carbon fund will become operational in the course of 2011 as a public-private partnership that will provide payments for verified emission reductions from REDD+ in countries that have achieved, or made considerable progress towards REDD+ readiness. Since Tanzania has access to other funding through Norway's international climate and forest initiative, they will only stay as members and will therefore be relieved of any financial obligations (Ibid). What Tanzania want is to benefit from being a partner in the FCPF process, learning lessons from other partners and being able to structure its REDD readiness efforts using the FCPF checklists and template checklists (Norad 2011).

The FCPF works closely with other initiatives, in particular the UN-REDD programme, and it is not unusual that they join forces in arranging workshops etc. However, it is not entirely clear where the lines between UN-REDD and FCPF goes as both programmes support countries in preparing and getting countries ready for REDD.

### **1.3.3.3. Valuing the Arc programme**

Valuing the Arc (VtA) programme is focusing on the Eastern Arc Mountains, a global biodiversity hotspot in Tanzania. It is implemented by WWF Tanzania Programme Office in collaboration with other partners and has duration of five years (2007-2011). It is an interdisciplinary programme with two broad parts; a theoretical review which aims at developing and publishing a broad conceptual model for ecosystem services

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<sup>35</sup> The objective of a RPP is to provide a framework for taking stock of the national situation from the point of view of deforestation and forest degradation, and addressing this situation by analytical work to be undertaken in a range of areas and funded from a variety of sources.

approach to conservation, and a Eastern Arc case study aiming at testing the conceptual model. Workshops and seminars are organized and both levels are producing high level of scientific papers, and technical materials are being fed into the REDD policy process in Tanzania.

Throughout the last phase, which we have chosen to name the strategic analysing and piloting, we have seen that several in-depth studies have been conducted, and pilot projects been initiated. Since this phase was all about gathering information to prepare a national REDD strategy, it also shows how core programmes such as UN-REDD contribute in the process. However, some the REDD pilots roles in a future REDD regime are unclear and presents several questions on the efficiency of its learning process along with who will benefit from it.

All in all, the process of getting towards where the first draft of Tanzania's National REDD Strategy were released in December 2010 have been through an extensive process of institution building where stakeholders have been identified, knowledge has been built, consultation rounds has been conducted, and pilot projects initiated.

In Tanzania, REDD is seen as a win-win-win situation where forest are protected, economic development are achieved, with the enhancement of rural livelihoods. Here the process of achieving such a beneficial situation is described with the help of three different phases, namely an analytical phase, a consultative phase and a strategic analysis and piloting phase.

Through the analytical phase, the National REDD Task Force was established together with its secretariat. As responsible for coordinating all REDD-related activities, goals were set and the work begun with the development of a National REDD Framework, requiring the identification of key stakeholders. By going through some essential characteristics of the stakeholders we see that there is an apparent need of coordination of information within and between governmental officials, research and training institutions as well as civil society organisations. We also learned that at the moment most stakeholders are focusing on the funding mechanisms and the funds it selves, and that overlapping and conflicting interests can pose challenges for REDD. At the end, we stressed that little is known about stakeholder abilities to affect a policy process, where the power aspect of politics are highlighted.

In the second phase, the consultative phase showed that there has been two consultative phases, one for the National Framework and a second, still on-going, for the strategy. This showed a unique willingness to include stakeholders in policy formation. How all these different inputs are prioritized still, however, remains to be seen.

Returning to the Resource Regime Framework Model, based on the political actors as mentioned above, their preferences, actions and interactions is then what has greatly played a part in deciding on how the REDD architecture looks like, i.e. the power structure between national and international stakeholders in particular has decided which actors preferences and wishes have been heard and taken into account, as has this structure played a great part in which stakeholders to be included and which to exclude. Thus the second box of Vatn's model will now be presented, in the form of the institutions which govern the policy process and which ultimately will have the entail the constitutions and collective choice rules. Therefore on the basis of having viewed governance as process, which we have done above, we follow the model's distinction and now look at governance as structure, which again is highly based on this process.

This will thus give us useful insight on how a REDD regime eventually will be working after its completion in 2012.

## **6.2 The National REDD+ architecture**

In Tanzania, PFM have been found to some degree to counter deforestation and forest degradation in unreserved forests and it has thus been included as a major element in the National Forest Policy and the following Act of 2002 (United Republic of Tanzania 2010). Because of this, one of the conditions Tanzania imposed on REDD when first introduced was that all REDD related programmes and projects had to include some PFM segments in their implementation efforts.

Today, the main FBD's strategies such as centralized forest management and PFM are not fully realized partially owing to poor governance at all levels. Some of the key

concerns are; corruption, poor inter-agency collaboration, weak law enforcement, low accountability, elite capture, marginalization in terms of access to resources, lack of transparency and low participation (Ibid). To improve environmental governance, a change of Tanzania's current institutional arrangement was deemed necessary, with this new structure then representing REDD as the new resource regime. Thus, on the basis of having gone through "Governance as process" we now turn to "Governance as structure", i.e. the institutions which governs the policy process (Vatn 2011).

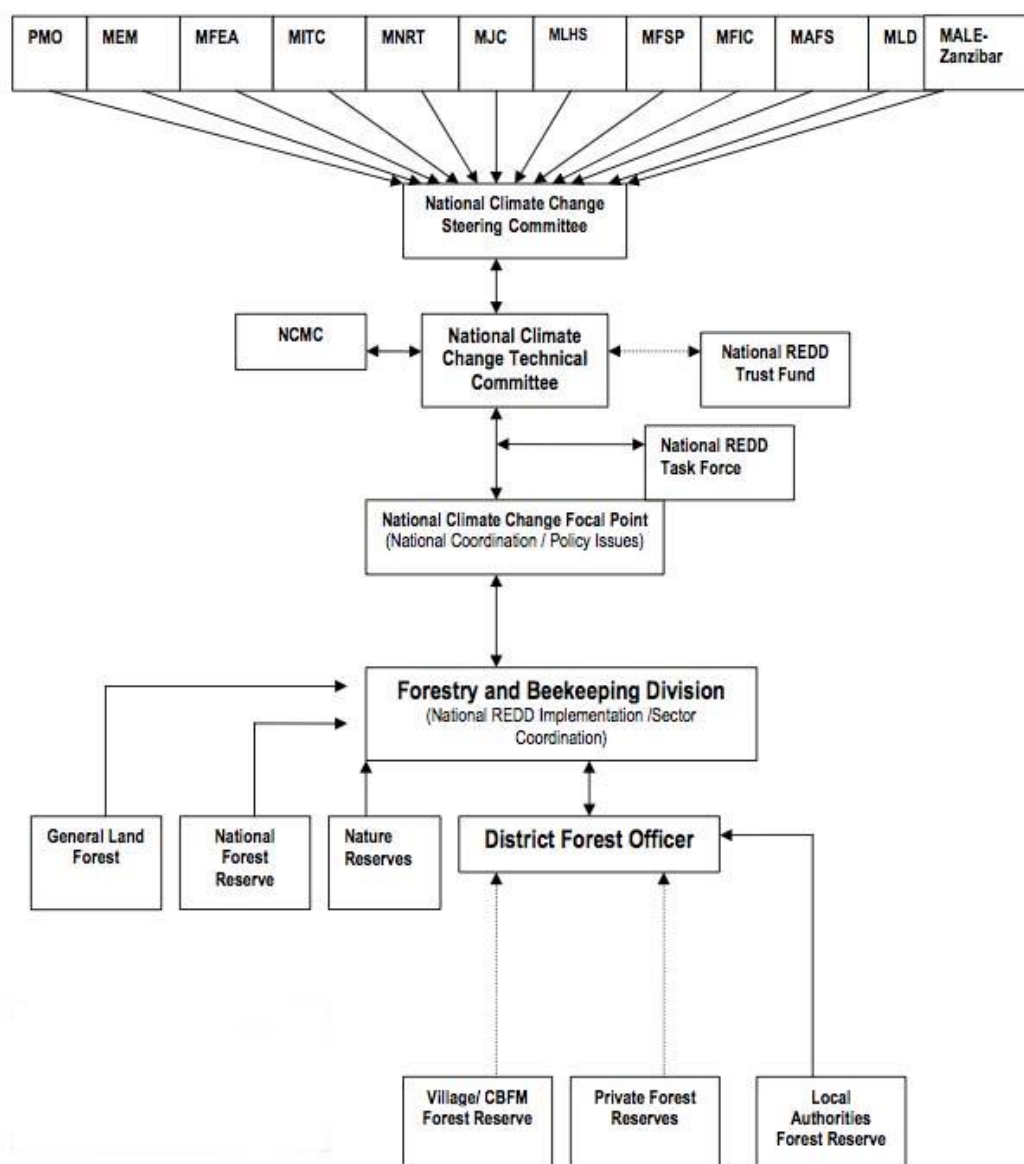
### **6.2.1 Institutional structure/Institutions governing the policy process**

Findings from the Legal and Institutional Arrangements and the Role of REDD+ for Rural Development in-depth studies demonstrate that the present policies on forests have had a large impact on the rate of success of various participatory interventions.

Among others, poor inter-agency collaboration has been a core obstacle to the current policies, and has the potential of compromising each stakeholders' underlying interests of a well-managed forest. Due to this, the first National REDD Strategy Draft tries to encompass a multi-sectoral collaboration approach (horizontally across sectors and vertically between different levels of institutions) towards the finalisation of a REDD strategy at the end of 2012 (Ibid).

One must not forget that Reduce Emissions from Deforestation and forest Degradation (REDD) is only one of several mitigation options to address the impacts of climate change. To avoid duplication and overlaps, The Tanzanian Government has thus put in place the National Climate Change Steering Committee (NCCSC) and National Climate Change Technical Committee (NCCTC) to oversee and guide implementation of all climate change activities. These institutions will also handle REDD+ activities (Ibid). Even though a final REDD Strategy will ultimately lay down the institutional structures for REDD, the proposed structure is already gaining wide acceptance among REDD stakeholders within Tanzania. It is built around FBD of the MNRT where the National REDD Task Force and its secretariat will oversee the REDD readiness implementation process, serving as an interim arrangement until more permanent structures such as the NCCTC is in place.

**Figure 14: Proposed public structure for REDD in Tanzania**



Source: (United Republic of Tanzania 2009)

### **6.2.1.2 National Climate Change Steering Committee**

In accordance with the Environmental Management Act, 2004, all environmental management issues including climate change are coordinated by the Vice President’s Office. In February 2007, the president approved the functions of the Division of Environment under the Vice President’s office, with a mandate to coordinate all climate change issues. Since then, the National Climate Change Steering Committee (NCCSC) has been put in place to oversee the implementation of climate change

activities. In this sense, it will work as a top decision making body for the national REDD scheme and oversee the implementation of the Strategy (Ibid).

It reports to the Vice President's Office, but its members are exclusively drawn from several governmental bodies. The Permanent Secretaries are drawn from 13 different ministries; the Prime Minister's Office (PMO), the Ministry of Energy and Minerals (MEM), the Ministry of Finance and Economics Affairs (MFEA), the Ministry of Industry, Trade and Cooperatives (MITC), the Ministry of Natural Resources and Tourism (MNRT), the Ministry of Justice and Constitutional Affairs (MJC), the Ministry of Land Housing and Settlement (MLHC), the Ministry of Agriculture and Food Security (MAFS), the Ministry of Fisheries and Livestock Development (MFLD), the Ministry of Foreign Affairs and International Cooperation (MFIC), and the Ministry of Agriculture, Livestock and Environment of the Government of Zanzibar (MALE) (Ibid).

#### ***6.2.1.3 National Climate Change Technical Committee***

While the NCCSC is the top decision making body, overseeing the REDD implementation process, the National Climate Change Technical Committee (NCCTC) is in charge of the technical issues, and will oversee all the technical issues related to the implementation of climate change issues, including the National REDD Strategy. It will report to NCCSC and is made up of Directors from the different Ministries in the Steering Committee.

#### ***6.2.1.4 MRV and a National Carbon Monitoring Centre***

To be able to sell carbon credits from REDD in the future, strong Monitoring, Verification and Reporting (MVR) mechanisms have to be in place. This system needs to be reliable, and accurate and available for policy areas where decisions are in need to be taken. In Tanzania a phased approach for establishing REDD and MRV systems are widely accepted among stakeholders<sup>36</sup>. The advantages lie in its flexibility;

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<sup>36</sup> Other than the relevant governmental institutions such as the FBD - NAFORMA, REDD Task Force, and NCCST and its NCCTC, there are several other institutions and stakeholders on the MRV landscape. These are: Tanzania Forestry Research Institute (TAFORI), Sokoine University of Agriculture (SUA), Institute of Resource Assessment (IRA), Ardhi University (AU), UN-REDD,

countries can participate accordingly to their capacity and have incentives to progress from one stage to the next.

The Government of Finland through FAO are supporting Tanzania in its efforts to put in place a National Forest Resource Monitoring and Assessment system (NAFORMA) (Ibid). It is hosted by FBD and will provide Tanzania with its first comprehensive forest inventory and will with targeted fieldwork, assess the level of forest degradation and collect socio-economic data. NAFORMA is expected to deliver:

- Training on national forest inventories and remote sensing
- Determine land use cover changes
- Determine rate of deforestation
- Identify drivers of deforestation
- Produce detailed maps over forest types
- Conduct case studies to quantify emission factors for different forest types
- Design a forest monitoring system

In order to monitor and report, Tanzania needs to improve its capacity on capturing of relevant data. UN-REDD will provide this by e.g. give MRV training of forest staff, create a system of REDD information and mapping of co-benefits (Norad 2011). The Clinton Climate Initiative (CCI) has worked closely with UN-REDD programme in the development of comprehensive MRV systems.

You can't however monitor or evaluate something without a reference point. The activity of setting out a national reference scenario is currently being put forward by FBD through the support of UN-REDD and NAFORMA. Through a National Carbon Account System<sup>37</sup> (NCAS), the baseline can then serve as a reference scenario against Tanzania's REDD achievements, which can then be measured and credited (United Republic of Tanzania 2010).

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Forest Carbon Tracking Task (GEO), Valuing the Arc (WWF), Jane Goodall Institute Tanzania, Wildlife Conservation Society (WCS).

<sup>37</sup> Lessons were learned regarding a National Carbon Accounting System (NCAS) during a field trip to Australia. Australia's NCAS is globally known for its comprehensive and reliable carbon accounting system. In an international search by the Clinton Climate Initiative it was selected as the basis for a Global Carbon Monitoring System, which through carbon trading, not only will benefit the environment but also help alleviate poverty in developing countries.

For a while there has been on-going discussions regarding the establishment of a Carbon Monitoring Centre. When operational it will then continue to maintain and develop a national MRV system by providing technical services on REDD activities across Tanzania and serve as a depository for all data and information concerning REDD. It will house Tanzania's National Carbon Accounting System (NCMC), and as soon as the national MRV system is able to produce national carbon accounts, it will be possible to use them as a basis for verification of the claims posted by the pilot projects and or forest owners (Arbonaut 2010).

The development process of a Carbon Monitoring Centre is envisaged to take four to five years. During the inception phase however, the REDD Task Force will act as an interim management committee. The REDD Task Force are currently collecting information from a high number of different projects and programmes having been undertaken in relevance to community carbon monitoring, carbon storage, forest disturbance and impact on carbon (Norad 2011). When the Centre is formally established, this information will be made available to a board<sup>38</sup> that will take the place of the Task Force.

In the end, the centre will serve as an independent organisation, established through legislation and governed by its own board. This board will again comprise of about ten national professionals that will report to the NCCTC. The location of its office will be outside the Vice Presidents Office and co-located with an appropriate host organisation (Arbonaut 2010).

#### **6.2.1.5 National REDD Trust Fund**

The National REDD Trust Fund will be responsible to market Tanzania's REDD – based carbon credits and distribute the funds on an agreed benefit sharing ratio. It will also be likely to receive REDD grants (Bofin, du Preez et al. 2011). Vatn and Angelsen (2009) discuss in their Options for a National REDD+ Architecture the available institutional arrangements in the process of establishing a national REDD fund. Here, four options are put forward; projects, Independent funds, funds within

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<sup>38</sup> Recommendations are given that the composition of such a board should have a broad stakeholder representation from government agencies, academic and research institutions, private sector, NGO's and civil society.



the state administration, and budget support. Today, “most stakeholders in Tanzania strongly advocate a mixed “market and fund” approach in order to address market fluctuations and to act as a means of paying for environmental services” (Bofin, du Preez et al. 2011, p.69). In addition, the NICFI’s evaluation report (2011) concludes on the basis on lessons learned so far, that a pre-selected nested approach appears to be the most feasible. Nevertheless, how it will end up looking like still remains to see.

Recommendation for the establishment of a National REDD Trust Fund have been made through FORCONSULT’s (2010) in – depth study on the Modalities of Establishing and Operationalizing National REDD Trust Fund. The references of the study are based on literature reviews and stakeholder analysis and study tours. But although the study conducts a stakeholder analysis, it makes little attempts to describe risks or the characteristics of risks for such a fund.

It especially stresses the need of learning from other models such as the Amazon Fund in Brazil, where a lot of attention is also given to the composition of a fund and its board of trustees where recommendations are given accordingly. The kinds of functions it will have are not considered. It also suggests that the fund should be established and operational by June 2011, and propose a range of activities that have to be undertaken e.g. producing an operational manual for the fund including safeguard standards.

The structures of the study preliminarily involve the forestry sector. From the proposed reporting structure (see Figure...) and beyond the National Climate Change Steering Committee (NCCSC) one key informant from an NGO suggested that governmental officials had concerns about accountability to institutions outside the forestry sector.

#### ***6.2.1.6 Regional and District level coordination***

The coordination at the regional and district levels will most likely go according to the existing institutional structure. The Regional Administrative Secretariat will serve as the link between the district councils and the Ministries. The REDD related activities will be coordinated on a regional level through the Regional Secretariat,

where at the district and ward levels, Natural Resources Offices and Environmental Committees will serve as the coordinators and implementers (United Republic of Tanzania 2010).

With the inclusion of representatives from such a wide range of ministries to have the overall coordination and technical responsibility, in addition to including government management bodies and institutions at all levels, we can clearly view REDD as encompassing an element of multi-level involvement, which is put forward as one of the four policy formations from Vatn (2011). In addition, it also entails a second element of what Berger (2003) has called governance as networks, where a variety of stakeholders and institutions will make up and influence the overall REDD regime. It does comprise of a clear hierarchical government system, though, where the NCCSC has the overall responsibility of coordination and forming policies, which in turn is dealt with by the MNRT-FBD and on a command basis will dictate which and how activities will be implemented by the District and Village Governments.

In relation to this, and influenced by the preferences and actions by the political actors as well as by the institutions governing them, are the policies themselves, as put forward by the Resource Regime Framework, the resource regimes, i.e. institutions governing access to resources and interactions between economic actors (Vatn 2011). A major question then becomes how well these resource regimes and property rights *fits* with what REDD intends to achieve which will in turn affect the realities on the ground.

#### **2.1.6 REDD in relation to existing policies and legal framework**

The in-depth study report on legal and institutional framework concludes that on a general level, existing legal and policy frameworks must be reformed and new provisions invoked and re-aligned to enable a more coordinated inter-sectoral approach in dealing with REDD (LEAT 2010). In so doing, a system of accountability has to be put in place.

**Table 6.6 REDD in relation to existing policies**

Since there are no laws directly related to REDD activities, useful interpretations have to be made based on existing structures. In areas where this is not possible, there will be a need to modify the current Forest Act of 2002 for Tanzania to meet its UNFCCC obligations.
In relation to the powers of the village government, the Forest Act is in conflict with the Village Land Act and Local Government Act.
The Forest Act interferes with the powers of the village government to enter into legal arrangements including the powers to establishing village forests under PFM agreements.
REDD activities should only take place in compliance with section 146 of the Local Government District Authorities Act of 1982 which requires village governments to enter into ventures that are beneficial to the villagers.
An analysis of the Environmental Management Act (EMA), 2004 reveals that it is in compliance with the Forest Act, 2002. However, EMA have a direct bearing to the Forest Act since the forest officers are no longer bounded by the Forest Act and the by-laws made from it.
Carrying out REDD activities in Tanzania will also involve Strategic Environmental Assessments (SEA) as required by EMA. To remove ambiguity there is therefore a view that the Forest Act should be amended to include the carrying out of SEA as mandated by EMA.
Since environmental management requires the participation of all stakeholders in the mechanisms provided by EMA, propositions have been made for the Forest Act to adopt the same coordination schemes so the forestry sector will stay in contact with other environmental sectors.
The Forest Act is silent about the need of carrying out environmental audits. The Forest Act should therefore mandate that environmental audits should be carried out by all projects that are considered to have a significant environmental effects.
To avoid corruption, EMA and the Forest Act should be harmonized to provide for the carrying out and licensing of REDD projects by bodies such as the village government, district authorities, the Forestry and Beekeeping Division and the Division of the Environment.
By the enactment of a law, the Forest and Beekeeping Division should be clearly mandated to be the overall institution in charge of the implementing REDD activities.
There is a need of conducting a Strategic Environmental Assessment before embarking on REDD activities, which also is a requirement under EMA.

Source: (LEAT 2010)

What we can see, is that this issue of *fit* is in many instances not there. First and foremost the added requirements of REDD calls for new policies or already established ones to be amended. Of particular importance, as put forward by the Draft Strategy, are policies that dictate which activities are to be performed, for instance SEAs or environmental audits, by whom, whether by the environmental management authority or forest officers, and who should have the main management responsibility on the ground, whether district or village governments. In addition, the issue of land tenure is highlighted as a policy area where reform is needed in order to create a clear property system where benefit sharing can be done in an equal way.

As the current system in place highly influences the local communities on the ground and their forest use, so will the new regimes under REDD influence the preferences and actions of local communities, which in turn will affect the environmental resource, therefore we cannot over-emphasize the importance of an institutional *fit* as compared to the forest resource in question.

As mentioned, Tanzania came out with a first draft of its National Strategy for REDD+ in December 2010. The overall vision stated that: “Tanzania implements a National REDD+ Strategy that ensures conservation and/or enhancements of its unique biodiversity values and forest ecosystems and the corresponding benefits, goods and services are equitably shared by all stakeholders for adaptation, mitigation and adoption of a low carbon development pathway under all processes as required by the UNFCCC” (United Republic of Tanzania 2010, p.5.).

In the strategy, which is aimed at serving as a facilitator for effective and coordinated implementation of REDD+, it highlights areas where action is needed, institutions which needs to be established and made operational, policies which might have to be reformed, and other challenges which have to be dealt with in order to reach its overall vision of biodiversity and forest conservation, reduced carbon emissions and poverty reduction. Given that this is not the final version of the Strategy and so far no National REDD+ Action Plan, draft or otherwise, has been published, there are still some uncertainties as to how the actual implementation process of Tanzania REDD+ will be. However, it does give us an overall idea of the process at hand and it is on this basis that we will put forward what we see as the major challenges for an effective implementation. In addition to our own interviews with some of the national stakeholders we have also looked at Norads newly published real time evaluation of Norway’s International Climate and Forest Initiative (NICFI) and their contribution to Tanzania’s National REDD+ Processes.

The task of establishing a sustainable national REDD system may seem overwhelming, and issues and challenges can be found every step of the way. And given the early stage, it is still unclear. However, some challenges and constraints to a coherent REDD approach seem particularly important to overcome.

## **6.3 Major challenges for an effective REDD implementation in Tanzania**

### **6.3.1 Patterns of interaction derived from choices made by the actors**

As an important aspect of the resource regime framework put forward by Vatn, patterns of interaction derived from choices made by actors are important factors to look at when analysing a resource regime, such as REDD. In this section we focus primarily on political actors on a national and international level, however as they are influenced by economical actors and their actions, they are also considered in the instances where it is particularly relevant. The first challenge we see is in terms of national ownership.

#### ***6.3.1.1 National Ownership***

As the strategy clearly states, implementing REDD will involve a large number of stakeholders assigned with different roles and responsibilities at different levels. Both the political and economic actors relevant for REDD and associated policies and activities are plenty, ranging from local forest dependent communities, to interest groups and institutions such as TFCG or SUA, public sector agencies like the Forest and Beekeeping Division or Ministry of Agriculture and Food Security either affecting or being affected by REDD policies, legislators and administrators such as NCCSC, and international actors such as NORAD and UN-REDD.

So far in the implementation process, there has been a relatively narrow participation of relevant stakeholders. Besides the key stakeholder consultation and workshop for the development of the National REDD+ Framework, and stakeholder awareness raising and consultative meetings for the development of the National REDD+ Strategy the key players in the REDD+ process in Tanzania has been, by and large, the Norwegian Embassy (under NICFI) on the donor side and VPO-DoE and MNRT-FBD on the national government side. The structure of the National REDD Taskforce and REDD Secretariat mirrors this as it until recently included only members from these two government bodies. The strategy claims though that the narrow engagement was a conscious choice in order to be more efficient and allow a faster start up, and

that they with a draft strategy will fare better in the process of the increased stakeholder engagement to come (United Republic of Tanzania 2010).

The challenge we see with this approach is that the inclusion of all relevant stakeholders firstly has to do with creating a national ownership of REDD+ on a national level. So far in the process it seems as if the Norwegian Embassy has been the main driver for implementing REDD+ in Tanzania, both by funding and establishing their own set of partner projects and activities, and by funding the activities of others such as UN-REDD. However, just as REDD+ depends on political will from the international community to make REDD+ work, so does it depend on overall national ownership and will in Tanzania to succeed. In addition, given the narrow participation, for some REDD+ might only be viewed as yet another donor-driven aid project which at this point in time is very topical, but which will eventually be replaced by new programs, just like participatory forest management (of the 1990s) replaced the tropical forest action plans (of the 1980s). This issue has been specifically expressed in NICFIs evaluation where Norway's dominant role on REDD+ in Tanzania has led some stakeholders to think of it as a "Norwegian project", introduced and supported solely by Norway, and thus will last only as long as Norway decides to finance it (Norad 2011). In addition, the fact that these international donors are planning to gradually move to the background and let Tanzania implement and run REDD+ on its own accord further calls for national ownership, not just from the VPO-DoE and MNRT-FBD but also among other national stakeholders. For instance, according to the Embassy and the REDD+ taskforce, the taskforce is now preparing its exit strategy and the overall responsibility of REDD+ will in a few years time be given over to the permanent government institutions NCCSC and NCCTC (Local resource person 2010). These two institutions have had limited engagement with REDD+, and the same applies for other relevant sectors, national institutions and NGOs which in the future will have a lot to do with REDD+. On a positive note though, stated in NICFIs evaluation, there seems to be a growing ownership by some stakeholders, for instance by the Forest Network of Community based Organisations (MJUMITA) and particularly from REDDs main stakeholders VPO-DoE and MNRT-FBD. The emergence of more widespread ownership is contributed to the REDD consultations which have been taking place and that has increased the awareness on REDD, an awareness building which they

view to be a precondition for a gradual building of more comprehensive ownership (Norad 2011).

### ***6.3.1.2 Stakeholder participation***

Given that so far only the forest sector and environmental division has been involved, it might send out a message that this is just that REDD is purely a climate change and forest issue and that it does not affect nor is important for other government sectors. However, dealing with the drivers of deforestation, one will have to involve several other government ministries and sectors. For instance as conversion of forest to agricultural land is the biggest driver of deforestation the Ministry of Agriculture and Food Security will have to be involved and policy around land and land conversion taken in account, and as around 90% of energy use in Tanzania comes from wood fuels and biomass products (World Bank 2009) the Ministry of Energy and Minerals will also have to play an important part. In addition, given the important land rights/property rights element to REDD+ also the Ministry of Lands and Human Settlements Development should be on board. The same applies for the Ministry of Finance given the apparent and demanding financial aspect of REDD+ in terms of carbon payments and for PMO-RALG as REDD+ clearly needs multi-level government involvement when implementing REDD+ at district and village level. Therefore, ensuring the cooperation and drive from all these different stakeholders is paramount for an effective and sustainable REDD+. It will, however, not be an easy task. Because viewing REDD+ as an important program in terms of dealing with climate change is one thing. Seeing it as a legitimate solution or policy element for overall national development which then requires the participation from many sectors is another matter. Although including REDD+ in overall national development strategies/policies such as MKUKUTA is an important step towards placing REDD on the national agenda, it might be challenging when engaging other public sectors and government Ministries. It will involve their willingness to take on responsibilities and tasks concerning REDD+ and add to their current workload and activities. In addition, it will probably entail difficult compromises to be made, given the high possibility of conflicting interests between sectors, and some might end up feeling their interests are not being met in the discussions. However, it is hard to believe that this can be avoided, and as Berger states: *“Policy making is inherently conflictual, involving an uneven distribution of power and influence between different institutions*

*and societal actors*” (Berger 2003, p.222.). In fact, historically environmental concerns and forestry have been given little political attention compared to other focus areas such as agriculture and health, and in addition the REDD draft states one of the weaknesses with establishing REDD in Tanzania is “lack of political will due to conflicting sector interests in forest and other natural resources use” (United Republic of Tanzania 2010, p.14.).

In relation to this, equally important is the inclusion of civil society and community participation, both in the consultation process and during implementation, as their involvement in the process and their interests being taken into account, clearly affect their cooperation on REDD+ and their willingness to sustainably manage their forests. As of yet, this does not seem to have been done sufficiently, and as the strategy puts forward, some local communities where field surveys have been carried out have expressed reservations on the REDD+ initiatives and view it as merely another of a long list of projects which they have been bombarded with but which have failed to deliver on its promises (United Republic of Tanzania 2010, p.19.). On this note, it is important that the overall stakeholder participation does not just include stakeholder consultations and awareness raising but also emphasises stakeholder involvement in planning, decision making and monitoring, as well as implementation, something which the various REDD pilot projects call for (REDD Pilot Projects 2011).

Returning to our Resource Regime Model, the unsustainable use of many Tanzanian forests can be viewed partly as a result of the lack of involvement and interaction between stakeholders both between national political actors, where those wishing for forest conservation seemed to have had their preferences undermined, as well as a lack of stakeholder involvement between economical actors and political actors, where local communities preference have not been taken sufficiently into account and where national or external interventions have resulted in not being seen as legitimate. Thus, creating national ownership and legitimacy will be a challenge for REDD implementation, where the success of REDD clearly hinges on the fact that this is done.



### **6.3.1.3 Coordination of activities and stakeholders**

The broad participation needed for REDD+ and the magnitude of activities already performed both within various sectors and having started up as a result of REDD+, preconditions proper coordination. The same applies for the various policies and acts which govern said activities. We will come back to this later. Nationally, both inter-sectoral and cross-sectoral coordination has previously been lacking, and has been accounted to contribute to the failure of previous forest conservation efforts. As we have previously seen, the coordination between the Vice President's Office - Division of Environment and the NEMC has been poor given the lack of guidelines, resulting in an overlapping of responsibilities and a struggle over whom to oversee what within the area of environmental issues. And this is further complicated by the MNRT which also has a mandate that overlaps with those of the NEMC and VPO-DoE. Cross-sectoral coordination has not been much better.

With a system unable to deal with conflicting interests and activities, either between Forest Dependent communities and the Forest Department or between development activities within different sectors such as forestry and agriculture, it has placed the entire forest resource under jeopardy and compromised stakeholders' underlying interests of a well-managed forest for sustainable livelihood (United Republic of Tanzania 2010). The strategy has thus put forward the need to create a system which can both coordinate horizontally across sectors, such as agriculture, wildlife and forestry, and vertically between parastatal, central or local government institutions. In order to do this, they emphasise a problem solving approach which includes multi-sectoral collaboration and the formation of an expanded partnership which will resolve conflicts and improve the overall quality of management of forest resource in the context of REDD+ (United Republic of Tanzania 2010, p.26.). Specific details on how this will be achieved, has not been put forward. However, we expect the REDD+ Action Plan will shed more light on this issue.

Since its establishment, the REDD+ Taskforce, facilitated by the REDD+ Secretariat, has had the overall responsibility of coordinating all REDD+ activities and creating a well functioning and efficient coordination system which includes all the necessary stakeholders. Given the temporary nature of these two bodies, though, the responsibility will in the future be transferred to the NCCSC which will work as the REDD+ coordination office and the NCCTC which will function as the overseer of all technical issues related to REDD+ implementation (United Republic of Tanzania

2010). So far, the TF has been getting some critique for not doing a sufficient coordination job, particularly when it comes to stakeholder participation. This was admitted by the government during a debate in January 2011, where the Director of MNRT-FBD told that the coordination towards planning and implementation of REDD has so far been poor, stating “Coordination (between the government and other stakeholders such as civil societies and the private sector) has not been good so far” (Liganga 2011). In addition, some of the coordination efforts have been carried out by other bodies such as the Norwegian Embassy and the UN-REDD. Given the Embassy’s role as a primary donor, they have been financing most REDD+ activities in Tanzania and have thus been in close contact with, in addition to the Taskforce, most of the stakeholders involved (Local resource person 2010). Since UN-REDD got involved in Tanzania, they have increasingly becoming a coordinator and working closely with particularly the Norwegian embassy when it comes to distributing tasks. They are planning to establish contact with other sectors such as the agricultural sector, the energy sector, and land use planning commission, even if that job should have been headed by the Task Force (Local resource person 2010).

It is a matter of grave concern if no clear coordination system is in place, or if there is no institution to oversee all activities being carried out within REDD+. This lack can result in some activities overlapping while other important activities are left out or forgotten, and sector activities such as agricultural expansion in one area might be directly conflicting with activities aimed at forest conservation in the exactly same area.

#### ***6.3.1.4 Stakeholder communication and information sharing***

Following the previous challenge of contradiction of activities and when more and more stakeholders are included in the process a major challenge becomes good communication and information sharing between sectors, public bodies and institutions, NGOs, interest groups, forest dependent communities etc. This responsibility has up to now been placed with the REDD Taskforce. Thus, when creating a coordination system of all REDD activities, they are also required to gather and share all information between engaged parties. Results from one of the in-depth studies have shown that there is “an apparent lack of effective communication

coordination system among key stakeholder in both the central and the local government sectors” (LEAT p.28). The new strategy emphasises, hence, the creation of effective communication and information sharing mechanisms that will allow the stakeholders to exchange lessons learnt and experiences gained (United Republic of Tanzania 2010). Playing a big part in establishing and operationalizing this system is the RICS and NEECS, although that will not be made operational until in 2013, wherein it then will be placed under the responsibility of NCCSC (Ibid.). As already stated, TF is supposed to oversee everything and make sure that all relevant information is spread and shared by all relevant stakeholders. So far the communication efforts have been done by different actors. For instance, as put forward in the NICFI evaluation, the regional consultations for the strategy has been “somewhat successful in opening a communication channel between the central government, regions, (some) districts and civil society/NGOs (Norad 2011, p.47.), but that a platform where for instance the pilot projects can exchange experiences and lessons learned is lacking. Such a platform, should also be available to cover a broader set of civil societies and local stakeholders as many relevant stakeholder are small, not organized or included in already established information sharing forums, some also are important forest resource users, but on the basis of informal use rights and thus might not be recognized as relevant or legal stakeholders from a higher political level.

An organisation/institution which has taken on some responsibility of information sharing is the Tanzanian Natural Resources Forum (TNRF), as they have set up events where different stakeholders have gathered and shared information between research, the pilot projects, taskforce and other stakeholders (Local resource person 2010). TNRF has also participated together with for instance TFCG where they have produced a radio program on REDD, a film on REDD and a cartoon-style brochure (TNRF 2010), and TFCG and other pilot project implementers have also worked with MJUMITA in creating awareness on REDD in their areas of operation (Norad 2011). District officers, particularly forest officers, can and should also play a big part in information sharing on REDD as they already include in their tasks the issue of awareness rising to communities within their district. The incorporation and communication with district authorities will also help the spread of information to

(remote) communities and help create legitimacy and capacity on REDD among district and local governments.

To sum up there is a great challenge in being able to coordinate all these activities at hand, and being able to disseminate information and experiences to all relevant participants. Until 2013 when the coordinating responsibility falls on NCCSC, as a result of the multitude of stakeholders and activities, a lot of important information and knowledge will be created through research and the pilots which are supposed to influence the future structure and implementation of REDD+. If this information, whether positive findings or negative effects, does not reach the relevant actors, it will greatly affect the further REDD+ implementation as ineffective practices might still be used. As an example, experiences gained on issues related to an effective carbon payment system from the local level to the national (and international) level needs to be gathered to be able to create an overall system and then disseminated again to those taking part in the implementation and running of REDD. In addition, if no overall communication and information sharing mechanism is in place, one cannot know in which areas activities or knowledge is lacking, which in turn will affect the post-2012 implementation, as knowledge gaps might result in the failure of certain activities.

Having outlined the importance of taking into consideration the various actors involved in a resource regime such as REDD, whether political actors at an international or national level or economic actors on a local level such as forest dependent communities, and having established the importance of creating an enabling environment where all stakeholders can interact and have their interests and preferences taken into consideration, we now move onto another important aspect of our resource regime framework. This next part is concerned with the institutions governing the policy process and the policies itself and the ways in which when analysed in terms of REDD can bring about various challenges.

### **6.3.2 Institutions governing the policy process, including all conventions, norms and formal rules**

#### ***6.3.2.1 Policy synergies***

Another important aspect to consider with the introduction of REDD in Tanzania is how well it fits within the current legal framework. In order for REDD to reach its overall aim of sustainable forest management which reduces carbon emissions, conserves biodiversity and contributes to added co-benefits of poverty reduction, it needs to work within an enabling legal environment which secures that this is possible.

Currently this is not the case, and as the in-depth study on legal and institutional framework in Tanzania revealed, not only does the introduction of REDD call for new legal provisions to be invoked which reflects the needs of REDD, but the existing legal and policy framework also needs to be reformed and re-aligned in order to enable a more coordinated inter-sectoral approach in dealing with REDD (LEAT 2010).

As the strategy emphasises these reforms need to deal with overlaps and conflicts between and within sectors, take into consideration and try to address the drivers of deforestation, accommodate changes in natural resources use systems and reflect the new demands that will be posed by the REDD+ initiative whereby stakeholder mandates, procedures and benefit sharing mechanisms will have to be clearly and explicitly laid out (United Republic of Tanzania 2010).

The challenges with such broad reforms are obvious and plenty. Firstly, in the case of conflicting interests among and within government bodies, there is a great element of power struggles involved, and there will inevitably be winners and losers as a result of this. And as our model dictates, as the decisions being made will reflect the power relations and level of participation, they will have implications on how accountable and legitimate the outcomes are viewed (political legitimacy) and whether or not the new or reformed policies and acts are followed and upheld. This in turn, will then influence the forest resource itself as for instance forest adjacent communities do not see the reformed resource regime as legitimate and might then chose to not follow the

rules and regulations in place and continue or to an increasing extent use their forest resources.

Therefore, with the addition of REDD within the environmental and natural resources sector, the legal framework within these sectors needs to incorporate this and be harmonized in order for REDD to function properly. This includes for instance the alignment of the Forest Act of 2002 with the Environmental Management Act of 2004 as to remove the ambiguity of who is responsible for and when it is necessary to carry out Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA). As EMA states a SEA needs to be carried out whenever new laws, regulations, programs or plans are proposed for an area, which would then also include REDD. The Forest Act of 2002 only binds forest officers and lower-level authorities to make by-laws and regulations as they see fit. In addition, the Forest Act also overlaps and contravene with the Village Land Act of 1999 and the Land Use Planning Act of 2007 when it comes to the power of village governments to establish village forests, with the two latter viewed as being a simpler and more participatory procedure and thus should be adopted when establishing REDD (United Republic of Tanzania 2010). Likewise, given the reality of various natural resources available at the community level, the Wildlife Policy and National Forest Policy of 1998, both situated within MNRT, should be aligned or at least considered as they have different frameworks in place on how to devolve management to the village level. For instance PFM, through the Forest Policy, builds on already existing village institutions such as the Village council or Village Natural Resource Committee and follows by-laws and land use plans set by the Local Government Act and Village Land Act. WMAs on the other hand, governed by the Wildlife Policy, requires a whole new set of community level institutions, such as an elected community based organisation. Being the manager of the WMA, the CBO will then have considerable power over village lands and resources as it is responsible for giving community user rights, leaving the village council with a very limited role in the management. This divergence has been accounted to previously impede sectoral integration, where either a WMA or a VLFR has been chosen and contributed to wasted opportunities and sustainable land management (Blomley and Iddi 2009), and now with REDD+ being implemented it might result in the same, either that WMAs are preferred over PFM and REDD+, or

that WMAs are completely overlooked, thus resulting in a reduction of wildlife conservation.

Other sectors also have clear competing interests with the forest sector, for instance the agricultural sector and the livestock sector. Although the Agricultural and Livestock Policy of 1997 advocates for a coordinated cross-sectoral approach to the conservation of environmental resources, agriculture remains the primary focus for development for the government under its Kilimo Kwanza<sup>39</sup> initiative as it is concerned especially with agricultural expansion and modernization in Tanzania. There are also plans within the livestock sector for increased pastoral areas and livestock keeping (Local resource person 2010). It does not however, seem to be any limits to the number of livestock one household is allowed to keep, at least not in practice. As a result, in areas with a high presence of pastoralists where land is set aside for grazing, the size of this land rarely reflects the needs of the high animal count and many thus take their livestock into village and forest areas, resulting in highly contested land uses.

REDD implementation and the legal framework need to take this into consideration, not only where possible REDD areas already are planned for agricultural expansion or livestock grazing, but also in a more general sense (Norad 2011).

Without proper discussions between these sectors and without compromises being made between them there will most likely be conflicts which will hamper the efforts of REDD. In addition, it seems unlikely that the various drivers of deforestation will be sufficiently tackled without a good working relationship between sectors as for instance a reduced and more sustainable use of forest resources is highly dependent on a more effective agriculture and the provision of either a more efficient energy use or alternative sources of energy.

Given the apparent land use and tenure issues of REDD, policies such as the Land Policy of 1995 and the Land Act and Village Land Act of 1999 also need to be addressed. Some good compromises have already been made between the agricultural and forest sector on the basis of the Village Land Act, but the REDD initiative will

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<sup>39</sup> Means “Agriculture first” in Kiswahili

most likely pose new challenges. The review of the strategy made by the pilot projects calls for policies which deals with the status of community carbon rights, and management of REDD funds (REDD Pilot Projects 2011). Central to this is dealing with what the strategy sees as “inadequately defined property rights rendering forests as “open access” resources”(United Republic of Tanzania 2010, p.43.) by which they are referring in particular to the issue of General Land (and subsequently also General Land Forest). For as this residual or unreserved land outside of village boundaries is governed by the Land Act and under the control of the Lands Commissioner it may also include village land that is “unused” (Sulle and Nelson 2009) and still fall under the control of the Lands Commissioner. Many civil society groups argue that as the land in question is within village boundaries it should be governed by the Village Land Act and thus fall under the control of village jurisdiction. For as the Village Land Act dictates, it should include all land and forests, which has customarily been used by villagers (Bofin, du Preez et al. 2011, p.62.). The ambiguity over what “type” of general land should be governed by whom can often create great confusion, but in the hierarchy of jurisdictions the Land Act is superior to the Village Land Act, and have therefore power to rule over this “unused land” (Brown, Garrucho et al. 2009). This contestation of tenure rights needs to be addressed and resolved, as studies have shown that if adding unreserved forestland within village land to general land as a whole it will account for nearly half of all forestland, and thus will be crucial to REDD implementation and how benefits will be shared (Ibid.). It is also the land category where most deforestation happens, where as a result of open access to the forest resource, the local communities (economic actors) can without any restriction access the forest and carry out forest extraction activities.

On this note, a legal framework and a system of benefit sharing is also essential for REDD and it needs to be established clearly which stakeholders will be responsible for what and set the rules and regulations which governs them.

However, addressing and resolving conflicting activities and interests cannot in all instances automatically be achieved simply by an enabling legal framework, stakeholder participation and coordination of activities. Some of them also needs to be addressed and overlaps with issues of governance.



### **6.3.2.2 Good Governance and Institutional capacity**

In order for REDD implementation and operationalization to work properly, a REDD governance system which is both transparent and accountable needs to be established. This is not an easy task especially given Tanzania's previous governance practices which has been suffering from "entrenched corrupt practices and lack of good governance in the forest sector and elsewhere" (United Republic of Tanzania 2010, p.14.). The strategy points out poor governance at all levels; at local, district, regional as well as at national level. At local levels, key issues put forward are corruption, elite capture and/or minority marginalization in terms of access to forest resources, low accountability, lack of transparency, low participation and weak law enforcement, while at higher levels main governance issues concern corruption, weak law enforcement, and accountability, all of which has contributed to hampering sustainable management and conservation of Tanzania's forests. The main reasons for the weak governance has been attributed to gaps and inconsistencies within the existing public forestry sectors institutional framework consisting of the MNRT-FBD and PMO-RALG and its lack of effectively linking the local governments to the regional administration and central government levels (Ibid., p.48.). Several studies have, as mentioned previously, highlighted these issues. For example while the independent consultation in 2006 revealed severe mismanagement of Norwegian government support to MNRT, accounting for as much as \$30 million lost (Jansen 2009), the Traffic report from 2007 and World Bank study of 2009 described corrupt political and private networks within the timber and charcoal business accounting for as much as \$100 million of lost governmental revenue annually (Milledge, Gelvas et al. 2007; World Bank 2009).

Thus, the importance of an accountable and transparent institutional framework and government system cannot be over emphasized, as it in many cases might make or break the potential success of REDD. It will in particularly affect the ability to deliver on the co-benefit of poverty reduction.

Given the high risks of mismanagement and the history of the MNRT-FBD, so far in the REDD process, the funding from NICFI has not been given directly to the Ministry but rather through IRA and the REDD Taskforce.

The need to be extra cautious has been stated to have resulted in the process moving more slow than if Tanzania had strong and accountable institutions able to handle the

money in a competent way. For instance, according to the expected budget for the two first years of the Norwegian – Tanzania partnership on REDD+, the Norwegian Embassy only spent half of what was expected and much of it due to this insecurity (Local resource person 2010). The same applied for funding for activities through UN-REDD where they have chosen to keep all funds in the UN system and only disbursed for activities through consultants, rather than the ministry itself (Local resource person 2010). There is an apparent trade-off between efficiency and securing good governance, where a long line of procedures and quality checks need to be in place before funding is received. Such a system of safeguards is necessary to ensure a well functioning REDD. However, where currently UN-REDD and the Norwegian Embassy can ensure such safeguards with their funding, the Tanzanian institutions will shortly take on this responsibility. In addition, the risk of bad governance and misuse is even greater when big scale carbon payments start coming in and is to be devolved and distributed at the local level. Some estimates place REDD payments to amount as much as USD 300 million annually which is the equivalent of more than 35% of the current General Budget Support, and after its establishment, handling the financial flows will then be the National REDD Trust Fund (Bofin, du Preez et al. 2011).

Given that the fund will be placed outside the national administration and operate as an independent institution, it might be less prone for corruption. But on the other hand, great sums of money often attract people with various agendas (Local resource person 2010), and therefore, establishing high quality standards for financial management and appropriate safeguard programmes is vital.

The same issue applies for the second new institution which is planned to be established as a result of REDD, namely the National Carbon Monitoring Centre. Also an independent institution, it will be in charge of the MRV of carbon. As the payments Tanzania gets from REDD will be a direct result of the MRV work of the NCMC, it is of utmost important that accurate assessments which are acceptable internationally will be produced by them, something which is less likely to happen if the institution itself is not seen as being accountable or believed to be susceptible for corruption.

These two institutions, even though instrumental for REDD in Tanzania, only makes up a small part of the stakeholders which will be involved in REDD, and all involved

should have to adhere to the same standards and principles of accountability. One way of ensuring higher levels of accountability, whether at national or local level, is ensuring adequate staffing and technical and administrative oversight (Bofin, du Preez et al. 2011). Capacity building is in this regard extremely important.

On a national level the UN-REDD is mapping out capacity needs within the MNRT-FBD and it is planning two training events for the ministry which will give around 100 staff 3 day REDD training (Local resource person 2010).

And on a community level, as outlined previously in this chapter, the pilot projects are aimed at building substantial capacity on REDD within the rural population.

As REDD will be based on PFM, whether CBFM or JFM, this entails great involvement from local level participation and staffing needs and capacity building within the forest sector are substantial. The Traffic report on illegal logging, for instance, shows that out of the four regions in their study, only two of them had forest officers despite the fact that they are required to be present in all regions. For Tanzania as a whole there is a deficit of 113 district level forestry officers. In addition, given understaffing among other things, it was estimated that as much as USD 58 million was lost annually as a result of under-collection of royalties at District level (Milledge, Gelvas et al. 2007). Without proper capacity building and staffing, when introducing REDD, this will then merely add to the limited capacity of adequately managing their forest resources. The limited technical and administrative oversight available in many districts will only increase as they now also have to carry out land use planning, baseline determination and future monitoring and financial management (Bofin, du Preez et al. 2011).

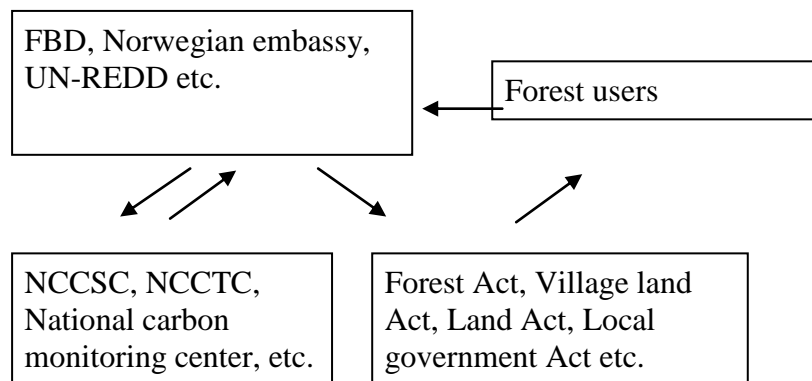
The fact that direct district level involvement in the REDD process as of yet is quite limited is then of great concern. As we have seen a variety of activities are being carried out both at central and community levels; however the district level does not seem to be properly included. A report concerning a “Fact finding/scoping mission on: Concept for District Level Climate Partnership” highlights this concern and also states: “the knowledge about REDD amongst district level staff is meagre, and the districts lack hard- and software to take proper part in the activities, especially the land use and environmental planning” (Laugerud, Lukumbuzya et al. 2010, p.romertall 8.). To rectify this there are currently talks of establishing a pilot project which focuses specifically on building district capacity on REDD, and the Norwegian

Embassy is working together with other organizations on a concept they call “district level climate partnership”. The aim of this project will then be to build capacity within district administration, focusing particularly on district land use planning and climate change adaptation (Local resource person 2010). At the time of writing though, whether such a project will be launched or not is uncertain. Therefore it is still worrying that so little focus has been placed on the role of district governments in concern with REDD, especially as they will most likely be left with the main management responsibilities after the piloting phase has ended. We also find it quite curious that the REDD draft has not commented on this issue. The strategy rather emphasizes on the need of capacity building and lobbying for village institutions and has plans for training programmes and capacity development in areas such as planning, mobilization, finance management and good governance on this level (United Republic of Tanzania 2010). Therefore it appears that the multi-level governmental involvement which the REDD Draft presents in their proposed REDD architecture, might be difficult to achieve if the district level will continue to be bypassed and will most likely lead to great capacity shortages when the time comes for District Staff to implement and run REDD on their own accord.

To sum up, since Tanzania signed the Letter of Intent in 2008 establishing the Norwegian-Tanzanian partnership on Climate Change, Tanzania has carried out numerous activities preparing them for the establishment and implementation of REDD+. Through applying a three-step phased approach the first phase, its analytical phase, entailed establishing goals, building of knowledge, identifying stakeholders and establishing the institutions necessary for REDD. The second phase, the consultative phase, included broad-based stakeholder consultations which would enable them to develop a national REDD framework as well as a national REDD strategy, the latter being carried onto the third phase - the strategic analysis and piloting phase. Currently this is where Tanzania is in their process of implementing REDD, where a first draft for the national REDD strategy has been published and is undergoing stakeholder feedback, and several of the planned pilot projects having been implemented. In addition, a national REDD structure has been proposed, including main ministries and departments such as the VPO-DoE and MNRT-FBD, as well as new institutions such as a National Carbon Monitoring Centre and a National REDD Trust Fund. There has been some concern of the degree of national ownership

though, as some feel there has been a too narrow stakeholder involvement up to now. In addition, given the magnitude of activities and knowledge being generated from this point on, the need for a well coordinated system is viewed as paramount and likewise the establishment of an effective communication system. Lastly, many have voiced the need to create an enabling legal environment where REDD can reach its full potential and reduce the risk of corruption and mismanagement. However, as REDD is ultimately a brand new way of dealing with climate change and forest conservation it naturally has a built-in element of “learn as you go”, something which the pilot projects are put in place to do. In this way what works and what doesn’t work can better be understood and from there best-practices can be formed and institutionalized.

Given this insecurity of how REDD in Tanzania actually will look like in a post-Kyoto era it is quite difficult for us to establish with utmost certainty how REDD as a resource regime will actually look like, however as the situation is currently, and based on the available information we have at the moment, and which has been presented above, REDD in Tanzania as placed within the Resource Regime Model, is presented below:



**Figure 15: Modified governance structure**

Source: (Vatn 2011)

In the next part we will focus specifically on the economic actors as described by our theory of a resource regime framework. Having selected our study area to include three villages where a REDD pilot project is being implemented the actors of particular interest are these forest adjacent communities but can also include external

people which come from outside these communities and into the area to use the forest. These actors will be placed within their local context through the help of the Sustainable Livelihood Approach and therefore the Resource Regime Model will be set aside for the time being. However, we will come back to the model in chapter nine when we evaluate the REDD pilot project on the basis of our findings from the SLA.

## **CHAPTER SEVEN – LOCAL LIVELIHOODS AND DEPENDENCE ON ENVIRONMENTAL RESOURCES**

*In the first part of this section we present household characteristics and assets as represented in the livelihood framework. From this the livelihood strategies or activities are presented before the outcomes are put forward. Lastly we discuss how the local context impacts on the observed livelihood adaptations.*

### **7.1 Household access to assets**

Assets, as explained by Ellis (2000) are the basic building blocks upon which households are able to undertake production, engage in labour markets, and participate in exchanges with other households. Social factors and institutions together with exogenous shocks or trends mediate the asset status. How such factors affect people's livelihoods and strategies we will come back to later in this chapter.

Assets can also be described as the households stock of capital. Different scholars have identified and categorised assets differently, but we follow Scoones (1998) and Ellis (2000) who categorise assets into human capital, natural capital, physical capital, social capital, and financial capital. We analyse these asset categories by use of two measure;, income groups and location. Household income groups are used as a welfare measure, and are done by dividing all households into three income groups; poor, medium, and less poor. It must however be said that by doing this, it became very clear that the overall welfare in the study area is very low, under one USD a day. The different income groups are equally represented with 60 households in each (see Table 13).

**Table 13: Socio-economic factors by total household income level, Kilosa District, Tanzania, 2010**

Socio-economic factors	Poor	Medium	Less poor	Total
Mean age of household heads (yrs)*	46	44	40	43
Religion (Christians) (%)	77	85	62	74
Religion (Muslims) (%)	23	15	38	26
Mean household size (number)*	4	5,4	5,2	4,9
Mean household land (ha)*	1,7	2,2	2,9	2,3
Primary school (%)	78	72	83	72
Worker/consumer ratio	0,8	0,8	0,8	0,8
Female head of household (%)*	18	10	7	12
Married (%)*	30	34	37	34
Mean total income (USD)*	206,66	631,31	2243,97	1024,64

*N = 180, \* indicates significant differences between income groups ( $p < 0.05$ )*

Both external and internal factors showed big variations between the three sample villages, and by implication the income and livelihood opportunities also varied. Location is a variable that encompasses variations in ecological, agronomic, economic, climatic, social, cultural and even political conditions that again impact on household's choice of activities and livelihood outcomes. Due to this we also use location as a measure to be able to address variations within the population. Some important variations are listed in Table 14.

**Table 14: Socio-economic factors by location. Kilosa District, Tanzania, 2010**

Household socio-economic factors	Lunenzi	Nyali	Masugu	Total
Mean age of household heads* (yrs)	38	45	47	43
Religion (Christians) (%)*	98	63	62	74
Religion (Muslims) (%)*	2	37	38	26
Mean household size (number)*	5,3	4,9	4,45	4,9
Mean household land (ha)	2,42	2,06	2,31	2,28
Primary school (%)	78	75	63	72
Worker/consumer ratio*	0,8	0,7	0,7	0,8
Female head of household (%)	3	18	13	12
Married (%)	93	72	72	79
Mean total income (USD)*	686,24	850,75	1544	1024,64

*N = 180, \* indicates significantly difference between locations ( $p < 0.05$ )*

### 7.1.1 Human capital and labour

To examine household's access to labour, we run ANOVA tests on age of household head, size of households, and worker/consumer up against both knowledge to enter into other ventures and income opportunities. Land size was significantly different between income groups ( $p < 0.001$ ). This was also true for location ( $p = 0,005$ ),



meaning that where households lived, affected how much land they had access to. The level of education did however not seem to differ.

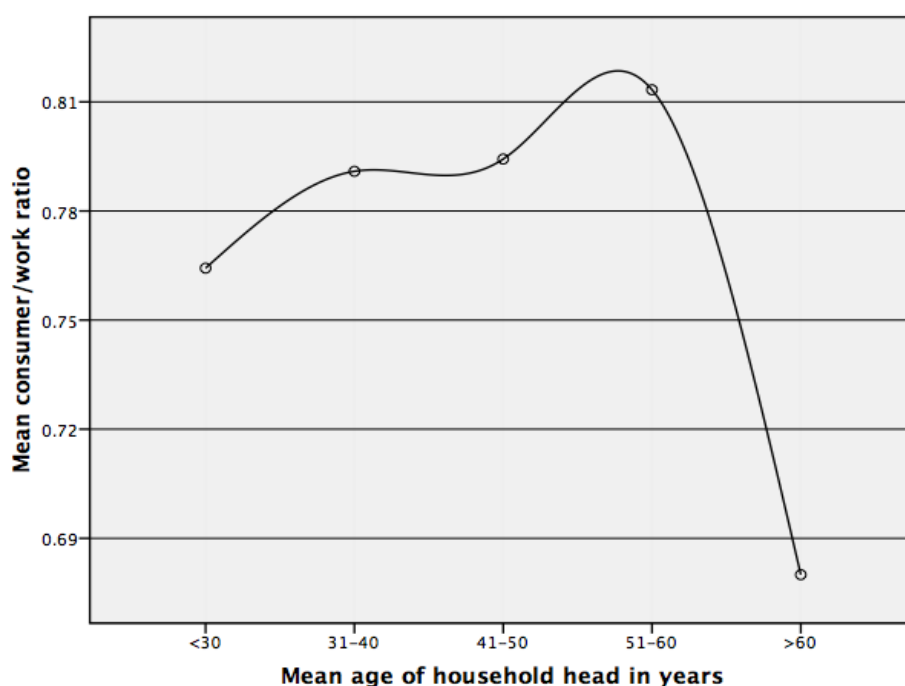
The size of a household can thus in this case be regarded as the main contributor to human capital and a source to available labour. The larger the household, the larger will the supply of labour be. When in addition the productive age of the household members is taken into account, this information becomes valuable. In the study area, mean household size was 5 but households hired labour to work on their land. This was particularly so among higher income groups ( $p = 0,005$ ). We also found that in Lunenzi, they were using significantly more hired labour (42 %) than in Nyali (37 %) and Masugu (18 %) ( $p = 0,000$ ).

#### **7.1.1.1 Worker/consumer ratio**

These findings are also reflected in the worker/consumer ratio. Figure 16 shows that the consumer/work ratio increases in the study area when the household head are young and reach a top when people are between 51-60 years of age.

wealth groups and location. We expected that the households with a higher income would have more land and education, than lower income households, thus having the opportunities and

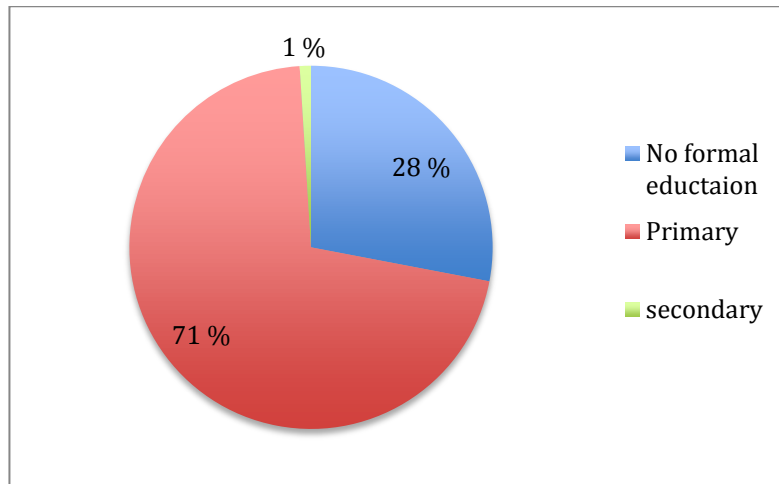
**Figure 16: Level of worker/consumer ratio in Kilosa District, Tanzania, 2010**



It is here shown that there is less productive labour when the household's head is young and that labour access increases up to when the head is around 60. The age of the household head can thus reflect on how much production the household can deliver. There will be a decreasing amount of household members after the children have moved out. However, this is not always true where we sometimes observed that the head of some households were old, but now had expanded to also include their grand children. We did find that the mean age of heads of households were lower in Lunenzi than the two others, and by also having a higher number of households, this equals a significantly higher worker/consumer ratio, 0,8 compared to 0,7 ( $p = 0,012$ ).

#### **7.1.1.2 Education and labour**

The quality of labour can be improved by investing in education and training. As mentioned, the level of education varied between income groups, but not between the villages. Only one respondent had secondary school education in the study area, while the rest had either primary or none at all (Figure 17).



**Figure 17: Level of education, Kilosa District, Tanzania, 2010**

The education levels in the study area are thus generally low although households in Lunenzi tended to have better education with 78 % of the household heads having some primary school education compared to 75 % in Nyali and 63 % in Masugu. There is a significant negative relationship between age and education ( $p = 0.000$ ). The low education levels were attributed to previous lack of secondary schools in the wards. This has changed and all now have access to both primary and secondary education, mostly due to government programmes that assist communities in building schools. However, people emphasised the poor quality of the education due to chronic lack of books and teachers.

### **7.1.1.3 Health and labour**

Labour as an asset is also made more effective by reducing incidents of illness or health problems. Large households have an advantage since the size reduces the impact of diseases (Ellis 2000). In the study area, typical diseases were stomach problems, especially diarrhea during the rainy seasons, and coughing in the dry seasons. Malaria was the biggest threat and occurred throughout the year but mostly in the wet seasons. There were no dispensaries in the villages so when someone got seriously ill they had to go to the ward hospitals. Here, people however complained about lack of medicines and poor treatment.

As seen, there are substantial variations in the population in terms access to labour. The education level is generally low in the whole area, thus having little effects on income. Households in Lunenzi, had a significantly higher worker/consumer ratio and a greater tendency to hire labour. In this respect we anticipate that the agricultural income in Lunenzi could be higher. However, incomes are linked to a complex mix of different attributes, with access to natural capital being one of them. Following this, we now turn to access to natural capital.

### 7.1.2 Natural capital – land

All respondents except one have land to cultivate. An average household had 2,28 ha of land. On top of this, most households accessed forest land for fuel wood, fodder and NTFPs. Richer households owned significantly more land but no such differences are observed between villages (Table 13), although the households in Lunenzi tended to have more land.

Households with more land could afford to leave some land pieces to fallow where wood fuel could be collected from such. Trees are used to mark boundaries, create shadow and fruit and also offer other environmental services. If needed, such trees could be taken down to produce e.g. charcoal and timber. Agricultural land thus has to be acknowledged not solely for its functionality to grow crops, but also as a source of energy and fodder. Forestlands can also be converted into agricultural lands. In table 7.3 and table 7.4 we illustrate this by looking into how long agricultural lands have stayed as such, which also gives an idea about the deforestation rate. By this we see that about 10 % of the cultivated land has been cleared for agriculture over the last 10 years.

**Table 15: Land cleared for Agriculture by location, Kilosa District, Tanzania, 2010**

Mean:	Lunenzi	%	Nyali	%	Masugu	%	Total	%
Permanent agricultural land (ha)	2,16	81	1,66	81	1,92	90	1,93	85
Forest cleared last 10 years (ha)	0,21	16	0,13	6	0,38	9	0,24	10
Previous grassland (ha)	0,01	3	0	0	0,06	0	0,02	1
Shifted - cultivation (ha)	0,02	0	0,27	13	0	1	0,09	4
Total	2,42		2,06		2,36		2,28	

*N = 180*

From Table 15 we can see that it is in Masugu most people convert forestland into agriculture with an average on 0,38 ha the last ten years. The reasons can be complex, but during our visit people in Masugu complained about bad conditions for cultivation and a high degree of crop failure. We therefore assume that due to inefficient agriculture, the need of more land would be higher. In addition we see in Table 16 that there are mostly the more wealthy households that have cleared forest for agriculture.

**Table 16: Land cleared for Agriculture by income groups, Kilosa District, Tanzania, 2010**

Mean:	Poor	%	Medium	%	Less poor	%	Total	%
Permanent agricultural land (ha)	1,43	84	1,87	85	2,45	83	1,93	85
Forest cleared last 10 years (ha)	0,15	9	0,18	8	0,40	13	0,24	10
Previous grassland (ha)	0	0	0,06	3	0,01	1	0,02	1
Shifted - cultivation (ha)	0,12	7	0,09	4	0,08	3	0,09	4
Total	1,7		2,19		2,94		2,28	

*N = 180*

However, we must further stress that these numbers are based on what people perceived as forestland. In reality households can clear much more land for agriculture than what is here reflected. By these concerns we therefore also include an overall deforestation estimate, which not only include land for agriculture, but also land cleared for energy use such as charcoal or building materials. To make them even more accurate, they are shown on an annual basis instead of a ten year basis (Table 17 and 18)

**Table 17: Forest cleared on average per year by location. Kilosa District, Tanzania, 2010**

Mean	Lunenzi	Nyali	Masugu	Total
Forest cleared*	0,06 (0,418)	0,05 (0,149)	0,44 (0,594)	0,18 (0,462)

*N = 180, \* indicates significantly difference between locations ( $p < 0.05$ ); Standard deviation in brackets*

Here we see that it is still the households in Masugu with the highest deforestation rate per household, but instead of having 0,40 ha cleared for agriculture over the last 10 years, it shows 0,44 ha cleared annually for all purposes. All in all 0,18 ha of forest is cleared annually (instead of 0,24 ha for agriculture for a 10 year period). 80 % of the cleared forest is cleared for agricultural purposes, while the restoring 20 % are energy and building materials.

**Table 18: Forest cleared on average per year by income groups. Kilosa District, Tanzania, 2010**

Mean	Poor	Medium	Less poor	Total
Forest cleared*	0,12 (0,510)	0,08 (0,214)	0,55 (0,184)	0,18 (0,462)

*N = 180, \* indicates significantly difference between income groups ( $p < 0.05$ ); Standard deviation in brackets*

As for non-renewable natural resources, this was not covered by our PRA since our main focus was on renewable resources. However, according to the Head of Natural Resource Office in Kilosa, Mr. Haule, "there are a lot of people carrying out mineral exploration in areas REDD is operating at the moment". Reports have also come in that gold has been found along a river in one of the pilot villages. If news gets out and such mining activities take off, it can potentially pose big challenge for renewable forest resources and conservation. Some typical environmental impacts caused by artisanal mining include diversion of rivers, water siltation, landscape degradation, deforestation, destruction of aquatic life habitat, harm to livestock and wildlife biodiversity and widespread mercury pollution (see Kitula 2006).

As seen, there are big differences in in terms of wealth and land use. The households with the highest income have more land and are also those with the highest annual deforestation. Masugu is the village where people depend the most on the forest. An obvious way to look at households' access to capital can however be measured by looking at what households actually have, as houses, tools etc., or physical capital.

### 7.1.3 Physical capital

In general, access to physical capital is low but, for most people this includes hand hoes, pangas, cutlass, axe and in a few instances, bigger machinery like tractors (or draft animals like donkeys). Poor households own significantly less hoes and pangas (Table 19).

**Table 19: Household agricultural implements and draft animals by income groups, Kilosa District, Tanzania, 2010**

Mean:	Poor	Medium	Less poor	Total	Owned%rented
Hoes*	2,8	3,51	3,86	3,39	99/1
Cutlass	0,07	0,12	0,19	0,12	100/0
Pangas*	1,22	1,36	1,54	1,37	98/2
Axes	0,78	0,83	0,83	0,81	99/1
Buffalo	0	0	0,02	0,01	100/0
Tractor	0,02	0,02	0	0,01	0/100
Maize mill	0	0,03	0,05	0,03	60/40

*N = 180, \* indicates significantly differences between income groups ( $p < 0.05$ )*

Since less poor households have more land and can afford to hire labour, the tools available thus explain these relationships. Hoes and pangas are two widely used tools in the area where tilling and planting are done by hand. In this way it also shows that even the more wealthy households cannot afford more effective agricultural implements such as the tractor or the plough. The tools are mostly owned by the households with an exemption of the maize mill, which are rented out by some few households. In terms of location (see Table 20), the number of hand hoes is significantly more predominant in Lunenzi than in the two other villages. Since Lunenzi also is the village with the highest worker/consumer ratio, this is no surprise.

**Table 20: Household agricultural implements and draft animals by location, Kilosa District, Tanzania, 2010**

Mean:	Lunenzi	Nyali	Masugu	Total	Owned%rented
Hoes*	4,46	3,32	2,51	3,39	99/1
Cutlass	0,08	0,16	0,13	0,12	100/0
Pangas	1,39	1,37	1,36	1,37	98/2
Axes*	0,69	0,74	1	0,81	99/1
Buffalo	0	0,02	0	0,01	100/0
Tractor	0	0	0,03	0,01	0/100
Maize mill	0,3	0,02	0,03	0,03	60/40

*N = 180, \* indicates significantly difference between locations ( $p < 0.05$ )*

Another interesting finding is that households in Masugu have significantly more axes than the other villages. Similarly to Lunenzi as being the village with a high emphasis on agriculture, Masugu is as shown the village that is most engaged in the forest. This then follows the assumption that available tools and technology (together with other factors) have an effect on the resource base. However, we must ask which comes first, tools or easy access to forest resources, or maybe a combination? In terms of access and use of tractor we only recorded two people in Masugu that were using it. We were told that this was because few could afford the prices of renting it for ploughing (\$67 per ha.). Tractors were generally not seen in any of the villages, but for Nyali and Lunenzi, tractors could not be used at all given their remote location and steep slopes.

From our focus groups, the participants voiced their grievances with their “primitive” agricultural tools, stating that if they had the capital, they would invest in improved tools and methods so they would be able to produce more. Only a few reported to use fertilizers<sup>40</sup>. Most of them came from Masugu, which now is more dependent on using fertilizer and pesticide to get sufficient output. We were told that the national agricultural programme “Kilimo kwanza” (“agriculture first”) provides every village with a certain amount of subsidized fertilizer so that poor farmers are able to buy and use it. However, in many instances this fertilizer has been bought up by businessmen and sold at a higher price, depriving it from the poorest farmers for which it was intended.

Each village had access to rice or maize mill, and there are a few in each village. The villagers would go to those owning such mills and pay around 1000Tsh (\$0,67) for 18kg of unprocessed maize. Several people mentioned that they lacked proper storage houses for their produce as well as good knowledge on preservation methods. This meant that most households had to sell their crops even if the seasonal price was low.

In terms of draft animals, only one person in Nyali was recorded using buffaloes. However, in Lunenzi some used donkeys to transport their produce to the nearest market. Although we did not record the number we were told that only those few with enough income could afford to rent a donkey (\$2-3 per trip, 70kg of maize/beans).

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<sup>40</sup> We were told during the focus groups discussions that very few used fertilizers in the area.



The majority of people carried their produce on their heads instead, as a result of the bad roads that made it impossible to use alternative means of transport (bicycles, motorbikes, donkeys).

Villagers in both Nyali and Masugu stated that an increase in number of bicycles, and to some extent motorcycles have had a positive effect to them. The availability of such means of transport is largely linked to households' income. In Table 21, this is illustrated and shows that households with more money can afford bicycles and motorbikes as transportation means, and in effect ease their access to markets.

**Table 21: Household's physical assets by income groups, Kilosa District, Tanzania, 2010**

Mean:	Poor	Medium	Less poor	Total	Owned%rented
House	1,24	1,29	1,34	1,29	94/6
TV	0	0,02	0,03	0,2	100/0
Radio*	0,56	0,64	0,98	0,73	100/0
Telephone*	0,12	0,12	0,44	0,23	100/0
Bicycle*	0,54	0,75	1,25	0,85	75/25
Motorbike*	0,02	0,12	0,15	0,1	12/88
Car	0	0,02	0	0,01	0/100
Generator	0	0	0,05	0,02	100/0

*N = 180, \* indicates significantly difference between income groups (p < 0.05)*

This is also the case with telephones. We were told that telephones were used to buy seeds and sell their produce in town. By this they would get better prices. While most bicycles were owned by the household, motorbikes and cars was primarily rented, usually on a day-to-day basis. The two individuals we talked to who owned motorbikes had also turned it into an added income source as they either rented them out or used them as "taxi". In Table 22 we see that there were some differences between the villages in terms of physical capital.

**Table 22: Household's physical assets by location, Kilosa District, Tanzania, 2010**

Mean:	Lunenzi	Nyali	Masugu	Total	Owned%rented
House*	1,46	1,19	1,21	1,29	94/6
TV	0,02	0,02	0,02	0,2	100/0
Radio	0,69	0,75	0,74	0,73	100/0
Telephone	0,12	0,30	0,26	0,23	100/0
Bicycle*	0,42	0,96	1,15	0,85	75/25
Motorbike	0,07	0,14	0,08	0,1	12/88
Car	0	0,02	0	0,01	0/100
Generator	0,03	0,02	0	0,02	100/0

*N = 180, \* indicates significantly difference between locations (p < 0.05)*

Lunenzi do have more houses than the rest, while Masugu had more bicycles. That Masugu had more bicycles than the others can be explained by its location close to Kilosa town. Nyali and especially Lunenzi were located far away and if something needed to be transported to the market, other means of transport would be used instead.

All in all, people have few tools and possessions. However, all households have both hand hoes and pangas as tools for agriculture. Lunenzi households have significantly more hand hoes than the rest, and Masugu have more axes. Housing also seemed to be of prime concerns, while bicycles seem a priority in terms of transport for both people and produce.

#### **7.1.4 Social capital**

As much as 23 different ethnicities were recorded in the study area. Out of these, five ethnic groups dominated, namely the Sagala, followed by Gogo, Hehe, Vidunda and Lugulu.

**Table 23: Ethnicities, Kilosa District, Tanzania, 2010**

<b>Tribe</b>	<b>%</b>	<b>Tribe</b>	<b>%</b>
Sagala	31	Nyamwezi	3
Gogo	17	Pangwa	3
Hehe	11	Ngoni	3
Vidunda	8	Ngindo	2
Lugulu	6	Others	12
Kagulu	4		

Few variations were recorded between the different ethnic groups, but as seen in Table 24, Lugulu have significantly more income than the rest.

**Table 24: Ethnic groups by income groups, Kilosa District, Tanzania, 2010**

	Poor	Medium	Less poor	Total
Sagala	35	35	22	31
Gogo	22	20	10	17
Hehe	12	7	15	11
Vidunda	8	12	3,3	8
Lugulu*	3	2	12	6
Other	20	34	33	28
Total	100	100	100	100

*N = 180, \* indicates significantly difference between income groups (p < 0.05)*

By looking at the three different villages separately, we found that almost all Vidunda's recorded lived in Nyali. Lugulu were almost solely found in Masugu (see Table 25).

**Table 25: Ethnic groups by location, Kilosa District, Tanzania, 2010**

%	Lunenzi	Nyali	Masugu	Total
Sagala	58	27	7	31
Gogo	20	10	22	17
Hehe	17	13	3	11
Vidunda*	2	18	3	8
Lugulu*	0	2	15	6
Other	3	30	50	27
Total	100	100	100	100

*N = 180, \* indicates significantly difference between locations (p < 0.05)*

Overall, there are both Christians (75%) and Muslims (25%) apparent within the study area. Masugu and Nyali have a similar composition with 60/40, but in Lunenzi on the other hand, almost 100% were Christians.

76% of the households interviewed were married<sup>41</sup>. As for gender divisions, women are responsible for the children, for cooking, as well as for the collecting firewood and water where also the children contribute. Men are traditionally engaged in marketing and selling, construction of houses, in addition to the production of timber and charcoal. There is thus a social defined sexual division of labour. In this way, men are in most cases in charge of the household economy, while the women will be active in the day-to-day management of the household.

However, we were told in both Nyali and Masugu that women are now also producing charcoal due to an increasing rate of failing crops. Often activities they do together are collection of NTFP<sup>42</sup>, planting and harvesting, land clearing and off-farm activities.

<sup>41</sup> : Single=7%, Married=76, Divorced=5, Separated=1, Widowed=11

<sup>42</sup> In Masugu they however said that mostly men collected NTFP. In Nyali, both were engaged, but only men collected honey.

Most people consider their village either a good (69 %) or OK (24 %) place to live<sup>43</sup>. The horizontal level of trust between households can be seen as fairly high among the villages, with the highest being in Lunenzi, and lowest being in Masugu (see Figure 15).

**Table 26: Level of trust between households, Kilosa District, Tanzania, 2010**

(%)	Very low	Low	Fair	High	Very high
<b>Masugu</b>	0	1	27	20	52
<b>Lunenzi</b>	0	2	12	17	71
<b>Nyali</b>	1	2	18	23	56

On top of this, during focus group interviews people mentioned that they had a good relationship to the village councils. Nevertheless, in Masugu some stated that the interaction was not good, since the chairman lived in town.

All in all, we recorded 22 ethnic groups in the study area. Out of the five best represented, we see that Lugulu have a significantly higher income. We can also say that Vidunda are better represented in Nyali, while Lugulu's are mostly located in Masugu. There are 75 % Christians and 25 % Muslims in the study area. The social roles between men and women also seem to be well established with their own sets of responsibilities. However, women are now allowed to produce charcoal. Last out of the five different capitals is financial capital.

### 7.1.5 Financial capital

From our findings we see that the poor is extremely poor with USD 0,14 a day, the medium poor with USD 0,32 a day, while the households with the most income are still regarded as poor with USD 1,18 a day. This also shows that there are significant differences between income groups and overall income, which is also described in Table 26.

**Table 27: Household income by income groups, Kilosa District, Tanzania, 2010**

Mean:	Poor	Medium	Less poor	Total
Total household income (USD)*	206,66	631,31	2243,97	1024,64

*N = 180, \* indicates significant difference between income groups ( $p < 0.05$ )*

<sup>43</sup> No significant difference were proven up against location and income levels

When compared to location, we see that households in Masugu have more than twice the income of Lunenzi (Table 27)

**Table 28: Household income by location, Kilosa District, Tanzania, 2010**

Mean:	Lunenzi	Nyali	Masugu	Total
Total household income (USD)*	686,24	850,75	1544	1024,64

*N = 180, \* Means significantly difference locations ( $p < 0.05$ )*

Household monetary transfers were mainly done in cash in all three villages, but some exchange in kind did occur, and can be seen in relation to the availability of external markets. Few households had access to financial institutions and people were often not sure if such institutions existed or not.

During focus group discussion we were told in all three villages that savings groups did not exist. In Masugu and Lunenzi a credit group did not exist either. For Nyali however, we were told that households operated in groups through a village community bank or credit union by the name VICOBA. Nevertheless, we did not find any differences between wealth groups and credit unions when testing. In Nyali someone also told us that a SACCOs or savings groups would soon appear, but in general we were told that such groups did not exist within the study area.

Since such financial arrangements were only used by a privileged few, people either borrowed from neighbours or relatives when money was needed, most savings were either kept in cash at home or used for investments in land and livestock. This could then serve as a coping strategy if future unforeseen expenditures would appear. One man in Nyali for example sold of all his poultry due to illness. Since there were no private forests in the study area, forests can thus not be regarded as saving, but can instead serve as safety nets in times of problems.

As we have seen, people's access to capital varies between households. We noted the big differences between those with more money, and those with little, and can see that households in Masugu have generally more income than the rest. Local banks, savings groups or credit groups were difficult if not impossible to access for

households in the study area. However, Nyali were here an exemption and was the only village with a fully operational credit union.

By having addressed available assets, we now move forward to how people chose to live accordingly through different livelihood strategies.

## **7.2 Activities and income sources (household livelihood strategies)**

From the livelihood assets discussed above, households carry out a variety of different strategies. Four main activities were recorded, and include agriculture production, forest and environmental activities, and non-farm and off-farm employment. However, since our main area of interest is surrounding the forest, most of our focus will be put here.

### **7.2.1 Agriculture**

Almost all (99 %) households in the project area were engaged in agriculture. 53% of the produce were used for consumption, while 43% was sold. While some crops served the purpose as both cash crops and for subsistence (typically selling the surplus produce), some crops were purely used as cash crops, most notably sim sim and sunflower. We recorded as much as 25 different varieties of crops. On average each household would grow two or three different crops and quite a few grew for instance various types of leaves in between a dominant crop such as maize. This was done to increase their total output but also to some extent to increase their resilience, meaning if one crop failed they would still have some output. In Table 28, the most common crops produced are shown.

**Table 29: Cash and subsistence crops per village, Kilosa District, Tanzania, 2011**

	<b>Lunenzi</b>	<b>Nyali</b>	<b>Masugu</b>
<b>Cash crop</b>	Maize, beans, bananas	Maize, sim sim, rice, cassava, beans, tomatoes, pigeon peas leaves	Maize, sim sim, cassava, sun flower
<b>Subsistence</b>	Maize, beans, bananas, cassava, sugarcane	Maize, rice, cassava, beans, tomatoes, pigeon peas leaves	Maize, banana, chinese leaves/ other leaves

The types of crops produced seemed to vary in terms of different climatic conditions between the villages. Maize were cultivated in all villages and used as both cash crop and for subsistence purposes. There were however some differences between. From Table 29 we see that both Nyali and Masugu had more or less the same type of production, with maize, sim sim, and cassava being the main crops, with some few differences. Since Nyali is a part of the plateau zone, it enjoys more rain than Masugu, which lies in the floodplain zone (which were more dependent on seasonal rains). Due to this, Nyali could grow more vegetables and as seen, even rice.

Lunenzi on the other hand, were located in the highlands, and were in contrast with the two others, cultivating beans and bananas on a large scale, both as a cash crop and for subsistence purposes. While households in Masugu and Nyali were involved in many different types of crops, e.g. 15 different ones in Masugu, in Lunenzi, the variation were not as large, and maize and beans for example, were produced by almost all households. This indicates that Lunenzi were more specialized in terms of production than the two others, and can indicate that the village were less affected by shortfalls. However, due to several droughts and floods in Kilosa during recent years many households had experienced frequent crop failure. In addition only a few could afford to use fertilizer, and even though many commented on the negative effects fire had on the fertility of their land, the practice of burning the fields before cultivation was widespread.

76 % of the households had additional livestock. The most common livestock was poultry (59%). Slightly more people kept poultry in Lunenzi than in the other two villages (66%). 23% of the respondents also kept goats and a few pigs. Only one household kept cattle and were located in Masugu. However, due to the fairly high presence of Maasai pastoralists in Masugu, it appears that the conditions were good for grazing. One respondent mentioned that he did not dare to keep any large livestock, as then the Maasai would steal them.

By looking at agricultural activities we see that interestingly enough, what types and variety of crops which is cultivated, are by large determined by location and climate, thereby reflecting differences in terms of livelihood strategies and adaptation. One

might think that more wealthy households tend to specialize more, but such relationships were not found.

### 7.2.2 Forest environment activities

In terms of environmental resources, there are generally three ways of use; (1) support of current consumption referring to regular use in support of livelihoods, (2) safety net functions referring to the role forest can play under periods of hardship, and (3) poverty reduction referring to diversified forest strategies, specialized forest strategies and payment for environmental services.

Out of the total sample size, 98 % were dependent on the forest. From this, 81 % are for subsistence use and 19 % are sold, thus representing cash income. In the study area, households depend on a variety of different forest products. These can be grouped under five different categories, namely Charcoal, firewood, poles and timber and Non Timber Forest Products (NTFP). Their contribution to local livelihoods is described in Table 30.

**Table 30: Environmental outtake/dependence (%), Kilosa District, Tanzania, 2010**

Forest products	Lunenzi	Nyali	Masugu	Total
Charcoal*	3	8	40	17
Firewood	98	97	97	98
Poles and Timber*	0	12	32	15
NTFPs	72	80	83	78

*N = 180, \* indicates significantly difference between locations (p < 0.05)*

78 % of the respondents said that they were using NTFP. Almost all households reporting that they collected such, used it for own consumption. Only the minority (six households) sold NTRPs and the income from it was small, with an average of around \$10 for those households. This tells us that the dependence on NTFP is high in the study area, although it was difficult to capture the extent of this use due to high use for own consumption.

Firewood is the collected and consumed by 98% of the population on a regular basis and is the main source of daily energy needs in all villages. It is thus also collected



primarily for consumption and only a few people sold it. In terms of relative importance it is thus safe to say that for the majority firewood is very important.

When it comes to poles and timber we recorded 15% of households either extracted it for consumption (96%) or for commercial purposes (4%). Also here there is a certain degree of regular use, especially for poles, as it is used mainly for building or mending houses. This is however not done on a regular basis and it can go years before the household needs to mend their houses with new poles. Therefore it is important to note that although we only recorded 15 % that recently had used poles, this just happened to be those who needed to build or mend their houses at that particular time. Timber on the other hand is extracted mostly for commercial purposes, either in times of hardship or as a poverty reduction strategy. For the few that did it on a regular basis it could raise their income significantly (one individual sold for as much as \$1372). Households with high human capital (younger household heads;  $p = 0,043$ , and higher worker/consumer ratio;  $p = 0,039$ ) tend to take more poles and timber than other households. This can be explained by the heavy workload associated with such activities. As seen from table... significantly more poles and timber are produced in Masugu (32%), compared to the other villages. We can thereby say that this activity is mostly seen in Masugu.

17% of the households were involved in charcoal production. However, given the fact that most of the charcoal was sold (81%) the majority of these households would still be dependent on firewood to cover their personal energy needs. By doing tests we see that there are significantly more wealthy households that are engaged in both charcoal and in poles/timber production within the study area. Similar to poles and timber households in Masugu are also engage more than the others in charcoal making (40%). We can therefore say that less poor households in Masugu, are the ones that are most engaged in both charcoal and poles/timber activities.

The reasons for why charcoal and poles and timber were that much more widespread in Masugu than in Nyali and Lunenzi can be many, however one obvious reason is its closeness to Kilosa Town which also makes it easily accessible from the main highway reaching Morogoro and Dar es Salaam (where much of the charcoal demand comes from). In and around Masugu, we observed substantial charcoal as well as

some timber being transported by bicycles, either to the roadside to be sold, or directly to Kilosa town.

Secondly, the forest where charcoal and timber is taken from is easily accessible due to unclear land tenure, thus restricting neither access nor use. We were told about people coming from outside the village to extract timber or to produce charcoal. For instance one respondent told the story about a woman coming into the village from town to produce charcoal and after living there for a while had earned enough money to be able to go back to Kilosa Town and open up a shop. Such extraction of forest products seemed to be regarded as accepted behaviour. This coupled with the inability of the District Forest Officers to enforce district and national rules on forest products licensing and permits,<sup>44</sup> makes it relatively easy to carry out these activities. Because the task of producing charcoal is still very physically demanding and as a result not everyone is able or willing to do it, and although the district forest officers cannot cover all areas within their jurisdiction many did fear that they would get caught if they tried to transport their produce into Kilosa Town which would result in them losing their bags of charcoal and also risk strict sanctions such as fines or in worst case legal action.

Thirdly, there has been a steady rise in the prices of charcoal and for those taking their bags to be sold in Kilosa Town, which many in Masugu did, where one could get between 6 to 10 dollars within the right season. Thus given these factors it has made for a good environment for charcoal production, something which is less so for Nyali and Lunenzi. For instance Nyali is located further away from Kilosa Town and depends heavily on middlemen coming to their village to buy their agricultural produce which means they get a much smaller price for their output, including charcoal. Lunenzi is even more remote, and as we will discuss in more detail at a later stage has a much more functional forest management system in place which limits their use. As we have seen they also have access to more agricultural land and on average has a bigger output than in Masugu.

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<sup>44</sup> Given the lack of resources, a chronic lack of staffing exists. For those already employed, limited funds for patrols are provided making it difficult to fulfill their obligations.

Lastly, it appeared that the lack of alternative income opportunities and more difficult conditions for agricultural production was put as the main reason and thus many saw no other choice but to go into the forest to earn an income from the forest. However, in the end, it seemed to us that they were quite aware of the consequences of high activities in the forest, since when asked, people mentioned that they now had to walk further and work harder since the forest was now more degraded.

In terms of NTFPs, 78% reported that they were collecting it, most of them from Nyali. The most important ones were mushrooms, bamboo, medicinal plants, fito<sup>45</sup>, wild fruits and leaves. These products though were used primarily for consumption either as building materials (bamboo and fito), as an added food source (wild fruits and leaves and mushroom) or as an alternative to modern medicine, which in many instances is inaccessible to households due to too high prices (medicinal plants). The main NTFP that we recorded being used for commercial purposes was mushrooms where small baskets of either fresh or dried mushrooms were sold after the rainy season.

**Table 31: Percentage of households using NTFPs and its perceived importance, Kilosa District, Tanzania, 2010**

NTFP	Somewhat important	Important	Very important	Collect by
Mushroom	9	35	56	<b>50</b>
Bamboo	9	27	64	<b>37</b>
Wild fruits and leaves	29	40	32	<b>35</b>
Medicinal plants	18	24	58	<b>28</b>
Fito	4	40	56	<b>27</b>

All in all, we see that the importance of firewood is huge in all three villages, where 98% of the respondents used it as their main source of energy. However, as seen, households in Masugu use the forest in a much larger scale than the two others. It is therefore clear that the population is hugely heterogeneous in terms of environmental activities.

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<sup>45</sup> Very thin sticks used in the construction of houses, for instance in binding the thatch grass roof together

### 7.2.3 Non-farm activities

In the study area, 27% of the households reported involvement in non-farm activities. Out of these, brewing was the most common activity followed by shop/trade and agricultural processing (see Table 32).

**Table 32: Representation of non-farm activities (%), Kilosa District, Tanzania, 2010**

	Lunenzi	Nyali	Masugu	Total
Shop/trade*	5	7	12	8
Agricultural processing	3	3	0	2
Brewing	13	10	13	12
Other*	2	5	15	7

*N = 180, \* indicates significant difference between locations ( $p < 0.05$ )*

Variations exist between the villages. This is especially true for shops and trade, but also for others. However, it must be said that the level of wealth determines household's engagements in non-farm activities. It is therefore mostly the households that are better off which participates.

12% of the households made local brew as an off-farm activity. This was carried out in similar fashions along all three villages, and was done solely by women. In this regard, households headed by women are significantly more engaged in brewing activities ( $p = 0,036$ ).

8% of the respondents were engaged in shops/trade, and typically involved small shops selling basic products. This activity was mostly seen in Masugu, and the least in Lunenzi, which can be explained by their respective locations. Since Masugu are located not far from the road or Kilosa town, people would more easily be able to run small shops and trade. On the contrary, Lunenzi were located far away from roads in the highlands, making it difficult to keep small shops or trade.

A third non-farm activity was agricultural processing. However, this was only done in Nyali and Lunenzi. We were told that due to its proximity to town, several households in Masugu transported their crops to town for processing there instead. This can explain this numbers, and also give an explanation why Nyali and Lunenzi were engaged in such activities. In this respect, closeness to market will matter.

#### 7.2.4 Off-farm activities

In the study area, a few households (13%) went into paid labour on other people's farms. How it usually worked was the a person would get paid per acre and on the basis of what type of work it entailed, whether ploughing or harvesting, and sometimes depending on what type of crop he/she was working with, a price per acre would be bargained. For instance in some areas working on a farm which produced sim sim would pay more per acre than for instance maize.

**Table 33: Off-farm employment, Kilosa District, Tanzania, 2010**

	Lunenzi	Nyali	Masugu	Total
Off-farm employment*	8	7	25	13
Use of off-farm labour*	53	23	20	32

*N = 180, \* indicates significantly difference between locations (p < 0.05)*

As seen in Table 33, most of the households employed as off-farm labour are from Masugu. The poorer households tend to be well represented within this activity, where also the size of the household matters. The bigger the households, the more they will be engaged in off-farm labour ( $p = 0,036$ ).

When poorer households tends to be the employee, the less poor households will be the managers ( $p = 0,030$ ;  $p = 0,005$ ) From this we therefore see that when Masugu was most engaged as labour, Lunenzi hire more labour than people attend to. These variations in activities and employment can reflect the natural capital in each village. In Masugu we did learn that the conditions for agriculture was challenging. This can then in return lead to that more people turn to off-farm employment as an alternative.

All in all, we see that almost all households are engaged in agriculture. This is also the case with forest environmental resources, where close to all households are dependent on collecting fuel wood to cover the daily energy needs. The forests were however also used for other purposes such as collecting NTFPs, producing charcoal, poles and timber. Such activities were mostly done in Masugu, and by the more wealthy households. Other activities include non-farm and off-farm activities. In general, this shows that more wealthy households diversify their livelihoods by the involvement in more activates than the poorer ones. By this their livelihood outcome would most likely be better.

## 7.5 Outcomes

Out from the access to different assets, activities within a set context, livelihood outcomes will be defined. This outcome will then again affect the assets, e.g. if assets and activities lead to a high environmental income from unsustainable use, it will in turn have a negative effect on natural capital.

**Table 34: Total household income and socio-economic characteristics, Kilosa District, Tanzania, 2010**

Variable	Coefficient estimate	SE	t ratio	Prob>t
(Constant)	1244	620	2	0,047
Sex of head of HH	-366	262	-1,39	0,165
Age of HH	-16	6	-2,79	< 0,006
Size of households	7	40	0,17	0,863
Land size	262	67	3,89	< 0,000
Education	44	206	0,217	0,828
Worker/consumer ratio	173	411	0,42	0,674
Religion (Christians as reference)	-424	210	-2,01	< 0,045
Ethnic groups	-4	9	-0,38	0,702
Location	384	120	3,18	< 0,002

N = 180; R square adj = 0,218; F= 5,898; p < 0,005.

As seen in Table 34, four relationships proved to be statistical significant. This means that four factors affected the income or outcome of a household; the age of the head (Old people seems to have less income), size of land (more land means more income), religion (Muslims have a general higher income than cristians) and location (Masugu have much higher income than the others). By this we can say that these are the factors that determine will have better opportunities to widen their asset base. To examine the significance of difference between income groups and income from different activities (Table 35), an ANOVA test was run. Here we found a significant relationship between all, with the exemption of remittance.

**Table 35: Annual income sources by wealth groups, Kilosa District, Tanzania, 2010**

Income source	Poor (N = 60)		Medium (N =60)		Less poor (N = 60)		Total (N =180)	
	Income (USD)	% total	Income (USD)	% total	Income (USD)	% total	Income (USD)	% total
Agriculture*	161,25 (82)	78	460,46 (212)	73	803,31 (604)	36	475,01 (454)	46
Forest environment*	30,19 (30)	15	90,64 (182)	14	835,45 (1717)	37	318,76 (1057)	31
Non-farm*	8,21 (33)	4	45,6 (162)	7	442 (1058)	20	165,27 (642)	16
Remittances*	4,2 (18,)	2	3,8 (18)	1	4,6 (19)	0	4,2 (18)	0
Off-farm*	2,8 (10)	1	30,8 (122)	5	158,6 (407)	7	61,4 (253)	6
<b>Total</b>	<b>206,66</b>	<b>100</b>	<b>631,31</b>	<b>100</b>	<b>2243,9</b>	<b>100</b>	<b>1024,6</b>	<b>100</b>

*N = 180, \* indicates significantly difference between income groups ( $p < 0.05$ ), Standard deviation in brackets*

Income varies significantly between the three villages, and through yet another ANOVA test, we can see that there are especially two types of income that stands out as statistical significant, namely environmental income and off-farm income. This tells us that the different villages had different livelihood strategies.

**Table 36: Annual income sources by location, Kilosa District, Tanzania, 2010**

Income source	Lunenzi (N = 60)		Nyali (N =60)		Masugu (N = 60)		Total (N =180)	
	Income (USD)	% total	Income (USD)	% total	Income (USD)	% total	Income (USD)	% total
Agriculture	480,85 (392)	70	540,36 (413)	63	403,8 (540)	26	475,01 (454)	46
Forest environment*	32,78 (32)	5	83,18 (239)	10	840,31 (1708)	54	318,76 (1057)	31
Non-farm	136,4 (433)	20	195 (945)	23	164,41 (408)	11	165,27 (642)	16
Remittances	2 (14)	0	2,2 (10)	0	8,4 (25)	1	4,2 (18)	0
Off-farm*	34,2 (144)	5	30 (160)	4	128 (377)	8	61,4 (253)	6
<b>Total</b>	<b>686,23</b>	<b>100</b>	<b>850,74</b>	<b>100</b>	<b>1544,9</b>	<b>100</b>	<b>1024,6</b>	<b>100</b>

*N = 180, \* indicates significantly difference between locations ( $p < 0.05$ ), Standard deviation in brackets*

As seen, most of the income from within the project area comes from agriculture, followed by forest environmental income, income from non-farm and off-farm activities and lastly remittances.

### 7.5.1 Agricultural income

Overall, agriculture constitutes 46% of all income and includes both incomes from livestock and crop production. Crop production was the main activity and we only recorded one person who did not produce anything. Although 76% of households kept some livestock only 19% of the agricultural income comes from livestock, and mostly from poultry. On average each household had 2.28 ha to cultivate on. The surplus produce were either taken to the market or sold inside the village. Although the household could get a higher price if waiting to sell their produce, the majority had to sell it at a lower price after harvest because they had no way of preserving it. Most of the money they got from selling their crop was used to get additional types of food, especially in the period between harvests where the ability to buy food was crucial, meaning very little was left to invest in agriculture again.

in Lunenzi agricultural income accounted for 70% of their total income and can be explained by agriculture being the overall dominant activity (100%). Although 93 % in Masugu were engaged in agriculture their income from it only accounted for 26% of the total income. This tells us that even though households tend to engage in other activities, they will still keep land for cultivation.

As seen in Table 36, the agricultural income varied significantly between wealth groups. Not surprisingly the low income group depends most on agriculture, as it makes up 78% of their total income, however interestingly the middle income group follow closely by with 73% of their income coming from agriculture. For the less poor agriculture only makes up a small proportion of their total income, with 36%, however they still produce a lot more than those with a lower income. In fact almost 50% of the total agricultural income is within those with the highest income whereas only 18% of the total agricultural income is within the lowest income. An interesting fact though, is that regardless of wealth group over 50% of the produce is sold, for instance 54% of the produce of those most poor is sold and only slightly more among those who are less poor with 65%.

As of agricultural productivity, the size of land does not alone dictate how much you will be able to produce and as we will see below also location plays a big part in terms of soil quality, climate, agricultural practices etc. For instance, whereas Nyali



and Masugu were quite close to one another, Nyali is a bit higher up in altitude. Lunenzi on the other hand was located a lot higher up in the highlands close to the Rubeho Mountains. Thereby they faced very different conditions than for example Masugu.

When looking at the yield per ha our findings supported our observations showing that Masugu had the lowest productivity within all the crops which we were able to compare between villages.

**Table 37: Average output in kg per ha of selected crops per village, Kilosa District, Tanzania, 2010**

Crop type	Lunenzi	Nyali	Masugu
Maize	874	853	451
Rice	537	814	427
Beans	494	383	*
Sim sim	*	451	327
Cassava	*	327	228

*\*In these cases it was not grown or in too small numbers to be able to calculate*

Given the fact that there are a lot of factors determining productivity, we cannot be too sure as to the reasons why Masugu would get overall lower yields than Nyali and Lunenzi, however we were told about the lack of fertility of the land in Masugu, as well as recording quite limiting restraints and shocks, which we will come back to. But also, households in Lunenzi have a higher worker/consumer ratio.

As seen, agricultural income plays a very large part for the majority of households, and crop production is the main income source for many. Although factors such as natural capital, location and shocks/risks play a part in the income gained it is very clear that the poorest people in the area are the ones getting the least income from it but at the same time depending the most on it. On the contrary, less poor households generates most income from agriculture but at the same time depending less on it.

In terms of location, Masugu is the one which depend the least on agriculture in terms of total income, and rather relies more on other activities, then environmental income in particular.

### 7.5.2 Environmental income

Within this income source we look at the various products which are seen as the most important ones, namely firewood, charcoal, poles and timber, and NTFPs. Not only are we interested in the general picture of use and dependence but particularly in the variations within this income source.

Overall, forest environmental income is the second most important income source and constitutes 31 % of households' total income. By running a multiple regression we see that those having a high environmental income is mainly dominated by three factors; Age of head of household, religion and location (see Table 38).

**Table 38: Environmental income and socio-economic characteristics, Kilosa District, Tanzania, 2010**

Variable	Coefficient estimate	SE	t ratio	Prob>t
(Constant)	643	454	1,41	0,159
Sex of head of HH	-259	192	-1,34	0,180
Age of HH	-8	4	-1,96	< 0,05
Size of households	3	29	0,12	0,904
Land size	78	49	1,58	0,115
Education	-172	151	-1,14	0,255
Worker/consumer ratio	239	301	0,79	0,428
Religion (Christians as reference)	-370	155	-2,38	< 0,019
Ethnic groups	-2	7	-0,35	0,725
Location	327	88	3,71	< 0,000

N = 180; R square adj = 0,155; F= 4,211; p < 0,005.

The reason why younger households tend to have higher environmental income can be explained by two factors. Charcoal, poles and timber production is associated with heavy work, thus favouring young men, and since the households are have recently been established, forestland are in much higher degree cleared for agriculture. In terms of religion, this can hardly be explained by any means. However, it is interesting to note that those households that have both the highest overall income as well as environmental income are Muslims. Why such a division exists would however need further study. As of location, it means the three different villages we visited, and tell us that the environmental income was much higher in Masugu than in the two others. This result was as expected and confirmed what we had observed in terms of the variety of environmental, climatic, ethnic, agro-ecological, cultural,

political and social conditions with different values and norms which also compact the resource use patterns (Kamanga, Vedeld et al. 2009).

As seen in Table 36, for whereas environmental income Lunenzi and Nyali only makes up 5% and 10%, in Masugu it accounts for as much as 54%. In addition, there are great variations for the importance of poles and timber and charcoal (see Table 39). These activities were in fact carried out almost entirely by villagers in Masugu.

**Table 39: Forest environmental incomes by location (USD), Kilosa District, Tanzania, 2010**

Forest environmental resource	Lunenzi (N = 60)		Nyali (N = 60)		Masugu (N = 60)		Total (N = 180)	
	Income (USD)	% total	Income (USD)	% total	Income (USD)	% total	Income (USD)	% total
Charcoal*	5,33 (29)	16	49,31 (231)	59	721,37 (1676)	86	258,67 (1025)	81
Firewood	27,95 (29)	84	28 (41)	34	47,69 (63)	6	34,58 (46)	11
Poles and timber*	0 (0)	0	5,19 (19)	6	70,85 (245)	8	25,35 (145)	8
NTFPs	0 (0)	0	0,6 (4)	1	0,4 (3)	0	0,36 (3)	0
Total	32,79	100	83,19	100	840,32	100	318,76	100

*N = 180, \* indicates significantly difference between income groups ( $p < 0.05$ ), Standard deviation in brackets*

The most interestingly and the most striking in terms of variations between wealth groups is the fact that those with the highest overall income use a substantially higher amount of all forest products as compared to those with the lowest income, and for all but NTFPs this is also statistically significant (see Table 40).

**Table 40: Forest environmental incomes by income groups (USD), Kilosa District, Tanzania, 2010**

Forest environmental resource	Poor (N = 60)		Medium (N = 60)		Less poor (N = 60)		Total (N = 180)	
	Income (USD)	% total	Income (USD)	% total	Income (USD)	% total	Income (USD)	% total
Charcoal*	5,33 (29)	18	48,45 (166)	53	722,23 (1683)	86	258,67 (1025)	81
Firewood*	23,20 (12)	77	32,37 (27)	36	47,56 (71)	6	34,58 (46)	11
Poles and timber*	1,65 (8)	5	9,63 (61)	11	64,75 (239)	8	25,35 (145)	8
NTFPs	0 (0)	0	0,18 (1)	0	0,9 (4)	0	0,36 (3)	0
Total	30,19	100	90,64	100	835,45	100	318,76	100

*N = 180, \* indicates significant difference between income groups ( $p < 0.05$ ), Standard deviation in brackets*

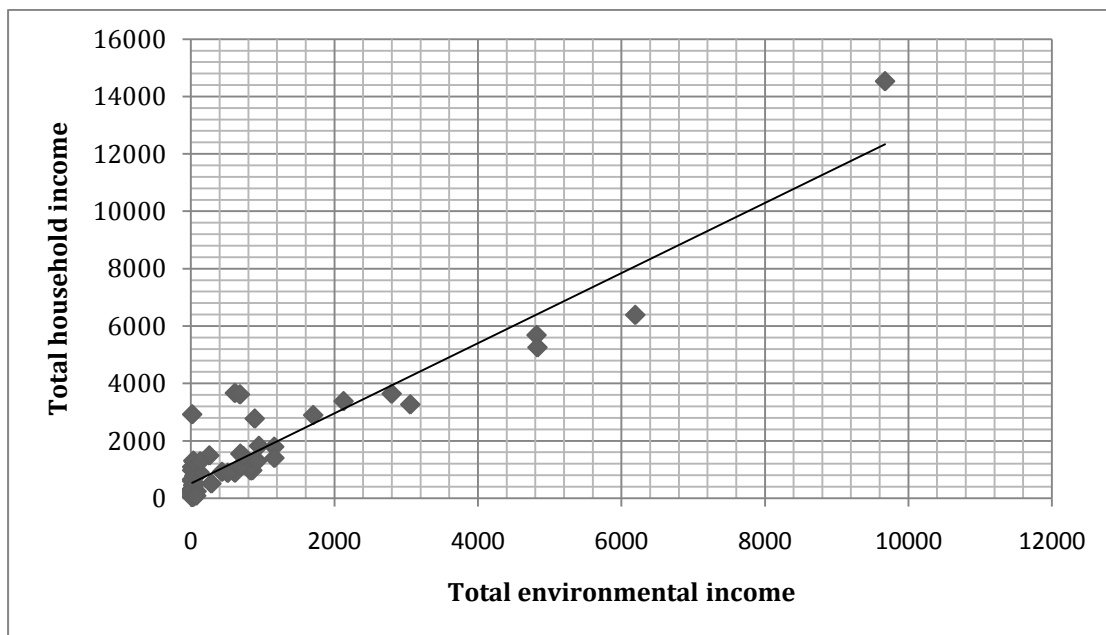
Charcoal is the resource which makes up most of the total forest environmental income, and whereas the lowest income group has little to no involvement in this activity (3%), only 18% of the income falls within this group. However, many less poor households are engaged in charcoal production (38%) and contribute to as much as 86% of their environmental income. The same tendencies are seen with poles and timber. This fact is very interesting as it is often described as a last choice where it is the poorest people which venture into the forest to create some income, however according to our numbers it is in fact dominated completely by those with the most income. It is however important to remember that generally and regardless of wealth group all within our study area were very poor and even the least poor category lie only slightly above one dollar a day.

Firewood on the other hand is by far the most important forest product for those with least income, accounting for 77% of their total forest environmental income, and although only representing 6% for the least poor they still collect on average the most firewood out of all, in fact almost twice as much as the middle and low income group. One reason for this might be the fact that much firewood is also used for other income generating activities, such as brewing local alcohol or brick making.

For NTFP, we see that the income from such was small compared to other forest uses. However, we must here refer back to activities, which showed that most household

were engaged in this activity. Due to the difficulties of establishing the correct amount of NTFP's taken and the prices (since most were not sold) makes NTFP likely to be much more important as an income than our data demonstrate.

Nevertheless, by looking at the different types of environmental income up closely we suspect that there is a strong relationship between household income and environmental income as a whole. Figure 18 shows this relationship, and illustrate a significant relationship between the two we see that this is true ( $R^2 = 0.67$ ;  $p = 0.01$ ).



**Figure 18: Relationship between total income and environmental income, Kilosa District, Tanzania, 2010**

As seen, forest products as an income source have various implications for the households depending on the particular resource. For instance whereas firewood is by all very important as a source of covering their daily energy needs for cooking, poles are used mostly in concern with construction and thus needed only rarely when a new house is built or an old one mended. Timber and charcoal is either used as a safety net or, increasingly so, as a stable income source. However the level of involvement and the amount of income gained from the various sources varies greatly between both wealth groups and between location, and whereas charcoal and poles/timber are mostly used by those with the highest income and they are also those receiving the

highest returns from them, they are also activities performed mainly in Masugu and to a much lesser extent in Nyali and Lunenzi.

### **7.5.3 Non-farm income**

As the third most important income source, non-farm sources contributed to 16% to the total income of an average household (see Table 38). The most profitable activity was agricultural processing which on average generated USD 191 a year, followed by shops and trade with USD 52, and local brew USD 26. Most of this income accrued to the less poor households contributing to 20% on average to total income (compared to 4% for the poor).

When looking for variations by location, households in Masugu were more involved in non-farm activities. This we think can be due to better road network and proximity to Kilosa Town. Availability of infrastructure will in this way, not only provide access to markets for sale of crops and forest products, but also provide opportunities for businesses.

### **7.5.4 Off-farm income**

As another diversification measure, off-farm activities make up 6% of the total income. Once again it is the less poor that are the biggest group involved in this activity (Table 36). In turn those less poor earned the most with an average of \$159 which is quite a lot more than say for instance the medium income group which only had an average income of \$31. Among the villages, Masugu had the highest rate of households doing off-farm labour (23%). Since it also had the highest rate of unexpected expenditures due to shocks (60%), this might be a partial explanation.

The final income source that we will mention is remittances, although this income hardly plays a part at all in the households' diversification strategy.

### **7.5.5 Remittance**

The amount of money transferred was insignificant in relation to total income, but we have to here consider what such payments presents. For instance there is a certain degree to which some remittances were not captured by us, as many view receiving remittances with something "shameful" linked to it, or rather being embarrassed for

not being able to tend to own income themselves, and thus more reluctant to admit to having received some assistance from a relative or family member. Regardless of wealth group, a few households had received some money from a family member or relative in the past year, and the amount given was also the same. However, as seen in table 9.6 the households that received significantly more remittance are the less poor households. This can be because less poor households can afford to educate their children, whereas the children will get better jobs in distant locations.

The only slight difference we found in terms of remittance and location was that most of them were located in Masugu. This can be explained by its closeness to town, and income opportunities for family members, but still, though, the amount was insignificant.

#### **7.5.6 Perceptions on livelihood outcomes**

As stated earlier, since the difference between those with the least income and those with the highest was quite substantial we were interested in finding out their perception of their level of income, and whether or not they felt it was enough to cover their households' needs. In total only 28% answered that the income they had was sufficient. A curious fact is that out of all the wealth groups the ones, which felt the most that their income was not enough was the less poor, with 46% answering this. When asked to compare their situation to other households in the village more than half considered themselves about average in terms of their wellbeing as compared to others, however 30% answered they considered themselves worse off. Compared to five years ago in total as much as 40% felt they were better off now, the most satisfied ones coming from Lunenzi (61%) whereas 47% in Masugu felt they were now worse off. 52% in Masugu also felt that today they don't have enough income to support their households needs.

**Table 41: How well-off households perceive themselves now and five years ago, Kilosa District, 2010**

Variables	Sufficient income to cover household need			Income compared to neighbours			Income compared to 5 years ago		
	%			%			%		
	Yes	Reasonably	No	Worse off	About average	Better off	Less well off	About the same	Better off now
Lunenzi	40	33	28	24	52	24	17	21	62
Nyali	28	30	42	26	56	18	33	32	35
Masugu	17	25	<b>58</b>	40	52	8	<b>47</b>	30	23
Poor	22	36	41	34	52	14	33	29	38
Medium	31	28	41	31	50	19	33	21	47
Less poor	31	24	<b>46</b>	25	58	17	32	32	36
Total	<b>28</b>	29	43	<b>30</b>	<b>53</b>	17	33	27	<b>40</b>

The outcomes show that quite strikingly, those less poor had a significantly higher income in all income sources and were by this also best suited in times of shocks and crisis. Between our villages some variations were also noticeable. Whereas Lunenzi depended the most on agriculture (70%), Nyali was slightly less dependent on it (63%) and got a larger share of their income from the forest. However Masugu was the village which got most of its income from forest resources, in fact it accounted for over half of their total income. In turn agricultural income was less important, contributing to only 26% of their total income and also being quite lower than in Nyali and Lunenzi. Since the less poor households have more income, and a more diversified income, they are also better adapted in terms of shocks and income shortfalls. When looking at the livelihood context, the concept of vulnerability is therefore important.

### 7.3 Vulnerability and risks

By vulnerability we refer to a situation with high degree of exposure to risk, shocks and stress. “Vulnerability has the *dual aspect of external threats to livelihood security due to risk factors such as climate, markets, or sudden disasters, and internal coping capability determined by assets, food stores, support from kin or community and so on*” (Ellis 2000, p.62).

To meet such vulnerability contexts, Ellis (2000) argues that individuals and households pursue diversification as a livelihood strategy. He further divides such



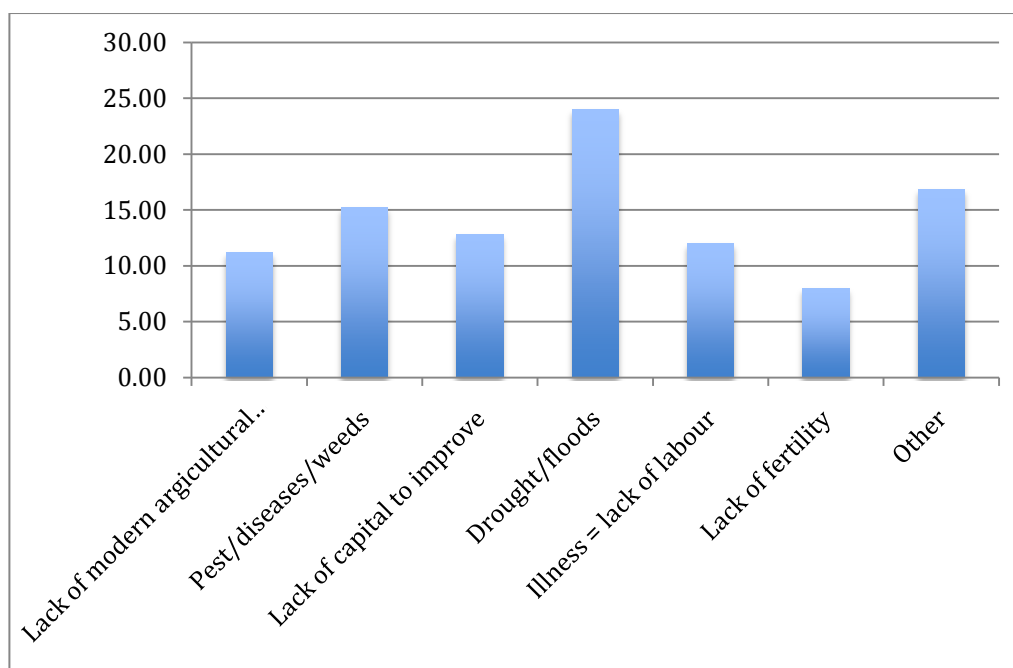
livelihood strategies into two overarching considerations; survival or choice. Where necessity refers to involuntary reasons for diversifying when sudden shocks occur, such as sudden death of family members, choice, by contrast, refer to voluntary and proactive reasons for diversifying. These determinants of livelihood diversification are here further divided into five different factors; seasonality, risk, coping behaviour, labour markets, credit markets, and asset strategies.

### **7.3.1 Seasonality**

“All households confront seasonality as an inherent feature of their livelihoods” (Ellis 2000, p.58). Out of such contexts, different livelihood strategies are developed as seen earlier in this chapter.

In the study area, all three villages face different kinds of shocks and risks, depending on the seasonality. In 2008, there was flood in Kilosa that had severe effects on the area. In Lunenzi crops in the valleys were washed away, destroying most of the lowland crops. In the lower lying Masugu and Nyali, livelihood had an even more severe effect. In Nyali, the bridge on the main road was also destroyed, making it more difficult to access the external markets. Due to the extent of this occurrence the government had to give out food and basic supplies.

In addition we were told that there are now more droughts than before, as well as unreliable rains and seasons. In Masugu they could now harvest only between 3-5 bags of maize of 0,4 ha compared to 15 bags before. 69 % of the respondents said they had problems that limited their agricultural production. The most important causes are listed in Figure 19.



**Figure 19: Problems limiting agricultural production, Kilosa District, Tanania, 2010**

There were no significant differences between villages or income groups in terms of problems limiting agricultural production. Hence, everyone are affected the same regardless of income and location. In all three villages, people also reported about pests and livestock diseases as being of huge concerns (15 %).

When we asked if household had faced any major income shortfalls or unexpectedly large expenditures during the past 12 months, 47% said that they had. When we compare households that had faced such shortfalls with location we see that Masugu is significantly more prone to income shortfalls (serious crop failure and climate/drought/flood) than the two others (Table 42). This finding supports our other findings as well as observations, and has to be seen in relation to Masugus' low agricultural productivity and high forest income.

**Table 42: Income shortfalls by location, Kilosa District, Tanzania, 2010**

	Lunenzi	Nyali	Masugu	Total %
Serious crop failure (%)*	0	5	32	12
Death serious illness (%)	27	32	28	29
Climate/drought/floods (%)*	12	8	32	17
Price change (%)	0	2	5	2

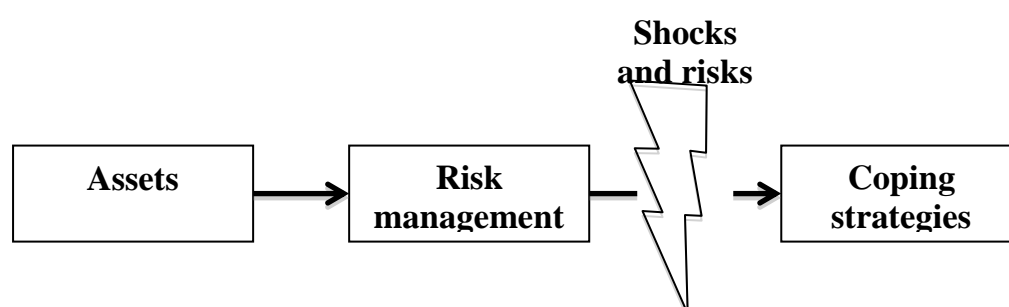
In terms of income groups, less poor households had significantly more problems with crop failures. The reason why can be associated with more land for cultivation, and thus bigger shortfalls and risks when shocks first occur.

**Table 43: Income shortfalls by income groups, Kilosa District, Tanzania, 2010**

	Poor	Medium	Less poor	Total %
Serious crop failure (%)*	7	5	25	12
Death serious illness (%)	27	27	33	29
Climate/drought/floods (%)	17	12	23	17
Price change (%)	2	0	5	2

### 7.3.2 Risk management and coping strategies

According to Ellis, there are two ways of dealing with vulnerability; risk management and coping strategies. The risk management can be interpreted as a household strategy to expect failures before they happen, usually done by diversification of income measures. Coping strategies is the response to a disaster after it has occurred. In this way risk management and coping strategies are neatly intertwined.



**Figure 20: Risk management and coping strategies**  
(Based on Ellis)

### 7.3.3 Risk management

The availability of assets is of crucial importance to risk management. A high ability to substitute assets and diversify thus increases the overall resilience of a household, thereby lessening the burden if unforeseen events occur, such as the flood in 2008. By have a strong risk strategy thus decrease the vulnerability of a household.

One such risk strategy that widely seen is the high amount of human capital, meaning big families. The mean size of households in the study area was 4,9. Here we saw that

Lunenzi had bigger households than the rest, and would in that way be better prepared if someone got sick. Variations are also seen among income groups where the medium income households had larger households. This can be linked to the fact that less poor households had higher diversification of activities, e.g. income from non-farm activities, and could therefore afford to hire labour instead. In this way we can say that the less poor households more resilient in terms of shocks.

Income diversification can be seen as a risk strategy that imply a trade-off between higher total income, but greater probability of income failure, and a lower total income involving smaller probability of income failure (Ellis 2000). However, this has proven to not always true regarding on-farm activities, where diverse complementary cropping system can help increase productivity (Ibid). A great variety of different crops were recorded in the study area, where households also had plots in different locations (with micro-climatic conditions, soil qualities, etc.), which also can be seen as a diversification measure. As mentioned under natural capital, people tend to invest in such diversification measures where people invest in own land and property to manage risks. For the Maasai pastoralists in the area, their number of livestock can be understood as capital and hence serve the function of managing risk for unforeseen events, and poor times.

#### **7.3.4 Coping strategies**

The inability to act if a shock occurs denotes high vulnerability. The available assets come and go where low ability to substitute between assets and outcomes is of crucial importance. How people cope with income shortfalls varied a lot.

In general, one may respond in the following ways; (1) Diversify income sources; (2) draw from reciprocal obligation (social capital); (3) migrate away; (4) sell assets (ex. livestock); (5) realization of fixed assets (land, house etc.) (Vedeld 2011). The most important coping strategy recorded in the study area was to compensate in terms of selling of possessions or crops, changing to work for others as labour, produce and sell charcoal for more income, switch to alternative crops, ask for assistance from family (see table 9.3). Many started to use the forest as a “safety net” in periods of hardship (see Vedeld, Angelsen et al. 2004) . This reflects a relationship between

shocks and deforestation. Nevertheless, many did not have any strategies at all that they would turn to.

**Table 44: Responses to shocks, Kilosa District, Tanzania, 2010**

<b>Shocks</b>	<b>Coping mechanisms</b>
Serious crop failure	Went to paid labour; compensating by produce or sell charcoal
Death, serious illness	Sold possessions such as crops, land and animals; got assistance from neighbour; went to paid labour/small business
Climate/drought/floods	Compensating by produce or sell charcoal; went to paid labour
Price change of agricultural inputs/outputs	No strategy, compensating by produce or sell charcoal

People cope in similar ways across income groups and villages, but the means of doing so favour higher income households. We were told that the richest are able to cope with shocks much better than the rest and are therefore not as affected. This is mainly due to their ability to buy food and seeds if something happens, and is reflected by the overall higher income from non-farm, agriculture, and environmental activities. Women were also said to be more affected than men, since they are more dependent on working in the fields. When major shocks occur, men can more easily go to the forest and do heavy work as a coping strategy.

### **7.3.5. A brief analysis of the most vulnerable households**

Although we did not find any relationships between the poorest households and their vulnerability towards shocks and risks, there a tendency of such was recorded. Out of curiosity, we choose to take the 10% poorest households and look into their characteristics. This we do in a similar fashion than before, by looking at each village separately as well as for an overall clarification. This is shown in Table 45.

**Table 45: Socio-economic factors to the most vulnerable by location. Kilosa District, Tanzania, 2010**

Household socio-economic factors	Lunenzi (25%)	Nyali (25%)	Masugu (45%)	Total	Total population
Mean age of household heads (yrs)	47	45	62	55	43
Religion (Christians) (%)	50	80	56	80	74
Religion (Muslims) (%)	50	20	44	20	26
Mean household size (number)*	4,83	4	2,44	3,55	4,9
Mean household land (ha)	1,51	2,06	1,9	1,61	2,28
Primary school (%)	67	80	22	72	72
Worker/consumer ratio	0,8	0,5	0,7	0,7	0,8
Female head of household (%)	17	60	13	22	12
Married (%)	83	40	55	60	79
Engagement in agriculture (%)	83	100	100	95	99
Engagement in charcoal, poles, timber production (%)	0	0	0	0	17
Collection of NTFP's (%)	33	20	89	55	78
Engagement in off-farm activities (%)	0	0	0	0	13
Engagement in non-farm activities (%)	0	0	0	0	27
Mean total income (USD)	110	138	96	111	1024,64

*N = 20, \* indicates significantly difference between locations ( $p < 0.05$ )*

First of all, the poorest households are a lot poorer than the rest of the population. They are also older (55 yrs). People have the same religion regardless of income, but the size of households seems to differ. The average size of households in the whole population was 4,9, but among the poorest it was 3,55. This also differs between the villages, where poor households in Masugu had smaller households. With smaller households, they also have less land to work on (1,61 ha compared to the mean total of 2,28 ha). Despite limited land though, all were almost entirely dependent on agriculture alone, showing that they are more vulnerable in terms of shocks. That no charcoal, poles or timber were produced is quite remarkable. Although some NTFPs were collected by some, more households on average still collected more. Interesting enough though, we see that this group are more dominated by female headed households (22% compared to 12%) and less households are married. This tells us that for example widowed or single women could in times of shocks and income shortfalls be affected more than the rest.

By emphasising on the vulnerability context, we have seen that livelihoods are affected by shocks and unexpected income shortfalls. This again affects households' strategies. In Kilosa District, the climatic conditions, and big variations along differed seasons have resulted in diversification as a risk management strategy, as well as

turning to other income sources as for coping strategies. The former involves the diversification of crops and lands, as well as size of households, while the latter involves compensating by paid labour, sell possessions etc. Probably the most interesting finding however, is the great importance of the forest as a coping mechanism.

#### **7.4 Policy and institutional context**

It is not only natural, human, physical, financial and social capital which determines how people structure their livelihoods and to which degree of sustainability. The policy and institutional context also plays a part, and although they are out of the direct control of the individual household, these are factors which the households have to relate to and take into consideration when shaping their livelihood strategies. Given this fact we will in this section highlight what we see as the most relevant legal, administrative and socio-cultural factors influencing the livelihoods in our study area. And since much of the sources from which the households create an income comes from natural resources such as agricultural land and forests a particular emphasis will be placed on how their access to these sources are regulated and how they either enable or limits the households livelihoods. And as we are highly interested in variations between our three pilot villages the particularities within each will be of main focus.

##### **7.4.1 Formal Institutions and Legal framework**

According to Causin (1997, p.61), *“formal institutions are those backed by law, implying enforcement of rules by the state, while informal institutions are upheld by mutual agreement, or by relations of power and authority, and rules are thus enforced endogenously”*.

Within the Tanzanian legal framework there are particularly two set of policies and acts which to a large extent influences the access villagers have to land and forest, namely the Village Land Act No.05 of 1999 and the Forest Act of 2002. As stated by these two acts all land within village boundaries is under the management of a Village Council which is supposed to give out and set aside land for agriculture, and whatever forest is within the village boundaries (which is not state protected) also fall under the

management authority of the Village Council. All our three villages have been through a village border demarcation, but since not having gone through a formal land use planning exercise what land belongs to whom and for what purpose it is intended for within the village is a lot less clear. The lack of deeds to individual households' agricultural land plays a big part in this unclarity and as a result many have experienced quarrels over their agricultural borders and many are less willing to invest as much time and effort into their agricultural land as they are not quite sure where their borders go and due to the insecurity of losing their land. Such quarrels we were told about in all villages, however it seemed more pressing in the case of Masugu. Masugu was also a special case when it came to legal rights to land, which caused for great uncertainty among its villagers. Because not only does it lie partly on a former sisal plantation now owned by the state, but it also in the not so distant past (1960s) had most of its land owned by a businessman involved in growing papaya. After the collapse of these two plantations many simply occupied the area and started cultivating, however many respondents told they were afraid that the state would come and take the land away from them. In addition as one respondent from Masugu stated the land rights are so uncertain that he is discouraged to make big investments into the land in order to create more output. As he said, although referring to land which is rented, if he put a lot of effort into the land and got quite a good output, if the land owner sees the high yields he will then usually take back the land thinking it is very fertile and attempt to produce as much. It is also not only in terms of agricultural land where there are unclear boundaries and use rights.

More generally the sometimes ambiguous distinction between Village Land and General Land has caused for more conflicts, especially between farmers and pastoralists, and again, particularly in Masugu. And as one responded said: *“there are conflicts with the Massai, since pastoralist's raids their crops and destroy their lands close to the forest. Their animals also destroy the places they use to make charcoal within the forest. They then have to chase them away”*. The source of such conflicts over land can be traced back to the colonial era (see Benjaminsen, Maganga et al. 2009). Such conflicts are usually dealt with through formal institutions, were severe conflicts have been taken to court, either to the Ward Tribunal Councils or through Magistrate Courts of Law. The outcomes of these trials have in many instances not changed anything though and substantial tension still exists. In addition, the local



legal system within the district struggles with issues of corruption and elite control where there has often been suspicion of one part paying of a judge to rule in his/her favour. The lack of management by the Village Council in distributing and controlling land has resulted in a more *de facto* open access land use, and due to the huge influx of people in the area there is now an increasing competition over land, leaving many people in need of acquiring an income in other ways. This competition over land and need for an alternative income is not as big in Nyali and Lunenzi as there is still land available for cultivation and the population pressure is not as big, however also here forest is cleared in order to acquire more land for cultivation and to some extent extraction of forest products is also done in order to get addition income.

#### **7.4.2 Informal institutions, rules and values**

Access to forests is also highly regulated by institutions, but more so than formal ones by informal rules and norms. Because even though the Forest Act dictates each village is supposed to follow national and district by-laws as well as village by-laws the forests within our villages are to a high degree regulated only by informal rules and regulation. In Masugu they have more or less open access to all land, and whereas they were free to take agricultural land wherever it was available so are they able to extract forest products more or less as they please. The lack of a functioning management system has resulted in a highly degraded forest base and although much of the bad management lies in the inability and lack of knowledge within the Village Government on what their responsibilities are, we also see two additional important contributing factors, namely the the great heterogeneity of the village and the great degree to which people come and go in the village. For as Scoones (1998) points out, the presence of a sense of “unity” consisting of shared norms and values are of critical importance in understanding livelihoods and their sustainability.

For instance just within our sample we recorded 17 different ethnic groups and none of which was in clear majority. In addition, 22% had lived there only five or less years, and in total 32% less than ten years. There was also a high presence of outsiders in the village, meaning people who did not live there but came in to extract forest products and then left again. Its close location to Kilosa Town facilitated this movement. As a result it seemed there was less of a social cohesion between those

living in the village, and rather than being bound together by a common set of values and norms as to how to behave for instance in terms of forest use, people seemed more concerned with their own affairs and could behave in ways they saw fit. At the same time though, as clearly shown above, not everyone were as involved in forest extraction, and in fact it was dominated primarily by those with the highest income, and it seemed those most poor did not have the same access to forest resources. It is difficult to establish the exact reasons for this, however it did not seem there were any particular power differences where for instance one ethnic group dominated and had the primary access to said resources while at the same time being able to restrict the access of others. Instead we can speculate in the fact that given the high involvement of forest activity of those with the highest income, a group which generally have stronger links to for instance village government than what the poor generally has, they might be given certain preferential treatment in this regard, while at the same time those most poor are excluded from. In Nyali the situation was quite similar in many regards. Also here there was a great heterogeneity and we recorded 14 different ethnic groups, however they were a lot more established, and as much as 77% of our sample had lived there for more than 20 years. The degree to which access to land and forest resources was regulated was a bit stronger in Nyali and as seen above the extent to which people were involved in forest activities was a lot less than in Masugu. Even still people were to a large extent free to do as they pleased, and as the admitted to use by one of the village government members, although they were aware of the national and district rules they were supposed to follow they did not and the village government did not try to enforce them either.

The situation in Lunenzi is one of complete contrasts, where the access to agricultural land and to forest resources was heavily regulated. An interesting fact was that the rules they had in place were not dictated by the district nor were they approved and formalised by the district. Instead they constituted an informal management system heavily based upon a common set of norms and values. It was for instance not allowed to take down live trees or go into the thickest forest with machete, and firewood collected to cover their energy needs could only be dry firewood. In addition there was quite an organised system of enforcement and sanctioning, where a village committee would patrol the forests for illegal use and if finding someone they would be taken to the VEO and sanctioned according to pre-set measures. There were also

regulations in place to deal with the issue of forest fires as a result of the extensive use of fire when preparing their agricultural fields. Based on the idea of mutual trust, if fire escaped from their fields and into the forest they would be let off with only a small fee to pay if they reported it themselves, however if they did not and they were spotted or reported by someone else the fee would be substantially higher. More so than actually having these regulations in place, it was commonly accepted and even 98% were very satisfied with the system in place, even though it heavily restricted their access. The reasons for this can be explained in much the same ways as with Masugu and Nyali. We recorded only six different ethnic groups in Lunenzi and with three of them, Sagala, Gogo and Hehe clearly dominating, and they also primarily Christians. Although 35% had lived there less than 15 years the majority of these had come from the neighbouring village Ibingu. As Lunenzi until recent years had been a part of Ibingu and they together had been an established village even before the villagization process their socio-cultural system seemed the most robust and the only village which shared the same norms and values concerning what was appropriate or not appropriate behaviour of forest use. As an additional factor, it seemed many of the villagers still placed value on more traditional beliefs and as much as 50% viewed some parts of their forests to be sacred.

Partly as a result of this Lunenzi was the village which were the least involved in forest extraction, however other factors also play an important part, and particularly in the case of Lunenzi but also for Nyali, the lack of proper infrastructure and easy access to markets influenced their livelihoods to a great extent, not only in terms of forest use.

#### **7.4.3 Infrastructure and market access**

As Masugu was located relatively close to Kilosa Town it had easy access to a main market where their produce, whether agricultural products or forest products, could be sold at a fairly high price, Nyali and Lunenzi suffered from bad infrastructure and remoteness which made it much more difficult for them to access markets. For Nyali this meant they relied heavily on middlemen to sell their produce, and except for perhaps leaves and tomatoes which were sold among themselves, traders would come to the village and then transport it to larger markets such as in Kilosa Town and sell it

for a higher price. A common complain among the villagers was their lack of bargaining power when it came to determining prices, and many felt that they were getting an unfair price, however felt they could not do anything about it. The same applied for Lunenzi although they themselves had to carry their bags of maize and beans on their heads to Ibingu and either sell it at the local market or to traders which then would take it to Kilosa Town. What came up in Lunenzi was not just the issue of getting unfair prices but also many voiced that they felt they were being cheated in terms of weight. By this they meant that the buyers often would claim their bags weighed less than they did and refuse to pay the appropriate price. This issue also applied heavily for charcoal and if not sold personally at a larger market but only through charcoal traders the prices they would get would automatically be much lower. This fact can also be seen as contributing to why villagers in Masugu were that much more involved in charcoal production than say villagers in Nyali which had more difficulties getting the charcoal to Kilosa Town. In fact, when comparing the various prices of how much one could get for a bag of charcoal, if transporting it themselves to Kilosa to be sold there in general the prices could be as much as three times as high. Villagers in Lunenzi were also aware of the price differences and one man stated that if he could only get to Kilosa he was sure he would get a much higher price for his crops. In terms of forest products for commercial purposes, such as charcoal, another man told us why this was not practiced in Lunenzi at all, and the way he saw it it had not much to do with their concern for the forest but rather: “the reason why we are not making charcoal in this village is because the road is so bad that it is very difficult to transport”.

To sum up this point we feel is important to highlight as it shows the complexities behind people’s choices. For instance even though the majority of people are in fact aware of the damage which is being done to their forests necessity often dictates that they have no other choice but to keep degrading it in order to get a sufficient income to support themselves and their families. On the other hand villagers such as Lunenzi which seems to have enough land and fertile soil to make a sufficient income and which seems very concerned with their forest areas might very well be inclined to increase their income by extracting forest products if it became more accessible and more profitable.

In this chapter we have gone through the various activities and sources of income that make up the options which the households make their livelihood strategy from, some particular specificity and variations stand out. First and foremost agriculture is the most important strategy especially among the poor, who have the least access to other options. The vulnerability context shows that there is a great need of diversification where the forest is commonly used as a coping strategy. Through the institutional context, we learnt that there are many differences between the three villages. Where Masugu had unclear land tenure and was the village that seemed to suffer the most in terms of conflict with pastoralists, Lunenzi have with its remote location already functioning institutions dealing with the forests. Due to its location away from the floodplains, there were no conflicts between pastoralists and farmers. On the basis of our findings in this chapter, we will now make an evaluation of the REDD pilot project which is being implemented in the area.

## **CHAPTER EIGHT – EVALUATION OF TFCG AND MJUMITA’S PILOT PROJECT “MAKING REDD WORK FOR COMMUNITIES AND FOREST CONSERVATION IN TANZANIA**

*The Tanzania Forest Conservation Group (TFCG) in collaboration with Tanzania Community Forest Conservation Network (MJUMITA) started their project “Making REDD work for communities and forest conservation in Tanzania” in August 2009. This project, located in the two project sites Lindi and Kilosa district, will run for 5 years and phase out in August 2014. Within the financial frames of US\$ 5,914,353, at least 50,000 hectares of Montane and Lowland Coastal/Miombo forest in the Eastern Arc Mountains and Coastal Forest biodiversity hotspot and as much as 25,000 persons living in 20 communities engaged in either CBFM or JFM, will benefit from the project (TFCG and MJUMITA 2009).*

In line with our final objective, in this chapter we will look at and make an evaluation of TFCG and MJUMITA’S project which is currently being implemented as part of Tanzania’s piloting phase under the process of establishing REDD.

Returning to our focus on REDD as a new type of resource regime we will again draw on the relevant theory which is included within the Resource Regime Framework and view the evaluation which follows in these terms. As we have moved down to a local level our main focus will now be on the economical actors, i.e. local forest users; their preferences and actions; and their patterns of interaction, much on the basis of our findings from the previous chapter. And as our model lies forth, these forest users are highly influenced by the resource regimes in place, which in turn are governed by local and national institutions. With the introduction of the REDD pilot project in the area these realities will most likely change and, as our objective states, we are concerned with whether or not REDD as a new resource regime will be able to reduce emissions from deforestation and forest degradation while at the same time be beneficial for the local population which relies on these forests.

Firstly we introduce TFCG and MJUMITA as organizations and look at their ability to implement and run REDD+ in terms of their capacities and experiences within the field of forest conservation and participation with local communities, as well as the presence of additional expertise needed to establish a REDD+ pilot project. Then we

outline the project as a whole with its aims and activities as well as mention their collaborating partners.

Thirdly we will focus on their work in Kilosa District and establish where they are in the implementation process. These activities will be viewed in connection with our findings on REDD+ policies, the local context within which the communities create their livelihoods, and the livelihood outcomes and forest dependence of the three pilot villages Nyali, Lunenzi and Masugu. In addition, local expectations and views will be presented and taken into consideration. Through the help of relevant theory we will ultimately be able to evaluate what might become challenging for the success of the project. Finally, we will come with some concluding remarks as to whether or not we think TFCG and MJUMITA will be able to reach their goal and purpose, and in particular what effects it might have on the local communities in question and the degree to which the 3Es are met.

It is important to note that as the project is still in its implementation phase, many activities have not yet started, and in many instances progress reports on *which* and *how* activities have been carried out have not yet been published. In such cases we refer to the most updated information we have and to our TFCG staff interviews which we carried out in December 2010.

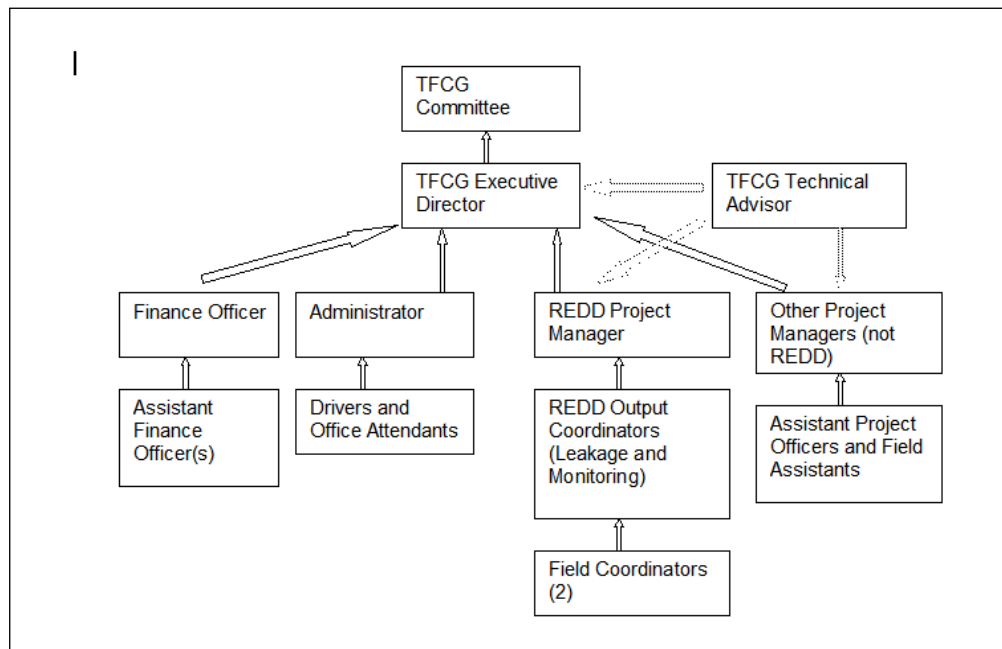
## **8.1 TFCG and MJUMITA**

### **8.1.1 Tanzania Forest Conservation Group (TFCG)**

TFCG was established in 1985 and they have more than 20 years of experience in working with issues relating to forest conservation in Tanzania. They structure themselves around five different programmes: (1) participatory forest management, (2) advocacy, (3) environmental education, (4) community development and (5) research. Through these activities they have been able to introduce “innovative and high-impact solutions” to the challenges Tanzanian forest face, as well as for the people that depend upon them. Over this period, this has been achieved through actively advocating for improved forest management and reduced deforestation. It has for long been in the forefront of national awareness campaigns on forest conservation, including educational and communication components of the UNDP/GEF Conservation and Management of the Eastern Arc Management project which supports institutional reform, strategy development, pilots, community-based

conservation, and the development of sustainable financing for tropical high forest conservation in Tanzania (World Bank 2011). TFCG has also been involved in developing solutions to reduce deforestation including PFM, fuel efficient stoves, tree planting, improved land use and agriculture (TFCG and MJUMITA 2009). TFCG is now the largest non-governmental organisation focusing on the conservation of natural forests in Tanzania (TFCG 2009).

The organization has currently over 40 full time employees and is guided by a voluntary committee comprising of individuals from academic institutions, development partners, NGOs, and government staff. It is headed by Executive director Charles Meshack and is based in Dar es Salaam. The qualifications of the staff are quite varied although around 80% have a background in forestry, and all have extensive experience in working with communities in participatory ways. In addition to some staff members qualified in finance and administration, economics and natural resource management, they recently expanded with staff experienced in agriculture, land-use planning and geographical land use with technical expertise in GIS. In addition many staff members have undergone short training in areas such as structural economic surveys and social economics (Local resource person 2010).



**Figure 21: Organisational structure of TFCG with REDD staff**  
Source: (TFCG and MJUMITA 2009)



Through the Rubeho Environmental Action Plan, TFCG have been working in the Rubeho Mountains since 2005. In addition, their experience with mountain forests and the Eastern Arc stretches back to the early 1990's (TFCG 2011).

### **8.1.2. Tanzania Community Forest Conservation Network (MJUMITA)**

MJUMITA is a national network of community groups involved in PFM and have operated since 2000 with support from TFCG, but was officially registered as an independent NGO in 2007. It currently has 72 affiliated community networks and its members are present in 318 villages in 22 districts of Tanzania. For these groups it provides capacity building, advocacy and serve as a forum for communication (MJUMITA 2011).

Many lessons have been learned through MJUMITA's network members regarding community forestry networking and PFM, particularly after the four years of intensive support from the EU-financed EMPAFORM programme. This programme, which aims at strengthening and empowering civil society for Participatory Forest Management in East Africa, and which has worked to build organizational capacity particularly amongst the local networks, learning about policy, law and guidelines governing participatory forest management processes as well as engaging in dialogue with relevant authorities concerning policy and practice in forest governance (TFCG and MJUMITA 2009), has resulted in MJUMITA acquiring extensive experience not only within PFM but also in taking into consideration and including external factors and stakeholders.

A typical claim by MJUMITA's members is that the revenues from PFM are not sufficient to cover the costs of forest management and that incentives must be increased if the village forests are to be protected in the long run (TFCG and MJUMITA 2009).

## **8.2. "Making REDD work for communities and forest conservation in Tanzania"**

As shown above, TFCG and MJUMITA possess extensive knowledge on PFM, advocacy, environmental education, community development and research, and methods to reduce deforestation, knowledge which they will use when implementing and running their REDD pilot project (TFCG and MJUMITA 2009). In addition, their

experience with the two districts, as they are already operating in these areas, will give them some pre-established insight and knowledge which can benefit their project further. Although basing much of the project on top of the PFM implementations, many aspects concerning REDD will be quite new and as a pilot project, the experiences gained and lessons learned are intended to help shape the future structure of REDD in Tanzania. Issues that needs to be dealt with then include: additionality, where it can be proven that these reductions would not have happened without REDD; leakage, so as to ensure that carbon emission are actually reduced; MRV, to be able to document the reductions in carbon emissions; transaction costs, where the costs of implementing and running REDD should be kept as low as possible in order to reach the aim of efficiency; and opportunity costs, where covering the income lost for the villagers is important in order to ensure compliance and permanence of the project.

In actual fact, the project was awarded a full score of “high potential”, and “potential for international relevance”, supplemented with the remarks stating “good PFM/CBFM and REDD links; relatively good capacity”, in the Norad evaluation of NICFIs contribution to Tanzanias REDD+ processes from 2007-2010 (Norad 2011). How the project attempts to achieve this “international relevance” and create “good PFM/CBFM and REDD links” will be presented below, but first here are the projects goal and purpose:

Goal: The goal of the project is *“to reduce greenhouse gas emissions from deforestation and forest degradation in Tanzania in ways that provide direct and equitable incentives to rural communities to conserve and manage forests sustainably”*.

Purpose: The purpose of the project is *“to demonstrate, at local, national and international levels, a pro-poor approach to reducing deforestation and forest degradation by generating equitable financial incentives from the global carbon market for communities that are sustainably managing or conserving Tanzanian forests at a sub-national level”*. (TFCG and MJUMITA 2009, p.9.).

Although TFCG and MJUMITA are the main implementing partners, within some areas and activities they will also be collaborating with various civil society

organizations and research agencies. An overview of the planned outputs and collaborating partners is here presented:

**Table 46: Summary of project partner and collaborator roles**

Output	Lead Agency	Support
<i>Output 1: Replicable, equitable and cost-effective models developed and tested at the group or community level for reducing emissions from deforestation and forest degradation (REDD) on village and government forest land in ways that maximize benefits to communities, forests and the nation.</i>	MJUMITA	<b>SUA</b> (with regard to developing participatory carbon monitoring) <b>Katoomba Group</b> (marketing VERs, financing mechanisms, carbon baselines) <b>Local Governments</b> (joint planning and implementation of field level activities) <b>CARE International Poverty, Environment and Climate Network</b> through inputs on cooperative structure and legal issues.
<i>Output 2: Replicable, equitable and cost-effective models developed that are designed to reduce leakage across project sites and provide additional livelihood benefits to participating rural communities</i>	TFCG	<b>Local Governments</b> (assistance with tree planting, improved agriculture and bylaw formulation) <b>RECOFTC</b> (preparing and implementing training programme on community forestry, REDD and leakage training programme)
<i>Output 3: Monitoring, evaluation and documentation processes supported that assess the overall impact of the project at local and national levels and communication of the findings undertaken</i>	TFCG	<b>Katoomba Group</b> (forums at national and regional level to disseminate project findings and lessons) <b>TNRF</b> in the production of simplified guides and updates.
<i>Output 4: Advocacy process supported at the national and international levels that promote equitable and effective REDD benefit sharing mechanisms and in particular with regard to forest managers at the community level.</i>	MJUMITA	<b>CARE International Poverty, Environment and Climate Network</b> and <b>Katoomba Group</b> (advocacy processes at the international level)

Source: (TFCG and MJUMITA 2009, p.24.)

As seen in the table TFCG and MJUMITA staff will cooperate with a variety of organisations and institutions throughout the project duration, including District Staff and Village Governments within the pilot sites. In this regard they will both include them in activities and provide them with training and capacity building. Their level of participation might vary between project sites though, and as we will see from our findings from Kilosa District in the next part, participation within the District also varies greatly.

### 8.2.1 Project Progress

After roughly two years of operation and according to the available information, the project process to our knowledge is as follows:

*Output 1: Carbon financing for community forestry:*

- During the first six month of the project, a site selection process carried out
- Business plan were developed
- A remote sensing team developed land-cover classifications for the two sites by carefully analyzing Landsat5, SPOT and PALSAR images.
- Benefit sharing mechanism was developed through consultations with representatives from 92 of MJUMITA's networks
- Classifications of landscapes were made by looking at seasonal changes in the vegetation and distinguish between forest and fallow

*Output 2: Reducing leakage:*

- 26 villages developed participatory strategies to reduce D&D and improve livelihoods
- PFM and REDD training programme for project staff, district staff and other NGO staff undertaking REDD projects completed
- Built capacity of communities, government and CBOs to support REDD+ in the long term
- Feasibility study for establishing a long-term PFM and REDD training programme based at the FBD's Forestry Training Institute of Oimotonyi completed and under consideration by development partners

*Output 3: Documentation, Monitoring, Evaluation and Learning:*

- Development and implementation of Monitoring, Evaluation and Communication plan (MEC)
- Continued collaboration with various research projects such as the CIFOR-led Global Comparative Study on REDD and inclusion in the work of five CCIAM financed research projects
- Memorandum of Understanding signed with TNRF on communication activities

*Output 4: Advocacy at national and international levels:*

- Recommendations for the National Strategy

- Key design issues for the issues for the National REDD strategy in September 2010
- Brief on key design issues for the issues for the national REDD strategy in September 2010
- One-step guide to make the strategy more pro-poor
- Development of a joint civil society response to a draft of Tanzania's REDD Preparation Proposal (RPP)
- Participated in COP 15 and COP 16

Source: (TFCG 2010; TFCG 2011)

As this progress report show, activities have been carried out on all four objectives. For the purpose of our study we are particularly interested in the activities done in our study area and in our three villages, therefore, based on the available information we have and although aware that these might be a bit outdated, we will now present the process so far within the Kilosa pilot villages.

### **8.2.2 PFM and REDD in Kilosa District**

As previously mentioned, the Village Land Act 1999, The Local Government Act 1982 and the Forest Act 2002 together provide the legal framework for villages to identify and declare land within village boundaries. The Forest Act further provides incentives to rural communities to progressively reserve large areas of unprotected woodlands on general land. Such delegated management of forest resources on village land is referred to as CBFM, but will here be referred to by the general term PFM which is now in operation in over 1440 villages in Tanzania (Ibid). In line with the current forest policy, the government has been urged to consider PFM as part of REDD, i.e. both on village land through CBFM and on state land through JFM.

From the start, TFCG has expressed their interest in integrating its experience from PFM with further opportunities under the carbon trade. Hence, the pilot proposal and project were guided by the principle that where possible they would link up to and support existing initiatives. In this regard TFCG could utilise their already established experience with PFM in coastal and mountain areas.

Following this line of thought, the strategy of TFCG followed a step-by-step implementation process which is in accordance with the National Land Use Planning act, No.06 of 2007, and includes a land use planning exercise. This includes demarcating land for settlement, land for grazing, land for cultivation, as well as establishing a village forest reserve made possible through the Forest Act. After this, the demarcated forest is to be managed as a PFM forest through the establishment of by-laws and under the management of a Village Natural Resource Environmental Committees (VNRC) responsible for the legal enforcement and performing day to day tasks.

The idea then, is to put REDD on top of existing PFM practices as a way of increasing incentives for the local communities involved. The main difference will be that along the PFM process, TFCG and MJUMITA will include MRV measures which will help determine the amount of carbon stored and determine the funding received. During our stay a team of experts were conducting the baseline measurements of the forests and classification of different landscapes. According to the field coordinator, Mr. Chikira, they will then come back in 1 to 2 years time after the measurements have been carried out and do an assessment. The exact details on payment mechanisms are, however, not set yet. In the meantime, the project team will support the different villages in their management. It is only after the assessment, that the performance based payments will be made available, which will generate valuable experience for MJUMITA and communities alike, however other types of incentives will be provided in the meantime. These additional benefits, which are included in their “leakage strategy” for each village, will be highly context specific, wherein depending on the needs of the village and subsequent drivers of deforestation, a “benefit package” will be delivered.

#### ***8.2.2.1 The process so far***

The project was launched in Kilosa in June, 2010, and follows a step-by-step process in implementing PFM, in accordance with the FBD’s PFM guidelines’ six stages: (1) Getting started, (2) Assessment and management planning, (3) Formalizing and legalizing, (4) Implementing, (5) Revising and Gazetting, and (6) Expanding to new areas. During our visit only two villages had reached stage two (see Kibuga, Nguya et

al. 2011). A team of 5 permanent staff members had been established, consisting of one field coordinator and one evaluation officer from TFCG, two field officers from MJUMITA, and one driver. In addition, we were told an additional member with a pure agricultural background would be employed in January 2011 (Local resource person 2010).

Contact with District Staff was also made in the beginning, both as a way of letting their presence be known and to further a good working relationship in the future. According to the field coordinator, *“they had a very warm welcome by the district authority, meaning the district commissioner and the district executive director, which assured them a good cooperation”* (Ibid.)

#### **8.2.2.2 Stage one: Getting started.**

The first step was done following the concept of Free, Prior and Informed Consent (FPIC).

The concept of FPIC has been developed as a response to operations with negative effects on indigenous peoples in the developing world. So far it has mainly been applied by companies investing in forestry operations such as logging. In addition to be a part of the pilot projects advocacy strategy, the concept of FPIC is being promoted as a prerequisite for including villages in the REDD project. FPIC is also being advocated by TFCG and MJUMITA to be included into future national level operations (Kibuga, Nguya et al. 2011).

At district level the first stage included the selection of villages, (see Table 46), briefing of district staff, and creating a district PFM/REDD facilitation team. The Kilosa District Natural Resources Office (DNRO) has as a result been involved from the beginning, and even lent their office to TFCG while they were in the process of finding a more permanent office. As part of the PFM/REDD facilitation team, at least one Forest Officer at a time have assisted TFCG in their activities, for instance when carrying out information meetings with Village Assemblies, and also the District Land-Use Committee has been involved when land use planning exercises have been carried out. Other important District Committees and Offices seemed to be less involved though, and for instance the District Community Development Office and

Agricultural and Livestock Office appeared to have little involvement in the project and only had very basic knowledge on REDD.

It is however mainly Village Governments and VNRCs that TFCG and MJUMITA will be working with, both in the implementation phase when VNRCs are elected and throughout the duration of the project.

**Table 47: TFCG site selection process in Kilosa**

Out of Kilosas 164 villages, 14 were selected. These were selected based on satellite images of the whole block. By this they could see where the forests of the Eastern Arc Mountains were concentrated. An area was then selected following the criteria's of: potential in terms of good forest, presence of many different species, and experiencing pressure from neighboring villages. After they had demarcated and decided upon the area, they went out to visit these villages to gather and give information. Through this they added and changed the villages that would be included. With Masugu Kati for example, they saw that it had access to a small forest. However, when they went there, they noted that it was very degraded, so most people used the forest at Masugu Juu instead. Masugu Kati was then included in the project together with Masugu Juu.
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Source: (Local resource person 2010)

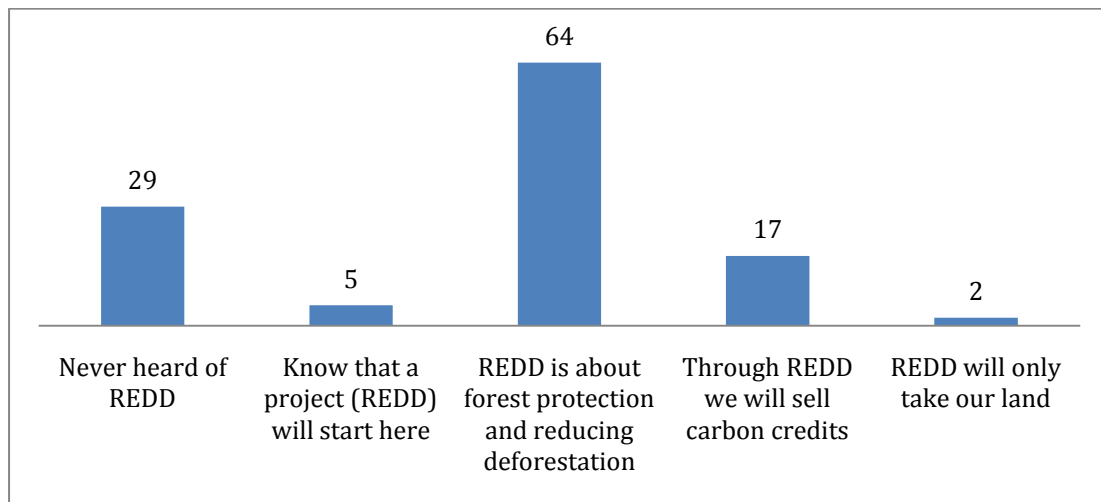
In terms of following the concept of FPIC at the village level, the team had met with the Village Councils and Village Assemblies to establish a VNRC as well as one communication facilitator in each village. We were told that the launch became a big process since all the villages had to be informed on how the project would operate. To make appointments and arrange meetings were not easy and they had to be creative on how to inform due to difficult geographical considerations. A decision was made to have meetings at sub-village level instead of at village level which took up further time and resources, but even so was seen as very important. First of all it was important in order to create overall awareness and knowledge about the project and its aims which in turn could play a part in ensuring that villagers saw the new rules and regulations as a legitimate reason for their reduced use and access to forest products.

8.2.2.2.1 Creation of knowledge, awareness and legitimacy of REDD within villages

We assessed the level of awareness of the project and put it up against the responses we got on whether or not they were positive to the project. What we found was that overall 29% had never heard of REDD+ or any project which were about to start within their village boundaries. 64% knew that REDD was to be implemented and concerned about forest protection. What they understood as TFCGs rationale behind



this forest protection, however, varied, and some said it was a project to reduce forest fires, while others said the main reason was in order to attract more rain.



**Figure 22: Local people and awareness of REDD in Kilosa, Tanzania, 2010**

17%, however, stated that through protecting their forest they would eventually receive payments from selling carbon credits and that this protection would reduce the carbon-dioxide in the atmosphere.

A few were skeptical to REDD and TFCG and thought the project would only lead them to lose access over their land and forests. All mentioning this came from Nyali, and overall villagers in Nyali also had the lowest understanding of REDD, with 45% not knowing what REDD was about. They, however, had in turn the largest population and the largest land size with as much as 11 sub-villages, many of them remotely located. The skepticism was also reflected to some extent when various payment types were discussed, and out of the 7% who felt they would not be motivated to stop using forest products by any type of payment, most of them came from Nyali (69%), and overall most of them had a low awareness of REDD.

**Table 48: Awareness of project by those who cannot be motivated by any payment to reduce their forest use, Kilosa District, Tanzania, 2010**

Awareness	Nyali	Lunenzi	Masugu	Total
%				
Never heard of REDD+	56	67	0	54
Know that a project (REDD) will start here	11	0	0	8
REDD will only take our land	11	0	0	8
REDD is about forest protection and reducing deforestation	22	33	100	30
Through REDD we will protect our forest and sell carbon credits	0	0	0	0
<b>Total</b>	69	23	8	100

The reasons put forward for why none of the mentioned payment types would suffice was mainly that they relied too much on forest products and didn't believe that the compensation they might get would cover their lost income. All the villagers in Lunenzi which felt they would not be motivated answered it was due to the strong cultural value the forest had to them.

**Table 49: Reasons for why cannot be motivated to stop clearing forest/stop harvesting wood resources for the forest, Kilosa District, Tanzania, 2010**

	Disagree	Disagree somewhat	Agree somewhat	Agree	Mean
%					
My livelihood depends too much on the forest	0	0	8	92	3.92
The forest has a strong cultural value to me	31	0	8	62	3.00
Money cannot compensate for reduced use of the forest	15	0	0	85	3.54
I do not think I will be compensated enough	15	0	8	77	3.46

Thus, it seems that the less information the villagers had, the more skeptical they were towards the project. The degree to which they were dependent on forest products also played a part in their skepticism.

Interestingly, among those which could not be motivated by any compensation for reduced use, 38% and 46% came from the middle and least poor income group. If considering our finding that those with the highest income were the most involved in forest extraction then this is less surprising.

On this note, another main reason for reaching down to the lowest community level when raising awareness, was that TFCG felt they could capture better what Cleaver called “power and process” among villagers. As she stated, a community does not only consist of solidarity and social cohesion but also of shifting alliances, power game and social structures. For instance, some forest users needed more than information and awareness raising to be willing to accept, something which the TFCG coordinator in Kilosa illustrated well when talking about the information meetings they had with villagers as part of the FPIC process: *“Many had mixed feelings about this, especially those who were doing timber business in the forest. Some of them were employed by logging companies and became very worried about this. They then formed an alliance to convince others that this project was not good, based on their own agenda”* (Local resource person 2010).

In their report on FPIC they felt there were particularly a good attendance of women and poorer people in the sub-villages, which often are left with a much smaller voice and which also are generally seen as the more forest dependent groups in society (Kibuga, Nguya et al. 2011). Our findings suggested the same, and concerning the overall knowledge and awareness of REDD within the poorest group of our respondents, they did not have any less knowledge of REDD than the middle and less poor groups. In addition, only 15% from the lowest income group felt they would not be motivated to reduce their use, indicating that the choice made by TFCG to have meetings at sub-village levels paid off. To further ensure that the poorest members of the communities were sufficiently informed and involved, TFCG stated that they are planning to elect a communication facilitator in each village which is particularly concerned with informing these members of the community of the process of the project, as well as report back to TFCG on the effects the project has on this group.

The relatively low awareness in Nyali calls for some concern though, however as there had only been one visit to the village when we were there it is however more understandable.

Overall, after giving the villagers an understanding of the project and its aims and goals TFCG felt it resulted in an increased sense of ownership among the villagers after being included in the decision-making process of either accepting or rejecting the project (Kibuga, Nguya et al. 2011). This overall acceptance was something which

we encountered as well, and whereas 93% felt motivated to take part in the project also 88% answered they thought the overall income situation in the village would be better as a result of the REDD implementation. Motivation to stop clearing forest or stop harvesting wood resources was also generally high, much due to the promise of an improved situation as a result of the project.

**Table 50: Motivations to stop clearing forest/stop harvesting wood resources, Kilosa District, Tanzania, 2010**

	Disagree	Disagree somewhat	Agree somewhat	Agree	Mean
%					
The compensation will make me equally well or better off	4	1	19	77	3.62
Forest protection is important	5	0	9	85	3.74
It will improve our environmental conditions	5	1	11	84	3.73
I need more income	17	5	13	65	3.25
It will improve the conditions of our village/community	6	2	15	78	3.65

Looking at variations within our data the villagers with the least income were those most positive towards an overall improvement, both in concern with improved conditions of their village and in terms of improved environmental conditions, both representing 89%. They were also, not surprisingly, the group which most felt they needed an added income, and therefore could be motivated by REDD. However it was still only 77% stating this, compared to 56% of those least poor. Interestingly, although Lunenzi had on average the lowest income of the three villages, it was only 63% of the respondents which gave the same need for income as a motivational factor. In turn 98% thought the introduction of REDD would improve the overall village conditions, as did 91% emphasize the importance of forest protection. From our previous findings these views are consistent with a more uniform population with a stronger social-cohesion which might explain their higher concern with the village as a whole and the well being of their natural resources as supposed to pure individual gains.

As a final factor to take into consideration we asked our respondents about specific deforestation activities which they were willing to reduce or stop if provided with compensation. The responses we got were as follows:

**Table 51: Commitments to avoid deforestation in the community if compensated for that activity, Kilosa District, Tanzania, 2010**

	Disagree	Disagree somewhat	Agree somewhat	Agree	Mean
	%				
<b>Stop expansion of farming activity in forests</b>	9	0	9	82	3.64
<b>Reduce wildfires in forest</b>	10	1	7	82	3.62
<b>Stop harvesting fuel wood</b>	11	2	18	69	3.44
<b>Stop harvesting poles/timber</b>	9	1	9	80	3.60
<b>Stop producing charcoal</b>	5	1	8	86	3.76

On average the majority were positive to reduce all of the above mentioned activities, except perhaps for the harvesting of fuel wood which people felt less willing to stop doing. As previous findings showed that 98% of the population on a regular basis collected and consumed fire wood as their main source to cover daily energy needs this is not especially surprising. Variations within location and wealth group also (to some extent) support previous findings. While looking at the responses from the least poor group of our sample they were the least willing to stop collecting fire wood, with 65% agreeing as opposed to 74% among the middle income group and 67% of the poorest group. The least poor had, however 19% agreeing somewhat. This group, as we have seen, were also the ones using the largest quantity of forest products, fire wood included, which might explain their higher reluctance. Interestingly then, the willingness to stop producing charcoal, which is dominated almost completely by the least poor, is not exceptionally lower than the remaining population, representing 82% compared to an 88% willingness within the middle income group and 89% within the poorest. The same dissimilarity was present when considering the willingness to stop expansion of farming activities in forests. As the group with on average a larger land size the least poor were also the least willing to do this, with 74% agreeing compared to approximately an 85% representation from the middle and poor group.

Looking more closely at location instead, some aspects become clearer. Lunenzi, which on average had more land per household and also more available land left were

the ones most willing to not cultivate within forest areas with 93% agreeing to stop, whereas Nyali, which had the smallest average land size per household were less willing. In fact, as we see in the table below, villagers in Lunenzi were very positive to all the measures mentioned as a way of reducing deforestation, whereas villagers in Nyali were overall less enthusiastic.

**Table 52: Commitments to avoid deforestation in the community if compensated for that activity by location, Kilosa District, Tanzania, 2010**

	Nyali	Lunenzi	Masugu	Total
	%			
<b>Stop expansion of farming activity in forests</b>	72	93	80	82
<b>Reduce wildfires in forest</b>	76	82	88	82
<b>Stop harvesting fuel wood</b>	65	75	66	69
<b>Stop harvesting poles/timber</b>	67	88	86	80
<b>Stop producing charcoal</b>	72	98	88	86

In terms of Lunenzi which already had restrictive measures in place for forest use; were located so remotely that charcoal and timber production was not feasible; and which overall had the lowest forest use, the high commitment level seems logical. On the other hand, Nyali's scepticism of REDD coupled with some degree of forest use as an income generating activity much as a result of the increasing competition for land, can also speak in favour of the relatively low numbers. However, what cannot be as easily explained is Masugu's overall willingness to reduce their forest use, with roughly 85% on all accounts apart from fire wood collection (66%), especially given the high importance these products play for many of the villagers. It does, however, show their willingness to change the current situation, where as it is their excessive forest use is highly unsustainable.

As seen above it becomes apparent that the forest users in the area are highly varied both in terms of the forest activities which they are involved in and as a result of their preferences. Many of these variations appear to be influenced by their income level and by their location. Whereas those with the highest incomes are heavily involved in forest activities they seem as a result more reluctant towards a project such as REDD as this could entail a great loss of income for them, and special attention seems necessary in terms of making the project viewed as legitimate. In turn the poorest in the communities are not as much involved in forest extracting activities, but none the

less are also highly dependent on forest resources, in particular on fire wood, which is their primary source of energy. The need for an added income seemed to be a major motivational factor for them though and the promise of such probably played a big part in 85% of this group being in favour of the project. In terms of location we see that both infrastructure and the current resource regime in place have affected the activities of the villagers, as supported by our resource regime model, and this is something which we will come back to. What we also found to play a part in the preference of villagers were the level of knowledge, where Nyali with the overall lowest knowledge on REDD also were the most sceptic. However, there are many other reasons which can contribute to this scepticism.

Overall, the villagers seemed to have embraced REDD+ as a legitimate way of reducing their forest use and as a way of improving their livelihood conditions. However, much of the task of ensuring the continued acceptance lies in the capacity of the management authority in achieving a management system which is both fair and seen as legitimate among the villagers.

#### 8.2.2.2.2 Management authority under REDD

As a final activity in the first stage, and as a result of Village Assembly meetings, Village Natural Resource Committees were democratically elected and created, and given the main management responsibility of the forest. When creating these VNRC's certain criteria were laid out for their establishment and operation.

**Table 53: Establishment and responsibilities for the VNRC's**

The committee is made up of at least 12 people but no more than 15. At least one third are women and members should be above 18 years of age. At least one representative from each sub-village are represented which holds knowledge about the forest and its resources. Half of the members should be literate. They are elected by the village assembly on four year terms. They should not be members of the village council although the chairman can attend the meetings together with the VEO.

Through bylaws, VNRCs have the legal mandate to manage the village forest reserves on behalf of the community. This is done by patrolling the forests in question, and to our understanding, enforce the rules by giving out fines and sanctions. Reports are written and given to the village council, which has the responsibility of oversee its performance.

The VNRC will receive training on carbon measurement and be a part of the monitoring, reporting and verification process that is required for REDD payments. This will be done in collaboration with experts from TFCG/MJUMITA. The members will also attend seminars on forest conservation and REDD.

Source: (Kibuga, Nguya et al. 2011)

At the time of our visit, our three selected villages had just gone through stage one and elected their VNRC, or "Mkuhumi group"<sup>46</sup> as they called it, but none of the three villages had started land use planning.

When assessing the villagers' thoughts and expectations concerning the establishment of REDD in their respective villages, we asked who they thought would manage the project "well" in their village, and quite a few answered they were unsure or did not feel the local or village government would be able to do so and was rather in favour of a specially elected village committee or with NGOs, as outlined below:

<sup>46</sup> Mkuhumi means REDD in Kiswahili



**Table 54: The authority viewed as best suited at managing REDD+, Kilosa District, Tanzania, 2010**

	Disagree	Disagree somewhat	Agree somewhat	Agree	Mean
	%				
<b>Government officials</b>	43	5	34	18	2.27
<b>Village leader(s)</b>	21	6	31	42	2.94
<b>Specially elected village committee</b>	13	3	25	59	3.29
<b>NGOs</b>	13	5	15	67	3.37

Variations within our data showed some differences in opinion though. For instance in terms of government or village leaders the poorest were the most positive to government officials (21%) with 18% and 15% from the middle and least poor. It was the opposite when they considered village leaders though, where in this case the least poor and the middle income groups were slightly more in favour, with 33%/43% agreeing somewhat and agreeing fully, as opposed to 26%/40% from those poorest. The fact that more people were members of the village council within the middle income and least poor (28% compared to 19% within the poorest) might speak for the slightly higher belief in their village leaders. They also seemed to have more contact with their village leaders and more involved in the community than the poorest. The biggest difference was the view towards a specially elected village committee. Also in this case the poorest were the least in favour with 74% agreeing somewhat and agreeing fully compared to 89% from those with a higher income. Again, the less involvement from poorer households in community matters might account for this.

In terms of differences between villages it follows the same trend as previously, where overall villagers were more positive inclined in Lunenzi than in particularly Nyali but also Masugu. For example whereas 61% in Lunenzi were in favour of their village leaders as the main authority under REDD only 29% in Nyali and 36% in Masugu felt the same. Concerning an elected REDD committee, the majority in all villages were in favour and roughly 85% in all villages agreed to some extent. However villagers in Lunenzi seemed surer on the matter with 68% agreeing completely compared to 59% in Nyali and 49% in Masugu. Masugu were, as previously deliberated upon, the most heterogeneous out of the three villages and appeared to have the weakest community bond between them, which might be a reason for this view. They in turn seemed to prefer an NGO to have the main

management responsibility which also supports our findings of villagers in Masugu to have a lower level of trust between them.

However, the establishment of a VNRC in the villages seems to be the better option and at least the idea of it appears to be seen as the best option among the villagers as well. Additional information we got in terms of who should manage the project, was that many emphasized the want for their sub-village chairmen to also be involved, as many trusted them and felt they were the ones who knew best of their particular needs and situation.

While considering the management authority in charge of enforcing the new resource regime put in place as a result of the pilot project, we here get an inclination of the various social and power structures within the communities. While those with the highest income were more involved in community matters and appeared to have stronger links with the village government they were also more inclined to have village leaders as the management authority for REDD. The poorest were in this regard more wary and did not seem to trust them as much. Between villages on the other hand there were greater variations, much of a result of overall social cohesion. Thus, Lunenzi seemed to trust their village leaders to a large extent and also trusted their fellow villagers to manage REDD whereas Masugu in particular neither saw their village leaders nor fellow villagers as equip to manage REDD. Instead they preferred an external actor, such as an NGO.

Having gone through the first step in TFCG and MJUMITA's process of establishing PFM and REDD+ in their selected villages, we see that much consideration has been made to capture the specific conditions in each village, where particular emphasis were placed at reaching as much of the population as possible when informing them of the project, and particularly taking into consideration the views of the poor and of women. The fact that for instance only half of the members in the VNRC had to be literate also speaks for their wish to include more of the poorest or disadvantaged members in the communities, which generally have less education.

### **8.2.2.3 Stage two: Assessment and management planning.**

This stage consists of three phases; First conduct a land use plan exercise to identify and agree on boundaries, then to carry out a Participatory Forest Resource Appraisal (PFRA), and lastly to develop a village management plan and village by-laws.

Although when we were in the field none of our villages had moved onto stage two of the implementation process they were just about to. For instance in Masugu they were getting ready to start the land use planning exercise when we left. Therefore we can assume that some work has at present been done in this regard.

**Table 55: Land use planning exercise under the project**

People in the villages will be the ones to make the land use plan according to their knowledge and wishes; what to be forest land, agricultural land, land for settlement and land for grazing. During this process they will receive advice from a district land use planning team. Through such an exercise a map is made, where GPS coordination's are taken among several other things. When this is done, more than 10 experts from different offices work in each village for about two weeks. Among others, such experts could be officers from the water department or officers from the land department dealing with boundaries. Through land use planning the inhabitants would at last be provided titles/deeds to their land.

Source: (Local resource person 2010)

At first, a land use plan exercises would be carried out in two villages at the time, and after completion, the villages would directly start with the next phase, the PFRA<sup>47</sup>. This phase measures and assesses the forest in question and is conducted together with the VNRC. Here experts from the project will come in and do carbon measurements for later verification measures needed for REDD. This stage involves and requires consultations with all stakeholders and natural resource users both through land planning and PFRA (Ibid.).

TFCG saw it as important that all stakeholders were included: the timber dealers, the hunters, the charcoal producers, the farmers, the pastoralists etc. All must be involved in discussions and also in the delegation of costs and benefits. If not, user conflicts might arise. Such types of conflicts were, as previously mentioned, already present in both Masugu and Nyali, but especially in Masugu. Here it seemed like the conflict

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<sup>47</sup> In an overlapping fashion, two new villages would start up phase 1 after two other villages have completed their land use plan.

levels had increased after Masugu joined the project. Villagers in Masugu told us that “the Massai have to be kept away so they will get used to the forest being protected”.

Since TFCG/MJUMITA will consult and include only the legally established institutions such as the village councils and assembly’s, the stakeholder inclusion in land plan exercises and PFRA’s are thus decided by these bodies. If the settled farmers don’t regard the Maasai’s as a part of their community (as they usually don’t), they will as a result be excluded from the process (we return to this). When then, for example, farmers decide that land along the rivers are to be included as agricultural land, with no land set aside for livestock to pass to get water, the Massai could be left with no other alternatives than take their animals across the farms.

TFCG/MJUMITA’s field coordinator, Mr. Chikira told us that; *“in the two villages they have started the land use planning, they have encountered one conflict in Chabima where many Maasai’s wants to reside with their cattle. The village leaders declined their request on the ground that it will bring problems to their farms. What the Maasai then did was to pretend that they had gone, but just went inside the forest and stayed there instead. When the village leaders discovered this they went to the Village Government. The VEO then took it to the WEO and discussed the matter since the conflict could not be resolved on a village level. They have now decided to take it to court”*. However, Mr. Chikira did not think that this type of conflict will influence the project too much. The only exception might be in the areas where the Maasai are very interested in the land such as *Masugu, Nyali and maybe Ddoma Isanga*. In Lunenzi for example, it will hardly be any problem since the Massai do not frequent there given the steep mountain slopes.

*“During the planning process they are not there, and take advantage of the fresh grasses and then return back”*.

When the villages have finished the PFRA and the boundaries of the PFM forest are clarified and demarcated they start to work with creating village bylaws. These are legal agreements that will allow local people to fine actors that break the rules they

have made for the forest<sup>48</sup>. Finally, the whole document with village boundaries and land plan together with the bylaws are sent to the district lawyer and formed into legal documents. The head of natural resource office, Mr. Haule told us that “*conflicts often actually arise after the laws have been established, since it first then becomes clear who has the rights to what*” (Local resource person 2010).

In much of our study area (apart from Lunenzi) the tenure in place is to a large extent *de facto* open access which can be seen as a contributing factor to the presence of various forest user groups. As seen it is not just people from within the villagers which use the village forests but also external people, such as timber and charcoal producers (and traders) and pastoralists. When property rights are strengthened, as a result of the land use planning exercise and the demarcation of village forest reserves, the interaction between these user groups will then most likely change and it might result in increasing conflicts. This can already be seen between farmers and pastoralists, and as it is the conflict level stands a high possibility of increasing as a result of REDD.

TFCG were planning to complete both stage one and two in all villages before the end of March 2011. However, creating the bylaws for the forest management plan can take a lot of time. According to Mr. Chikira, “*this is because the counselors are very busy with a lot of meetings which slows down the process. If they are done in March depends on the counselors, which do not meet more than every third months*”. In addition, complaints were made that the topography and nature of the district coupled with unpredictable rains, made the land use planning take more time than anticipated. The project thus faces a huge challenge and may take much more time than planned for. This can also affect local people’s attitudes to the project all together. Time does not appear to be on their side, and as two years have already passed only few villages have undergone and set up PFM. From what we have heard the implementers are also feeling the pressure and want more time within the project. It has no doubt also been a costly affair of informing all the villages of their intentions and to set up land use plans for each of them, which might become an issue later on in terms of the funding available to provide for more direct benefits to the villagers as a result of their efforts.

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<sup>48</sup> An example of a by-law could be that people are not allowed to farm closer than 30 meters from the river.

Overall, the level of participation for the project at the time being has been quite substantial. By following Vedeld's (2010) typology of local participation, based on Pretty's work, we can thus say that the participatory part of PFM is a functional participation, which is explained as follows; *“people participate by forming groups, to meet predetermined objectives relative to the project, which can involve the development or promotion of externally initiated social organization. Involvement does not tend to be at early stages, but after major decisions have been made. These institutions tend to be dependent on external initiators and facilitator, but may become independent”*(Vedeld 2010, p.13)

#### **8.2.2.4 Drivers of deforestation and forest degradation assessment and “Leakage strategy”**

As part of the assessment stage TFCG has in some villages already carried out a “drivers of deforestation and forest degradation assessment” in some selected villages, including in Masugu. On the basis of this assessment a subsequent “leakage strategy” will be developed which to a large extent is made up of an “additional benefits package” which the villagers will receive as an instrument to reduce their forest dependence and thus reduce their forest use. The creation of these packages has, according to TFCG, been developed after consultations with the villagers where different benefits were discussed and together the most needed and effective benefits decided upon. Among the alternatives they have come up with are assistance to improve agricultural production and output, fuel efficient stoves to reduce the energy need, planting of trees to supply for building materials and fire wood, among others. We asked in the villages what type of payments which would motivate them to reduce their forest use their answers were as follows.

**Figure 23: Type of Compensation Preferred from REDD+**

	Disagree	Disagree somewhat	Agree somewhat	Agree	Mean
%					
<b>Payments</b>	35	35	35	35	<b>2.70</b>
<b>Increased employment opportunities</b>	9	9	9	9	<b>3.50</b>
<b>Alternative sources of livelihoods</b>	11	11	11	11	<b>3.43</b>
<b>Social services</b>	13	13	13	13	<b>3.42</b>

When asked about the first option “payments” – within which we refer to direct payments to individuals on a cash basis – there was quite a few which did not think this was a good idea. The main reason for this was that if cash payments were given directly to them in exchange for reduced forest use, this money would most likely be spent on other expenditures than to cover their energy needs and thus they would still have to go to the forest and collect. This view predominated regardless of income level with only a slight difference between the poorest (47%) and the least poor (40%). Those poorest were also more in favour of better social services with 78% compared to 70% among the middle income and 63% from the least poor. Our previous findings also mirrored this, as for instance illness seemed to strike the poorest families the most given their inability to pay for medicines. On the other hand the least poor villagers were more positive towards increased employment opportunities as a way of compensation, and whereas 72% answered this, slightly less people, 66%, answered the same out of the poorest. The least poor were also the ones which were overall the most involved in other income generating activities whereas the poorest which were predominately involved in agriculture and thus might have been less inclined to this idea as a way of compensation.

In terms of location, in Nyali they were especially against direct payment as a way of compensation and over 50% disagreed with this option. Rather the majority preferred the other three options, but also here they were less positive to the payment types and overall only 50-60% felt the above mentioned compensation options would suffice. This might be explained partly by the higher skepticism towards REDD+ found among the villagers, and the disbelief in what the project can offer.

In Masugu, on the other hand, direct payments were preferred by 80%. 95% also agreed with an increase in employment opportunities. As much of their agricultural production seemed to suffer from low fertility and/or a high vulnerability to drought, pests and weeds, they produced low yields compared to Lunenzi and Nyali. Many were also more involved in other income generating activities such as small businesses and/or extraction of forest products, something which its close location to Kilosa Town also facilitated. However, if receiving assistance in improving their agriculture, through technical expertise and the provision of fertilizer and pesticides,

they might then be able to substitute some of the income which they are get from the forest.

Given that the land use planning and PFM will establish and give formal rights and deeds to their land villagers might also be more inclined to invest more time and effort into their land. In Lunenzi, better social services was seen as the most preferred payment option, perhaps not so surprising given their lack of dispensary, schools and modern wells in the village. Many here also commented on the fact that they needed better roads so they could more easily get to and from the village.

Overall, depending on the particular livelihood situation of the respondents the responses given would vary significantly, and given the big variations between both income groups and between location so did their preferences vary. These variations then are vital to be taken into consideration both if indeed it is expected that their livelihood conditions will improve and as a way of increasing the cooperation among villagers.

As shown above TFCG and MJUMITA have vast experiences within PFM and subsequently this will make up the foundation which REDD will be based on within the villages. So far, progress has been made in quite a few areas, although for the most parts it is still very much in the implementation phase. They seem to have given due diligence to capturing the variations between and within villages, however this emphasis has cost them a lot of time and money.

In addition, as we will show, PFM in itself is not unproblematic and it is not made any easier by adding the specificities and requirements needed for a REDD policy on top. While evaluating the current resource regimes in place and as part of looking at REDD in terms of the overall Resource Regime Model, we will now on the basis of Ostroms design principles look at what make a sustainable resource regime, and the amount to which PFM can be seen as such.



### **8.3. Existing Regimes**

As emphasised, the strategy towards sustainable management of community forests have long been linked to PFM and now also to REDD. As our findings have shown, the amount of environmental income produced varies between villages as well as between wealth groups. This has shown us that even though villages might look similar on the surface, there are institutional and structural differences that have substantial effects on how people live their lives. By using concepts of common pool resources and resource regimes we can assess the qualities of the different management systems and capture their relative effectiveness and efficiency.

However, while a comparison between our three pilot villages will tell us a lot, perhaps even more interesting would be to compare them to a village which have already gone through PFM and been managed as such for a while. By doing this we will be able to see how a PFM management system affects environmental income.

As we can see in Figure 22 we here included one more village, where we also conducted research. This village is Lumango, a CBFM village located in the western part of Kilosa district. The first column shows how many of the respondents answered that their forest was a community forest (or CBFM in Lumango's case), and can be interpreted as "level of awareness of". When asked whether or not they had a community forest in their village, the fact that the majority of villagers in Masugu answered "no" is no surprise, since here, many perceived their forest to be open access. When it comes to access and use of the forest, though, Masugu scores highest, which again not that surprising. Worth noting here is that almost 20 % more households in the CBFM village Lumango responded that they accessed and used the forest. In this sense, people still continue to rely on the forest regardless of CBFM interventions. Vedeld et al. (2004) asks whether people are forest dependent because they are poor, or poor because they are forest dependent. They argue that the causality runs mainly in the first direction and that low return activities in forestry or other sectors often is an employment of last resort.

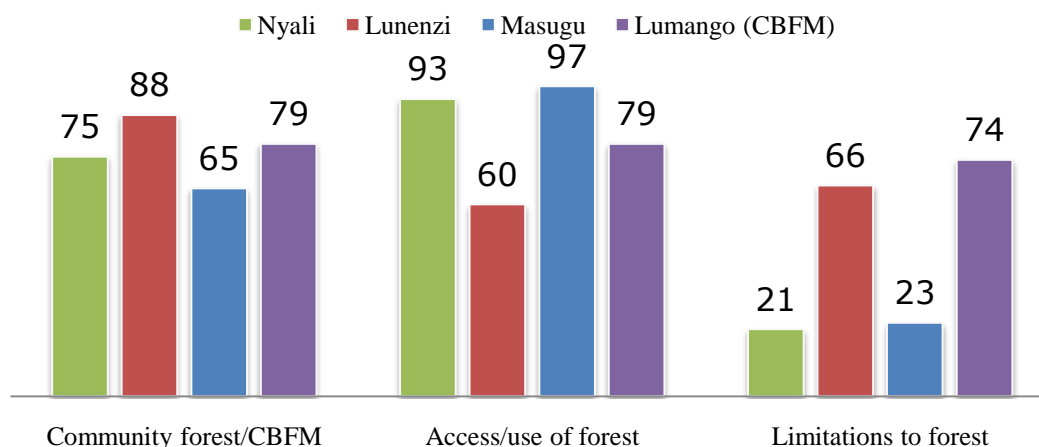


Figure 24: Forest Resource Regime and access to it

That CBFM village Lumango have most rules or limitations to their forest is as expected, but what is intriguing is that Lunenzi is almost as high and this without any PFM or formal institutions attached. This can tell us that the informal institutions when they are in place can be equally strong. As mentioned before, the remote location coupled with a homogeneous population which to a higher extent share common social values and norms can be seen as reasons for this. For further analysis we use Ostroms model for long-enduring common-pool resources.

**Table 56: Modified Success Principles for long enduring CPRs, Kilosa District, Tanzania 2010**

Success Principles	Nyali	Lunenzi	Masugu	Lumango
%				
Clear boundaries/outside are kept out	51	78	20	<b>81</b>
Equal distribution of use and benefits	71	91	33	<b>67</b>
Good access to resources	82	94	80	<b>83</b>
Good management and coordination	30	91	47	<b>65</b>
My/our interests are well taken into account	57	87	33	<b>71</b>
The local community is involved in making rules	34	81	20	<b>78</b>
Satisfied with the rules	69	91	40	<b>77</b>
Rules are followed	53	91	27	<b>47</b>
Proper enforcement of rules/sanctions	51	94	47	<b>67</b>
Conflict resolution mechanisms are appropriate	59	97	67	<b>76</b>
Avoids opportunities for corruption	25	67	37	<b>27</b>
<b>Total average</b>	<b>53</b>	<b>87</b>	<b>41</b>	<b>67</b>

From the table above there are several things of great interest. The first category, “clear boundaries/outsideers are kept out”, tells us to what degree neighbours or competing uses are kept out. That Lumango scores the highest here are as expected since they have gone through land use planning exercise as opposed to the rest. However, Lunenzi scores the highest on all the restoring points, which is quite impressive. By this in combination with earlier findings, it is safe to claim that, as the conditions are today, Lunenzi has in place a functional resource regime based on well established social institutions and structures and are not in acute need of a CBFM scheme to manage its forests in a sustainable manner. They will however not receive REDD money without implementing PFM, so if they want to get paid for their effort, a prerequisite formalisation process through CBFM is held as a necessity. We also got the impression that they were positive to the project strengthening the existing institutions by “formalizing” them so they could fine and sanction illegal harvesters. However, introducing PFM and REDD+ does not automatically improve forest conditions, but can instead worsen the conditions by degrading local values and norms (concerned with the management and protection of forests).

In addition, if the new system in place is not seen as legitimate, the villagers will most likely not feel bound by the rules, and thus tend not to follow them. For instance, whereas as many as 96% in Lunenzi answered they felt bound by the rules regulating their forest use, and thus followed them, 28% in Nyali stated they only felt somewhat or not bound at all by the rules, and as many as 65% in Masugu answered the same. Thus, even if there were an able group or organisation in place to enforce the rules in these villages it might not have meant the rules would automatically be followed, and might only have resulted in an increasing level of conflict. As an example of this in Lumango, the environmental committee in charge of patrolling the forest and enforcing the rules had not been functioning properly for about a year. One of the reasons put forward was that the hostility they met from forest users when trying to detain them for illegal use, both people from within and outside of the village, were so bad that they had been discouraged to continue.

Masugu scores the lowest on all points with the exception of good management. This confirms what we observed regarding unclear land tenure and boundaries.

Lumango scores lower than both Lunenzi and Nyali on enforcement of rules and if they are followed. This tells us that how the resource regime fit on top of the resources will not matter if the people are not able to enforce the rules created.

Overall Lunenzi is has by far the most functional resource regime in place if we are to follow the design principles of Ostrom, and with its 87% score it is even quite higher than the PFM village Lumango which has 67%, and in particular Nyali with 53% and Masugu with 41%.

In chapter 7 we looked at environmental incomes, and from Table 8.13 we can see that there is a relationship between income and resource regime. The level of environmental income increases with reduced compliance and the gradual shift to more open access regime, as in Masugu.

**Table 57: Mean environmental income by villages**

	<b>Masugu</b>	<b>Nyali</b>	<b>Lunenzi</b>	<b>Lumango</b>
Mean environmental income	472 (896,82)	60,06 (129,54)	31,45 (27,31)	31,95 (71,07)

Masugu had overall the lowest score when following the success principles and it also had the highest environmental income. However, there are many reasons which can contribute to this high forest use, and as we have seen, the close location to a main market, its relatively low agricultural output and insecurity of land, and its high heterogeneity among villagers are also contributing factors.

Lunenzi had as we have argued a functional resource regime, and this is reflected in having the lowest environmental income of all. Lumango is however not far behind, which is also illustrated by how successful it is in forest conservation.

Looking at how sustainable forest management is created within a set area is important in the success of future REDD+. In this context, it is Lunenzi, which has not been involved in any formal process of establishing a formal management system, still has a resource regime that seems the most robust one out of all the four villages above. It even surpasses Lumango which for quite a few years now have had PFM in their village. Although we have already established some major reasons for this, namely its homogeneous population with shared norms and values, this is worth looking further into. This is also particularly important when assessing whether or not

REDD+ will succeed in the other areas which don't have such a system in place. Or if a REDD+ effort could come to affect Lunenzi in a negative way.

Our findings above further support the theoretical basis of the Resource Regime Model where the resource regimes in place highly affect the forest users (economic actors) preferences and actions. In the cases where there is a more open access regime there is a higher forest use than in the cases where a functional management system is in place. However infrastructure also can be seen as a contributing factor, and whereas the forests in Lunenzi are quite difficult to reach and is remotely located from the nearest market, in Masugu there is easy access both to the forest and to the nearby market place.

Although the establishment of PFM appears to rectify some of the shortcomings of other informal management systems, it does not, however, seem to be able to sufficiently deal with all. In order to further analyse PFM as a sustainable resource regime, and as the TFCG/MJUMITA REDD+ pilot project is based on PFM, we will therefore look at past experiences with PFM and outline the biggest challenges it has had.

### **8.3.1 Experience with PFM**

Tanzania has been implementing PFM since the 1990s, and now has 1440 villages under such a regime. Therefore much experience can be drawn from on its effectiveness as a sustainable forest management regime. On the positive side it has been accredited to empowering local communities and establishing “good governance”, however at the same time a major reason for why many PFM project have not reached its full potential of benefits for local people has been due to a lack of proper accountability and transparency, as well as a lack of taking into consideration the poorest members in the community. Blomley and Iddis's (2009) evaluation of PFM in Tanzania from 1993 to 2009 looked at past experiences with PFM. Some of their findings are what is outlined below.

**Table 58: Experiences from PFM in Tanzania from 1993 to 2009**

- Licences, fees and other payments required to harvest products from village forests were too expensive for the poorer households, thus only benefitting middle income and richer members of the community and resulting in elite capture
- The poor are rarely represented within forest management committees, and even when they are, their participation and voice is rather low
- Opportunities for the VNRCs to provide feedback and get responses from the Village Assembly has been rare and thus there has been limited opportunities for the management committees to be held accountable for their actions
- VNRCs being essentially a government institution are more often accountable to the village government and not to the wider community
- Knowledge of forest management plans, by-laws and concepts are generally low among community members
- Although the by-law being exempt from FBD Forest Harvesting Guidelines after establishing a VFR some District Councils have still placed additional burdens, barriers or costs to villages regarding harvesting
- Income generating projects have tended to be geared more towards richer members of the community due to the required investment of time and funds, and thus being inaccessible for the poor
- Income generating activities (IGAs) tend to be demand-driven or provided through groups which generally do not include the poor and are rarely targeted towards the poor
- Deliberate exclusion of the poor by the belief that the poor are responsible for forest destruction and unable to contribute in a useful or constructive manner
- Seasonal forest users such as various pastoralist groups are not included in planning processes either because they are not present at the time of decision making or because they are not viewed as having legitimate rights of forest use and management
- Due to increases in wildlife following improved forest protection there is also an increase in crop raiding and damage from wild animals, placing additional costs on those living close to the forest

Source: (Blomley and Iddi 2009, p.42.)

As seen above a major shortcoming of many PFM projects has been to effectively take into consideration the poorest members of the community, and they have often been left out of the management committees and been excluded from income generating activities. Instead they have been left with the added burden of having to pay higher license fees to be able to use the forest than what they can afford. In addition previous PFM efforts seem to have been suffering from insufficient accountability and transparency, and from a management committee that rather takes reports and acts in the best interest of the village government than the community as a whole.

How well these issues are tackled by TFCG and MJUMITA when establishing PFM and REDD in their 14 selected villages will gravely affect the success of the pilot

project, both in terms of permanence and in terms of ensuring equal benefits to all community members.

Having gone through the activities carried out so far in the villages which make up TFCG and MJUMITA's pilot area in Kilosa, as well as having looked at the local context and local expectations in concern with this, we now will go through what we see as the main challenges for TFCG and MJUMITA and for the ability for the project to reach its aims and purpose.

#### **8.4. Challenges of implementing and running the pilot project**

There is no doubt that the challenges are many when implementing a pilot project such as REDD. First and foremost, the nature of a pilot project itself means there is little experience and knowledge to draw from and which can be used to ensure the success of the project. In addition, what we have showed is that PFM in itself is not without its own set of challenges. Given the early stage of the project we have to stress the fact that this is a real-time evaluation and we can only make an assessment based on what has been done so far and on the information which has been available to us. As such there might have been changes made to the project or to TFCG and MJUMITA's approach that we are unaware of.

However, based on the information that has been available to us, and largely based on our findings from the field, there are in particular some challenges which we feel might undermine the success of the project. These are both general in nature, such as ensuring proper participation and good governance, and particularly linked to REDD, such as the ability to carry out MRV, deal with leakage and cover opportunity costs. We will now go through each of these challenges before we come with our concluding remarks.

### **8.4.1 Participation**

The first challenge we see is that of participation, which may come in many forms and used in a number of settings. Participation has been a major topic in Tanzania's forest sector during the last decades and has been closely linked to PFM and the positive effects it has had on communities and on forest governance. While keeping in mind Cleavers' analysis of development participation there are some issues with participation within the pilot project that we see as particularly pressing.

First and foremost we wonder who it is that are intended to participate and to subsequently benefit from the project: is it the individual, the community, the poor, the socially excluded or perhaps groups such as women? Along the same line of thought we ask how these benefits will come; through cash transfers, rights of resource access and level of control, or right to participate in decision-making?

From the information we have gathered, the REDD pilot project appears to attempt to employ a variety of participation tools and benefit streams. Through PFM, informal institutions will be strengthened, such as in the case of Lunenzi. In the cases where there are no such rules or norms in place governing forest use, such as in Masugu, the formal institutions will attempt at creating the values of sustainable use.

TFCG seem very aware of local heterogeneity and has as much as feasible attempted to take all user groups viewpoints into consideration, whether the poorest in the community, women, or those heavily involved in forest extraction. However, one important exception prevails. For whereas they do not conform to what Cleaver have pointed out to be a false assumption of a community as unitary, they do not seem to have taken into sufficient consideration user groups which do not reside in the village itself but still uses it, something which can pose a great challenge to the success of the project.

A good example of this within our study area was the exclusion of Maasai pastoralists both from the villagers themselves and TFCG/MJUMITA. We were told by TFCG that they intended to contact the Maasai pastoralists and talk to them about the project, and that so far it had been difficult due to the fact that they move around so much. When this does happen, how much they are to be included in the decision-making progress is unsure and we wonder if it is merely to inform them of what is happening or actually include them in the process. For instance if looking at the



example given previously about another pilot village, Chabima, it appeared that although they were contacted, and their interests taken into consideration, ultimately the villagers decided they did not want to give them access to any of their land. The fact that increasing conflict came out of this decision does not give good promise to the villages within our study area, and for instance in Masugu and Nyali where the conflict level is already quite high, it is unlikely that they would want to grant the Maasai any access to grazing within their village boundaries. As the example from Chabima showed it might result in a lose-lose situation where conflict levels rise, the Maasai are constantly being chased away but still return given a lack of other options, and the villagers lose out of carbon credits due to continued use of their forests.

Paradoxically then, participatory approaches may reduce conflict between implementers and the communities but lead to increased conflicts locally (Vedeld 2010).

In addition, as emphasised previously, the poorest members of the community seem to previously have been excluded from much of the process and as an effect have ended up being negatively affected by a project such as PFM. As our findings show those with the least income were often older villagers and especially widowed or single women and overall less people in their households. In such occasions they will probably find it difficult to participate in any demanding communal tasks since they would have their hands full with covering basic needs. There is then the possibility that as they are little involved in the project they automatically will benefit less especially if there is a high competition over said benefits. In addition we found that increasingly so, due to shocks or income shortfalls, women were taking part in charcoal production as a coping mechanism. Whereas it was previously primarily young men involved in this activity this change should be taken into consideration when planning for leakage strategies and benefit sharing. If for instance the situation becomes worse for women as a result of the project, this group as a forest user could then increasingly so venture into the forest and produce charcoal as a way of surviving.

On the other hand, whereas the poor are generally less able to participate in activities outside of covering their day to day needs, the fact that those less poor generally do participate more in communal matters and especially in income generating activities with the highest gains might again have negative effects for the benefit sharing. When

REDD is fully implemented and if being involved in the project can result in such high benefits it might result in elite capture as those most able can utilise their skills and often tight links to the village government to acquire most of the benefits.

However participation is not only important within the villages. In order for the pilot project to work at its optimal also participation on a district level is crucial.

According to Vedeld (2010), one may talk of a “broad unending, inclusive, reflective and open dialogue” between authorities and the civil society as an aim for participation. By this, it could imply a project approach where politics is more than a strategy to reach pre-determined goals. We find that TFCG/MJUMITA have engaged and included local authorities from the start. This has mainly been done in collaboration with the DNRO. During our stay we had several meetings with the staff at both the DNRO and with TFCG and MJUMITA and got the impression that the cooperation was sound and based on mutual respect. Nevertheless we did receive some complaints about the project not providing for anything but per diem payment for the days they assisted TFCG although other expenses were also there such as added phone bills or other communication expenses. From what we were told the DNRO suffered from a lack of both funding and staffing. It is thus important to also take them into consideration in terms of the time and effort they put into the project and provide for some compensation. In addition to the DNRO, the TFCG cooperated with other offices such as the Community Development Office, the Land Office and Livestock and Agricultural Office. However, our impression during interviews was that the awareness of REDD was not as high. This could imply that some local governmental offices are more included and informed than others. By working close to such established governmental institutions, the project aims at creating a sustainable project that will continue even after the project has ended. Talking about sustainability, one might in fact wonder why an NGO, and not local governmental offices are implementing the REDD pilot in the first place. Even though the project is just a demonstration activity, an ambition with a pilot project should be to include existing institutions and conform to the reality in the best ways possible. When a post-2012 climate regime is established, and a national REDD trust fund is in place, the ones that will be in charge of further REDD implementing activities will most likely be local governmental officers and not the NGOs and therefore their full involvement from the beginning should be a required pre-requisite.

The full participation of district staff is also needed in tackling the political element of forest extraction that persists in so many districts, Kilosa not being different. Although TFCG have planned to assist in training on local law enforcement within Natural Resource and Forest Staff we also feel the other offices need to be included. Even more important, if following studies done on governance at local levels there are findings which suggests that district staff often are included in these corrupt networks and might work against the establishment of strict forest management systems, for instance by district staff dragging out the legalization process of village by-laws (Blomley and Iddi 2009).

The above issues can be supported well through the relationships laid out by the Resource Regime Framework as the political actors', in this case district staff and the over arching forest trade network that seems to persist in many districts, preferences, actions and interactions directly has an effect of the institutions governing the policy process, in this case district staff can directly hamper with the process of establishing VFRs, as can they in turn have direct effects on the resource regimes on the ground, where it is shown that these political networks often manage to by-pass forest patrols and check points.

#### **8.4.2 Governance and Institutional Capacity**

In order for REDD to work in our villages, an overall accepted and well functioning management system has to be put in place. Besides Lunenzi, the previous local management systems can hardly be viewed as such, something which has played a great part in the over-use of forest resources and a declining forest cover. The initial activities of TFCG and MJUMITA, such as the awareness raising and participation in electing a VNRC has contributed to many viewing REDD as a legitimate project.

Introducing a new management system and establishing new management authorities in an area is not unproblematic, and regardless of the appropriateness of rules and regulations, those in charge must be capable of carrying out the tasks assigned to them, and at the same time they must be viewed as both accountable for their actions, and they must have a local mandate on legitimacy.

Already having established VNRCs in the villages, which was overall seen as the best option by the villagers, when asking them to evaluate the chance for possible issues to

occur as a result of REDD, some issues were still seen as being of particular concern which we can see below in Table 59.

**Table 59: Issues associated with REDD+, Kilosa District, Tanzania, 2010**

	Disagree	Disagree somewhat	Agree somewhat	Agree	Mean
	%				
<b>It will result in corruption</b>	63	3	9	25	1.95
<b>Unequal distribution of payments</b>	51	2	12	34	2.29
<b>Payments will go only to land owners</b>	51	4	11	33	2.26
<b>There will be less conflicts in the village/community</b>	23	2	11	64	3.15
<b>It will increase privatization of land</b>	57	5	7	31	2.13

Surprisingly there were no big differences in opinion between wealth groups, where for instance 25% in all three groups thought there might be corruption, and when asked whether they thought there would be unequal distribution 36% and 37% within the poorest and middle income group agreed, whereas 30% of the least poor answered the same. They however also had 20% somewhat agreeing.

As previously the villagers in Nyali seemed the more skeptic, with 66% thinking there might be unequal distribution of payments (approximately 35% in Lunenzi and Masugu) and 50% fearing there might be corruption, compared with around 20% in Masugu and Lunenzi. Whether a result of an overall more negative view on the project as a whole, or as a result of a less good relationship between villagers and with the village government is hard to tell. In fact, when previously assessing these relationships Masugu for instance noted worse social relationships than in Nyali. The lack of belief in corruption or unequal distribution in Lunenzi on the other hand can more easily be attributed to their social cohesion both between the villagers and a good relationship with their village government.

Much of the concern for mismanagement of funding and unequal distribution of payments was concerned with who would be the overall authority responsible for the management of REDD+ and for its distribution, and to some extent specifically how much the Village Government would be involved. Overall people felt that the more representative of the people the management authority was the less chance of

mismanagement there would be. It was put forward as a way of solving these problems that there be good communication throughout the process, where the villagers would be informed of what those in charge were doing, who were getting what, and which basis, so that they could more easily notice if some irregularities in distribution came up. A few respondents also mentioned the need to have training and education on good governance. In addition, some suggested that in order to make sure things were carried out in a proper manner it would be good if either the NGO or the district government kept an eye on the activities in the village and controlled that the VNRC were performing their tasks as set out in the beginning.

According to TFCG documents there will be training on good governance for village leaders as well as the VNRC and during the project TFCG also plan to assist and help the villagers or VNRC if problems of unequal distribution or conflicts occur. Much of their assistance seems to lie in this facilitation and training, and overall it seems to be very much in the hands of the Village Government and the VNRC on how they decide to manage. Issues of corruption in general, and elite capture in particular seems quite difficult to avoid in this regard, however also closely linked to the issue of governance and institutional capacity is the ways in which accountability and transparency can be ensured. As a result we will specifically look at these issues below.

#### **8.4.3 Capacity, Accountability and Transparency**

As we have seen the lack of accountability and transparency seems to have been a general issue under PFM, and a major reason for why many PFM projects have not reached its full potential of benefits for the local people.

The ways in which TFCG plan to ensure this is firstly to build capacity through training on MRV, governance training for village leaders and the VNRC in order to strengthen decision making processes and transparency as well as building the capacity of communities to advocate for their rights. Secondly, while acknowledging the danger of marginalized members being excluded from the process and benefits, they aim to identify those vulnerable groups and come up with measures that will ensure that they benefit from the project as well as keeping good communication with

and establish a monitoring system to track the impact of REDD on these groups as the project progress (Kibuga, Nguya et al. 2011).

An issue that comes to mind is the level of which the members of the VNRC will be assisted in the work they do. Previously under PFM, besides initial training it appears most of the people within the committees have dedicated a lot of time and effort without being compensated for it. The forest areas to be patrolled and monitored against illegal use are often big and the people performing these tasks often lack means such as proper footwork to make it easier for them. The experiences from PFM tell that if not sufficiently incentivized or provided with sufficient assistance, there is a danger that once the “novelty” of the project wears off the people placed with the responsibility of performing these tasks will stop and rather return to their day to day tasks.

Secondly, as one TFCG staff member explained, the current power structure in place in each village is difficult to influence or change. What they can do is to influence and facilitate better performance through training on governance and hope that issues like elite capture and unequal distribution will improve, or in other words “we cannot tell a chairman that he is lazy and doesn’t do his job properly...but we can influence his work through meetings” (Local resource person 2010).

Whether or not this more “hands-off” approach will suffice in establishing a transparent and equal benefit sharing system is unclear. However it does not seem likely that an improved governance system will happen on its own. As the benefits available get more substantial, for instance as a result of carbon payments, the risk of mismanagement and unequal distribution will increase. This is also a big risk in terms of permanence. If the majority of the community feels they do not benefit and that they only lose from the project and the restrictions placed on their forest access and use, they are unlikely to continue supporting the project. People would rather start going back into the forest and disregard the rules put in place. In addition, if it is noticeable that only a few are subject to large amounts of benefits it stands a higher chance of increasing conflict levels and disintegrate the social structure or well-being in the village and not bring villagers together such as the project intended to do but rather increase tension and conflict between villagers. Again we need to emphasize the great challenge in ensuring that the poorest in the community are not the ones

suffering the most from such a project. Given their probable lack of capacity and ability to take part in many of the activities the chances are very high that they are left out of the benefit stream. And if these benefits do not reach them but instead only added costs are placed upon them, the effects can be detrimental to this group which already is in a severe disadvantaged position.

Therefore, as clearly put forward by Ostrom and her design principles for sustainable natural resource management, not only do collective participation and decision-making need to be in place, but there also needs to be congruence between the effort that is put into the project with what is gained, and there needs to be in place a management authority which is accountable for its actions (Vedeld 2002).

Whereas the above mentioned challenges are more of a general nature, and can be found in many development projects, the following challenges we see are more geared towards REDD+ and the specific challenges which that pose. Overall, as TFCG and MJUMITA have yet to start many of their planned REDD+ activities, much of our evaluation does not come from actual activities which they have carried out, but rather from information we have gathered through project documents and in-depth interviews with TFCG staff concerned with what they plan to do.

On the basis of this available information we will go through what we see as the main challenges, more specifically we are concerned with the issue of creating a financial mechanism, of carrying out MRV, of dealing with leakage, and on their ability to cover opportunity costs. The first challenge we will go through is concerned with the planned financial mechanisms.

#### **8.4.4 Financial mechanisms**

As part of their first output, and in order to provide direct and equitable incentives to the communities involved, the project will support the development of a Community Carbon Cooperative which will be hosted by and work within the network of MJUMITA in the future. During the current TFCG/MJUMITA pilot project, various models to achieve the stated “replicable, equitable and cost-effective incentive” will be developed and tested at the group or community level. This will provide important lessons learned and experiences which will influence the creation of this “self-

financing carbon co-operative based on sound “state of the art” business principles established and functioning within MJUMITA by the end of project” (TFCG 2010, p.7.). To gain experience with carbon crediting, experience which can be transferable to a future crediting system under REDD+ internationally, the carbon cooperative will link to the Voluntary Carbon Market. Certification will therefore be sought under the Voluntary Carbon Standard (VCS) system.

As a way of ensuring that social and biodiversity benefits are indeed created they will also undertake a secondary benchmarking following the Climate, Community and Biodiversity Alliance (CCBA) standards (TFCG and MJUMITA 2009). Further, a financial transfer mechanism and system that can channel REDD+ financing from the national to the local level, compensate and create incentives for the forest managers (the VNRC members and forest guards) as well ensure that an equitable share of the funds reach all members of the community, even the poor and marginalized ones, will be developed. Of particular focus here is to introduce simple but effective and transparent mechanisms for the disbursement of REDD+ funds. As a way of testing out how to create such a system in total 18% of the projects financial disbursements will be linked to results-based performance, 8 of which will only be disbursed after demonstrating direct REDD+ results (TFCG and MJUMITA 2009). According to its most recent project process document, dated February 2011, so far a project design document for the VCS is under development, based heavily on remote sensing activities. In addition, the financial benefit sharing mechanism is being worked on, and consultations with 92 representatives of MJUMITA’s networks on the matter had been carried out. There are also plans to apply for validation by the CCBA in the near future (TFCG and MJUMITA 2011).

TFCG is only in the beginning phase of designing these models. They will later be tested out in the communities and this will give an indication of the ways in which they plan to disburse future REDD payments. It is not possible at this stage to evaluate its possible effectiveness, efficiency and equity. Our field interview with TFCG also didn’t shed light on the design of such a system as everything was still very unclear. They were, however, hoping to start disbursing some project funds as performance-based payments one to two years after the initial baseline measurements had been carried out (Local resource person 2010).



However, some issues still prevail on a general level in terms of REDD+ credits. Particularly we are concerned about issues of corruption, bad governance and elite capture. If the project will come with substantial amounts of financing for each village which is to be disbursed through either the Village Government or the VNRC and reach the household level, strict safeguards need to be in place to ensure the equal distribution of these funds. It is clear that there are certain power structures in place, particularly in Masugu, which has played a part in some members of the community being able or allowed to extract large amounts of forest products from the forest, while the poorest are excluded from these activities, as we doubt it is only a result of other enabling or disabling factors which explain why the poor are less involved than those with a higher income. As a result we are reluctant to believe training and advice on good governance from TFCG and MJUMITA will be able to prevent unequal distribution of funds as a result of this. Another important aspect of setting up such a financial system is in terms of its transaction costs. Apart from the initial costs of going to all the villages and sub-villages to inform them of the project and establish the VNRCs as well as the costs of carrying out land use planning for each village, the project runs the risk of acquiring quite substantial transaction costs when establishing and running this financial system. As a new institution it will most likely entail much funding in its initial set up; in training and building sufficient capacity of those involved; in handling the financial management; and in setting up and using proper safeguards to ensure equal distribution of the funds. This then pose the question of where to strike the balance, and whether or not to take the risk of reducing safeguards and transaction costs in order to increase efficiency without risking the overall effectiveness of the project. However, if all the funding or carbon credits are spent on these transaction costs and none reach the villagers which have carried out their tasks placed upon them, the permanence of the project is questionable.

Another area where transaction costs might end up being quite substantial is in terms of MRV which we will now discuss.

#### **8.45 Monitoring, Reporting and Verification**

There are two ways to compensate communities in terms of lost forest access in REDD. There is the effort-based option, meaning to reward communities for things that they do which are meant to improve forest condition. And there is the output or performance based payments, in terms of improved and verifiable forest conditions. TFCG/MJUMITA have chosen to go with the latter, the performance based approach. In this, they will monitor report and verify forest degradation and carbon stock in all the selected villages in Kilosa, which largely relies on ground measurements, complemented by remote sensing.

There are both advantages and disadvantages related to this approach. An advantage is that it creates much stronger incentives for forest managers to actually improve forest conditions by being paid for their performance as opposed to effort. It also takes account of differences in the effectiveness of different forest managers, and are thus more likely to create strong links between REDD payments and conservation activities. It can thus be seen as the most effective in terms of carbon storage.

A disadvantage is that it rewards forest managers in terms of results they achieve, which depends not only on their level of performance but also their respective starting points. During interviews with forest officers, concerns were raised that the villages included in the pilot would not receive a sufficient amount of funding from REDD+ because of this starting point. Lindi were here used as an example, where the forest was much more degraded than in the mountainous forest ranges in Kilosa. Such examples can also be seen between villages. The logic behind becomes; if the forest are more degraded it would provide a higher return from REDD since it can potentially regenerate and hold more carbon than a forest in good conditions. In this sense, such a system rewards forest managers who are able to conserve forests on the basis of the status of the forest in the first place.

The project focus solely on communities with already degraded forests. It will however not provide tree seedlings to the communities but plan to assist in tree nurseries instead. The question then becomes, which tree species should be planted? Such advice will be some of the responsibilities of the project experts to give, and have to be done in accordance with the climate and location. In so doing, one might

wonder how these experts would value biodiversity up against carbon storage capabilities. Regardless of the technical aspects of carbon, local communities will any ways continue to value a tree for its practical values, not for its ability to store carbon. The carbon thus becomes a technical issue, which is difficult to grasp for many.

In addition, an output-based approach to REDD+ is likely to represent higher transaction costs as it requires verifying of the conditions of each local forest that is managed. With many small forests areas the transaction costs are likely to be quite high. By establishing a number of different village forest reserves this is exactly what happens. Another concern is the type of forest included under REDD+. Since it is performance based, and thus requires verifiable measures, it compensates the forest manager in exact carbon stored. Most of Kilosa's forests consist of Miombo Woodland, which hold much less carbon than for example rainforests.

In this regard, it can be viewed that under a REDD Resource Regime the attributes of the forest is perhaps even more important than under previous regimes, where type and state of the forest resource has a direct bearing on the amount of payment received.

REDD and the performance based approach demands quite extensive Monitoring, Reporting and Verification (MRV) measures where the forests in question will have to be assessed twice during the project cycle. A danger is if it takes too long before people start receiving REDD+ funds. If so, people could start losing their patience. The ability to enforce the rules made during the PFRA is another concern. In Lunenzi, people mentioned this and expressed their worries about the VNRC only having 15 members (the number set by the project) and that this would make it difficult to manage and patrol the extensive forest area. In addition, when working with rural communities one has to bear in mind that these people have a range of other things to do. Forest management will thus be prioritized after basic needs such as food and agriculture.

When carrying out MRV, only the PFM forest from its established boundaries will be measured and included into the project. This brings us to some core concerns in terms of REDD and its ability to hold carbon. Following the PFM guidelines, TFCG/MJUMITA help communities to establish boundaries and demarcate what is forest and what is not. Such boundaries are not decided by the villagers themselves.

The bigger the forest, the more income they will get from carbon sales. So if their forests are small, and the villagers many, there will be a small return. On top of this, there are great uncertainties in knowing exactly how much they can get from carbon sales.

In addition, the plans of TFCG and MJUMITA of including local people in the MRV process, with the aim that they after training and capacity building will be equip to perform these activities with sufficient diligence and precision needed, might also pose some challenges. As already stated, performing MRV can be a quite time consuming process, and the technical expertise needed to carry out measurements which can be seen as legitimate and reach national or international standards also suggests the training will have to be substantial and can take a long time. This issue has also been raised by national stakeholders with the question if it is even feasible for local people to perform such activities given their often limited education and limited availability of time (Local resource person 2010).

We therefore wonder if and how these issues have been taken into consideration by TFCG and MJUMITA and how they plan to solve the capacity and time constraint they most likely will face. As these activities by and large also are new to many TFCG staff we worry that their main focus is on forest and biodiversity conservation and less on the technical aspects of MRV and carbon crediting.

This brings us to another REDD related issue, namely the challenge of avoiding leakage.

#### **8.4.6 Leakage**

The issue of avoiding leakage is of utmost importance if actual emission reductions are to be achieved. According to Angelsen (2008) leakage entails the following: *“Carbon leakage is the result of interventions to reduce emissions in one geographical area (sub-national or national) that lead to an increase in emissions in another area. For example, if curbing the encroachment of agriculture into forests in one region results in conversion of forests to agriculture in another region this is considered to be leakage.”* (Angelsen 2008, p.140.)

As the basis of which carbon payments will be given there needs to be documented reduction in emissions in the area which is to be measured. However, with the end goal of reducing *actual* and *total* emissions, if those previously using the now protected forest only start performing the same activities in a nearby forest which is not under protection the total D&D and subsequent emissions will not have reduced at all. If the measurement level which payments are based on, at a sub-national or district level, the payments received, no matter how effective the management within the REDD+ forests are, will then be marginal.

Due to this issue TFCG have dedicated one of their four outputs solely to tackle the issue of leakage:

*“Output 2: Replicable, equitable and cost-effective models developed that are designed to reduce leakage across project sites and provide additional livelihood benefits to participating rural communities”* (TFCG and MJUMITA 2009, p.10.)

The approach they have decided to take is firstly to carry out an assessment of the drivers of deforestation, or “primary leakage” activities in each area and on that basis make a leakage strategy for each community which lays out measures to address the drivers identified.

In terms of dealing with drivers of deforestation not performed primarily by the village community itself and in order to try to minimize the leakage, the main focus is on creating good links with district forest staff and provide training and capacity building of district staff on improving forest governance and addressing forest crimes, for instance by supporting law enforcement initiatives. In addition, an extensive area surrounding the pilot villages will be monitored in accordance with the Voluntary Carbon System (VCS) guidelines and also ward and adjacent communities will be involved in the monitoring. TFCG will also focus on market and policy issues through advocacy and awareness rising, and although outside of the scope of their project they call for measures to be taken to reduce the demand for energy coming from urban areas such as Dar es Salaam, where for instance the introduction or subsidizing of gas stoves might reduce the demand for charcoal as much of it is produced in areas such as Kilosa district (TFCG and MJUMITA 2009). In their progress report published in February 2011, education and training has been carried out for district and ward staff

on forest conservation and environmental issues and on social impact assessment (TFCG and MJUMITA 2011).

A lot of the work to prevent leakage is concerned with activities outside the village boundaries where the REDD forest is located, most notably in the training and assistance to district and ward staff to improve their capacity in dealing with illegal harvesting of timber and charcoal production. As many of these individuals have been able to carry out the extraction of forest products without much restriction from either village or district government up to now, enforced restrictions might discourage some in continuing their activities. However the profitability of the bigger companies and traders which are involved will probably be more difficult to deal with, especially given the links and expertise many of them have at surpassing such restrictions.

We also see that many of the households with a higher income are those heavily involved in charcoal production and the extent to which these households can be incentivized to stop their current actions is unsure.

Returning to our previous concern with the presence of many pastoralists in the area these might also have an effect on leakage. Even if the pilot villagers are able to keep pastoralists out of their forests the need of these pastoralists to feed their livestock will not disappear and they will most likely merely move onto other close by grazing or forest areas. As much of their previous areas have become unusable due to drought or over-use, previous grazing areas have been converted into other land uses, and overall the livestock population has increased in Kilosa finding good grazing areas for their cattle has become a very difficult matter. And as most villages do not see the Masais' claim for grazing area as a legitimate one within their village boundaries and thus will most likely be opposed to establishing areas for them within their village boundaries. It is also an issue which should be taken up nationally, in terms of establishing sufficient areas which are formally recognized as grazing areas and a review of the current Livestock Policy, particularly in terms of putting a limit to livestock numbers per household, should also be considered.

Such challenges seen in Kilosa between pastoralists and farmers may potentially pose huge implications for the projects overall effectiveness and ability to reach their goals. The introduction of PFM and REDD will most likely make the land use conflict

become explicit and can increase conflict levels in ways which could constraint the effort of reducing deforestation and forest degradation. For REDD to work in Kilosa, mechanisms must be in place to prevent this.

In terms of recognizing other land uses a Maasai we interview stressed the the need of including other land types in REDD, including grasslands. More thought and effort is needed to create a unified approach that includes all types of land in terms of carbon storage and credits. This argument can, however, at the moment be dismissed by the simple definition of REDD as reduced emissions from deforestation and forest degradation – hence, forest only. Since it does not include other types of land, what we can risk is to see other types of land uses increase. Shrubs and bushes in fact covered a lot of the land we saw during our visit and much of the firewood was collected from there. The pressure against such lands could thus potentially increase, which will in a total sense then not reduce any emissions. In addition, if not dealt with, when these areas are too degraded people might start venturing into the forest again. As such this challenge we see is extremely important to try to tackle.

In terms of dealing with intra-community drivers of deforestation and forest degradation, added livelihood benefits will be provided such as providing training and inputs for a more efficient agriculture, provide for alternative or more efficient energy use and facilitate tree planting, and through PFM, establish a clearer and more sustainable land use. Various measures will be discussed with each community and depending on what they feel they need a set of activities will be chosen in order for them to reduce their forest use and which make up what TFCG has called a “leakage strategy”. However for the most parts, a combination of the above mentioned activities will be carried out, and agricultural improvement is seen as particularly important. For instance TFCG has now added, most likely, a 6<sup>th</sup> member in their staff which deals purely with agriculture (Local resource person 2010). According to the progress report the activities already carried out include 26 villages where participatory strategies to reduce D&D and improve livelihoods have been developed, within which some have prepared village land use and management plans and by-laws, some households have adopted fuel efficient stoves and farmers have come with recommendations on measures and activities which can improve their agriculture and

thus reduce the need of having to clear forest in order to get more land to produce (TFCG and MJUMITA 2011).

Although performance-based payments would not start in a while, the activities performed in the mean time as a way of creating incentives and to try to address the drivers of deforestation, also provide villagers with tangible benefits. As we saw previously in this chapter, when we asked our respondents on what type of payments they would prefer as compensation from REDD the answers were quite varied. For instance whereas the poorest and Lunenzi were more in favour of better access to social services, Masugu and the least poor were more in favour of increased employment opportunities. If effectively dealing with the drivers of deforestation then these views need to be considered.

An overall concern for all locations was that they needed to be compensated sufficiently if they were to stop using forest products, particularly in concern with firewood which they all depended so much on. In addition, the fact that overall 31% of the income is derived from forest resources suggests a need for forest resources which does not disappear on its own. Suggestions they put forward to lessen their dependence were access to technologies which enabled more efficient energy and also training in and establishing their own woodlots from which they could get firewood and building materials. Perhaps the most pressing driver of deforestation to deal with is charcoal production, which is increasingly becoming a major driver of deforestation in these areas, especially Masugu and to some extent also in Nyali. As we saw for instance from the selection criteria of TFCG, when selecting their villages Masugu Kati was included into the pilot project as they were heavily using the forest in Masugu Juu, and as a result of their previous forest being too heavily degraded. Thus, the current forest use is far from sustainable. Establishing an area for sustainable charcoal making with more efficient charcoal kilns might be part of a solution, however this then pose the question of how much of the forest the villagers will in effect be allowed to use. We are also curious as to how the system will be set up in terms of having to pay for permits or not in order to access forest products. This is particularly a concern in terms of the poorest members of the community. As experience have shown, they are usually the ones which are the least able to cover such expenses.



It is also highly obvious that dealing with the high demands and profitability of charcoal and charcoal production needs a larger focus than only within the selected villages and needs to be dealt with on a higher level, for instance by trying to tackle the high demand from the urban areas and by better enforcing the legal obligations when producing charcoal.

Although as of yet we found relative to no charcoal production in Lunenzi, this might change in the future if this profitability and demand still persist. For instance if the roads to and from Lunenzi improved it might see a change in the forest use, and as one of the villagers stated “if there were better roads where charcoal could be transported we would do it”. For as technologies and infrastructure currently has acted as a disincentive for villagers in Lunenzi to participate much in forest extracting activities, if these conditions are improved it might change their preferences and subsequent activities within the forest.

A final point which was raised by villagers was the need for TFCGs openness on what benefits they could expect, i.e. if they were promised a certain amount or a certain type of compensation then they had to deliver it so as to not create false hopes and mistrust.

The balance here can however be very difficult to set. On the one hand in order to motivate the villagers to participate and to manage their forests sustainably the future promise on carbon payments will naturally work as an incentive. However, given the nature of a performance based payment system, regardless of their efforts, if the issue of leakage is not dealt with properly then these villagers will get very low returns for their efforts. If coupled with the high transaction costs which a performance based system entails the returns will be even lower.

We see that people in different locations face different challenges in terms of drivers of deforestation, whether from within the villages or from outside people. This fact is very important to take into consideration when the pilot attempts to deal with these.

Also, people do not only use the forest when they don't have any other opportunities to generate and income or alternative ways of accessing for instance energy or building materials. It also has a factor of relative profitability, wherein given an individual calculation of effort and time spent compared to output a choice of income generating activity is selected. This brings us to the issue of opportunity costs, which

we will now discuss as a factor which might become very difficult for TFCG and MJUMITA to deal with.

#### **8.4.7 Opportunity Costs**

The main idea, something which often PFM were not able to deliver on, is to through these incentive mechanisms cover the loss in profitability the villagers will experience as a result of stopping deforestation and forest degradation, also known as opportunity cost. As explained by Angelsen (2008):

*“Opportunity costs are the foregone economic benefits from the best alternative (non-forest) land uses, e.g., the minimum amount a landowner must be paid to be willing to stop deforestation and forest degradation/DD (compensation payment) (Angelsen 2008, p.20.).*

The most tangible benefits and incentives the villagers will receive through TFCG for now will be in the form of activities as mentioned above. As stated, the leakage package of activities provided to each village will depend largely on what the community itself will prefer. Within a visioning exercise, TFCG has decided to place particular emphasis on the views of the poorer people and women in the community (Local resource person 2010).

The opportunity cost of charcoal production in Kilosa is high, and particularly in those areas close to Kilosa town where the access to forests and to the main market in Kilosa makes charcoal making relatively easy and very profitable. The increasing charcoal prices coupled with an ever increasing demand for it from urban areas makes it even more so. This is not to say that everyone does indeed produce charcoal as it is a very physically exhausting activity and without a proper licence there is a chance that one can be caught by the district foresters and heavily penalised.

And some would probably prefer to do other activities such as agriculture but feel they don't have any choice. In addition, we found it quite surprising, although positive, that those which generally were more involved in charcoal production, e.g. the least poor and those from Masugu, were overall quite positive to stop producing charcoal.

However, it is a concern as in some pilot areas the incomes from charcoal production most likely are much higher than what TFCG and the potential revenue from REDD and selling carbon credits can cover. Masugu village is one such area where the close location to Kilosa town and transported into town has increased the prices where one bag can be sold for as much as USD 10 during high season (15.000 Tsh) compared to for example only USD 2 (3.000Tsh) during low season in the more remote areas. A household can produce 20 sacks of charcoal a month, USD 200, which makes up quite a high income compared to other activities. Charcoal making is in the areas around Kilosa Town the main driver of deforestation (Forester-Kibuga and Samweli 2010). There are also many external people who come to the village forest to produce charcoal and therefore will not receive any type of payment for reduced production and thus make it even more difficult to tackle the issue. TFCG also questions this, and state in their project document that such villages would not be a part of the project as the opportunity costs would be more or less impossible to cover through their project. However, if not able to provide monetary or other incentives for them to stop, certain disincentive can be created.

For instance already one of the reasons where people would *not* get involved in charcoal making was their fear of being caught by the district forest officers, thus an increased presence or collaboration with them and more strict procedures on licensing and permits for production could discourage charcoal producers. However, as we see it, given the high demand for charcoal and its profitability, it could also be a good idea to introduce more efficient kilns to produce charcoal in, and to earmark some of the productive forest area to this activity where permits have to be bought to produce it and thus creating more revenue for the village while still allowing some of the production to continue.

As we see it there are a magnitude of challenges and issues that need to be taken into consideration in order for TFCG and MJUMITA's REDD+ pilot project to efficiently and effectively reach its aims and goals, and much of the challenge lies in taking into consideration the local context within which the implementation takes place, as the local variations can have big effects in whether or not a certain intervention will work. As a final part of this chapter we now present some concluding remarks and an overall evaluation of the project.

## **8.5 Concluding remarks and overall evaluation**

In REDD literature, co-benefits are listed as one (in addition to efficiency, effectiveness and equity) of the criteria's for a successful REDD regime. In this early assessment of a pilot project in Kilosa, we have looked at local livelihoods and their dependency to forest in terms of income level and location. Since these villages are in their early stages of REDD implementation it is difficult to say how exactly they will be affected by the project. However, by discussing main components of TFCG/MJUMITA's REDD pilot we can draw a picture of what could be seen as the likely outcomes.

As mentioned, there is a fairly high level of participation in all three villages. There have however been some variations where for example in Lunenzi, almost all households participated in the meetings and were generally positive to the project. In Masugu and Nyali however, people were a bit more reluctant, but did still agree to join. The level of households for or against can be coupled to the projects overall legitimacy. By analysing the different resource regimes in place, we learned that there was a connection between how well resources are managed and how much forest are taken. With this we can draw lines and get an opinion about what the three different villages and what their chances of success can be.

### **8.5.1 Lunenzi**

Due to primarily its remote location and homogeneous population Lunenzi had developed a functional forest management system based on informal institution and the villagers also had relative low environmental incomes. In other words, such well organized institutions and structures can be seen as a preferable starting point. However, as argued in terms of payments received from REDD, a performance based approach does not necessarily reward those who already manage their forests well since the money will be given in terms of carbon storage gained. However, in addition the project will provide other opportunities to increase efficiency and alternative sources. The majority in Lunenzi called for payments in terms of better social services and infrastructure, e.g. the creation of a proper road leading into the village. However, this issue is not completely problem free, as better infrastructure into the village might lead to more people coming in and using the forest, or to villagers starting to harvest

and sell forest products such as charcoal now that the roads are more accessible. However, what we see as important additional benefits created through TFCG is the improvement in agriculture, where as much as 80% of the total income in Lunenzi comes from agriculture. In addition, care should be given to the most severe limitations in the area such as crop failure or soil erosion during the rainy seasons.

### **8.5.2 Nyali**

Perhaps the biggest challenge in terms of Nyali benefitting properly from REDD is in terms of getting all the villagers to accept the project and the restrictions which will be placed on their access to the forest. As seen in this chapter a large part of the villagers were very sceptic to REDD and whereas some thought their land would be taken away from them, others felt they could not be motivated to stop using the forest regardless of the payments received. This scepticism was also coupled with a general mistrust of its village leaders as they feared REDD would result in both corruption and elite capture when the carbon payments started arriving. The reluctance of compliance can be very serious for the villagers, thus further awareness rising is needed. Given the size of the village and its division into 11 different sub-villages with large forest areas the patrolling and enforcement activities will probably be an extensive task and preconditions that some level of legitimacy for the project is in place. As for Masugu, Nyali has also experienced high immigration into their area, and in addition to an increasing area being cleared for agricultural land, it has also lessened the social cohesion among villagers which might have been present before. Given the large size of land it is also a worry that those living in the more remote areas of the village will be left out of the benefit sharing. Another issue, concerning strengthening individual property rights is that it might bring negative effects to the informal rule of allowing people on their land to collect firewood. If these areas become too degraded then conflicts might arise and some might start venturing into the forest. Nyali could benefit from more fuel efficient energy stoves, as firewood was the main source of energy and use of forest product. However, improved agricultural practices or other sources of livelihood is also an area for improvement and might prevent more people to go into the charcoal business. As a final note, however not a big issue yet, there should be a strategy in place when it comes to possible conflicts or

quarrels with Maasai pastoralists who to an increasing degree have started grazing their livestock in and around Nyali.

### **8.5.3 Masugu**

Our findings from Masugu have showed a dependency on large forest resources. Firstly, the agricultural output were the lowest of the villages, its location is close to the road and Kilosa town, the land tenure rights are vague, it has experienced a high population influx and the village is clearly heterogeneous. In addition, there are emerging conflicts with the Maasai over land. All these problems can be reflected in the lack of a good, long enduring management system. It is important that the project recognises such challenging situations as something to be dealt with. If not, it can potentially affect the projects overall outcomes. Equally important is that the project should recognise the many differences that exists within the village, based both on formal and informal institutions. However the unsustainable use of the forest resources in Masugu cannot continue for long, and as we saw that villagers in Masugu Kati had already depleted their forest the same might occur within the forest in Masugu Juu if nothing changes.

Since the village is located on former plantation lands a fear exists that someone could come in and take the agricultural land they use now. To secure land tenure, is therefore greatly needed. However, implementing REDD will entail the exclusion of “outsiders”. In a village like Masugu where people are used to come in from the outside, either to graze their animals (Maasai) or produce charcoal, this can create some problems. The question then becomes if the community will be able to manage a forest designated as a REDD forest. Households also have different capacities to participate.

Another worry in Masugu is leakage. Due to its forest dependence and extensive production of charcoal the opportunity costs are very high. For REDD to work, the payments from REDD need to at least somewhat reflect the opportunity costs lost. Here, also improved enforcement of rules from the district plays a role. If no permits are paid, the cost of production will continue to stay low, however with increased law enforcement many might refrain from producing charcoal or extracting timber. Even

if Masugu seems to face most challenges it does not mean that REDD could not be successful here. In fact, overall, many seemed positive to the project.

The different factors have an effect on the effectiveness of the resource regime, where it can be concluded that its current use of forest is not sustainable in the long run. However, there are huge potentials for the community to benefit from the REDD process. Direct and beneficial effects can be associated with undergoing a land use plan. However, inclusion of all stakeholders must here be stressed.

#### **8.5.4 Wealth Groups**

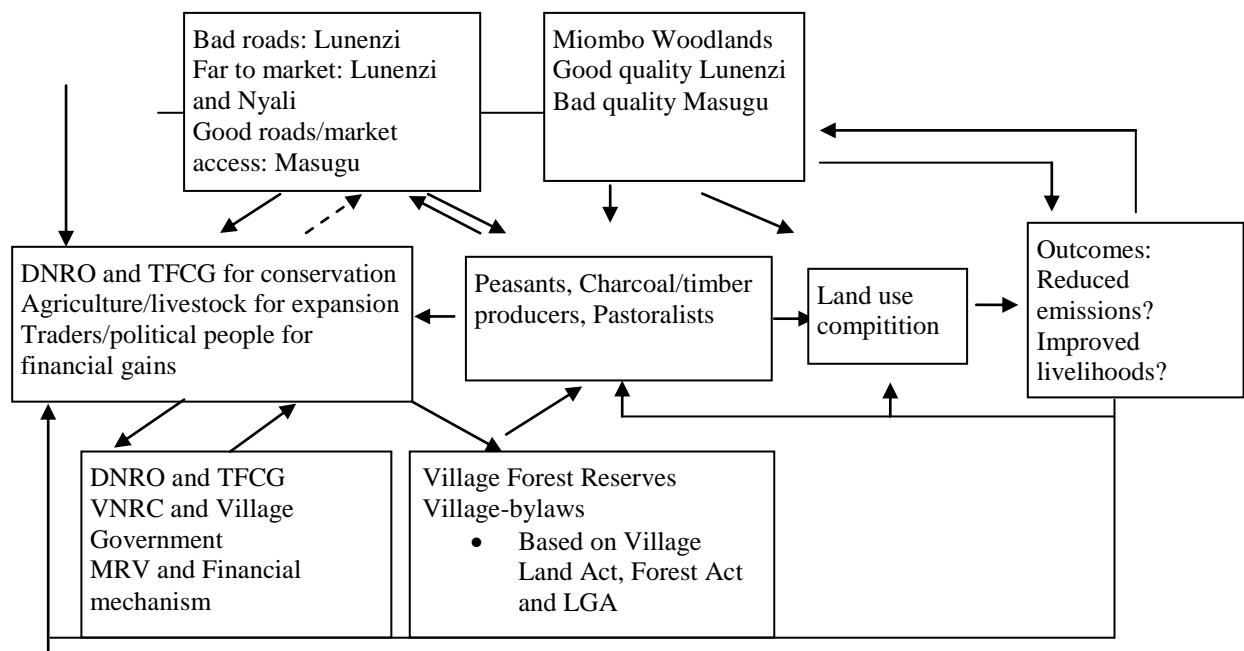
As with location so do wealth groups need to be considered within REDD. As previous PFM efforts often has resulted in a decreasing poverty situation for the poorest members in the community so does the same challenges persist under REDD, and as we see it, even more so. TFCG seem to have a consistent focus on capturing the situation of the poorest. We found that although they are the least involved in forest use as an added income they still rely heavily on forest resources to cover their energy needs, and given their lack of income, they are less able to supplement or substitute with other sources of energy. If, as with PFM, strict rules under REDD which includes payment of licences or permits in order to collect fire wood, this will then have negative effects for both the villagers in question if they are not able to pay these licences, and for the project if this means they will collect fire wood illegally. The low involvement in forest resource extraction might suggest a certain power structure in place which limits their access to forest products. This appears to be the case particularly in Masugu where only the more resourceful households benefit much from forest resources.

They are also the ones that are best equipped against unexpected shortfalls through their diversification of activities. In this respect, one has to bear in mind that in Masugu, the forest also acts as a risk management or coping strategy during hard times, and this is also becoming increasingly so for poorer women. The forests are thus of crucial importance to ensure resilience. In terms of awareness and inclusion TFCG's focus on the poorer members of the society seem to have been effective and they overall possess the same knowledge as the other two income groups and are generally positive to the project. However, perhaps not enough emphasis has been placed on the least poor in the communities which often have a very high and

unsustainable forest use, thus making it more difficult to cover the opportunity costs and to create overall acceptance of the project. It can also pose a big problem in terms of elite capture, where their ability to involve in the most profitable income generating activities also can be a result of REDD, leaving little compensation left for the remaining community. The least poor also are more involved in the communities and in general seem to have closer links to the Village Governments. In addition, the poorest often have enough with covering their day to day needs and are not as involved in community activities. This can be an issue in REDD as well, where the lack of involvement further reduces their chance of receiving their due compensation. Given the fact that overall the poorest members in our study area had the least land but in turn were the most dependent on agriculture as a source of income, agricultural improvements and alternatively additional land could be highly beneficial for this group.



On the basis of the information we have gathered we have been able to create a picture of how REDD in the pilot projects will work as a new resource regime. By employing the Resource Regime Framework created by Vatn (2011) the regime as we see it is presented below.



**Figure 25: REDD as a Resource Regime in Kilosa District**  
Adopted from: Source: (Vatn 2011)

As a final summarising point we put forward the main challenges we have gone through and view them specifically on the basis of the 3Es. This can be seen in Table 60.

**Table 60: Main challenges of TFCG and MJUMITAs pilot project, on the basis of the 3Es**

<p><u>Efficiency:</u></p> <ul style="list-style-type: none"> <li>• High opportunity and transaction costs</li> <li>• Complexity of program calls for extensive awareness rising, capacity building and training</li> <li>• Time consuming MRV activities for local community and dependency on external experts</li> <li>• Lack of hands-on accountability and transparency measures</li> <li>• NGO driven – lack of district ownership, lack of broad-based district involvement</li> <li>• Splitting up project area in many small forest areas</li> <li>• Poor uptake of carbon in dry Miombo woodlands</li> <li>• Poor storage capacity in well managed forests</li> </ul>
<p><u>Effectiveness:</u></p> <ul style="list-style-type: none"> <li>• Reduced emissions only from selected forests with oversight of other forest landscapes</li> <li>• Village leakage strategy - insufficient inclusion of pastoralists and “outside” views</li> <li>• Insufficient market considerations and power-structure of charcoal/timber trade</li> <li>• NGO driven – lack of district ownership, lack of broad-based district involvement</li> <li>• Insufficient time?</li> </ul>
<p><u>Equity:</u></p> <ul style="list-style-type: none"> <li>• Lack of specific measurements against elite capture</li> </ul>
<p><u>(Co-benefits:)</u></p> <ul style="list-style-type: none"> <li>• Biodiversity</li> <li>• Poverty reduction</li> </ul>

In terms of *Effectiveness*, we question the overall ability to reduce emissions as only selected forests are included, while heavily used forest landscapes are not taken into consideration. In addition, what we see as an insufficient consideration of major stakeholders such as local pastoralists can have grave effects on the ability to avoid leakage and thus undermine the effectiveness of the project. Market pressures and political power networks within the forest sector might also undermine the effectiveness of the project, as these will be difficult to tackle by the project alone. Likewise the relatively low inclusion of district staff will then not improve this situation. We also question the projects ability to carry out all the planned activities within the timeframe they have been given.

In terms of *Efficiency* there are also challenges. While establishing PFM is seen as a prerequisite for the pilot project it has become a very time consuming and expensive matter both in raising awareness among the local population and establishing new land rights and land use practices. The complex issues of REDD has resulted in further issues of efficiency with the need for more extensive capacity building and training if the local population are to be able to carry out the required tasks for REDD, such as MRV and financial management. The lack of overall district government involvement might also hamper the efficiency as lack of legitimacy or lack of coordination of activities might persist. As a final point we are wary of the efficiency of the forest areas in general, as firstly having many small forest areas to monitor and measure will increase the transaction costs, however equally important, the state and type of the forests that are present in much of the study area – Miombo Woodlands in a fairly good state – is less able to store as much carbon, which again can result in insufficient carbon payments.

Concerning *Equity* the main challenge we see is in terms of avoiding elite capture as there does not seem to be any specific measures to avoid it. We have to emphasize though that TFCG and MJUMITA overall seem to be very aware of the poorest people in the communities and attempt at including them as much as possible both in decision-making, participation, and ensuring that benefits also reach them.

Finally, while considering the *Co-Benefits* we feel the project might be able to improve livelihood conditions through the activities they have planned. As incentives will be provided, firstly through the “leakage package” and secondly through carbon payments, this can motivate the community to continue to manage and use their forest in a sustainable manner, thus result in increased biodiversity. However we are wary of how equitable the benefits will be shared, as the added pressures from REDD might be difficult to handle even though the experience of both TFCG and MJUMITA in previous PFM activities have made them very equip at taking into consideration local contexts and utilizing local participation as a way of ensuring a pro-poor approach. In addition as the REDD specific activities are new to them and given the challenges as discussed in this chapter, we are also very concerned with whether or not the aim of reducing emissions from deforestation and forest degradation will be achieved.

## **CHAPTER NINE – CONCLUSION AND RECOMMENDATIONS**

### **9.1 Conclusion**

In this thesis we wanted to make an early evaluation of REDD in practice. Through focusing on Tanzania in general and a REDD pilot project in particular, we have identified how REDD will be established within the existing Tanzanian national structure, and based on a livelihood assessment in the Kilosa pilot area we evaluated how the pilot project reflects the local context, and ultimately what outcomes the project might have and what the possible challenges are.

What we have found is that with the primary support of Norway and NICFI and with increasing assistance from the UN-REDD and the World Banks' FCPF, Tanzania has chosen a phased and nested approach towards implementing REDD, with a REDD Task Force as the main overseeing body of the process.

On the basis of widespread stakeholder consultation and in-depth studies, a National REDD Strategy, followed by a National REDD Action Plan, will be used as the main guidelines for REDD in Tanzania. The National Climate Change Steering Committee will have the overall coordination responsibility; the Forest and Beekeeping Division the main management responsibility; while eventually Local Government Authorities will be the main implementers on the ground. In addition, a National Carbon Monitoring Centre and National REDD Trust Fund will be made operational and manage the Monitoring, Reporting, and Verification (MRV) of carbon and the financial flow that may come as a result of this.

What we found was that much of the existing legal and policy framework needs to be revised and new regulations put in place in order to create an enabling environment for REDD. This includes both policies and acts within the environmental and forest sector and aligning them with policies within for instance the agricultural and livestock sector. In addition, particular focus needs to be placed on land tenure and on establishing a system where rights to carbon payments are clearly defined, but which takes into consideration the current reality of both formal and informal institutions, in order to create equal and fair benefit sharing.

In addition we found that further national ownership and stakeholder inclusion needs to be developed, both horizontally and vertically, as this is paramount to establish REDD as an overall legitimate policy programme within the country.

Likewise, REDD cannot operate at its best without fully able and accountable institutions and stakeholders, and given Tanzania's history of corruption and mismanagement within forestry and other sectors, much work remains on building capacity, ensuring good governance and a good communication system which can disseminate knowledge and ensure transparency.

Currently in their "analytical and piloting phase" Tanzania intends to acquire and gain valuable lessons and experiences from 9 REDD pilot projects implemented all over the country, and through them develop "best-practices" and identify further knowledge and capacity gaps. It appears, though, that the district authorities have been highly overlooked in the governance structure, and we find it concerning that it is only NGOs which have been chosen to implement such projects while it is mainly district authorities which will have the implementation responsibility in the future. This fact might be addressed in the future as there are talks of establishing District pilot projects.

When looking at the TFCG/MJUMITA pilot project in Kilosa District, which started in August 2009 and will run until 2014, we found that the main approach they are taking is through establishing PFM in their respective villages and then adding REDD related activities on top of that. Both TFCG and MJUMITA have a long and extensive experience with PFM and working closely with local communities, and they also have much working experience from the Eastern Arc Mountain area where Kilosa is located. They see their approach succeeding in the way that whereas PFM could previously fail due to lack of incentives for the local community to conserve their forest, by giving out performance based payments it will create the sufficient incentives needed. Various methods will be tested and best practices identified to inform both REDD in Tanzania as a whole and to inform the creation of a carbon co-operative which in the future will be established and run by MJUMITA. In addition, added benefits will be delivered based on a leakage strategy created for each village as a way of covering some of the opportunity costs until the carbon payments start and as a further incentive for the local communities to protect their forests.

What we found, was a somewhat “over-emphasis” on PFM whereas the new demands of REDD seem to have been pushed to the background or under-estimated. No performance based payment mechanisms are developed yet, and the highly technical and capacity driven need to perform MRV as well as the time consuming aspect of these activities does not seem to be overtly deliberated upon. The transaction costs involved for the NGO and for local people to perform MRV and handling the financial aspects of REDD is also of concern. If using NGO’s in an overall future strategy for REDD with the aim of implementing REDD throughout Tanzania, this will then entail extremely high transaction costs to cover all of Tanzania’s 10.000 villages, a lot more than what carbon credits will generate.

So far, the land use planning exercises have only started in a few villages and participatory methods and awareness raising have been used to create acceptance and elect members to the VNRC in charge of managing REDD in the villages. The various forest user groups have been identified, with particular attention given to the poorest people in the community, and the main drivers of deforestation in each village have been mapped. But again, when viewing the project in terms of its ability to create net-carbon storage, the fact that only selected areas have been chosen and will be measured and not entire village areas suggests that overall reduced emissions will be hard to come by. This is particularly apparent as many households collect forest products from other forest landscapes than those selected for measurement. There is thus need for a clear consultant and comprehensive leakage strategy.

Pastoralists in the area appear to have been left out of the project, even though in some of the villages, Masugu in particular and Nyali to some extent, they represented a substantive presence. Although stated that they were planning to discuss REDD with them we wonder if this means actually including them in the decision-making process or merely informing them of what will happen. In this case, a substantial conflict area will appear, and is an area that can lead to larger national implications.

Improving the villagers agricultural conditions seem to have some emphasis and with one staff member with a pure agricultural background to provide with technical expertise, the farmers will in the pilot villages receive assistance in their current practices. We found that villagers in Masugu can in particular accrue benefit from this, as they had the lowest outcome from their agricultural production, fertility seemed to be lower and they were especially affected by crop failure. This was also

the case for the poorest people in the communities which had a lot less land and subsequent output.

Masugu had the highest pressure on available land, which has resulted in much forest area converted into agricultural land. The low agricultural yields and less available land has also resulted in many turning to the forest to create an income, and especially younger males are involved in forest extraction activities, and charcoal production in particular.

Overall we found that the dependency on forest products was high, representing 31% of the total income. For 98% firewood served as the main energy source for cooking, and poles were still used extensively for construction of houses. Although providing fuel efficient stoves, establishing land use plans and a clear forest management system which previously lacking might improve the situation somewhat we fear it might not have the wanted effects on the current unsustainable forest use. As the situation is, the high historical influx of people into Kilosa and study area have created a great heterogeneity within these areas; resulted in increasing pressure and competing land uses; as well as eroded a previous system of more sustainable use of resources as the villagers increasingly turn to the forest for added income. Such activities are not sustainable in the long run.

The only exception is perhaps Lunenzi, where a certain homogeneous population still resides, and as a result a more functioning forest management system is still in place. Much of this is due to its still available agricultural land and remote location. They are in turn though, the village with the worst access to social services and local markets and also the village with the overall lowest income level. As a result they were most interested in improving their infrastructure and access to and from their village so they could improve their livelihood situation. And as we found, easier access to markets also comes with its challenges. Those residing close to Kilosa Town, which further facilitates easy access to urban areas such as Morogoro and Dar es Salaam, have experienced substantial increase in profitability within timber and charcoal production. It makes it highly unlikely for the project to be able to compete with these opportunity costs. The fact that it was mainly those with the highest income that were involved in forest extraction, as were they also the primary ones involved in non-farm activities, suggests a power structure which might be difficult to

handle within a REDD project. Either they might be less accepting of the project and try to work against it or they might be more able to acquire a larger share of the benefits brought by REDD, resulting in a great risk of elite capture and unequal distribution of benefits, much to the detriment of the poorest in the community. As a further concern, many of those involved in forest activities come from outside of the village and are connected to a larger network of forest trade, something which the project may not be able to tackle on its own, and thus leave a greater chance of leakage. Cooperating with the District Natural Resources Office in improving governance and law enforcement is seen as one way of improving the situation. However, the involvement of district staff does not seem to come with anything but capacity building. The present financial capital is here a limiting factor for their ability to manage the area within their jurisdiction.

We see the possibility of the project for the future to assist in improving local livelihoods and establish a more predictable and transparent tenure system and creating more sound forest management. It is clear that TFCG and MJUMITA are aware of and sensitive to local variations within the project area. However, in terms of efficient reductions in carbon emissions as a way of dealing with climate change, for which the pilot project and REDD in Tanzania is intended, we are more skeptical. We feel that more attention needs to be placed on the specific challenges that REDD+ will pose, both as it will highly affect the financial flows to come and as that is after all the main goal of this globally emerging programme: to Reduce Emissions from Deforestation and forest Degradation. Norway as a funding nation, together with TFCG and MJUMITA believe that REDD can conserve, store carbon as well as reduce poverty, all at the same time. From our findings however, we can say that TFCG and MJUMITA's pilot in Kilosa, based on PFM, will most likely give a low return in terms of net-carbon stored which in turn will make it even more difficult to cover some of the high opportunity costs in the area, charcoal production in particular. As a result we believe a more critical view is needed if the aims and goals of REDD is to be reached.



## **9.2 Recommendations**

When analyzing the national REDD+ strategy process, we find it important to involve all stakeholders horizontally from all governmental institutions, not only the VPO-DoE and FBD. By involving more sectors the capacity will increase, and could again enhanced the transparency in REDD+ operations in general as well as reducing the risk of bad governance and corruption. By improving the vertical stakeholder involvement as well, for instance by assigning REDD+ staff within districts with direct communication with the FBD, capacity and also ownership can be better developed at the local levels.

At the District level, there is a great need for good cooperation where more patrols should be facilitated and additional checkpoints could be set up by the Natural Resources Office. The effectiveness and efficiency of such core offices should therefore be deliberated upon. In addition, by including more of the District Departments and offices and not just those involved in forestry a broader legitimacy of REDD+ on a local level can be created. The same applies for stakeholder consultations. Since many come from outside the villages or district, such as charcoal and timber traders, these also need to be addressed and their interest taken into account in order to come to an understanding or arrangement so as to reduce the illegal extraction and reduce the risk of leakage.

To address the socio-cultural and political heterogeneity in the area, there is a need for different and more innovative approaches to REDD+. As different villages have very different local institutional structures and conditions, the approaches at village needs to reflect this. If each village's wishes are taken into account and the compensation and payment mechanism are created around existing institutions there is a better chance of creating more appropriate incentives and in turn create greater cooperation and delivery. For instance in areas where there is high forest use and charcoal production, an idea could be to introduce private woodlots coupled with sustainable charcoal production in addition to the planned introduction of fuel-efficient stoves. Although overall, in order for REDD+ to work, there is a great need of improving agricultural production and provide for other livelihood diversification options.



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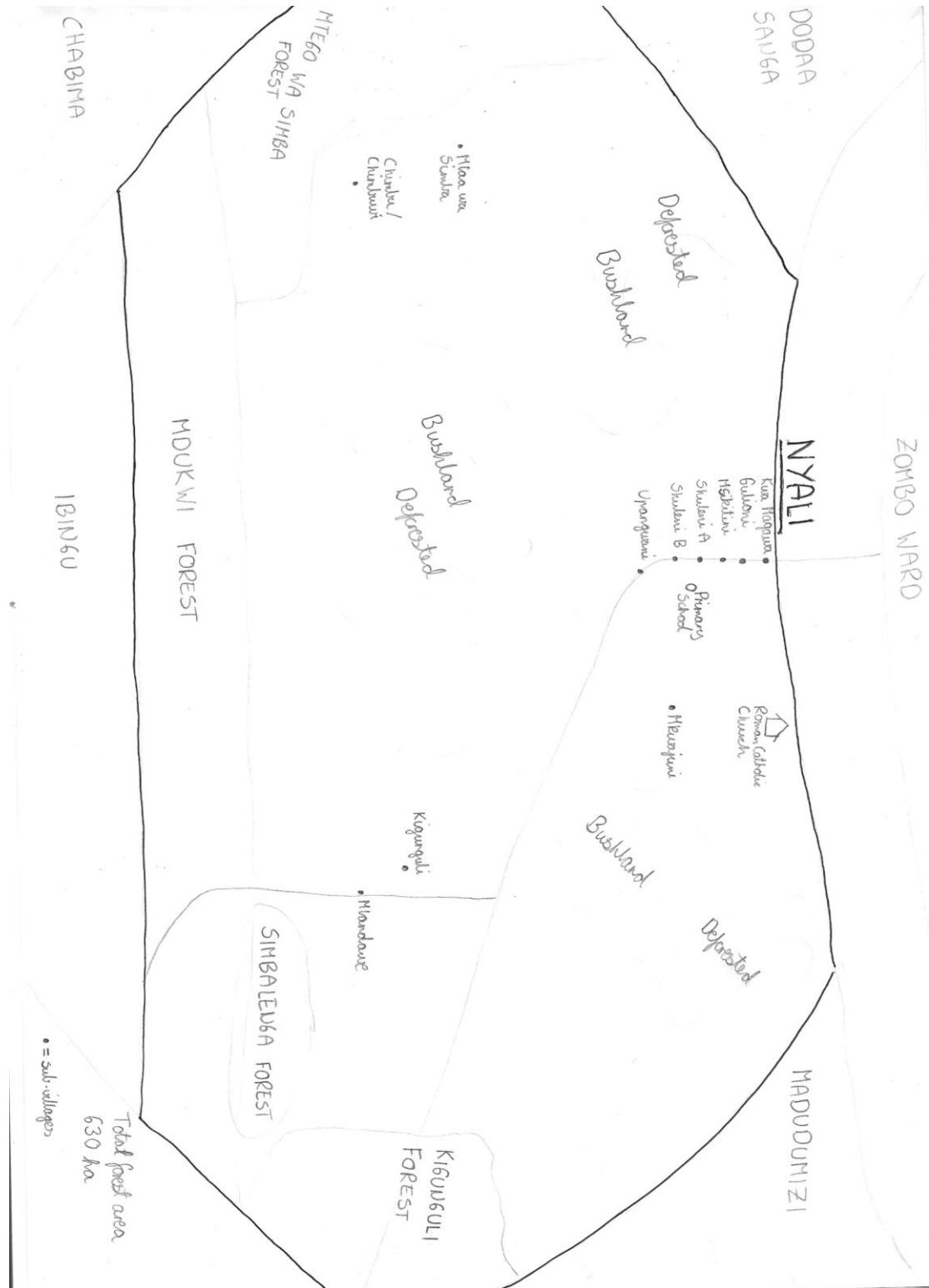
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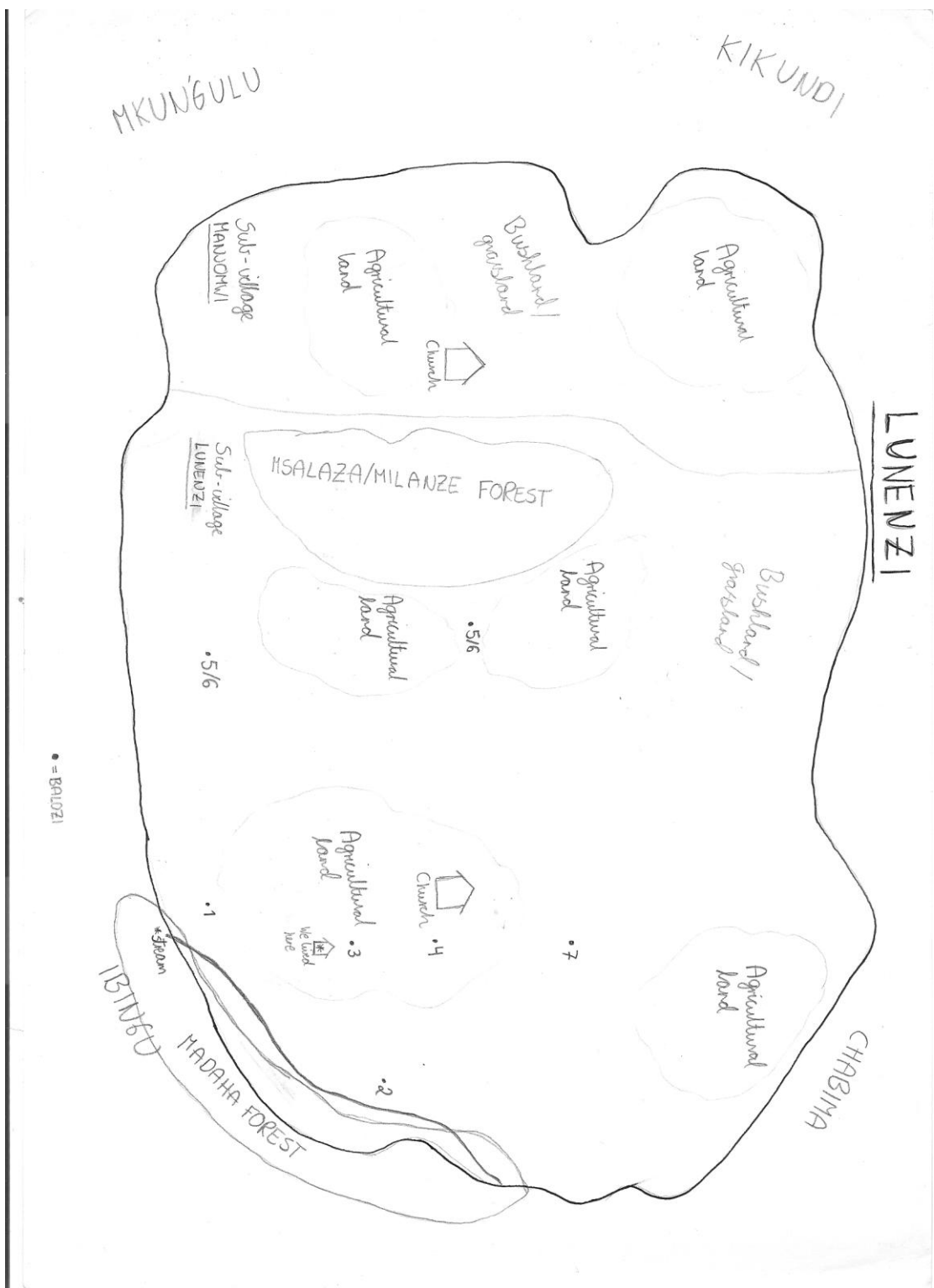
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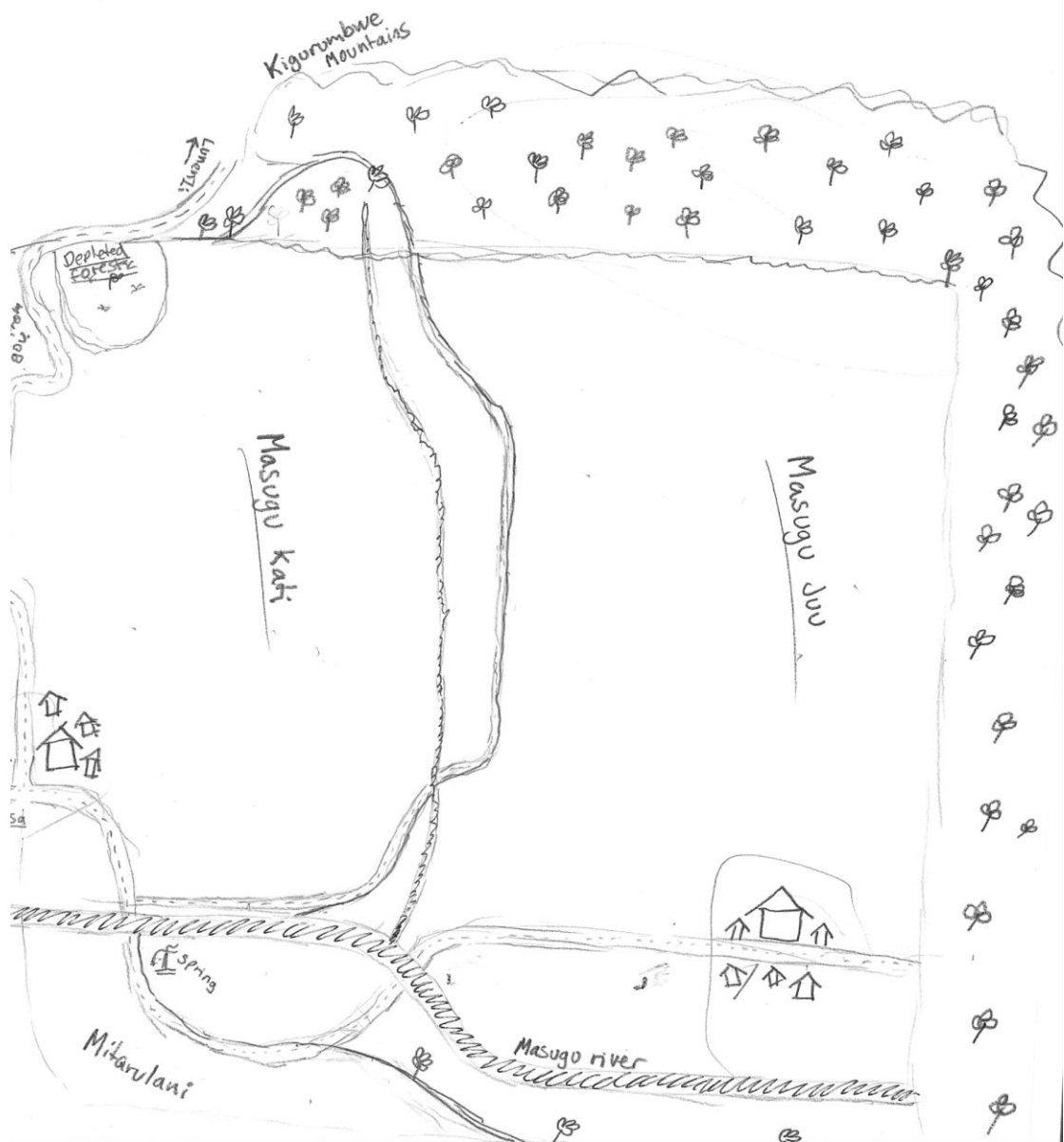
# APPENDIX

## Appendix 1: Village Sketch Maps

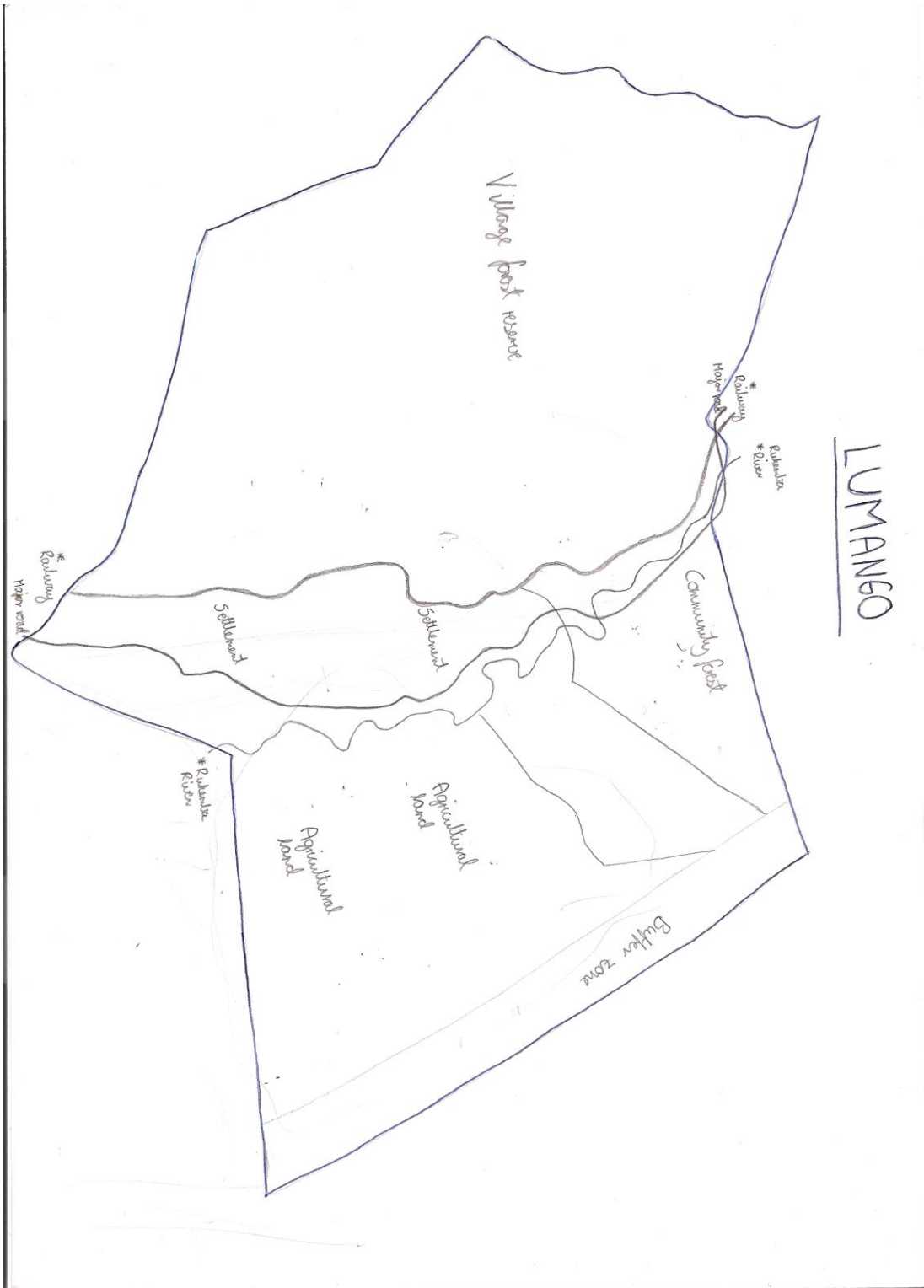




# Masugu Joo/kati



# LUMANGO





**Appendix 2: Questionnaire for the household survey of the baseline study**

**QUESTIONNAIRE FOR THE HOUSEHOLD SURVEY OF THE BASELINE STUDY**

01. Country:	04. Questionnaire number:	
02. Village:	05. Name of respondent:	
03. Pilot/study area:	06. Street address of respondent:	
	07. Name of interviewer:	
	Date:	
	Starting time:	Finishing time:

**SECTION A: Household structure and livelihood assessment**

The aim of this section is to map out household characteristics, assets and ownership.

**I. HOUSEHOLD CHARACTERISTICS AND COMPOSITION**

		A1 <sup>1)</sup>	A2 <sup>2)</sup>	A3	A4a <sup>3)</sup>	A4b <sup>4)</sup>	A5 <sup>5)</sup>	A6
ID	Position in HH	Sex	Marital status	Age (yrs.)	Education	Other skills training	Main occupation	How long have you lived here (no of yrs.)
1	Head of HH							
2	Spouse							

A7. Please indicate the number of permanent household members in each group:

	Sex	Age group			
		0 to 15	16 to 45	46 to 60	Above 60
1	Male				
2	Female				

A8. What ethnic group or tribe do you belong to? \_\_\_\_\_

A9. What religion do you practice? \_\_\_\_\_

## LAND

A10. Please indicate the size of farmland (in hectares) that currently has been in **use** (last 12 months). If type of ownership, rental status and land conversion is the same for all land, please treat as one 'parcel'. If there are different tenure arrangements for different part of the farmland, please specify accordingly.

	Area used (ha)	Ownership (tenure) <sup>1)</sup>	Rented <sup>2)</sup>	Land conversion type <sup>3)</sup>
'Parcel 1'				
'Parcel 2'				
'Parcel 3'				
'Parcel 4'				
'Parcel 5'				
'Parcel 6'				
Total				

## II. ASSETS AND SAVINGS

<b>Habitation</b>		
A11	Housing contract <i>Code: 1=owner; 2=tenant; 3=free; 4=not owner; but exclusive use rights</i>	
A12	Material used in construction of walls of the main house? <i>Code: 1= cement bricks 2= mud bricks; 3= wood; 4=sticks with mud plastering ; 5=mat/leaves; 6=other. If 'other', please specify here:</i>	
A13	Material used for roofing the main house <i>Code: 1= tiles; 2=iron sheet;3=thatch/mat/leaves; 4= other If 'other', please specify here:</i>	
A14	Number of sleeping rooms?	
A15	What is the main source of potable water used by the household <i>Code: 1=personal tap; 2=public tap; 3=improved well/spring; 4=traditional well 5=surface water (river/lake/pond, etc.); 6= other If 'other', please specify here:</i>	



A16	What is the most important source(s) of energy for cooking? <sup>1)</sup> Please rank your answer in the order of importance <sup>2)</sup>	Rank 1 <sup>2)</sup>	Rank 2	Rank 3

A17. Please indicate the number of implements and other large household items that are owned or rented by the household.

No	Assets	Quantity <sup>1)</sup>	Owned <sup>2)</sup>	Rented <sup>3)</sup>
1	House(s) (for living in)			
2	TV			
3	Radio			
4	Telephone			
5	Bicycle			
6	Motorbike			
7	Car, jeep, pickup, truck etc			
8	Boat, canoe			
9	Generator			
10	Rice/wheat/corn mill			
<b>Agricultural implements and draft animals</b>				
11	Hoes			
12	Cutlass			
13	Pangas			
14	Axes			
15	Buffalo			
16	Horse			
17	Tractor			

### III. SOCIAL ASSETS

A18. Do you consider your village/community a good place to live?

A19. What is your level of trust in people in your village/community?

1 Very low	2 Low	3 Fair	4 High	5 Very high

A20. How do you rate your household's relationship with the following?

No		1 Very bad	2 Bad	3 Fair	4 Good	5 Very good
1	Neighbours					
2	People from other communities					
3	NGO workers					
4	Village council					
5	Local government officials					

A21. Does any member of your household belong to the following groups?

No	Groups	Member <sup>1)</sup>	Function in the group <sup>2)</sup>
1	Farm groups		
2	Village committee		
3	Local NGOs		
4	Traditional council		
5	Local political group		
6	Religious group		
7	Credit union		
8.	Savings group		

A22. Has the household's income over the past 12 months been sufficient to cover what you consider to be the needs of your household?

A23. How well-off is your household compared to other households in the village/community

A24. How well-off is your household today compared to the situation 5 years ago?

A25. Has your household faced any major income shortfalls or unexpectedly large expenditures during the past 12 months?

A25a. If 'yes', please complete the table

No	Serious event	How severe <sup>1)</sup> ?	How did you cope with the income loss or costs? <i>Please indicate the most important strategy</i>
1	Serious crop failure		
2	Death/serious illness in family (productive age-group/adult)		
3	Loss of land		
4	Major livestock loss (drought, disease, etc.)		
5	Loss of waged employment		
6	Climate/drought/floods		
7	Price changes on products and consumer goods		
8	Protected area establishment		

## SECTION B: Resource use, income and constraints

The main aim of this section is to map out the livelihood activities and strategies of the household in the pilot areas. The household's use of land resources includes both forests and agriculture. We will also map livelihood outcomes, constraints and major changes in the use of land resources over time. This data will form the basis for

assessing the local livelihood outcomes and offer information for the opportunity cost analysis of forest land in the different pilot areas.

### I. AGRICULTURAL PRODUCTION FOR THE PAST 12 MONTHS

B1. List the most important crops that your household has produced, consumed and/or sold the **last 12 months**.

No	Crop type <sup>1)</sup>	Area (ha)	Labour <sup>2)</sup>	Total output (kg) <sup>3)</sup>	Sold (kg) <sup>3)</sup>
1					
2					
3					
4					
5					
6					
7					
8					

B2. Do you have any problem(s) that limit your agricultural production?

B2a. If 'yes', what do you consider to be the most important problem limiting your agricultural production? \_\_\_\_\_

B3. If you were to expand your agricultural production, how dependent would you be on clearing forests?

1. Not dependent at all	2. A bit dependent	3. Quite dependent	4. Very dependent

B4. Is it easier to get new land for agriculture today than five years ago?

1. By inheritance	2. By buying	3. By renting	4. By clearing forest

B4a. If you have marked 'more difficult' (3) in any of the above categories, why is it so? Please state the most important reason:  
\_\_\_\_\_

B5. Have you had any conflicts over access to land for agriculture in the last five years?

B5a. If 'yes', how would you describe the seriousness of these conflicts?

1 Very low	2 Low	3 Intermediate	4 High	5 Very high

HC1. Do you practice fire on your land?

HC1b. What are the advantages and disadvantages of this practice?

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## II. LIVESTOCK PRODUCTION FOR THE PAST 12 MONTHS

B6. What is the number of livestock and livestock products that your household has sold, bought, slaughtered or lost during **the last 12 months**? What is the present number of livestock?

No	Livestock	No	Product produced	Sold (incl. barter) <sup>1)</sup>	For own use	Total number owned
1	Cattle	1	Live animal (no)			
		2	Meat (kg)			
		3	Milk (litres)			
		4	Dung (kg)			
		5	Hide (kg)			
2	Buffalo	6	Live animal (no)			
		7	Meat (kg)			
		8	Milk (litres)			
		9	Dung (kg)			
3	Goat	10	Live animal (no)			
		11	Meat (kg)			
		12	Milk (litres)			
4	Sheep	13	Live animal (no)			
		14	Meat (kg)			
		15	Milk (litres)			
5	Pig	16	Live animal (no)			
		17	Meat (kg)			
6	Poultry	18	Live animal (no)			
		19	Egg (kg)			
		20	Meat (kg)			

1) Please indicate sold live animals in numbers and sold meat from slaughtered animals in kg – please convert local measuring units into kilos and litres as appropriate when entering into database.

B7. Do you have any problem(s) that limit your livestock production?

B7a. If 'yes', what do you consider to be the most important problem limiting your livestock production? \_\_\_\_\_

B8. What do you consider to be the most important suggestion to improve your livestock production? \_\_\_\_\_

B9. How do you feed your livestock<sup>1)</sup>?

No	Type of animals	A. Forest land (grazing and/or collected fodder)	B. Non-forest land (grazing and/or collected fodder)	C. Using crop residues	D. Other (specify)
1	Cattle				
2	Buffalo				
3	Goat				
4	Sheep				
5	Pig				
6	Poultry				
7	Other animal Specify type:				
8	Other animal Specify type:				

### III. FOREST RESOURCE USE

B10. How far is it in minutes (walking) from your house to the edge of the nearest forest that you often use? □

B11. What is the importance of the following forest products that the members of your household have collected from the forest both for own use and sale over the last month? Where and how is it collected?

	Main forest products	Collected where		Collected by whom		Own use (kg)	For sale (kg)
		Forest type <sup>1)</sup>	Ownership <sup>2)</sup>	Labour <sup>3)</sup>	Sex/age group <sup>4)</sup>		
1	Fuelwood						
2	Poles & timber						
3	Charcoal						

When coding, use the number for the dominant category. Hence, if one category clearly dominates, do not use 'mix'/'both'.

B12. How would you rate your access to and use of forest products (fuelwood, poles & timber, charcoal) today compared to five years ago?

1 Much reduced	2 Reduced	3 The same	4 Increased	5 Much increased

B12a. If ‘much reduced’ or ‘reduced’, what do you consider to be the most important factor(s) limiting your access to and use of these forest products today? If more than one, please rank up to the three most important factors.

1	
2	
3	

B12b. If ‘increased’ or ‘much increased’, what do you consider the most important factor(s) for increasing your access to and use of these forest products today? If more than one, please rank up to the three most important factors.

1	
2	
3	

B13. How important are the other forest products, i. e. non-timber forest products (NTPF) that the members of your household collect from the forest both for own use and sale?

No	Other forest products	1 Do not collect	2 Somewhat important	3 Important	4 Very important
1	Fodder (collected or grazed)				
2	Bamboo				
3	Rattan				
4	Medicinal plants				
5	Wild fruits and leaves				
6	Nuts				
7	Bush meat				
8	Mushroom				

B14. If you sell any of the above products (question B13), how much income does your household make on average in a month (in \$):

\_\_\_\_\_

B15. How satisfied are you with how the forests of your community are managed?

1 Very dissatisfied	2 Somewhat dissatisfied	4 Somewhat satisfied	4 Very satisfied

B16. How would you rank your relationship with other forest users in terms of access to and use of forest resources (fuelwood, poles & timber, charcoal)?

1 Very bad	2 Bad	3 Fair	4 Good	5 Very good

B16a. If 'bad' or 'very bad', why is it so? Please rank

No	Response	1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	No cooperation				
2	Poor communication and dialogue				
3	Ethnic conflicts				
4	Unequal distribution of rights				
5	Others (specify)				

B17. Has your household planted any woodlots or trees on the farm over the past 5 years?

B17a. If 'yes', what are the main purpose(s) of the trees planted? You may emphasize more than one purpose

	Purpose	Ranking <sup>1)</sup>
1	For own use	
2	For commercial use	
3	Carbon sequestration	
4	Other environmental services If 'other', please specify here:	

1) Indicate importance by ranking the purpose(s): 1,2,3...

B18. Did your household clear any forest during the past five years?

B18a. If 'yes' to B18, how much forest was cleared on average per year:  
\_\_\_\_\_ (ha)

B18b. If 'yes' to B18, answer also the following questions concerning cleared forests over the last five years

		Rank 1 <sup>1)</sup>	Rank 2	Rank 3
1	What was the cleared forest (land) used for? <i>Codes: 1=cropping; 2=tree plantation; 3=pasture; 4=other</i>			
2	What type of forest did you clear? <i>Codes: 1= primary forest; 2=secondary forest; 3=mix</i>			
3	What was the ownership status of the forest cleared <i>Codes: 1=private; 2= state (ordinary); 3= state (JFM); 4= state (CBFM); 5= state (individual); 6=common property; 7= open access</i>			

B19. How much land used by your household has been abandoned on average over the last 5 years? (Left to fallow or converted to natural re-vegetation). Please denote as ha per year

**(NB: READ THE MANUAL ON INCOME CAREFULLY (End of Section 5.3.2))**

B20. How much fish did your household catch in the streams, rivers and small lakes of the forest both for own use and sale over the last month?

No	Main fish species (common names) <sup>1)</sup>	Ownership <sup>2)</sup> where caught	Caught by whom <sup>3)</sup>	Own use (kg)	For sale (kg)	Unit price (\$/kg)
1						
2						
3						
4						
5						

B21. Has the household received any cash or in kind payment or compensation related to the following forest services over the past 12 months?

No	Principal purpose	Received <sup>1)</sup>	If 'yes', please indicate the amount received (\$)
1	Tourism		
2	Carbon projects		
3	Water catchment projects		
4	Tree planting		
5	Benefits from logging companies		
6	Other, please specify here:		

B22. What is the average income from paid work that the household members together receive in a month (in \$): \_\_\_\_\_

B23. Are you or any other member(s) of the household involved in any type of business, and if so, what is the **net income** related to that business **per month**?

	Business 1	Business 2	Business 3
1. What is your type of business? <sup>1)</sup>			
2. Net income (in \$)			

B24. What is the average income received from income transfers (state support; remittances etc.) the household members together receive in a month (in \$):

\_\_\_\_\_

### **SECTION C: Property rights, use rights and management**

The main issue here is to map out ownership, management and use rights to forests land and forest resources. We also want to map people's views on management systems and the rules defined for use rights. A more detailed examination of the rules regulating access and use of forest and forest resources in the different pilot areas will



be dealt with in the PRA interviews. **(NB: READ THE MANUAL ON PROPERTY/USE RIGHTS CAREFULLY (Section 4.8))**

C1. Do any members of your household belong to any forest management group in your community?

C1a. If 'yes', please indicate the name of the group:-

\_\_\_\_\_

**I. PRIVATE FOREST (PRIVATELY OWNED FORESTS)**

C2. Do you own any forest?

*(If 'no', please go to sub-section II)*

C3. What is the total area of your forest: \_\_\_\_\_ (ha)

C4: What is the overall status of your forest?

C5: Do you have user rights over all resources in the forest?

C5a. If 'no', which resources are you not allowed to use? -

\_\_\_\_\_

C6. Do you accept other people accessing and using resources in your forest?

C6a. If 'yes', which resources? \_\_\_\_\_

C7. Do you lease out part of your forest for agriculture, grazing or collection of NTFPs?

C8. Are your rights to transfer your forest to others restricted in any way?

C9. Do you face any difficulties in managing your forest?

C9a. If 'yes', please rank up till three most important problems

1	
2	
3	

**II. STATE FORESTS (FORESTS UNDER STATE PROPERTY)**

C10. Please tick the box which most closely resembles the property and management arrangements present in part of the pilot/study area where the respondent lives (tick more than one if applicable). Then go on to answer the questions corresponding to the choice(s).

- IIa State forests (Ordinary)**
- IIb State forests (Joint Forest Management)**
- IIc State forests (Community-Based Forest Management)**
- IId State forests (Individual Use Rights - leases, permits, etc)**

*(If none of these categories apply, please go to sub-section III)*

You may want to use locally adapted words instead of e.g., state forest (ordinary). Be 100% sure that there is no misunderstanding regarding which forests you are talking about.

**IIa. STATE FORESTS (ORDINARY)**

C11 What is the operational form of management?

C12. Do you have user rights to resources in state forests (ordinary) in your community?

C12a. Are your user rights to state forest (ordinary) formal or informal?

C12b. Do you have individual or common use rights to state forest (ordinary)?

C12c. Are your user rights limited to particular resources in the state forest (ordinary)?

C12d. If ‘yes’, which are the most important forest resources you can use?  
 \_\_\_\_\_  
 \_\_\_\_\_

C13. How satisfied are you with the rules that govern use and management of the state forest (ordinary)?

1 Very dissatisfied	2 Somewhat dissatisfied	3 Somewhat satisfied	4 Very satisfied

C13a. If ‘somewhat dissatisfied’ or ‘very dissatisfied’ with the rules, why is it so?

No		1 Dis-	2 Disagree	3 Agree	4 Agree
----	--	--------	------------	---------	---------

		agree	somewhat	somewhat	
1	My/our interests are not taken into account				
2	Unclear boundaries/outsideers are intruding				
3	Unequal distribution of use and benefits				
4	Too strong limitation on access to resources				
5	Rules are not followed				
6	The local community is not enough involved in making rules				
7	Conflict resolution mechanisms are inappropriate				
8	Too weak enforcement of rules/sanctions				
9	Creates opportunities for corruption				
10	Bad management/lack of coordination				
11	Other (please specify)				

C13b. If 'somewhat satisfied' or 'very satisfied' with the rules, why is it so?

No		1 Dis-agree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My/our interests are well taken into account				
2	Clear boundaries/outsideers are kept out				
3	Equal distribution of use and benefits				
4	Good access to resources				
5	Rules are followed				
6	The local community is involved in making rules				
7	Conflict resolution mechanisms are appropriate				
8	Proper enforcement of rules/sanctions				
9	Good management and coordination				
10	Other (please specify)				

C14. Do you feel bound by the rules governing use and management of state forests (ordinary)?

1 I feel bound by them and follow them always	2 I feel quite bound by them and follow them mostly	3 I feel somewhat bound by them and follow them sometimes	4 I don't feel bound by them and do usually not follow them	5 Not relevant to me

C15. Have there been any changes in the rules that govern use and management of the state forest (ordinary) in the last five years? Codes: 1=Yes; 2=No; 3=Not aware

C15a. If 'yes', have the changes influenced your use of state forests (ordinary)?

1 It has worsened my livelihood a lot	2 It has worsened my livelihood to some extent	3 It did not have any effect on my livelihood	4 It has improved my livelihood to some extent	5 It has improved my livelihood a lot

C16. How is your relationship with those authorized to manage the state forests (ordinary)?

1 Very bad	2 Bad	3 Fair	4 Good	5 Very good	6. Not relevant

**IIb. STATE FORESTS (JOINT FOREST MANAGEMENT)**

C17. Do you have user rights to resources in state forests (JFM) in your community?

C17a. Are your user rights to state forest (JFM) formal or informal?

C17b. Do you have individual or common use rights to state forest (JFM)?

C17c. Are your user rights limited to particular resources in the state forest (JFM)?

C17d. If ‘yes’, which are the most important forest resources you can use?  
\_\_\_\_\_

C18. Do you have any influence on the rules that govern use and management of the state forests (JFM)? You may tick more than one option.

1 Yes, during village assembly meetings	2 Yes, during other meetings	3 Yes, through general discussions in my community	4 No, we have not taken part at all	5 I do not know
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C19. How satisfied are you with the rules that govern use and management of the state forest (JFM)?

1 Very dissatisfied	2 Somewhat dissatisfied	3 Somewhat satisfied	4 Very satisfied
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C19a. If ‘somewhat dissatisfied’ or ‘very dissatisfied’ with the rules, why is it so?

No		1 Dis-agree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My/our interests are not taken into account	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Unclear boundaries/outsideers are intruding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Unequal distribution of use and benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Too strong limitation on access to resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Rules are not followed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	The local community is not enough involved in making rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Conflict resolution mechanisms are inappropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Too weak enforcement of rules/sanctions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Creates opportunities for corruption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Bad management/lack of coordination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C19b. If ‘somewhat satisfied’ or ‘very satisfied’ with the rules, why is it so?

No		1 Dis-agree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My/our interests are well taken into account	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2	Clear boundaries/outside are kept out				
3	Equal distribution of use and benefits				
4	Good access to resources				
5	Rules are followed				
6	The local community is involved in making rules				
7	Conflict resolution mechanisms are appropriate				
8	Proper enforcement of rules/sanctions				
9	Good management and coordination				
10	Other (specify)				

C20. Do you feel bound by the rules that govern use and management in the state forests (JFM)?

1 I feel bound by them and follow them always	2 I feel quite bound by them and follow them mostly	3 I feel somewhat bound by them and follow them sometimes	4 I don't feel bound by them and do usually not follow them	5 Not relevant to me

C21. Have there been any changes in the rules that govern use and management of the state forest (JFM) in the last five years?

C21a. If 'yes', have the changes influenced your use of state forests (JFM)?

1 It has worsened my livelihood a lot	2 It has worsened my livelihood to some extent	3 It did not have any effect on my livelihood	4 It has improved my livelihood to some extent	5 It has improved my livelihood a lot

C22. How is your relationship with the forest management committee under the JFM arrangement?

1 Very bad	2 Bad	3 Fair	4 Good	5 Very good	6. Not relevant

**Ic. STATE FORESTS (COMMUNITY-BASED FOREST MANAGEMENT)**

C23. Do you have user rights to resources in state forests (CBFM) in your community?

C23a. Are your user rights to state forest (CBFM) formal or informal?

C23b. Do you have individual or common use rights to state forest (CBFM)?

C23c. Are your user rights limited to particular resources in the state forest (CBFM)?

C23d. If 'yes', which are the most important forest resources you can use?

\_\_\_\_\_

C24. Do you have any influence on the rules that govern use and management of the state forests (CBFM)? You may tick more than one.

1 Yes, during village assembly meetings	2 Yes, during other meetings	3 Yes, through general discussions in my community	4 No, we have not taken part at all	5 I do not know

C25. How satisfied are you with the rules that govern use and management of the state forest (CBFM)?

1 Very dissatisfied	2 Somewhat dissatisfied	3 Somewhat satisfied	4 Very satisfied

C25a. If 'somewhat dissatisfied' or 'very dissatisfied' with the rules, why is it so?

No		1 Dis-agree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My/our interests are not taken into account				
2	Unclear boundaries/outsideers are intruding				
3	Unequal distribution of use and benefits				
4	Too strong limitation on access to resources				
5	Rules are not followed				
6	The local community is not enough involved in making rules				
7	Conflict resolution mechanisms are inappropriate				
8	Too weak enforcement of rules/sanctions				
9	Creates opportunities for corruption				
10	Bad management/lack of coordination				
11	Other (specify)				

C25b. If 'somewhat satisfied' or 'very satisfied' with the rules, why is it so?

No		1 Dis-agree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My/our interests are well taken into account				
2	Clear boundaries/outsideers are kept out				
3	Equal distribution of use and benefits				
4	Good access to resources				
5	Rules are followed				
6	The local community is involved in making rules				
7	Conflict resolution mechanisms are appropriate				
8	Proper enforcement of rules/sanctions				
9	Good management and coordination				
10	Other (please specify)				

C26. Do you feel bound by the rules that govern use and management in the state forests (CBFM)?

1 I feel bound by them and follow	2 I feel quite bound by them and follow	3 I feel somewhat bound by them and	4 I don't feel bound by them and do usu-	5 Not relevant to me
-----------------------------------	---	-------------------------------------	--	----------------------

them always	them mostly	follow them sometimes	ally not follow them	

C27. Have there been any changes in the rules that govern use and management of the state forest (CBFM) in the last five years?

C27a. If 'yes', have the changes influenced your use of state forests (CBFM)?

1 It has worsened my livelihood a lot	2 It has worsened my livelihood to some extent	3 It did not have any effect on my livelihood	4 It has improved my livelihood to some extent	5 It has improved my livelihood a lot

C28. How is your relationship with the forest management committee of state forest under CBFM?

1 Very bad	2 Bad	3 Fair	4 Good	5 Very good	6. Not relevant

### IId. STATE FORESTS (INDIVIDUAL USE RIGHTS)

C29. What is the nature of tenure arrangement for your part of the state forest (individual)?

*Codes: 1=allocated use right, 2=assigned use right, 3=other*

C30. What is the total area of this forest to which you have a use right? \_\_\_\_\_ (ha)

C30a: Are there any restrictions on your use rights with respect to resource use?   
*Codes: 1=Yes; 2=No (If 'no', go to C31)*

C30b. If 'yes', which resources are you not allowed to use? -  
\_\_\_\_\_

C31. Do you accept other people accessing and using resources in this forest?   
*Codes: 1=Yes; 2=No (If 'no', go to C32)*

C31a. If 'yes', which resources? \_\_\_\_\_

C32 Do you lease out part of your use rights to others for the purpose of agriculture, grazing or collection of NTFPs?   
*Codes: 1=Yes; 2=No*

C33 Are your use rights transferable or sellable?   
*Codes: 1=transferable; 2=sellable; 3=neither*

C33a Are there any restrictions on the transfer or sale of your use rights?   
*Codes: 1=Yes; 2=No*

C34. Do you face any difficulties in managing your part of the state forest (individual)?

Codes: 1=Yes; 2=No

(If 'no', go to C35)

C34a. If 'yes', please rank up till three most important problems

1	
2	
3	

C35. How satisfied are you with the rules that the state has established for the management and use of the state forest (individual) to which you have use rights?

1 Very dissatisfied	2 Somewhat dissatisfied	3 Somewhat satisfied	4 Very satisfied

(Note: Dependent on responses to C35, you proceed by going to C35a or C35b)



C35a. If ‘somewhat dissatisfied’ or ‘very dissatisfied’ with the rules, why is it so?

No		1 Dis-agree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My/our interests are not taken into account				
2	Unclear boundaries/outsideers are intruding				
3	Unequal distribution of use and benefits				
4	Too strong limitation on access to resources				
5	Rules are not followed				
6	The local community is not enough involved in making rules				
7	Conflict resolution mechanisms are inappropriate				
8	Too weak enforcement of rules/sanctions				
9	Creates opportunities for corruption				
10	Bad management/lack of coordination				
11	Other (please specify)				

C35b. If ‘somewhat satisfied’ or ‘very satisfied’ with the rules, why is it so?

No		1 Dis-agree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My/our interests are well taken into account				
2	Clear boundaries/outsideers are kept out				
3	Equal distribution of use and benefits				
4	Good access to resources				
5	Rules are followed				
6	The local community is involved in making rules				
7	Conflict resolution mechanisms are appropriate				
8	Proper enforcement of rules/sanctions				
9	Good management and coordination				
10	Other (please specify)				

C36. Do you feel bound by the rules that the state has established for the management and use of the state forest (individual)?

1 I feel bound by them and follow them always	2 I feel quite bound by them and follow them mostly	3 I feel somewhat bound by them and follow them sometimes	4 I don't feel bound by them and do usually not follow them	5 Not relevant to me

C37. Have there been any changes in the rules the state has established for the management and use of the state forest (individual) in the last five years?

C37a. If ‘yes’, have the changes influenced your use of the state forests (individual)?

1 It has worsened my livelihood a lot	2 It has worsened my livelihood to some extent	3 It did not have any effect on my livelihood	4 It has improved my livelihood to some extent	5 It has improved my livelihood a lot

C37b. How is your relationship with those authorized to manage the state forests (e.g. forest management committee)?

1 Very bad	2 Bad	3 Fair	4 Good	5 Very good	6. Not relevant

**III. COMMUNITY FORESTS (FORESTS UNDER COMMON PROPERTY)**

C38. Are there any community forest(s) in your village/community?

C39. Do you have access to resources in the community forest(s)?

C39a. Are your user rights in the community forests formal or informal?

C39b. Do you have individual use rights or use rights in common?

C39c. Are your user rights limited to particular resources in the community forest(s)?

C39d. If 'yes', which are the most important forest resources you can use?

---

C40. Do you have any influence on the rules that govern use and management of the community forest(s)? You may tick more than one alternative.

1 Yes, during village assembly meetings	2 Yes, during other meetings	3 Yes, through general discussions in my community	4 No, we have not taken part at all	5 I do not know

C41. How satisfied are you with the rules that govern use and management of the community forest(s)?

1 Very dissatisfied	2 Somewhat dissatisfied	3 Somewhat satisfied	4 Very satisfied

C41a. If 'somewhat dissatisfied' or 'very dissatisfied' with the rules, why is it so?

No		1 Dis-agree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My/our interests are not taken into account				
2	Unclear boundaries/outsideers are intruding				
3	Unequal distribution of use and benefits				
4	Too strong limitation on access to resources				
5	Rules are not followed				
6	The local community is not enough involved in making rules				
7	Conflict resolution mechanisms are inappropriate				
8	Too weak enforcement of rules/sanctions				

9	Creates opportunities for corruption				
10	Bad management/lack of coordination				
11	Other (specify)				

C41b. If 'somewhat satisfied' or 'very satisfied' with the rules, why is it so?

No		1 Dis-agree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My/our interests are well taken into account				
2	Clear boundaries/outsideers are kept out				
3	Equal distribution of use and benefits				
4	Good access to resources				
5	Rules are followed				
6	The local community is involved in making rules				
7	Conflict resolution mechanisms are appropriate				
8	Proper enforcement of rules/sanctions				
9	Good management and coordination				
10	Other (specify)				

C42. Do you feel bound by the rules that govern use and management of the community forest(s)?

1 I feel bound by them and follow them always	2 I feel quite bound by them and follow them mostly	3 I feel somewhat bound by them and follow them sometimes	4 I don't feel bound by them and do usually not follow them	5 Not relevant to me

C43. Have there been any changes in the rules that govern use and management of the community forest(s) in the last five years? Codes: 1=Yes; 2=No; 3=Not aware

C43a. If 'yes', have the changes influenced your use of community owned forest(s)?

1 It has worsened my livelihood a lot	2 It has worsened my livelihood to some extent	3 It did not have any effect on my livelihood	4 It has improved my livelihood to some extent	5 It has improved my livelihood a lot

C44 How is your relationship with the local committee managing the community forest(s)?

1 Very bad	2 Bad	3 Fair	4 Good	5 Very good	6 Not relevant

## SECTION D: Perceptions, attitudes and norms concerning resource conservation

This section of the baseline study concerns the mapping of local peoples' perceptions, attitudes and norms about forest conservation. This section highlights the importance of forest conservation within the REDD pilot areas before REDD takes place and will potentially provide important information that will influence the REDD policy measures in these areas.

D1. Are there any forests in your community that are protected by the state/public authorities?

D2. If 'yes', how do you feel about this protection?

1 Against	2 Somewhat against	3 Somewhat supportive	4 Supportive

D2a. If 'against' or 'somewhat against', why is it so?

No	Response	1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	It restricts my access to forests				
2	No compensation for losses				
3	No access to benefits from tourists				
4	Other (please specify)				

D2b. If 'supportive' or 'somewhat supportive', why is it so?

No	Response	1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	Protection is important				
2	Protection increases long-term access to forests resources				
3	Receive compensation for reduced use				
4	Secures access to income from tourists				
5	Other (please specify)				

D3. Does your community have any locally developed conservation measures for the forest?

D3a. If 'yes', what are these measures?

No	Response <sup>1)</sup>
1	Controlling harvest of forest products
2	Limiting farm land in the forest
3	Protecting some areas in the forest
4	Placing guards to control illegal use of the forest
5	Other (please specify):

D4. How satisfied are you with these locally developed conservation measures?

1 Very dissatisfied	2 Somewhat dissatisfied	3 Somewhat satisfied	4 Very satisfied

D4a. If 'very dissatisfied' or 'somewhat dissatisfied', why is it so?

No		1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	It restricts my access to the forest				
2	Unequal distribution of benefits				
3	Increased illegal use of forests				
4	Other (please specify)				

D4b. If 'somewhat satisfied' or 'very satisfied', why is it so?

No		1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	Increases long-term access to forests resources				
2	Equal distribution of benefits				
3	Reduced illegal use of forests				
4	Other (please specify)				

D5. Have these conservation measures affected the way you use forests resources?

1 Not at all	2 Not so much	3 Quite a lot	4 Very much

D6. Are there any sacred forest(s) in your community?

D7. Are the sacred forests sacred to you as well?

D8. In what ways is this/are these forest(s) important to you?

---

D9. Does the fact that some forest(s) are sacred to you influence your view about forests in general?

D9a. If 'yes', explain in what ways this influences your views about forests more generally.

---

HC2. What do you know about the TFCG program (REDD) that has started in your village?

---

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## SECTION E: Pre-REDD Analysis

The aim of this section is to gain insights about what type of REDD policies local residents would prefer. The interviewer must evaluate if the below questions are of any relevance to the respondent. The interview might in a few instances stop here. In the case of a person who does not depend on land for agriculture or does not harvest any forest wood resources (see question B11), the below questions will be irrelevant.

E1. Are you aware of the role forests play in climate change?

E1a. If 'yes', what relationships between deforestation and climate change do you find especially important? \_\_\_\_\_  
\_\_\_\_\_

E2. Do you think you would stop clearing forest land for agriculture/stop harvesting wood resources from the forest (fuelwood, poles/timber and/or wood for charcoal production) if you get compensation for your loss of income? Please evaluate the below options.

No	Types of compensation	1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	By payments				
2	By increased employment opportunities				
3	By alternative sources of livelihoods				
4	By better social services in my community				
5	Other (specify)				

E2a. If you cannot be motivated by the above options to stop clearing forests/stop harvesting wood resources from the forest (the respondent has answered 'disagree' or 'somewhat disagree' to **all options** 1-4 in question E2), why is it so?

No		1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	My livelihood depends too much on the forest				
2	The forest has a strong cultural value to me and it is wrong to accept compensation to stop present use				
3	Money cannot compensate for reduced use of the forest				
4	I do not think I will be compensated enough				
5	Other (please specify):				

E2b. If you can be motivated by some of the above options to stop clearing forests/stop harvesting wood resources (the respondent has answered 'strongly agree' or 'agree' to **at least one** of the options in question E2), why is it so?

No	Response	1 Disagree	2 Disagree	3 Agree	4 Agree
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			somewhat	somewhat	
1	The compensation will make me equally well or better off				
2	Forest protection is important				
3	It will improve our environmental conditions				
4	I need more income				
5	It will improve the conditions of our village/community				
6	Other (please specify)				

E2c. What commitments could you make to avoid deforestation in your community if compensated for that specific activity? (This question is only relevant for those answering question E2b)

No	Response	1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	Stop expansion of farming activity in forests				
2	Reduce wildfires in forest				
3	Stop harvesting fuelwood				
4	Stop harvesting poles/timber				
5	Stop producing charcoal				
6	Other (please specify)				

E3. Could the following manage a programme against deforestation in your community well?

No	Response	1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	Government officials				
2	The village leader(s)				
3	Specially elected village committee				
4	NGOs				
5	Other (please specify)				

E4. What kind of issues do you think could be associated with such a programme?

No	Response	1 Disagree	2 Disagree somewhat	3 Agree somewhat	4 Agree
1	The overall income situation in the village/community will be better				
2	It will result in corruption				
3	Unequal distribution of payments				
4	Payments will go only to land owners				
5	There will be less conflicts in the village/community				
6	It will increase privatization of land				
7	Other (specify)				

E5. If you foresee any problems, how do you think they could be best handled?

\_\_\_\_\_

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### Appendix 3: List of Interviewees

<b>Name of Interviewee</b>	<b>Title</b>	<b>Place</b>
Adam Maasai	Maasai, Kilosa	Kilosa
Aloyse Buhori and Mpangala	District Community Development Officers´	Kilosa
Ottmar Haule	Head of Kilosa District Natural Resource Office	Kilosa
Pius Yanda	Director of IRA	Dar es Salaam
Ivar Jørgense	Environmental/Climate change councillor at the Royal Norwegian Embassy	Dar es Salaam
Ralf Ernst	UN-REDD Coordinator	Dar es Salaam
Hassan Chikira	TFCG Kilosa District Coordinator	Kilosa
Charles Meshack	TFCG Executive Director	Dar es Salaam
Mr Abdallah	Staff in CCIAM project	Morogoro

All interviews were carried out in November 2010