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Local Forest Governance and Benefit Sharing from Reduced Emissions from Deforestation and Forest Degradation (REDD)

- Case study from Burkina Faso

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Master's thesis · 30 hec · Advanced level Programme · Uppsala 2010

Local Forest Governance and Benefit Sharing from Reduced Emissions from Deforestation and Forest Degradation (REDD) - Case study from Burkina Faso

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Credits: 30 hec
Level: Advanced E
Course title: Independent Project in Environmental Science – Master's Thesis
Course code: EX0431
Programme/Education: Environmental Economics and Management**,** Master's Programme

Place of publication: Uppsala
Year of publication: 2010
Cover picture: Author
Online publication: http://stud.epsilon.slu.se

Key words: Climate change, REDD, local governance, community forest management, benefit sharing

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Acknowledgements

I take this opportunity to thank everyone who has been part of this research process and made it possible. Firstly I would like to thank my supervisor Cristián Alarcon-Ferrari for his guidance and expertise throughout the whole research process. The support of Focali, Robin Biddulph and Lisa Westholm as well as Susanne von Walter in helping to define the research topic made it possible for me to carry out a study for which there was a need and which was in line with my own interests and values.

This research would not have been possible without a Sida's MFS scholarship and the local support of Göran Björkdahl from Sida in both guiding through and discussing forest issues in Burkina Faso as well as with practical issues during the field study. I am extremely grateful to anthropologist Sita Zougouri, who along the research process was not only an excellent mentor, but also became a dear friend. I am also most thankful to my interpreter Babou Sogue who shares my passion in environmental issues and gave his consistent support during the field work. I thank the National Forest Department for allowing me to conduct this research the Nazinon forest and also for their support with field work practicalities.

The discussions I hade with Cyrille Kaboré from DGCN and Mathurin Zida from CIFOR were most valuable for understanding the local realities and reflecting on the research findings. However foremost I thank the people of Bawiga, Gallo and Nadono for their support, interest and participation in my research. Their warm welcome and hospitality as well as the personal contacts created with certain GGF members will stay in my mind and heart forever. I hope to return to visit you again!

Summary

Africa is one of the regions most affected by climate change. However its forests are important carbon sinks for the whole world, and if recognised as a global public good, could be conserved and contribute to green house gas emission reductions. A global mechanism, Reduced Emissions from Deforestation and forest Degradation (REDD+) aims to help developing countries in reducing emissions from deforestation and forest degradation, and enhancement of carbon stocks. REDD+ strategies may, however exclude local forest dependent communities from forests in order to conserve and maximise carbon stocks, thus having a severe impact on local livelihoods. Therefore, how local communities can participate and share benefits from REDD+ is a key concern.

This study investigates how three forest dependent communities in the Nazinon forest, in Southwest Burkina Faso could financially benefit from a REDD+ project. The aim of this study is to identify local governance structures for equitable distribution of benefits from avoided deforestation by investigating local-level experiences and practices in governance of forest resources, and trying to reveal structures that could be used for equitable benefit sharing and the implementation of an effective mechanism. This is a qualitative study which has been conducted through semistructured interviews and focus group discussions with woodcutters, women and other stakeholders. Interviews with governmental officials and representatives from the union of forest management cooperatives complement interviews conducted in the three villages. The empirical findings are supported by pervious research on deforestation, climate change and community forest management.

The field data demonstrates a strong dependency of the local populations on the Nazinon forest, which provides products and services to various stakeholders, such as woodcutters, women, live-stock breeders, fuel wood transporters and traders and the state. Based on the empirical data, problems are observed in local forest governance and the existing land tenure regime, which can cause significant challenges when designing and implementing REDD+ in the Nazinon forest. Nevertheless numerous opportunities are identified in the existing governance structure, well-known rules and regulations, level of awareness of deforestation of local communities and their willingness to find alternative income generating activities to conserve their forest and improve their livelihoods.

The government and the international community have high ambitions for REDD+ in Burkina Faso, requiring complex strategies and action plans before any actual carbon selling can take place. This study questions the need for overwhelming strategies when the existing forest governance problems are fundamental, requiring simple, but overarching reform processes in order to obtain sustainable forest management and empower local communities in the management of their forests.

Sammanfattning

Afrika är en av de regioner som påverkas mest av klimatförändringar. Dess skogar är dock viktiga kolsänkor för hela världen, och om de erkänns som global allmännytta, kan de bevaras, och därmed bidra till att minska utsläppen av växthusgaser. Den globala mekanismen Reduced Emissions from Deforestation and forest Degradation (REDD) syftar till att hjälpa utvecklingsländer att minska utsläpp från skogsavverkning och -nedbrytning, samt att öka kolsänka-massan. En konsekvens av detta är dock att REDD-strategierna kan stänga ute regionala skogsberoende samhällen från skogar och därmed allvarligt påverka lokala näringar. Därför är en nyckelfråga hur dessa regionala samhällen kan delta i, och dra nytta av, REDD.

Den här studien undersöker hur tre skogsberoende samhällen i Nazinonskogen i sydvästra Burkina Faso kan få ekonomisk nytta av ett REDD-projekt. Syftet med studien är att identifiera lokalstyre-strukturer som leder till en rimlig fördelning av förmåner av att undvika skogsavverkning genom att undersöka regionala erfarenheter och utövande i styrelsesätt befattande skogsresurser, och att försöka visa strukturer som kan användas för en rimlig förmånsdelning och till att genomföra en effektiv mekanism. Detta är en kvalitativ studie som har genomförts genom kvalitativa intervjuer och fokusgruppsdiskussioner med skogshuggare, kvinnor och andra andelsägare. Som komplement till intervjuerna i de tre byarna har också intervjuer gjorts med regeringsanställda och fackliga representanter från skogsförvaltningskooperativet. De empiriska resultaten stöds av tidigare forskning på skogsavverkning, klimatförändringar och regional skogsförvaltning.

Fältdatan visar att den regionala befolkningen är stark beroende av Nazinonskogen som förser andelsägare så som skoghuggare, kvinnor, djurbönder, skogsbränsletransportörer, handlare, och staten med produkter och tjänster. Baserat på den empiriska datan har problem med regional skogsförvaltning och den befintliga markbesittningsrätten, vilket möjligtvis kan resultera i betydande utmaningar när man designar och genomföra REDD i Nazinonskogen. Trots det har ett antal möjligheter identifierats i den befintliga förvaltningsstrukturen, i välkända regler och bestämmelser, i graden av regionala styrens medvetenhet och deras vilja att hitta alternativa inkomstgenererande aktiviteter för att bevara deras skog och förbättra deras livsvillkor.

Regeringen och det internationella samfundet har höga ambitioner med REDD i Burkina Fason, vilket kräver avancerade strategier och handlingsplaner innan någon egentlig utsläppshandel kan påbörjas. Den här studien ifrågasätter behovet av överväldigande strategier då de befintliga skogsförvaltningsproblemen är fundamentala och kräver enkla men övergripande reformer för att uppnå hållbar skogsförvaltning och att bemyndiga regionala samhällen i bestämmandet över deras skog.

Abbreviatons

CAF:	Forest Management Unit (*Chantier d'Aménagement Forestière*)
CFM:	Community Forest Management
CIF:	Climate Investment Fund
CIFOR:	Center for International Forestry Research
COMIFAC:	Conference of Ministers in Charge of Central African Forests
DTC:	Decentralised Territorial Community
FAO:	Food and Agricultural Organisation of the United Nations
FUGGF:	Federation of the Unions of Forest Management Cooperatives (*Féderation des Unions de Groupement de Gestion Forestière*)
FIP:	Forest Investment Program
GGF:	Forest Management Cooperative (*Groupement de Gestion Forestière*)
FMF:	Forest Management Fund
IPCC:	Inter-Governmental Panel for Climate Change
MEVC:	Ministry of the Environment and Standard of Living (*Ministere de l'Environnement et de la Cadre de Vie*)
NGO:	Non-Governmental Organisation
NTFP:	Non Timber Forest Product
PES:	Payment for Environmental Services
REDD:	Reduced Emissions from Deforestation and Forest Degradation
SFM:	Sustainable Forest Management
SIDA:	Swedish International Development Agency
UGGF:	Union of Forest Management Cooperatives (*Union de Groupement de Gestion Forestière)*
VDF:	Village Development Fund

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1 Introduction

Chapter 1 provides a preface to the context of the research and the problematic behind the research questions.

1.1 Problem background

According to various research Africa is one of the most vulnerable regions to climate change, while its contribution to global greenhouse gas (GHG) emissions from fossil fuels is only under 4% (www, FAO,1). Burkina Faso belongs to the Western Sub-Saharan region, with a Semi-arid to Sub-humid climate. The temperatures in this region are expected to rise approximately 3,5 °C (projection 2080/99 compared to 1980/99, which will result in drying of the landscape and will have a major effect on agricultural activities and forests (ECOWAS-SACO, 2008). Approximately 29% (www, FAO, 2) of the total land area in Burkina Faso is forest land; however none of it is classified as primary forest (www.mongabay, 2010). Despite climate change posing various threats to the whole African continent, including Burkina Faso and its population, there are some opportunities that can be seized in order to adapt to and mitigate climate change while reducing poverty, by creating new income for local forest dependent communities and increasing local capacity in forest management and governance. According to Gigli and Agrawal (2007) Burkina Faso is at an early stage of mainstreaming climate change in national policies and current initiatives involve broad environmental objectives to climate change. Current forest policies in Burkina Faso are well developed and aim at various objectives through different strategies, however only few of them are actually implemented (Kalame et al., 2009)

The discussions for the post-Kyoto 2012 climate agreement have placed forests and avoided deforestation on the top of the agenda. As deforestation accounts for 12% of total GHG emissions (van der Werf et al., 2009), reduced emissions from deforestation and forest degradation (REDD) can provide a significant mechanism for climate change mitigation. If properly implemented it could also contribute to improving the livelihoods of indigenous and local communities whose livelihoods depend on forests. In May 2010, 50 countries established the Interim REDD+[1] Partnership which will have in its use USD 4 billion to help developing countries in the efforts to reduce GHG emissions from deforestation, forest degradation, and the enhancement of forest carbon stocks between 2010- 2012 (La Viña, 2010).

So far, the discussions about a REDD mechanism have focused on tropical forest nations, however Burkina Faso was chosen in March 2010 as one of the five pilot countries for the World Bank's Climate Investment Fund's (CIF) Forest Investment Programme (FIP), which provides support to developing countries' readiness for REDD and efforts for sustainable forest management for carbon sequestration (www.climateinvestmentfund, 2010). As forests and agriculture add up to 75% of GHG emissions in Africa (AFP, 2009) and Africa's forests are important carbon sinks for the whole world, if recognised as a global public good, the

[1] The concept of REDD has evolved during the global discussion to REDD+, in which the + refers to a policy approach and positive incentive that goes beyond reducing emission from deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries" (UN-REDD, 2010; IPCC, 2007). To simplify, this research uses the term REDD when discussing the general ideal of the concept.

consumption of forest resources could be limited and emissions reduced (ECOWAS-SACO, 2008). Forests provide many goods and services for local communities, varying from wood-based (e.g. fuel wood) to non-timber forest products (NTFP) as well as forest services such as regulatory, recreational and cultural services (FAO, 2006).

If access to forests and changes in land use are limited, local populations will have to be compensated for the loss of income and resources. The threat of losing access to forests and its resources was a major concern of the indigenous and local communities at the COP15 negotiations in December 2009. REDD payments are meant to be performance-based and conditional upon emissions avoided or carbon stored. It is still an open question how these payments will be channelled to the populations that actually protect and manage the forests and there most likely does not exist a one-size-fits-all solution. Rather, the transfer of payments will have to be adapted to local realities. Representatives of indigenous and local communities have demanded full participation in the design, implementation and management of the REDD mechanism at local level and safeguards for equitable benefit sharing and rights.

1.2 Research problem

REDD is considered to be one of the key solutions to climate change mitigation. As it involves forests which many local communities depend upon it is necessary to understand the current governance structures and the role of forests in local livelihoods. REDD is most likely applied at state level involving international and national level decision making and REDD strategies will have a significant impact on local livelihoods. The state of Burkina Faso has initiated it's REDD preparations and in order for the state to develop policies that have sustainable and equitable outcomes for the forest dependent local stakeholders it is essential that decisions are made with full understanding of the current local forest governance situation and with consideration to the needs of the local communities. This research has been conducted as a case study in Burkina Faso in the Nazinon forest in South-Centre region of the country.

This research will form a contribution to a wider study conducted by the Swedish research network for forests, climate and livelihood, Focali (www. Focali, 2010). One of Focali's three research areas is "Making REDD work for the poor". Under this theme the research network, in cooperation with other actors and local researchers, will conduct case studies in Burkina Faso, Bolivia and Cambodia. These case studies consist of two parts; an overview of the drivers of deforestation, the location of past and anticipated deforestation, and a description of REDD preparations, plans and activities, including an analysis of their poverty implications. Secondly, local case studies will be conducted in the three countries. The local case studies research a 'forest-dependent' 'community' in an area where deforestation may occur. By analysing the current population and its livelihoods, prospects will be developed for that population under future scenarios of either (a) deforestation or (b) avoided deforestation. Many studies have focused on the international implementation of REDD, leaving less research on national implementation, despite that one of REDD's aims is to ensure that poor forest dependent people will gain a fair share of benefits.

1.3 Aim

This study aims at 1) researching local forest governance structures in an area in Burkina Faso in relation to REDD initiatives and 2) analysing possibilities for benefit sharing from REDD.

By investigating local-level experiences and practises in governance of forest resources, and the current governance structures and institutions I try to reveal structures that could be used for equitable benefit sharing and the implementation of an effective mechanism to distribute monetary benefits to village members from avoided deforestation and forest degradation. The results are compared to existing literature. The findings will demonstrate potential opportunities that exist at local level for implementation of REDD or they will reveal institutional and organisational challenges for the mechanism. This study can be used for comparative studies in local forest governance by other researchers for possible policy and project recommendations.

In order to obtain a comprehensive understanding of the local governance of forest resources the research addressed the following questions:

- What role do forests play in current livelihoods in the villages and who are the stakeholders?
- What are the structures in place for forest land and forest products ownership and decentralised forest management?
- What are the experiences with existing mechanisms to distribute benefits from forests and other natural resources and are they legitimate?
- What could be the consequences of REDD implementation at local level and its implications for benefit sharing?

In order to investigate the above research questions, field research carried out in the Nazinon forest is a Forest Management Unit (CAF) managed by 25 village Forest Management Cooperatives (*Groupement de gestion forestiere*, from here referred to as GGF).

1.4 Delimitations

Due to the limited scope of this study, the research has been limited to the Nazinon forest, of which three villages have been chosen for more investigation. Other forests in Southern Burkina Faso were considered for this research, however Nazinon forest was chosen due to various reasons specified in Chapter 3. Alternatively this study could have investigated all stakeholders in local forest governancem such as state officals at Ministry level, fuel wood traders and transporters and consumers, however due to limited time, the focus was on woodcutters and other stakeholders at local level. These stakeholders are also the most important ones when studying local forest governance and benefit sharing as they are the most vulnerable. The season the research was carried out in presented certain limitation to the study; the rain season was beginning, and therefore many interviewees were occupied with agricultural activities and their availability to participate in the research was restricted.

Only one similar qualitative study at a much larger scale was found from Bouda et al. (2009) who have studied decentralisation of forest management in the Centre-West region of Burkina Faso in regard to democracy and good governance. Other research reviewed for the

conceptual and theoretical perspective has been limited to studies, mainly quantitative surveys, from the same geographical area and similar research from other continents.

1.5 Outline

Chapter 1 provides the reader with an overall understanding of the background to the research, the research problem and aim. A theoretical framework for the empirical research is presented in Chapter 2, giving the reader an introduction to the concepts of climate change, REDD, deforestation and community forest management. The following Chapters 3 and 4 explain the research methodology and give a background to the empirical part of the study. Chapter 5 presents the research results obtained from the three villages as well as from interviews with governmental officials.

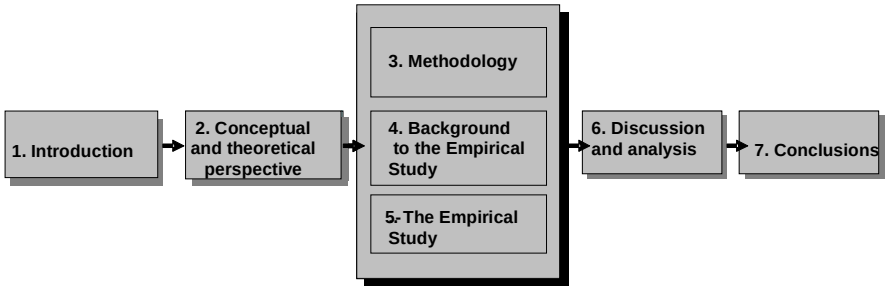

Figure 1. Illustration of the outline of the study.

Chapter 6 offers a continued analysis in the form of a discussion in which the field study results are compared to other studies in community forest management, deforestation and REDD that were identified in the literature review. Finally Chapter 7 concludes the research results and provides suggestions for future research and recommendations on governance aspects that should be taken into consideration when implementing REDD in the Nazinon forest.

2 A theoretical and conceptual perspective

The current REDD discussions are at a theoretical and conceptual level, where estimations are made of what implementation could imply for climate change, forests and local livelihoods. No country is yet in reality selling carbon credits from REDD and only a few pilot projects provide actual data, mostly on carbon stocks and measuring and reporting issues. Therefore the theory and concepts need to be shown in practise. Chapter 2 provides an introduction to the key theories related to REDD and local governance of forests. Underlying concepts of the drivers of such as deforestation and climate change are first presented, followed by current issues on REDD as well as the concepts of sustainable forest management (SFM) and community forest management (CFM).

2.1 Deforestation

Deforestation increases the impact of climate change. Forest areas are estimated to have decreased by 200-490 million hectares in the 1990s in developing countries, whereas forests in the tropics were estimated to degrade 2,4 million ha (corresponding to approximately 3 116 883 football fields) per year during the same time period. The main driver of deforestation and change in land use is the conversion of forest land to agriculture. Especially in Africa, it is small-scale subsistence agriculture that is the main direct cause of deforestation (Nabuurs et al., 2007). Other indirect drivers are prices and subsidies for agricultural products, access to infrastructure and markets, land tenure regimes as well as demand for forest products (Stern, 2006).

According to Burkina Faso's Ministry of the Environment and Standard of Living (2004) the rural sector has an important role in the national economy by employing 86% of the total population. Agricultural activities contribute 40% to the GDP and are therefore the main drivers of economic growth. Forestry is included in these activities, accounting for 3% of the GDP; with wood consumption estimated at 5 million m^3 per year. Agro-sylvi-pastoral practices are permitted on approximately 42% of the national territory. This area is called "protected area" and represents the essential forest formations in the country, whereas the classified forests cover national parks and reserves and constitute 14% of the national territory. Due to numerous degradation practises forest areas are decreasing although the lack of clearly defined boundaries makes their geographical limits imprecise in Burkina Faso (ibid).

Wardell et al. (2003) have studied forest cover changes and forest regeneration processes in the sudano-sahelian regions of Ghana and Burkina Faso, with a historical perspective of both pre-colonial and colonial forest management practices; challenging the mainstream thinking which explains population increase as the main driver of deforestation and forest degradation. Wardell et al. (2003) see deforestation rather as value-laden. The discourses on deforestation in West Africa have concentrated on land degradation processes including bushfires, shifting cultivation and pastoral land use, which have also been identified by the Government of Burkina Faso as the three main issues to combat.

The case studies conducted by Wardell et al. (2003) have demonstrated that different local processes determine deforestation rates. The largest changes in forest areas can be seen in areas where there were initially abundant forests. A driver of deforestation in West Africa has

been the colonial forest policies, influencing current natural resource management schemes. Local rights to forest resources were depressed by the colonial administration in West Africa, with laws restricting or forbidding customary communal rights on land use. On the whole the land use changes in the Sudano-Sahelian region are driven by social, economic and ecological processes at various scales and times. Location specific patterns of deforestation and forest protection as well as access to forests, are the result of interaction with changes in the economic environment at local and national as well as regional levels, which are affected by changes in socio-political, infrastructural and institutional influences in specific areas (ibid).

In West Africa, changes in social and economic conditions have taken place during a long time period, influenced by migration, agriculture and commerce as well as religious and political turmoil. According to Fairhead and Leach (1995) there is no baseline for how a society assesses the importance of vegetation, as it's valuing alters according to changes in current circumstances. These values are socially distinguished as the priorities of a conservation planner in terms of forest land are not always the same as e.g. farmers. Population growth periods are considered to have both positive and negative influences depending on the existing economic and ecological conditions. Socioeconomic and political reasons drive people to create forests and transform landscapes. Peoples' activities can make a difference on land use change depending on their priorities. Fairhead and Leach (1995) suggest that it is essential to create policies and economic conditions that encourage and facilitate local resource management. Providing support to the local institutional structures and building on larger rural and development policies tend to enhance beneficial environmental implications.

2.1.1 Implications of fuel wood extraction

Fuel wood is the main source of energy (90%) for households in Burkina Faso and it is mainly extracted from natural forests which have low productivity (MECV, 2004). Fuel wood is commonly acquired by felling trees or collecting fallen wood (FAO, 2007). The role of fuel wood consumption and its relation to deforestation has been debated by various researchers. According to Cline-Cole et al. (1990) there exist significant variations of the impact of fuel wood collection on deforestation. The common assumptions of the linearity of fuel wood and population growth, and agricultural expansion decreasing fuel wood supply, as well as fuel wood related deforestation spreading in rings from urban centres is considered superficial. An inventory conducted between 1980 and 1992 showed a decrease of 1,26 million hectares in forest formations in Burkina Faso corresponding to the Ministry's estimation of a total of 105 000 hectares per year. However since the 1980s there are numerous programmes in place for improving forest management and for creating alternative energy sources for households (MECV, 2004) therefore the deforestation rates should be lower nowadays.

Cline-Cole et al. (1990) suggest that fuel wood consumption patterns are more related to household unit size and structure, in addition to culture, ecology, market mechanisms and access to alternative energy sources. Poor local strategies for forest management are factors of relative importance for fuel wood-driven deforestation. In highly populated areas the unsustainably managed forests cannot provide sufficient wood supplies and more distant supplies are required. There is however great variety of tree cover between different geographical areas in Africa and in some empirical cases timber volume has been shown to be greater on farmland and that a fuel wood problem emerges when the supply is trying to respond to the increasing demand. The three case studies conducted by Cline-Cole et al. (1990) in Nigeria show that fuel wood extraction is not the main driver of deforestation, but

rather farming activities especially livestock; there was however a significant amount of trees on farmland; contradicting the mainstream assumptions. Ribot (1999) also challenges the common perception of fuel wood consumption being the main driver of permanent deforestation. Other more significant causes of deforestation are changes in land use due to agriculture, livestock grazing, fires, and climate change.

2.1.2 Expansion of agricultural production

Despite high consumption of fuel wood, agricultural expansion can be considered the most significant cause of deforestation in Burkina Faso (MECV, 2004; FAO, 2006). Conversion of forest land to pasture and agricultural production accounts for two thirds of deforestation (Krutilla et al., 1995). An increased population is driving people to search for new land for cultivation and has increased the consumption of fuel wood and agricultural products.

Studies carried out by Paré et al. (2008) and Ouedraogo et al. (2009) discuss the relations between population growth through migration from northern Burkina Faso to the southern regions. Migration is mainly due to poor agricultural conditions caused by drought and changes in land use, especially deforestation. Commonly population growth results in an increased demand for food and fuel wood which consequently increases the need for farmland. Paré et al. (2008) demonstrate changes in land use on local and regional scales resulting in deforestation in the South of Ouagadougou (capital of Burkina Faso). The main driver of deforestation in this area was increased agricultural production mainly in the form on increased crop and grazing lands, with some variations between different villages. The increase in agricultural production was due to an increased population mainly through migration. In Paré et al.'s (2008) study the village with the highest rate of migration was Yalé which was located in the proximity of a large road. These perceptions suggest a direct relation between population and infrastructure and agricultural expansion. The migrants as well as the locals were involved in cultivation of cash crops such as cotton, cashew and beans. The increased migration has changed the traditional agricultural production systems in the regions. Grazing is also considered a significant driver of deforestation. Programmes for preventing overgrazing in the study region have not been successful; the density of cattle has only increased and has resulted in excessive trimming of fodder trees and is threatening crops. This has had serious implications on social relations between farmers and herders (ibid).

At regional level Paré at al. (2008) have observed that the numerous forms of managing resources encourage deforestation and change in land use. In addition to traditional subsistence farming of cereals, previously mentioned cash crop production and new systems for fuel wood extraction, ranching, forest conservation and tree planting agribusiness contribute to more complex patterns in land use, each competing with each other. On the whole deforestation is mainly driven by expansion of cropland in the region, and the appearance of commercial farming. However uncontrolled grazing, fuel wood extraction, bushfires and charcoal production are other drivers of deforestation in the area (Paré et al., 2008; Ouedraogo et al., 2009). Paré et al. (2008) see integrated natural resources management as a solution to these changes in land use and suggest the following: " (a) facilitate local dialogue among the various stakeholders to reach a consensus on land use; (b) regulate the influx of people to the region, grazing intensity to reduce the increasing pressure on the forest resources; (c) empowering local communities in management and conservation of forest resources; (d) follow-up of the land use changes in the region, and the methods used in the study can be seen as a potential tool for such monitoring" (ibid, 284).

Both Ouedraogo et al. (2009) and Paré et al. (2008) see a clear relation between migration and deforestation and the results from their research in Southern Burkina Faso foresee that if migration continues there will be no forest left in the area in the near future due to expanded agricultural production. Both studies show a strong negative correlation between population growth and deforestation which they explain also by increased fuel wood extraction and livestock grazing in forests. The villages in the study were also big suppliers of fuel wood and charcoal for Ouagadougou (Ouedraogo et al., 2009).

Fairhead and Leach (1995) on the other hand suggest a very different perspective toward deforestation in West Africa, challenging the western developmentalist perceptions of people and environment relationships in Africa. Their case studies in Ghana demonstrate that vegetation is in constant transition determined by present and past ecological situations. This transition can be explained by theories of social action and the capacity to structure rules in a society rather than analysing the traditional societal state.

In most cases deforestation is the consequence of government policies that have been set separately from the local context. Increased prices for agricultural products as well as subsidies and exchange rate and trade policies are drivers of agricultural expansion on the detriment of forest land. Any agricultural production that is more profitable than conserving forests will be an incentive to clear forests for cultivation. Support to the agricultural sector for combating climate change is possible in some countries and therefore it is essential that there is dialogue between agricultural and forest policies in order to fully consider the economic, social and environmental impacts of deforestation in climate policies (Glück et al., 2009).

2.2 Climate change

Agriculture and changes in land use cause 41% of global GHG emissions. Other global drivers of climate change are burning of fossil fuels for power generation, transportation and industry counting for 57% of all emissions (Stern, 2006). The Stern Review (2006) reveals that the global temperatures will increase from 2 to 5°C due to the doubling of GHG emissions from the pre-industrial levels. The report estimates that the increases will be attained between years 2030 and 2060. Many studies have also predicted with a 20% possibility that temperatures will increase even more than 5°C. In 2000 the estimation of GHG emissions from land use change was 18% of global GHG emissions. Deforestation is considered the largest sole producer of GHG emissions accounting for 8 GtCO2/yr in 2000. Africa was responsible for 20% of the emissions from land use change (ibid).

The Stern Review (2006) places deforestation as one of the key elements of climate change and forests received significant interest during the Copenhagen Climate Conference (COP15) negotiations for the post-Kyoto climate agreement. There continues to be disagreement on the true impact of deforestation on climate change; in the 1990s the top down estimations of emissions from deforestation were of 5.8 GtCO2/yr whereas regional case studies showed lower potential: 1.3-4.2 GtCO2-eq/yr (average 2.7 GtCO2-eq/yr) in 2030 with large differences between regions. Top-down models on a global scale predict extremely higher mitigation potentials of 13.8 GtCO2-eq/yr in 2030 if carbon prices are less than or equal to 100 US$/tCO2-eq (Nabuurs et al., 2007).

2.2.1 Forests in Climate Change Policy

Climate change affects forests and the services they provide for populations. As forests cover approximately one third of the land in the world, increasing forests resilience to climate change has important implications for biodiversity and human livelihoods. In addition forests provide direct and indirect benefits both at local and global scales; forests store approximately half of the carbon created in the world and have therefore a decisive role in the global carbon cycle. Policy measures are one way to manage forest resources in a sustainable way and enhance climate change adaptation and mitigation practices. However policies must be flexible and adaptable to local conditions, taking into consideration local needs for forest goods and services as well as indigenous knowledge. Traditional command and control measures need to be revised to cover more participatory models including the conflicting interests of different stakeholders (Louman et al., 2009).

In this context Glück et al. (2009) see a need to mainstream climate change policies to cover the interaction between sectoral and macroeconomic polices in order to avoid negative effects of policy changes in different sectors. When looking at local levels there exist various drivers of deforestation that are context specific and must be addressed individually. Having deforestation and the reductions of GHGs as part of a global climate agreement, would provide possibilities for long term stabilisation of the climate (Okereke and Dooley, 2010).

2.3 Reducing Emissions from Deforestation and Forest Degradation (REDD)

Climate change mitigation through avoided deforestation was already discussed in 2007 in the Bali Action Plan which proposed international approaches and incentives to reduce emissions from deforestation and forest degradation. The underlying idea of this global policy, that was the main climate issue agreed upon to be included in the post-2010 climate agreement, at COP15 in Copenhagen in December 2009, is that Annex 1 countries (developed countries) provide financial incentives to non-Annex 1 countries (developing countries) to conserve and sustainably manage forests and as a result increase global carbon stocks to mitigate climate change. The Conference of Parties considers it necessary to offer incentives for avoided deforestation through a mechanism that transfers financial resources from developed countries to the developing ones (www, IPCC, 2009). REDD is a financial instrument for reducing deforestation and forest degradation and enhancement of carbon stocks, based on either a market approach under the regulatory framework of the Kyoto protocol or a voluntary carbon market. By conserving forests, developing countries receive carbon credits, which can be partly transferred to local communities and forest owners through for example payments for environmental services (PES). REDD includes SFM practices (www, Simula, 2008).

Despite the lack of clarity of how the mechanism will work, it is very likely that it will operate at national level (Skutsch and Ba, 2010). In order for REDD to be effective it requires an understanding of the drivers of deforestation and forest degradation, both direct and indirect causes, most of which have been discussed earlier in the paper. The complexity of the interactions between the different causes of deforestation mean that there is no one and only REDD that fits all countries (Kanninen et al., 2007).

Whatever form REDD takes, it will imply complex technical issues on baselines, measuring, reporting and verification of carbon stocks. Beside these technical aspects of REDD, equitable

distribution between and within countries and stakeholders is a complex task (Angelsen and Atmadja, 2008) requiring adequate local governance structures and capacity. Angelsen and Atmadja (2008) have proposed a three E concept for REDD, covering E for Effectiveness, referring to how the mechanism can provide considerable reductions in GHGs; Efficiency, how to obtain the reduction at a minimum cost; and E for Equity of benefit distribution. REDD includes a poverty reduction dimension to the mechanism, implying that REDD can in addition to carbon sequestration create co-benefits to local communities by poverty alleviation, enhancing human rights, improved governance and providing other environmental services; water quality, biodiversity conservation and scenic beauty in addition to carbon sequestration (Pagiola et al., 2005). However in order for the local communities to benefit from REDD there will need to be appropriate safeguards in place (Angelsen and Atmadja, 2008).

Peskett et al. (2008) list various poverty implications that REDD may have on the poor. Delivering emission reductions can impact the poor as they often lack financial resources for investment. If REDD requires payment on delivery it may have equity implications by diminishing access to REDD by smallholders and even small poor countries. In addition rules that define REDD such as the definition of forest and the technical barriers of monitoring and accounting for land use change may have negative impacts on the poorer local populations. Additionally the livelihoods of the poor may be dependent on some forest degrading activities. National REDD schemes can fail to distribute finances and authority to local levels depending on the structures in place, implying a lower level of participation in design of REDD and its implementation. With appropriate and functioning governance systems a national REDD mechanism can enable lower transaction costs in contrast to independent projects. Distributing financial benefits from REDD can be challenging due to elite capture at different levels as well as possible conflicts due to increased value of land, therefore measures for transparency and accountability are essential (Peskett et al., 2008).

2.3.1 Proposed REDD schemes

Okereke and Dooley (2010) have analysed eight REDD proposals in terms of justice and global equity. The implementation of a global REDD mechanism will have different implications geographically and on different scales of governance (from local to international). Injustices may exist in terms of land tenure systems, access to natural resources and their control as well as sovereignty of management of natural resources. A major concern is also the consequences that the mechanism will have on the indigenous communities that depend on forest products and services for their livelihoods (ibid).

According Okereke and Dooley (2010) the majority of REDD propositions are based on market driven perceptions of distributional equity and justice and are driven by national interests rather than the benefit of the global community, especially the forest dependent communities. This means that small scale REDD projects will be left out as well as poor countries since they will not be able to meet the measuring and monitoring costs, as the forests in these areas are heterogeneous and small; and often dispersed. Market based mechanisms are however considered to bring a better access to more funds, which could increase income and benefit sharing for developing countries. Though market based options will prefer least-cost options, leaving aside funding that is required for pro-poor strategies (Peskett et al., 2008).

Three of the eight propositions studied by Okereke and Dooley (2010) take a more equitable and pro-poor perspective to REDD. Firstly, the proposition made by Tuvalu places community involvement and equitable distribution on centre stage, implying that justice is best achieved in a community. This perspective emphasises the role of culture and livelihoods of forest dependent people, and participation, most common to theories of justice according to communitarianism. Therefore distribution of benefits from REDD would be tied to the collective understanding of the benefits distributed and existing social and cultural ties. In Tuvalu's proposal local communities would have a key role in designing a REDD fund and in the development of guidelines for safeguarding indigenous people's and local communities' rights in a REDD mechanism. Tuvalu's proposal considers local communities as the best managers of local forest resources, calling for measures to deal with demand side drivers of deforestation. Tuvalu's proposal also touches on justice as meeting needs, referring to local communities having the right to subsistence. On the whole the proposal provides incentives for outcomes that are socially and environmentally sustainable (Okereke and Dooley, 2010).

Bolivia has also taken the perspective of justice as meeting the needs, where the focus is on community involvement and management of forest areas. Bolivia proposes trust accounts that are managed by the communities. Additionally regional REDD centres would be established. Indigenous rights have been given an important place in the proposal as the rights for carbon are not transferred to the market. Norway's proposal also concentrates on participatory approaches and equity, emphasising forest sector reform, land tenure reform, stakeholder consultation and forest governance with a stress on participation; all having a positive impact on local forest dependant communities and their livelihoods. The activities under Norway's proposal are divided into steps and in order to move to the next phase graduation is required to ensure reform at ground level before moving to the implementation of REDD (Okereke and Dooley, 2010). Norway's proposal follows a three-phased implementation approach, for which a common understanding was obtained at the COP 15, according to which REDD activities are to be implemented in phases, starting with drawing up national strategies and action plans, capacity building followed by implementation and results based action, shortly described as:

Phases 1 and 2:	Funding mainly from public sources. Measuring, reporting and verification are linked to the preparatory activities required for full compliance – such as consultations, policy and institutional reforms and capacity building.
Phase 3:	Measuring, reporting and verification is directly related to the quantity of emissions reduced or carbon removed (La Viña, 2010).

The Coalition for Rainforest Nations and Latin American countries propose market based REDD schemes, with no specification on how benefits could be distributed equitably in the REDD "supply chain". Under these proposals countries with low technical capacity as well as communities would be at a disadvantage compared to more developed countries and the private sector. Both proposals have a negative impact on environmental and social sustainability. India's and Brazil's REDD proposals emphasise national interests with a focus on the state; driving for mutual advantage when considering justice. India proposes to include plantations in REDD. The social and environmental benefits from these proposals remain unclear. The proposal from COMIFAC on the other hand seems to accommodate existing land users, by excluding logging and slash and burn farming from degrading activities within

REDD. SFM is subsidised under this proposal as the way to development at national level rather than at community level. There is no concern for the material equity of the poorest stakeholders, neither is the role of communities taken into consideration in the COMIFAC's proposal (Okereke and Dooley, 2010).

2.3.2 Institutional capacity requirements

REDD will require both capable international and local institutions in order to govern the economic, financial and regulative dimensions of the mechanism. Kanninen et al. (2007) consider the causes of deforestation and degradation, land tenure and rights, integrity of decision making procedures and capable institutions, as the main areas of importance for effective governance of REDD.

Land tenure
The way land is used is defined to a large extent by land tenure regimes and property rights. Removing the linkages between deforestation and access to secure land rights is one step towards avoiding deforestation. Private actors are said to be better motivated to invest in SFM practises if they are legal owners of the land or if property rights are well defined and enforced. Under REDD, forest conservation should provide financially the most beneficial mode of land use. Common property regimes including conditions for SFM have been established for example in Brazil to discourage conversion of land as well as speculation on land. Once there are clear and secure property rights in place, direct payment transfer systems such as PES can be used to motivate landowners to change land use toward the desired direction and they can be compensated for their efforts (Kanninen et al., 2007).

Decision making integrity
Providing individuals and authorities with transparent and timely information for decision making can reduce corruption and increase the accountability of government agencies and companies toward the public sector. Communities that depend of forest resources have significant stakes in decisions related to forests and are probably the most affected by decisions changing the management of forests, not forgetting local communities' crucial role of participation for implementing forest policies (Kanninen et al., 2007).

Capable institutions
As REDD will be implemented at national level, the governments need to be capable of designing and implementing the mechanism as well as enforcing it, in order to obtain effective, efficient and equitable outcomes. Governing capacity is needed at all levels of authority: national, regional and local with adequate responsibilities and resources. REDD governance could be built on existing institutional structures for decentralised forest management if the structures are effective and functional. Good conditions for the transfer of property rights and support to local forest governance as well as incentives are essential for successful outcomes. CFM provides a rather successful option to consider for SFM and distribution of benefits. In order to transfer payments to local communities in the form of, for example PES there is a need for intermediary organisations to allocate funding and channel it to the right stakeholders in a transparent and efficient manner. In order to pay, there needs to be a functioning monitoring system in place to ensure the performance of the "sellers" (Kanninen et al., 2007).

2.3.3 Benefit sharing

According to FAO's report State of the World's Forests 2009, protected forest in densely populated areas are susceptible to degradation such as collection of fuel wood, illegal logging, grazing and poaching. There are many challenges in managing effectively these areas and the success depends on the ability and motivation of the society to meet the management costs. CFM with equal sharing of income within local communities is considered one effective management approach which depends on the creation of sufficient tradeoffs between payments for forest conservation and lost income, requiring solid institutions. Many low-income societies are attracted by other economically beneficial options. However PES can act as a poverty alleviation mechanism if the payments for environmental services truly reach the people providing the services by converting to more appropriate land use practices. In order to be successful PES requires secure land rights and land ownership in addition to solid institutions and policies. Case studies on PES projects have shown that often large landowners benefit the most of PES schemes (FAO, 2009).

Policies including equitable compensation for environmental services for small holder farmers could place subsistence farmers in key roles on the international market. Forests in semi-arid areas such as Burkina Faso face high rates of forest degradation, even though carbon values are lower, and are therefore of significant interest to national and international schemes. FAO (2009) considers these low carbon density areas as buffer zones between dense forests and agricultural lands. If they are protected, violation, conversion and additional land degradation as well as desertification can be prevented. Equitable sharing of environmental services throughout the different socio-economic groups is essential for improving livelihoods, avoiding conflicts and disasters, as populations grow and forest ecosystems degrade (ibid).

2.4 Sustainable Forest Management: a pre-requisite for REDD

The mainstream approach toward increasing carbon stock is SFM. SFM allows sustainable timber and energy harvesting from forests and is considered to be the largest generator of sustained benefits from climate change mitigation. SFM practices include reduced deforestation and degradation, agro-forestry afforestation, forest management, and bio-energy. Proper management of forest resources is a prerequisite for further developing strategies for forest carbon sequestration (Nabuurs et al., 2007).

There is a shared understanding within the international forest policy community over the overarching goal of SFM; however the concept remains abstract and is in continuous development. In its economic sense SFM implies fairer benefit sharing and costs of forest management for users of forest products. At governance level SFM involves a more participatory network approach at local, national and international levels (Glück et al., 2009) SFM aims at forest use and conservation practices that contribute to long term development. The actions under SFM encompass maintaining and safeguarding forest ecosystems and their functioning by deliberate human intervention as well as enhancing the use of socially and economically valuable species for better production of goods and services (www, FAO, 3). According to FAO, SFM has the following seven key purposes (www, FAO, 4).

1. Extent of forest resources
Forest cover should be increased in order to support sustainable (social, economic and environmental) dimensions of forestry, including decreased deforestation and restoring

degraded forest areas. Forest and trees outside the forest are considered important for carbon storage and mitigating climate change.

2. Biological diversity
Conserving fragile ecosystems can ensure biological diversity while providing opportunities for development of new forest products such as medicines. By improving genetic resources, productivity of forests can be increased.

3. Forest health and vitality
Management of risks and degradation of forests such as wildfires, diseases, pollution, storm felling etc. can have significant impacts on the social, economic and environmental aspects of forestry.

4. Productive functions of forest resources
Sustainable production and harvesting of wood and non-wood forest products, will allow a supply of primary forest products also for future generations.

5. Protective functions of forest resources
Forests provide many eco-system services for soil and water systems, by cleaning water and reducing risks and consequences of natural disasters e.g. drought and floods. The protective function of forest benefits also farmers and populations living in rural areas.

6. Socio-economic functions
Forest resources contribute considerably to local and national economies, by providing employment, products and investments. Forest areas also provide valuable functions as cultural, spiritual and recreational areas, including traditional knowledge, land tenures and community management systems.

7. Legal, policy and institutional framework
Legal, policy and institutional frameworks are necessary to enforce the different purposes of SFM. These frameworks encompass governance and law enforcement, participatory decision making and monitoring and assessment in addition to cross cutting issues such as fairness and equitable use of forest resources, research and education, capacity building and technology transfer, public awareness and communications, and infrastructure arrangements.

These seven purposes are in line with many of the objectives of REDD and the systems that need to be in place for the design of national REDD mechanisms in addition to their effective implementation. The role of SFM in climate change adaptation and mitigation is considered crucial (Louman et al., 2009). However including SFM as the criterion for REDD has received opposition from the civil society. For instance the Australian Humane Society International has stated that SFM is a common term used by the industry, covering activities that degrade forests and are unsustainable in regards to biodiversity conservation and carbon storaging. Therefore REDD would be compatible with only a limited scope of SFM activities (Humane Society International, 2008). Nevertheless SFM is a concept that is developing continuously with the aim of guaranteeing that forests can offer environmental services. The underlying idea is that forests provide services to both people and the nature and therefore SFM addresses also social and benefit aspects of forest ecosystems (Seppälä et al., 2009)

SFM is however in constant competition with other land use practices and resource sectors, which makes its implementation challenging. The measures of SFM need to be assessed in

terms of other land users and resource sectors. In addition, as community forests are public land, but managed by the local population, the income from the forest products is shared between the community members in cash, in-kind or in infrastructural development projects. In developing countries community forests play an increasing role in SFM. The forests are considered as an essential source of livelihoods and if land tenure rights are secure people have shown their willingness for long-term invesments. Therefore secure rights are necessary for community forestry and SFM. However the most important factor is what contributes the most to peoples' livelihoods. If alternative land use provides more income than forest conservation, there is less incentive to conserve forests (Glück et al., 2009).

In addition SFM implies increased sequestration rather than avoided emissions, which is a different approach from the initial idea of REDD and especially REDD. It is therefore appropriate to consider the concept of CFM when talking about SFM from a public interest point of view and when considering benefit sharing and governance systems.

2.5 Opportunities of community forest management under REDD

CFM is a form of forest management where the management of the land is handed over to a local community, while the ownership of land remains, most often with the state. Generally the community has an agreement with the Forest Department and there is a management plan that is followed, stating which quotas of forest products the community is entitled to extract, as well as measures for forest conservation. The community is often responsible for any regulations on grazing and hunting and is empowered to manage the distribution of benefits from the sales of forest products, as well as administrating a community fund. Functioning CFM schemes enhance forest protection and decrease forest degradation and deforestation. In these terms CFM is a potential mechanism for participation in REDD (Skutsch and Ba, 2010). Studies in community based forest management (CBFM) in India and Nepal also demonstrate increased productivity of fuel wood, fodder and forest litter; NTFPs and biomass as well as increased commercial value of timber. Increased productivity has had a positive impact on local subsistence livelihoods. Therefore community forestry can contribute to climate change by providing increased natural carbon sinks (Singh, 2008; Karky and Skutsch, 2010)

Studies conducted by Skutsch and Ba (2010) in Senegal, Guinea Bissau and Mali show that CFM practises in dry forests enable local communities to assess carbon stocks themselves. These forests were primarily used by local communities for fuel wood extraction for cooking; previously the forests were steadily degraded by overexploitation for fuel wood and charcoal production. In addition agricultural production and grazing had prevented the forests from regenerating in all the research areas. Under the CFM carbon projects the village forest committees mapped their forests to create statistics on the forest area and carbon stocks. The results demonstrated a slow, but steady increase of carbon stocks. However some areas had experienced significant loss of forest area despite CFM. Skutsch and Ba (2010) see significant potential of carbon sequestration from dry forests as they are degraded in much larger areas than rainforests. Emphasis has been placed on alternative income generating activities such as bee-keeping and horticulture in order to replace firewood and charcoal trade in the three research areas. This will also avoid leakage of forest degradation and deforestation to other areas as new ways of earning money are adopted (ibid).

According to calculations done by Skutsch and Ba (2010) if only 10% of the monetary value of carbon is returned to the community it will be a substantial earning as income from agriculture and other income generating activities is rather low in these areas. It could be a satisfactory incentive to get more communities interested in CFM and encourage the state to give more forest areas for CFM activities. Likewise Jindal et al. (2008) agree that even a small share of the revenue from carbon offsets could present considerable economic income to local communities as well as governments to invest in conserving forests. The key findings from research conducted by Skutsch and Ba (2010) show that communities are able to manage forests so that there is regeneration of the forest and increased biomass, therefore increased carbon stocks. Local communities often have solidarity and social control to ensure rules and adherence to them and they are able to measure carbon stocks, decreasing inventory and monitoring costs.

CFM can be regarded as a cost-effective method for reducing degradation in dry forest areas (Bouda et al., 2009), however it does not necessarily provide a clear structure for direct payments from REDD. It may not guarantee that the local communities will access the monetary benefits from the carbon credits they generate under REDD; as REDD payments will most likely be paid to the state and not directly to individual projects. Therefore national institutions play a key role in compensating carbon credits to communities. Functioning monitoring and payment infrastructures are necessary for the money to reach the right receivers across the whole country. There exist many opportunities for fraud and corruption that must be considered. If direct payments for carbon credits are not possible, due to the various challenges, CFM can provide other income generating opportunities from alternative activities or the state can pay the local community for measuring and monitoring their forest, under REDD. The side benefits of REDD and the possibility of improved livelihoods make it an interesting option for dry forest areas. It is however essential that local communities in dry forest areas are able to justify and self assess the changes in carbon stocks. Defining degradation and measuring it in ways that communities are able to justify it as well as self assessment of changes in carbon stocks (Skutsch and Ba, 2010).

Studies carried out by Karky and Skutsch (2010) in Nepal also show that CFM can provide incentives for forest management already without revenue from carbon credits. The different scenarios of CFM under REDD: limited access to forest products and carbon sequestration; and complete conservation of forest demonstrate that carbon trading is an attractive option for local communities only if the benefits from carbon exceed the benefits of existing management practices. The case studies in Nepal show that a combination of carbon sequestration and a limited extraction of forest resources provide additional benefits to local CFM communities. In this scenario carbon credit prices are low due to the gains from fuel wood extraction which lowers the forest management costs. Sustainable harvest of forest products is allowed and carbon credits are given only to what is left in the forest. This scenario is considered the most beneficial because under strict forest protection regimes which aim solely at carbon sequestration local communities lose more than they gain. Therefore building REDD policy on existing CFM structures provides recognition of local communities' user rights (ibid).

2.5.1 Community forest management and equity

According to Mahanty et al. (2006) the most common measure of equity in CFM is the distribution of benefits. CFM involves also costs that should be divided equitably between the parties as opportunity cost of participating in CFM group may be high for poorer households.

In addition decision making power and the ability to make one's voice heard in decisions concerning resource management has equity implications (Bouda et al., 2009), often referred to as political and procedural equity. Different research in natural resources management has shown that there is a clear relationship between political and economic equity. Mahanty et al. (2008) consider equity also between different social groups within a community, with a special regard to marginalised groups. CFM is seen to be moving toward a form of social action in governance, beyond natural resources management. Regarding spatial equity CFM aims at transferring power from state to community and stakeholders at different levels and localities. There is however difficulty for communities to access forests that have high commercial value or are protected areas. The needs of local daily livelihoods is in competition with high value resource areas in contrast to successful community management of very degraded forests, which have been transferred from state to community management (ibid).

Another study from Nepal, conducted by Neupane (2003) however reveals that CFM does not guarantee equitable distribution of forest products between households. In the case of Nepal there is a lack in consideration of the natural economic differences (such as economic standing of a household due to cast) between households that are members of a CFM group and each household's dependence on the forest and its products. Community forestry is influenced by a larger social process that is required for community forestry to be equitable. Many of the equity problems can only be seen once a community forest project is started and the people have to work together and make decisions (ibid).

In the recent research carried out by Cronkelton et al. (2010) and similarily Bouda et al. (2009) both studies argue that the government benefits from CFM in the form of restructuring and management of the forest sector in order to obtain conservation and development goals. Ideally co-management enhances participatory decision making of local communities and brings local knowledge of the society and environment into decision making. Cronketon et al. (2010) believe that the distribution of local benefits from forest resources is more equitable and motivation for forest conservation is strengthened through CFM. It is common that rights are only partially given to local management associations and the state holds the ultimate decision making power. Previous attempts to exclude local communities from forests have not been successful. Decisions concerning CFM normally involve defining who is allowed to participate and how, which resources will be co-managed under which conditions, and finally who benefits and how. Therefore the pre-requisite for successful co-management includes a management organisation, which has an established management plan and is able to comply with technical standards. A major risk of a co-management agreement that the local communities may face is their responsibility of bearing all risks and a large portion of transaction costs. Often the state does not bear its responsibility in providing support to the communities to enforce their rights and fight against illegal logging and other unsustainable practices in the forests. The challenge remains for the benefits to outweigh the costs and regulations of community forestry (ibid)

The described concepts provide a basis for the investigation of the research questions. Previous studies on the drivers of deforestation and benefits of community forest management allow to reflect on the situation in the study area, whereas literature review on climate change and REDD give an understanding of the concepts and what could be expected in terms of REDD in the study area.

3 Methodology

The field research in Burkina Faso was conducted in order to obtain an understanding of the current governance structure and the role of forest in local livelihoods. The field data was collected from villages that have formed cooperatives to manage the Nazinon forest. The sample of analysis for this study is three villages: Bawiga, Gallo and Nadono (presented in detail in Chapter 4) located in the Ziro province, in the South-Centre of Burkina Faso. These three villages together with 22 other villages around the Nazinon forest form a Union of Forest Management Cooperatives (UGGF). Background information on local forest management was obtained through meetings with officials from the National Forest Department and the technical management of the forest. In order to be able to make a scientifical statement that meets the quality standards (quality of sampling decisions) based on the research result, it was important to carefully choose the case villages. The Forest Department provided guidance on the decision which villages to choose. According to the Director of Forests, Mr. Doulkom, the Nazinon forest could eventually be under the REDD mechanism as it is a Forest Management Unit (CAF, *chantier d'aménagement forestière*), with a long history in CFM and is considered to function rather well.

3.1 Qualitative research

In order to understand how the three chosen communities use and manage their forest resources, qualitative research methods were employed. The three villages in this case represent narratives that are limited locally, situationally and in time. It is useful to understand the social and environmental contexts of the villages instead of defining certain theories and testing them. As the research analyses knowledge and practise at a local level it is essential to apply a qualitative approach to the empirical study (Flick, 2006).

Qualitative research can combine different methods in one research such as analysis of texts and documents, participant observation and interviews. When comparing with quantitative research, the connection between theory and empirical results maybe more ambiguous in qualitative research, due to theory often being developed after data collection. Emphasising existing theories can limit the researcher's perception and receptivity toward the information from the field and the research may therefore lose the "discovery" part (Bryman, 2004; Flick, 2006). The aim of this study is not to test something that is already known, but rather to discover and develop new theories based on the empirical data.

Key features of qualitative research are the suitability of theories and methods for the research: the participants' perspectives and the diversity of participants; researcher's and the research's reflexivity; and the variety of methods used for the research. Qualitative research is appropriate for this research as the objects that are studied represent "their entirety in their everyday context" (Flick, 2006, 15), in other words representing interactions and practices of their everyday life. A rather similar study about decentralised forest management in the same geographical area conducted by Bouda et al. (2009) has provided a methodological example for this qualitative research on local forest governance. Bouda et al. (2009) have used qualitative research methods such as focus group discussions and interviews with key stakeholders in addition to rapid rural appraisal. However their research has mainly focused on interviews with higher level stakeholders such as state officals, UGGF representatives, village chiefs and some key local informatants from the GGFs and local communities.

Qualitative research methods focus on interpreting the social world by its participants leaving openness to the diversity of objects under study and the possibility to adapt to different situations on the field (Flick, 2006; Bryman, 2004). According to Flick (2006) qualitative research methods enable analysis of interrelations in a concrete context and explain in relation to it, allowing also the consideration of different viewpoints and practices due to the variety of research subjects (in this study later referred to as interviewees) and their perspectives and social backgrounds. In this study a diversity of participants and perspectives has been obtained by interviewing different social and ethnic groups in the villages; indigenous people and migrants, relatives to the chiefs of the villages as well as non-family members, as social status and ethnic background plays an important role in power relations and access to natural resources. Table 1 presents the breakdown of subjects according to ethnic background of the individual interviews. In addition two four-women focus groups were conducted in both Bawiga and Nadono; whereas in Bawiga a men's focus group consisting of five Gurunsi and seven Mossi was held; and in Nadono a men's focus group consisting solely of representatives of the Mossi tribe, due to most of the individual interviewees being Gurunsi. The breakdown corresponds to the proportions of each ethnic group in the three villages.

Table 1. Breakdown of ethnic background of interviewed individuals.

	BAWIGA	GALLO	NADONO
Mossi	7	7	4
Gurunsi	2	2	10
Peuhl	1	2	1
Bissa	0	1	0
Yadzé	0	1	0
Total	10	13	15

According to Flick (2006) the researcher's considerations of the actions of the subjects and the observations from the field, such as impressions, feelings etc. should be considered as data and be documented. The subjectivity between the research and the study subjects is a part of the research process. These aspects have been taken into consideration throughout the research process.

3.1.1 Research process

In contrast to quantitative research, which is in general a linear process, where a certain model or hypothesis is tested against empirical conditions, qualitative research prioritises data from the field study. The subjects of the study have been chosen due to their relevance in the research topic, not because they represent a statistically appropriate sample of a general population. Theoretical sampling implies defining the sample step-by-step and writing the theory. The focus is on interpretation of the data instead of how the data is collected. Analysis of the data will also define which data is integrated as the theory is normally developed after data analysis (Flick, 2006; Bryman, 2004). Therefore theoretical sampling is considered an appropriate research method for this research.

Figure 2 presents the qualitative research process where the research process starts by a formulation of the research questions that will guide the research and serve as a base for interview questions. Choosing the relevant sites and research subjects is the next step, followed by data collection, by the means of e.g. interviews and observation. The next phase is to interpret the data and develop theory. It is possible that no new theory emerges from the

findings, but it maybe possible to tie the findings to previous theory. These two steps are the core of qualitative research. Steps 5a and 5b may be necessary for example in the grounded theory framework, where there is interchange between the interpretation, theory development and data collection. Writing up research findings and making conclusions should convince the audience about the research and its significance (Bryman, 2004). The main steps of qualitative research can be divided in the following way:

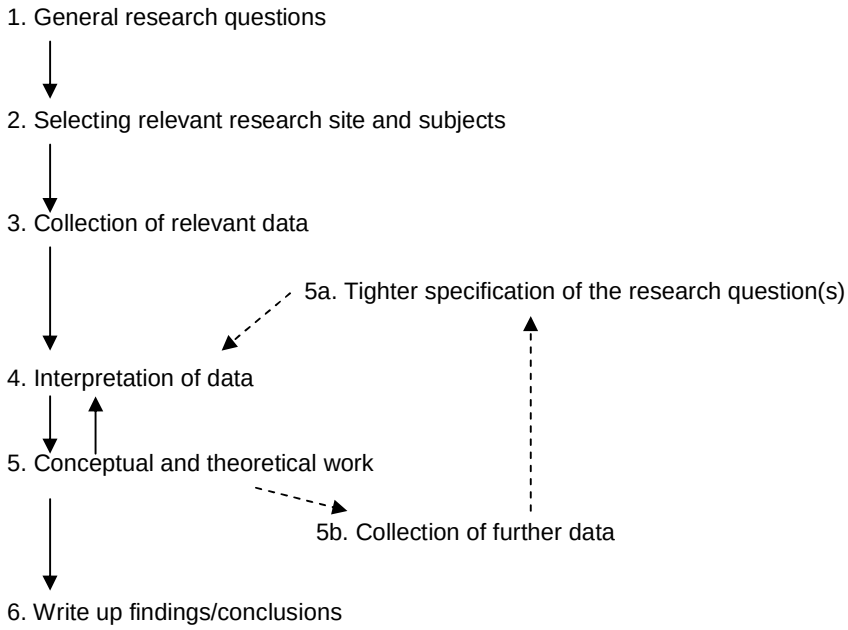

Figure 2. Main steps of qualitative research (Bryman, 2004)

This research used these steps as a guideline for the research process. However instead of developing the concepts and theory after data collection, the theory writing was commenced before the data collection due to time limitation and reliance on admission time of the study grant. A literature review prioir to data collection permitted better development of the aim of the research and the research questions. The conceptual and theoretical background was modified after data collection in order to support the findings from field research.

Concepts and how they are developed are important in qualitative research. Developing sensitising concepts which provide a general reference and direction in approaching empirical examples is considered more suitable for social research than definitive concepts that limit to defined indicators. Concepts should therefore provide a general sense to what to look for and as a way of uncovering other forms of the researched phenomena (Bryman, 2004). As the number of subjects interviewed increased, new information was revealed, which allowed to concentrate the interview questions to certain areas of interest with the following subjects and to obtain validation for information that was contradictory from previous subjects.

The unstructured approach of qualitative research and fairly general research questions, enable a relatively quick submersion of the research into the social and environmental settings in the villages. The rather general research focus in the beginning has been defined during the research process and after data collection. Qualitative research results are supported and complemented by quantitative empirical data concerning socio-economic factors of the

households studied, in order to have a comprehensive overview of impact of forests on the livelihoods in the villages.

3.1.2 Access to subjects

According to Bryman (2004) ethnographers rely a great deal on informants that often allow access to the research area/community and help throughout the research and provide support during field work. There is a risk of being reliant on key informants, as the researcher may see the society through the eyes of the informant instead of the members of the society. Many people may take the role of informants and are appreciated due to their spontaneity and naturalism. Key informants played an important role in this research, as they facilitated the search for relevant interviewees and helped in scheduling interviews, which made the data collection efficient. In order to not only rely on interviews organised by the key informants, we initiated interviews with both woodcutters and non-woodcutters when walking around in the villages.

3.1.3 Case study

This research is carried out as a case study in order to understand the current situation of local forest governance in a specific place. As the research is limited to three villages it presents the current situation in the villages and therefore the findings cannot be generalised to the whole country nor region for example. The individuals interviewed in this research each represent an individual case in their own right, but together they represent the village, contrasted against a general background within the field of forest management and climate change. According to Flick (2006) a case demonstrates an increased subjectivity gained from supplies of knowledge and specific ways of living, acting and perceiving. Case study research gives a description of a certain case, three villages in this research. It is essential to define which case is relevant for the research topic and what methodology is required (ibid). Jacobsen (2002) defines case study as a form of research where the research strives for a deeper understanding of a particular area, unit or subject and describes what is specific to this case.

3.1.4 Interviews

The main method of collecting empirical data in this research has been qualitative interviews. All in all 38 individual interviews were conducted in addition to two focus group discussions with men woodcutters and two focus group discussions with women who exploit NTFPs, in Bawiga and Nadono. The transcriptions of the interviews have been translated for the empirical study and due to the sensitive nature of some narratives the villages names are not always sited. The translation of the narratives entails only what is recorded and noted during the interviews. Figure 3. demonstrates the relationships between interpreting experience into constructions of the reality that are then again interpreted by others. Constructions are developed about the ones observed or studied as well as scientific constructions by the researcher while collecting and interpreting data and presenting the findings (Flick, 2006).

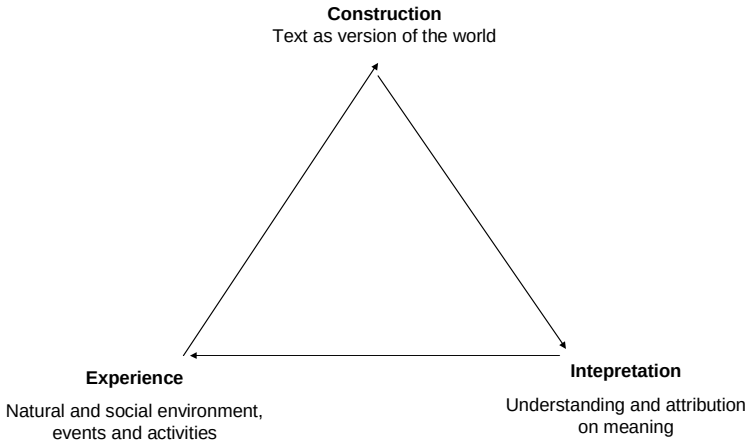

Figure 3. Understanding between construction and interpretation (adapted from Flick, 2006, 85).

According to Flick (2006) interviewing requires a decision on who to interview (case sampling) and which interviews should be transcribed and analysed. A sample structure was defined prior to the field study. The pre-determined group consisted of representatives (households) of the different social and ethnical groups in the village who were members of the village GGF. In each village a couple of non-members as well as women were interviewed in order to have a comprehensive picture of the forest related activities in the village and its governance in general. Also different members of the GGFs of different hieratical levels and responsibilities were interviewed in order to obtain a comprehensive understanding of how the forest is managed and how the members are organised.

Theoretical sampling allowed however to gradually define the sample during the research and choose the empirical material during the research process and data interpretation. This was appropriate for this research as new information was obtained during interviews, which guided further toward new subjects and sources of empirical material. According to theoretical sampling individuals and groups may be selected according to new insights into the theory. The aim was also to obtain the most significant insights based on what was collect and used so far. Limitation of the sample is nevertheless required and it should be based on theoretical criteria e.g. how relevant is the next sample in the development of the theory. The sampling was stopped when there was theoretical saturation, in other words when no additional data was found. At the end theoretical sampling a structural sample is obtained. Sample was not defined before data collection and analysis, but rather step by step along the research: a typical form of selecting material in qualitative research (Flick, 2006; Bryman, 2004).

The interview method used in this research was open interviews, following the guideline of semi-structured interview (see Appendix 1), in order to catch the subject's viewpoints, a very appropriate method for studying everyday knowledge. The subjects interviewed have a complex and large amount of knowledge of the topic studied, subjective theory. Open ended questions enable the subject to answer the question spontaneously and immediately. However

methodological aids are needed to support the interviewee to articulate the answers. Open ended questions are useful for this kind of research as they allow the researcher to treat openly the assumptions behind each question. The goal of interviews is to reveal knowledge in the form of answers that can be further interpreted and analysed. Semi-structured interviews give structure to the interview and allow focus on certain topics (Flick, 2006). Open-ended questions allow the researcher to sensitise the concepts instead of definitive concepts. Most importantly semi-structured questions allow a greater degree of flexibility to redirect the course of research according to the findings (Bryman, 2004).

3.1.5 Observation

Observation was the second method used in the research since it is a central method within qualitative research, permitting to discover how something exactly works. As a difference from interviews which demonstrate more how thing are and should be. All senses, hearing, seeing, smelling and feeling are a part of observation and provide additionally to speaking and listening used in interviews. In this research observation is conducted in a natural environment as a participant observer. Participant observation is the most common used method in qualitative research, combining analysis of documents, interviewing, direct participation and observation (Flick, 2006; Bryman, 2004). Descriptive observation provides an introductory view of the field studied and may develop the research questions and views, whereas focused observation focuses on processes and problems relevant to the research questions. Selective observation is carried out at the end of the data collection in order to find further evidence and examples of the practices found in earlier steps of the study (Flick, 2006). In addition theoretical sampling fits very well with the participant observation method. This procedure allows methodological flexibility and is appropriate for the objects studied. A major limitation on this method is that not all phenomena can be observed at a certain time (ibid). Observation is an important method for analysing the state of the forest, techniques used to cut the wood, working conditions and to understand the level of living in the villages as well as to validate information provided in interviews. New interview questions were also initiated from observation.

Observing as a research method requires a selection of the setting, in this case the villages and village forests as well as suitable observation times. It is also necessary to decide what is documented from the observation, by the means of selective observation to seize the essential aspects studied. Main problem in observation is defining the role of the observer without influencing the field and the behaviour of the subjects. According to Flick (2006, 217) “the easier the field is to overlook, the more difficult it is to participate in it without becoming a member”. Therefore interviews increase the clarity of the data collected.

3.2 Challenges

Avoiding influences from cultural and social background can be challenging, even impossible, despite methodological control. Research questions and hypotheses can be biased due to these factors in addition to analysis of the data and relations (Flick, 2006).

External reliability (possibility to replicate the study) is rather difficult to obtain in qualitative research as it is impossible to capture the same social setting and circumstances of the study. An internal reliability problem is a lesser challenge in this research as there is only one

researcher; however the assistant/interpreter's participation required a common agreement on what is heard. Considering internal liability, there should not be significant challenges as the theoretical ideas are developed based on the research. There should therefore be a high level of correspondence between the empirical and theoretical parts. External validity may however be a challenge as the research as qualitative research often is a case study with small samples and generalising the situation in the three villages may not be possible across all settings in the country (Bryman, 2004).

Credibility of the research can be increased by respondent validation, in order to receive confirmation that the researcher has understood the findings. Triangulation can also be used to increase the credibility of qualitative research. Triangulation refers to using multiple methods of investigation or sources of data in the study. For example interview questions can be checked against observations; as was done in this research. The quality of qualitative research can also be increased by dependability, which refers to auditing of the research process. Complete records of all phases of the research (problem formulation, field notes, interview transcripts etc.) are kept for peer auditing either during the research or at the end. This helps to justify the developed theory. To assure conformability and objectiveness, personal values of the researcher must not manifest significantly in the research process and the derived findings (Bryman, 2004).

There is the risk of overwhelming the reader with the amount of details and descriptions of the situations examined, often a risk with qualitative research. This is a risk because in order to understand the behaviour, values and the context in general, descriptive detail is important (Bryman, 2004).

Qualitative researcher may be influenced by his or her own characteristics such as age, gender and personality, and the interpretation of the open-ended question results is strongly influenced by subjectivity, this affects negatively the replicability of the research. In addition qualitative research is often criticised of lack of transparency of how people were chosen for the study or how the researcher arrived to the conclusions and how the data was analysed (Bryman, 2004). These challenges have been strived to be limited by staying objective during the interviews and while analysing the results. The research is made more transparent by clearly describing who was chosen to be interviewed and why.

Due to the restricted time and scope of this research, data collection is limited to three villages and the forest they manage and use. Therefore no nationwide generalisations can be made of the research results, although the research results may mirror the situation in many GGFs. The GGFs form the body that produces the wood to the capital Ouagadougou and the second largest city Bobo-Dioulasso in the CAF forests, which are normally located outside the two cities. The GGFs are linked to the fuel wood market by the merchants of wood who collect the wood in the forest and further sell to wholesalers in the cities. The market for fuel wood in Burkina Faso is a free market dominated by the merchants and wholesalers. Due to the limited scope of the research, focusing on local governance, no analysis is made of the wood fuel market and its implications on REDD.

Finally, some information may have been distorted due to translation to and from the local languages, Gurunsi and Mòoré, as many of the technical vocabulary does not exist in these languages. In order to avoid any misunderstandings the interview questions have been thoroughly discussed with the interpreter, who was well introduced to the study and its objectives.

4 Background for the empirical study

The purpose of the study was to identify local governance structures for equitable distribution of benefits from avoided deforestation and forest degradation, REDD by investigating local-level experiences and practises in the of governance and management of forest resources and the current governance structures. This chapter presents an introduction to the REDD initiatives and CFM in Burkina Faso as well as the field research in the Nazinon forest. The research background information is based on secondary sources; both existing documentation and interviews conducted with governmental officials.

4.1 Forest investment programme and REDD in Burkina Faso

In its confirmation of interest in participating in the Climate Investment Fund's Forest Investment programme, Burkina Faso's government expresses its ambitions under a REDD programme to conserve and increase existing carbon stocks by SFM and expand the potential of forests in reducing poverty. It reminds that approximately 90% of the population's livelihoods depend on forest resources and that natural resources will remain for a long time the centre of development for the rural populations. Burkina Faso's REDD strategy will include public and non-public stakeholder consultations and involvement. The government confirms that indigenous groups and people will have an active role as members of the steering committee in decision making in regards to the FIP and will participate at the grassroot level in the planning, monitoring, and evaluation of the relevant actions in order to ensure that their concerns are properly reflected and managed under their control. NGOs and the private sector operating in the field are an integral part of these steering committees, and their main interests and views would be considered in this context. The key focus areas of the strategy according to the CIF (2010, 2) are:

- Learning more about the status of forest resources, in order to make an ongoing assessment and adjustment of the exploitation measures adopted;
- Rehabilitation of classified forests, through registration, reforestation/restocking, surveillance of forest exploitation, ecological monitoring;
- **Creation of communal, community, and private forests through support of territorial collectivities and local communities**, encouragement and inclusion of the private sector in pursuit of sustainable exploitation, expansion of research on priority species and those that can best adapt to climate change, and improvement of the productivity of income-generating species;
- **Better management, aimed at forest conservation and rational development**;
- Promotion of alternative and renewable energy sources other than fossil fuels, in order to ease pressure on forest resources (biofuels, solar energy, etc.);
- Recovery of degraded land in order to improve farm productivity and combat desertification, by promoting the fixation of soil, dunes, and riverbanks and encouraging sustainable growing techniques (agro forestry, reduced consumption of chemical inputs, plant-pit (Zaï) system, anti-erosion diguettes, stone contour lines, etc.);
- **Control of bush fires to prevent forest degradation and further desertification through involvement and organisation of local residents**, promotion of mowing and conservation of animal feed, etc.
- Protection of riverbanks and lakes.

4.2 Legal framework for community forest management in Burkina Faso

Community forest management has been recognised by the state since the 1980s. Law n°006-97/ADP of January, 31, 1997 provides an administrative contract which permits village groups to participate in forest management. Also law n° 014-96/ADP of May 23, 1996, provides an institutional frame for the participation of villages in their own development. Article 223 of the General Code of Territorial Collectivities states that the Village Development Councils have the duty under the Municipal Council to contribute to the formulation and running of community plans for development as well as supporting local development. Despite the frameworks in place for community participation, there exist many limitations for communities, such as denial of certain rights, such law n° 014-96/ADP of May 23, 1996 where the state claims sole ownership of all land, while villages continue to refer to traditional customary land rights. The areas used by communities can be areas that are part of territorial collectivities rather than part of the state. These areas as well as areas owned by the state, can be part of a concession contract for the benefit of a village that has organised itself into an association or group in order to manage the forest in the form of a concessionary organisation (Kante, 2009).

Participatory forest management is also one of the articles in the national Forest Act. Participation and transferring responsibilities to the population in the formation, execution, monitoring and evaluation of forest related activities, especially in the form of decentralised management of natural resources is central to the Forest Act. Public forests are either classified or protected forests and are under the ownership of either the state or the decentralised territorial community (DTC). The current Forest Act determines the modalities of distribution of forests between the state and the DTCs. According to article 40 of the Forest Act the management of forests by DTC is guaranteed by a management structure that is based on partnership. The creation of these structures is realised by a decree of the competent authority of the DTC. Forest management is conducted according to the forest management plans. These management plans are elaborated by the forest service or under their control. The plans are approved by the decree of the Minister in charge of forests, regarding state forests and by decree of the competent authority of the DTC regarding forests managed by DTCs. Use of the forest for household purposes is under the traditional user rights of collection and gathering of NTFP and dry wood.

The current Forest Act, adopted in 1997 distinguishes three categories for forests: public, private and community forests. All forest land is owned by the state however communities and private persons have user rights. Public and community forests are either classified or protected. User rights in classified forests are restricted to collection of fuel wood from the ground and NTFPs. Commercial exploitation is permitted in both types of forests, however special restrictions apply to classified forests. In protected areas local communities are allowed to farm, graze and collect NTFPs. Management associations formed by members of local forest communities, are created in protected forest areas to attend forest management matters. In classified forest it is normally private operators that manage the forest (Brännlund et al., 2009).

In classified forests the traditional user rights are recognised for the profit of the neighbouring communities; this concerns the collection of dry wood, fruit and collection of medicinal plants. Whereas in the protected forest, the traditional user rights recognised for the benefit of neighbouring communities concern cultivation, grazing and collection of forest products. All

the traditional user rights can be authorised for every forest by the forest management plan applied to that forest. However the practise of traditional rights is limited to the satisfaction of personal needs of individuals and families. It is free of charge and without permit while respecting existing regulation. All commercial use of forests is subject to taxes and licences. The forests can be exploited either directly by the owners or non-owners conform to the administrative authorisation or contract in place.

There exist various initiatives for decentralised management of natural resources in Burkina Faso. The Government of Burkina Faso has initiated a national programme for Natural Ecosystem Management (PRONAGEN) as part of the Policy for Decentralised Development. The implementing party of PRONAGEN is called PAGEN (Partnership of Improved Management of Natural Ecosystem) also implementing Burkina Faso's Community Based Rural Development Program. Also the World Bank's Global Environment Facility (GEF) project assists in conserving protected forests in Burkina Faso. Brännlund et al. (2009) see community involvement in forest management important in Burkina Faso as the forests are owned by the state and communities and individuals rely a great deal on the use of forest products. The property regime for forests in Burkina Faso can be considered as a common property resource and based on their research in the National Park Kaboré-Tambi, Brännlund et al. (2009) see community management as an effective tool for managing forests, by the means of tree planting, controlling bush fires, and bordering protected forests. Participatory management provides individuals with additional activities such as training in soil and water conservation, installation of improved cooking stoves, and forest management. Forest surveillance including forest monitoring of bushfires and illegal use of the forest are seen as important activities in terms of forest conservation and protection (ibid).

4.3 Field research

Qualitative field research in the form of interviews, focus group discussion and observation was conducted in order to answer the research questions. The field research started in the beginning of May 2010 in Ouagadougou, the capital of Burkina Faso, by meeting representatives from the National Direction for Nature Conservation (DNCN) and the National Forest Department. Discussions with different representatives gave an understanding of the background to CFM in Burkina Faso and current forest governance issues including REDD.

The National Forest Department's interest in REDD was initiated at COP15 in Copenhagen in December 2009. Currently they see a need to better understand the mechanism and increase the capacity and knowhow of forest technicians, in order for them to fully understand REDD and the possibilities it offers at national and local level. Understanding the realities of the terrain and the effects on different actors is necessary for the state before moving ahead with REDD. How to translate governance on to the terrain under a REDD mechanism is crucial as well as how benefits can be shared throughout the supply chain. In Burkina Faso there exist large scale forest projects such as the Forest Management Units (CAFs) for managing vast forest areas. These areas could be made use of under REDD. The state is also interested in transferring the pressure off the natural forests and artificially establishing forests that are managed by villages by their own means. These artificial forests could form national networks that are organised at communal level. The government considers that more work is needed in conserving natural forests. Currently investments are made in Eucalyptus and Neem plantations (pers.comm. Doulkom, 2010).

In order to geographically define the field research area, possible REDD areas in Burkina Faso were discussed with representatives from the Forest Department, who considered the Nazinon forest a potential REDD forest and suitable for the research due to its long history in community management and an established management structure that was considered to function rather well. Another criterion was the forest's proximity to the capital which allowed easy and rather fast access to the villages surrounding the forest. An informal discussion with Mr Kaboré from the DNCN, one of the founders of the decentralised forest management project in Nazinon, provided background information about the forest and its management history. The Technical Director of the Nazinon forest, Mr Dango advised on which villages to choose for the research. Bawiga, Gallo and Nadono were chosen as they all belong to the Nazinon CAF and are rather close to each other. Due to the geographical location, all three villages are Gurunsi villages with similar economic activity and ethnic representation although Gallo, located on the main road to Léo has a more diversified economy and more ethnic groups (a Mossi majority). Bawiga, located approximately 5 km from the main road and Nadono, 10 km from the main road to Léo are more similar, though Bawiga is visibly poorer than Nadono. All villages have a similar structures and governance systems, with customary chiefs. The main comparative points are presented in Table 2 below.

Table 2. Main comparative points for the studied villages

	Bawiga	**Gallo**	**Nadono**
GGF area (ha)*	2110	4117	2779
Wood production*	1681	3282****	1822
Population**	2929	2215***	2129
Ethnic groups	Gurunsi Mossi Peul	Gurunsi Mossi (majority) Peul Bissa Yadzé	Gurunsi Mossi Peul
Distance from main road	5km	0km	10km

* FAO (1997)
** Estimation based on a 4,9% early population increase. Initial figures from populations census made in 1985 by I.N.S.D (Ouedraogo, 1997)
***According to village chief approximately 2000 inhabitants in 2009 population census.
****According to the President of Gallo's GGF in good years the production can reach 2500m³, while in bad years it is around 1000m³.

There are several reasons why the Nazinon forest is an interesting area of research for this study:

- a potential REDD forest
- long history of community forest management as it was one of the first State owned classified forests transferred to local community management
- part of a project to combat unlimited woodcutting and to supply fuel wood to the capital
- proximity to the capital which creates pressure on the forest

Various methods were used to find appropriate subjects for the study. The coordinator (*animateur*) of the Nazinon forest, Mr Nama, was a key informant facilitating the access to the villages by introducing me and my interpreter to village chiefs and members of the GGF offices, who then introduced us to woodcutters and other village habitants that were considered relevant for the study. Further on the different informants in the villages organised interviews with subjects with different profiles according to our request. In addition we walked in the villages and interviewed independently subjects in order to have some randomly chosen subjects to check if the responses to the questionnaire (Appendix 1) were in

line with the responses of subjects provided by the different informants. A few woodcutters asked to be interviewed after hearing of our presence in the villages.

The questionnaire in Appendix 1 was used for all individual interviews, however questions concerning agricultural production and land ownership were dropped at the end of the interviewing process as the responses became identical to previous subjects and the land ownership according to customary rights became clear and coherent in all villages. In addition question 9 concerning payments was dropped once a repetition of the answers to the question was perceived. Question 19 about sanctions for illegal activity and half of question 24 concerning change in income from the forest were also dropped due to saturation in responses in an early stage of the field data collection.

Questions for men's focus group discussions (Appendix 2), were chosen based on the answers to individual interview questions in the two villages where focus groups were organised. The focus group questions reflect topics that required an open discussion setting in order to validate the perceptions from individual interviews and to discover possible additional information to complex and diverse answers concerning the relationship between the GGFs and the UGGF. The focus group in Bawiga included both members that had been individually interviewed and members that had not been interviewed. In Nadono the focus group included solely Mossi woodcutters as the informants in the villages tended to organise interviews only with Gurunsi woodcutters. Women's focus groups were organised in Bawiga and Nadono in order to understand what role the Nazinon forest plays in women's' livelihoods and how they are organised for forest activities. The guideline questions for the women's focus groups reflect these topics and can be found in Appendix 3.

4.4 Nazinon forest management unit

The Nazinon forest if located 70 km south from the capital Ouagadougou in the province of Ziro (Sissili according to FAO). The geographical delimitations of the forest are: 11° 30' and 11° 51' of northern latitude, and 1° 27' and 1° 50' of western longitude. The area of the forest is 32 000 ha, but only 23 700 ha for the forest management unit (CAF).The annual rainfall is approximately 800mm and is concentrated in the period from the beginning of June to end of September. A large partially permanent river, Nazinon provides a hydrographic network in the area. Vegetation in the Nazinon forest is mainly forest savannah including tree species such as *Butyrospermum paradoxum Detarium microcarpum, Acacia spp., Lannea spp. and Combretum spp.* More dense forest areas include also *Afzelia africana, Khaya senegalensis and Pterocarpus erinaceus* (FAO, 1997).

The state Forest Service took the initiative in 1985 to decentralise the management of the forest and proposed to the surrounding villages to participate in a community forest management project, PNUD/FAO/BKF/85/011, financed by UNDP in cooperation with FAO aiming at supplying Ouagadougou with fuel wood. The Nazinon CAF became a protected forest where commercialisation of wood is allowed with the state authorisation, while other activities may be freely exercised. The project commenced in 1985, with 24 villages participating in the project (FAO, 1997).

4.5 Organisation of community forest management in Nazinon

Nowadays there are 25 villages which form 25 GGFs, which together form one Union of GGFs (UGGF) for the Nazinon forest (pers.comm., Kaboré, 2010). The initial project period ended in 1995 in Nazinon, when the UGGF took over the management of the forest in joint-management with the Regional Direction of forests. In 2002 the management was completely handed over to the UGGF by a concession contract (pers.comm., Dango, 2010). The Nazinon project had a 4-year start up period in order to put into place a management model. During the first 2 years the funds were managed by the project, whilst during the third and fourth year the forest and funds were co-managed by the project and the UGGF and the fund was completely handed over to the GGFs. After the fourth year the Union signed a management contract with the state and a Management Plan was adopted. The Union is represented by the President of the Union, Mr Poko, who is also the President of the National Federation of the UGGFs, which is the network off all the UGGFs, throughout Burkina Faso. The UGGF is both the technical and contractual link between the GGFs and the State (pers.comm., Kaboré, 2010). Figure 5. illustrates the different organisational bodies of the Nazinon CAF .

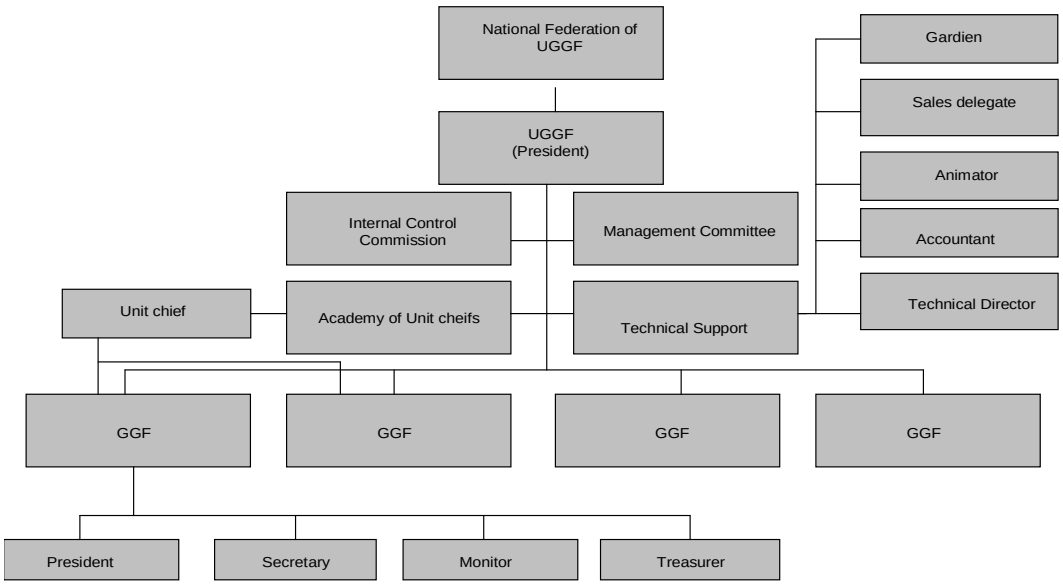

Figure 5. Organisational chart of the Nazinon CAF (adapted from Bouda et al. 2009)

Participation is entirely voluntary, and is under Law n°006/97 ADP of January 31, 1997. Each GGF has a unit that is divided into annually cut plots. The rotation period in Nazinon is 20 years, covering 20 plots. Up to two or three villages can share one unit (pers.comm., Kaboré, 2010). In total there are 8 management units, and for examples 2-3 villages can decide on a unit chief. In total there are 830 members in the Nazinon CAF (pers.comm., Dango, 2010).

4.5.1 Organisation of work

Members of the GGFs are trained by their Monitor in direct seeding. The UGGF organises trainings for the Monitor, Coordinator and the Accountant of each GGF. Many of the GGF have also received training in adult literacy. It is the Monitor's responsibility to further train the members of his GGF (pers.comm. Dango, 2010). The Monitor is also responsible for ensuring that the technical measures are followed. He marks the trees to be cut and the chief of unit monitors the work. Once a week a surveillance tour is carried out on the GGF's unit. On every last Friday of the month there is a Board of Director's meeting where an assessment of the different activities in the forest are made for the past month and decisions on sanctions for possible illegal activity are delivered. Sanctions vary between a warning, a fee, exclusion from the GGF (which is considered rare), and imprisonment. If immediate intervention is required earlier than at the end of the month, action can be taken immediately. There also exists a group of people called the "Green Brigade" which consists mostly of breeders who indicate the starting places of bushfires for example. However nowadays this responsibility has mostly been taken over by the unit chiefs (pers.comm. Zane, 2010)**.**

4.6 Rules and regulation

Each unit manages 2000-4000 ha of forest, which are divided into 20 plots cut in a rotation of 20 years; one plot per year. According to FAO (1997) the 20-year rotation was decided upon with very little knowledge and information on regeneration of trees in the area and on droughts and the standing volumes of the trees. No more than 50% of each plot can be cut and cutting is to be conducted according to certain criteria. The plots are to be reforested by direct seeding during the rain period between June and August. Forest is cut between January 1 and March 31, and fires are made from December onward on plots that have not been seeded (pers.comm., Dango, 2010).

Monitoring and control is normally under the responsibility of the State Forest Department which is under the Ministry of Water and Forests (*Direction General des Eaux et Forets*). However the Forest Department lacks the means to conduct efficient control over forests. Support to the GGFs is provided by a State Forester and the Technical Director, who is recruited by the State, but paid by the UGGF. The transfer of the management of the forest is under a technical agreement (*Cahier de Charges*), which is signed by the State and the UGGF. It is the Forest Department's responsibility to ensure that the management plan and the technical agreement are followed. In addition the State has the overall responsibility of the technical support to the GGFs.

4.7 Source of funding for forest management and local development

The UGGF is responsible for the management of the forest management fund (FMF) which finances for example the salaries of the Technical Direction and direct seeding. The accountant of the UGGF is responsible for deposits and making payments. The cheques are signed by the Technical Director, Accountant and Treasurer. However the account is controlled by the Regional Direction, who represents the State (pers.comm, Poko, 2010). According to Mr Bayala, (pers. Comm. 2010), the Provincial Director of Forests, the FMF

finances the protection and restoration of the forest, such as the firewalls and direct seeding as well as road maintenance. However the UGGF does not have total responsibility for the FMF. The Union manages the accounts and finances different programmes for technical activities. In addition some technical activities are financed by the State. The accounts are audited every trimester by the control commission which is an internal organ of the CAF.

The official payments for one m^3 of wood are as follows:

300 FCFA[2]	taxes
600 FCFA	forest management fund (union)
200 FCFA	village development fund (management and use by the GGF)
1100 FCFA	Total costs paid by the merchant at the post of the Union's sales delegate.

The woodcutter receives 1100 FCFA for each m^3 of wood. In total the cost of one m^3 of wood is 2200 FCFA. According to Kaboré (pers.comm., 2010) no audits are made for neither one the funds. There is no annual external audit of the UGGF's forest management fund According to Bayala (pers. comm., 2010), 50 FCFA of the 200 FCFA of the VDF is given to the UGGF to cover management costs such as transportation to meetings and the Presidents of the different GGFs and the accountants have access to the VDF in addition to the UGGF's sales delegate.

At the end of every year the UGGF organises a General Meeting, in which the UGGF, Treasurer, the Technical Direction and three members of each GGF conclude the activities of the past year, the accounts, and decide on the activities for the coming year as well as a budget (pers.comm., Poko, 2010).

According to the Technical Director, Mr Dango (2010), the decisions concerning the use of the village development fund (VDF) are made in consensus by the members of the GGF. The President of the GGF and the Treasurer are responsible for the account and it's book-keeping. In general the VDF finances investments that are for common purposes, such as wells, schools, mosques etc. In the beginning of the Nazinon project loans were given to members, but due to non-payment, this has ended. Some GGFs which have had positive experiences with loans and have members that enjoy trust, continue providing loans. Many GGFs donate money to members who are in need or for village sacrifices.

4.8 Current challenges

Several dysfunctions have been observed in the Nazinon forest. For instance the traders and transporters of wood pressure woodcutters to infringe the regulation by cutting more wood than allowed. According to the Management Plan a variety of species should be cut, however certain species are more valuable for the merchants and are subject to a higher demand on the fuel wood market. Consequently the merchants pressure woodcutters to cut excessively these species such as the *Detarium microcarpum*. This means that the cutting order, according to the Management Plan is not respected. On the whole a lack of respect toward the forest regulation has been observed according to Kaboré (pers. Comm., 2010). Secondly there is

[2] FCFA stands for the local currency: *Franc Communauté Financière Africaine,* also known as *Franc de colonies françaises d'Afrique.*

dysfunction in the fuel wood market. The wood merchants have existed since the colonial period. There are old families with a long history of power in the wood supply chain. As the GGF are still young cooperatives they are in a much weaker position compared to the merchants. Many woodcutters sell their wood directly to the merchants in the forest without going through the sales delegates post. This means that the FMF does not function properly, the VDF does not receive provisions and taxes are not paid. However the woodcutters receive a better price for the truck load of wood. Due to their bargaining power the merchants also ask for more m^3 of wood than the official 20 m^3 per truck. It is not unusual that the merchants take an undefined amount of wood for the price of a 20 m^3 truck.

According to Bayala, the Regional Director of Forests (pers.comm., 2010) the main difficulty in forest management in the region is the pressure from agricultural expansion and especially the phenomena of village chief selling land to agro-businessmen. Bayala (2010) emphasises the need for people understand the importance of natural resources for their own wellbeing and stop selling land. The participation of the local population is crucial for the conservation of forests and they should have a financial interest in forest conservation. Currently the only natural forests that remain are the CAFs. Sometimes bandits sell units of the CAFs. The Forest Department has had to increase control due to illegal selling of forests. The Technical Direction is also currently sensitising local population to respect the forest Management Plans. The state is involved in the management of the community managed forests by providing technical support through the UGGF's Technical Direction, tax collection (300/ FCFA m^3), and the protection of the units. If the GGFs do not respect the management plan they receive a warning or a fine. The Union is built up of the GGFs and therefore represents the GGFs.

4.9 Traditional land tenure

In Burkina Faso, the state is the sole official owner of land. However customary land tenure is practised parallel to the legal system. According to the interviews with village chiefs and woodcutters in each village there is a chief of land, who is a customary chief. He is the guardian of the spirit of the land and gives land to the people in his village for living and cultivation. According to the customary land tenure the person who is given land by the chief of land becomes the owner of the land as long as he respects three rules:

1) no stealing
2) no adultery
3) no fighting or creation of disorder in the village

The autochthones have the right to choose their land area. The people in villages do not have the right to sell land; they only have the right to use it.

5 The empirical study

This chapter presents the findings from interviews conducted with governmental official, members from the three GGFs and the focus group discussions. It embodies the perception of local community forest management and the benefits and difficulties encountered at local level.

5.1 Case study villages

5.1.1 Bawiga

Bawiga is a Gurunsi village consisting of approximately 3000 inhabitants. The village is divided into sectors according to ethnic group: 3 Mossi, 3 Peul and 2 Gurunsi areas. Agricultural production is dominated by the cultivation of white and red sorghum, peanuts and maize. The village chief, Mr Koussé Baignan is a Gurunsi. His ancestors left the village of Doulougo (a Mossi area), due to a conflict of chefferie between two brothers. The younger brother left with the village fetish and came over the Nazinon River. He arrived in Bawiga village on the early morning of a December day and called the village Bawiga, which means the sun. The chief's family still has roots in Doulougo and they return there for funerals and other important ceremonies. The chief is responsible for looking over the well-being of the inhabitants and solving problems in the village and in households.

Bawiga share its forest unit with the villages Wayalghin and Yirsé. The unit covers 2110 hectares of forest with an annual production of 1681 m³ (FAO, 1997). The GGF has a field of 2 hectares, where they produce peanuts, beans and maize. The production is sold to supply the village development fund. The field is managed by the women who collect firewood. They are around 20 women in total.

Picture 1. Woodcutters in Bawiga

Bawiga can be considered as the poorest of the three villages studied, based on the amount of cultivated hectares per woodcutter, the m³ of fuel wood produced and observations of the livelihoods in the village. The average amount of hectares was four and amount of wood 76 m³ per year on average for a woodcutter. The amount of m³ cut per year varied between 60 and 100. The average age of interviewee was 42 years, youngest respondent being 30 years old and oldest 62. Nine individual interviews were conducted, with 7 members of the GGF and two non members. The individual interviews were supported by one focus group consisting of 12 men and another focus group of 4 women.

5.1.2 Gallo

Gallo is a Gurunsi village located on a main road to Léo. The village is divided into five sectors, of which four are shared by the Gurunsi, Mossi, Bissa and Yadzé ethnic groups. The fifth sector is for the Peuls (livestock-breeders, originally nomads). According to the population census from 2009 the village consisted of 136 households, accounting for approximately 2000 inhabitants. The main activities in the village are agriculture and forest exploitation, which is considered a complement to income from agriculture. Both activities are considered equally important as they are complementary. The main agricultural activities are the cultivation of 1) red and white sorghum 2) small millet, and 3) maize. Maize is a new cultivation taken in 2009. It has not shown expected results and will probably be abandoned. Maize was taken to replace cotton, which was abandoned due to poor quality of the soil.

The ancestors of the village were descendants of the royal family, of the Mossi Kingdom of Naba Bao. They came to Gallo from Doulou due to a conflict in the family. The different ethnic groups are mixed in the villages, except for the Peuls who stay on the outskirts of the village due to their animals. Three of the main families: Gurunsi, Mossi and Peul have representatives.

The five ethnic groups in the village are divided as following:

1) Gurunsi, the autochthones, 32 persons (2 households)
2) Mossi, the majority group, 1000 persons
3) Peul, 70 persons
4) Yadzé, 13 persons, the Yadzé belong to the Mossi group, but prefer to not be assimilated with the Mossi
5) Bissa, 36 persons

Gallo shares its unit with two other villages. The unit is 4117 ha and the annual production of wood 3282 m³ (FAO, 1997). Gallo is the main village for the circulation of wood and money for the Nazinon forest. All the trucks transporting wood from the Nazinon forest stop in Gallo to pay for the wood as the union's sales delegate (*commis de commercialisation*) is located in Gallo. Gallo is a Mossi dominated village, therefore the majority of the interviewees were Mossi (7), in addition two Gurunsi, one Bissa, one yadzé and two Peul as well as the village chief who is a Gurunsi. All in all 9 members of the GGF were interviewed in addition to 3 non-members (the Peuls and one Mossi). The average age of interviewees is 53 years, varying between 42 and 60 years. Household size is rather large 12 people and on average a woodcutter cultivates 4,4 hectares of land. The average production on wood per person in also rather high, 93 m³, varying between 30 and 130 m³.

5.1 3 Nadono

Nadono is also a Gurunsi village, located approximately 10 km from the main road. The inhabitants of Nadono are from three ethnic groups: Gurunsi, Mossi and Peul, which are mixed in the seven sectors of the village. The ancestors of the village chief, Mr Bouma Neya, came from Ghana. Two sons came to the area to hunt and found that the area was abundant in game and decided to stay. They named the village Nadono, which in nuni language means lengthlyness. The main activity in Nadono is agriculture, with the production of white and red sorghum and maize. The average size of cultivated land per woodcutter is 5 hectares; highest of the three villages.

Nadono shares its forest unit, 2779 ha, (FAO, 1997) with the villages Kono and Bon. Woodcutting in also an important economic activity in the village, accounting for 114 m^3 per woodcutter on average. The amount of wood cut varies between 50 and 170 m^3 per woodcutter per year, also the highest in the three villages. In addition the members were slightly younger on average, 41 years. The youngest member, also the President of the GGF, is only 24 years old.

The majority of interviewees in Nadono were Gurunsi (9), two Mossi woodcutters were individually interviewed in addition to a men's focus group consisting of 7 Mossi woodcutters. The non-member interviewees were the village chief who is a Gurunsi, one Peul and two Mossi. Additionally 5 women were interviewed in one focus group of 4 women and one woman individually. The women's focus group questions (Appendix 3) concerned their activities in the forest and the organisation of women in the village.

5.2 Observations in Nazinon forest

During a walk on Gallo's forest unit, the annually cut plots were very visible when comparing the plot that had been cut the current year and the opposite plot that was to be cut the coming year. On a recently cut plot an area with an approximate side length of 15 meters was chosen for more detailed observation. It was obvious that the rule of leaving 50% of cutting standard size trees had not been respected. Only one sixth of the trees were left on the plot, where we could see 5 nearly full size trees and 26 stumps that had started to regenerate. The plot that is to be cut next year, after 20 years of rotation, contained mainly trees that did not meet the cutting size requirement.

This means that the woodcutters will have to cut trees that are too small, and therefore will have to cut more trees in order to fill the trucks and sustain their level of revenue. Illegal cutting could be seen on both plots. An entirely protected species, the shea had been cut on the newly cut plot and on the older plot some trees had been cut probably the previous year; based on the coppicing. In general felling of shea could be observed in all three villages. Loss of soil fertility was visible on the nearly clear cut, recently cut plot.

5.3 Forests and livelihoods

The GGFs consider the Nazinon forest state property; the GGFs only manage and use the forest. Forest is an important source of income during the dry period when there are no other income generating activities. Agriculture is the most important activity in all three villages,

but woodcutting generates more cash revenue, therefore agriculture and woodcutting are seen as complementary activities.

"Agricultural production does not meet the needs of my household. The quality of the soil is degrading. I cut the forest during the dry season because there is no other activity to gain income. If I did not have to cut the forest I would not."
(Koudubila Nikiema from Gallo)

Woodcutting generates significant revenue for the community and allows it to meet different individual needs that agricultural production cannot cover. As woodcutting provides cash income, the money gained is used mainly for subsistence necessities such as heathcare and to complement food supplies when agricultural production is insufficient. Income from woodcutting contributes also to solving different daily problems requiring cash, to cover travel expenses, to buy clothes and for traditional ceremonies and offerings. In addition income from woodcutting is an important source for productive investments; a few woodcutters have invested in commercial activities, many in buying farm animals (cows, goats and donkeys). Some interviewees had bought a mobilette or a motorcycle. Long-term investments are an alternative to the decreased agricultural productivity which is due to land degradation and decreased rainfall. On the whole the entire household benefits from income from woodcutting. The majority of woodcutters consult their family members on how to use the income and often college education of children is financed with income from woodcutting. In Nadono woodcutting income is considered an important source for financing pre-natal care for pregnant women.

Being a member of the GGF is also described as health insurance by many woodcutters. Thanks to the VDF the woodcutters may take loans to take care of illness. It may occur that during the rain season, the only period for agricultural production, a woodcutter falls ill and is not able to cultivate his land, but he has been able to cut wood during the dry season. From woodcutting he has cash to buy food that he was not able to produce due to his illness. If the woodcutters were not able to cut wood it would be a catastrophe as it is a very important generator of income - as long as there are no other dry season activities.

Despite forest exploitation providing significant benefits for the woodcutters, there are many difficulties, such as health problems due to the physical nature of the work. People are scared of the future; of falling ill and not being able to cut during the short cutting period. The elder woodcutters have a tendency to convert to livestock-breeding once they are physically too weak to continue woodcutting, and if they have managed to buy animals during the cutting period. Every woodcutter would prefer to only concentrate on agriculture and expand agricultural production if possible. However agricultural production stays limited due to the lack of water.

Another forest exploitation activity, although very limited (two interviewees in the three villages), is the production of charcoal. One interviewee reported producing 70-200 bags a year. Charcoal production is only rarely engaged in, not least because of transportation problems; the charcoal bags have to be transported on a bicycle. The production of charcoal from Nazinon goes to wholesalers who supply Ouagadougou. Charcoal production is not a lucrative activity; it is very laborious and provides less income than woodcutting. In general the financial benefits from cutting wood are significant. However the woodcutting occupation is degrading. According to a woodcutter "you are not considered as someone important in the society even though you make a better living then someone else, such as the person who

keeps a café". In general the woodcutters would prefer not to cut wood, and rather concentrate on agricultural and livestock-breeding activities.

5.4 Organisation in GGF

Each village has a GGF office consisting of a President, Secretary and Treasurer, sometimes also of a Vice-President. The GGF can contribute to solving problems concerning the whole village. In some instances the village chief may ask the President of the GGF to help in finding a solution to a problem. According to the President of Bawiga's GGF the organisational cart of the group should be seen as a family. The President is the head of the family and the members are family members. The head of the family is responsible for managing the family as a good father or a mother. When there is a problem he makes the decision for the benefit of the family by bringing together the family members and consulting them. A hierarchy of responsibilities is respected; a member cannot interfere with management tasks and responsibilities, however the decisions are made in a democratic manner in all villages.

5.4.1 Democratic decision making

Being a member of a GGF allows the woodcutters to participate in decision making. Everyone has the opportunity to express their opinion in meetings and those who are not present are informed in the best possible manner. The yearly general meetings allow the exchange of opinions and problems between the villages that form the Nazinon UGGF.

The GGF office does not have the power to make decisions on its own and it cannot withdraw money from the VDF without the approval of the members. In order to take out money the office must convene all members and discuss the problem and financially evaluate it in order to see if the cooperative has the financial capability for a contribution. Minutes are written of the outcome of the meeting and an estimate is made. Two people are delegated to withdraw money at the post of the UGGF's sales delegate. In Bawiga and Nadono the general opinion is that the activities and responsibilities of the GGFs are conducted in an equitable way and in complete transparency, however opinions vary in Gallo.

There is no formal communication of the activities of the UGGF or the GGFs. Normally information is received word to mouth from others members. The Presidents of the GGFs and the Unit Chiefs are responsible for informing about GGF meetings (in general 10 days in advance) and the periods for different forest management activities to be conducted in the forest.

5.4.2 Organised collective activity

In general, each woodcutter cuts independently, nevertheless sometimes they may partner with other members or ask family members to help. Non-members may ask to participate in woodcutting if they are in need of cash. In each case everyone receives their payment individually. There are no employment relationships in the woodcutting activity. The GGFs may have additional collective activities. For example in Bawiga the GGF has a two hectare field for beans, maize and peanuts production. The field is cultivated by women, who cut

firewood. They are approximately 20. The production from the field is sold to finance the VDF. In Gallo, millet and red and white sorghum are cultivated on the GGF's common field. There is also a 1,5 ha field for eucalyptus. All members of the GGF work on the field especially for the maintenance of the eucalyptus trees. The income from the production is for the support of all members and the cereals are distributed between the members' households during the dry season.

5.4.3 Responsibilities of GGFs

The GGFs are responsible for various activities in the forest. Members are well aware of how the forest unit is managed and what their responsibilities are. Each year a defined plot is cut in a selective manner. For example cutting is started with low value trees. In addition to dry wood the woodcutters cut green wood, which is cut according to a certain criteria. When a new member joins the group he receives training in woodcutting techniques, which allow the regeneration of trees. Correct cutting of the trees allows water to flow to the ground and to avoid rotting of the stumps. If the woodcutters succeed to finish cutting before the cutting period is over or if the quantity of trees on the plot is small, they may ask to cut on another plot (there maybe reserved areas that can be cut). After cutting, wood is collected into piles and the quantity is estimated before calling trucks to collect the wood. Once the wood has been taken out of the forest, in August, the woodcutters are given seeds to plant in the forest for reforestation of the area they have cut. Direct seeding is followed by a follow up on the amount of seeds that have successfully germinated. In general direct seeding is considered necessary and rather successful. When the woodcutters have finished seeding and the rain is decreasing or finished they cut the grass in the forest in order to avoid bushfires on the exploited plot. The woodcutters play an important role in the control of bushfires; in December they make a firewall around the forest, which is cultivated before burning.

The number of cubic meters of wood produced is calculated for the year. In January a meeting is organised to evaluate the production and income for the past year. After this meeting the woodcutters make rounds in the forest to detect any illegal activity before starting to cut on a new plot. Sometimes woodcutters participate in forest inventories conducted by the forest technicians from the regional office of the forest department located in Koudougou.

5.5 Membership

In general there is no discrimination for becoming a member of a GGF. Everyone who is available and capable of cutting wood can be involved in all the GGFs. The majority of the members in all three villages have been members since the beginning of the project. The most common reason for becoming a member is being part of a Union; it guarantees an income and access to credit. There exits a general understanding that collective action is more effective than individual action and the GGF is more influential when defending the woodcutters' interests.

In Bawiga and Nadono there is a considerable amount of young woodcutters, however in Gallo the average age is higher. In Gallo there was also some discontentment among the young people; their requests for membership had not been accepted. According to two young men interviewed in Gallo the age limit membership in the GGF is 35 years. In order to enter the GGF you must provide motivations for your application and enjoy the support of the UGGF. Currently only 2-3 young people are members of the GGF in Gallo. Once a year there

are discussions on the entry of new members. According to one of the woodcutters "membership depends on your social status - critical people are not accepted". The two interviewed people cut wood occasionally with the members of the GGF. They take over the cutting when the older members get tired. In Gallo the GGF has a common field and young men help with the cultivation when needed. They are paid with food. During the winter period the young men do not benefit from the distribution of the production from the field, unlike the members of the GGF.

When these two young non-members cut wood with the members they pay between 300 and 999 FCFA (all the coins below 1000 FCFA) per truck for the VDF. This money is collected by the UGGF's sales delegate. The money is used for buying the books for the different receipts and for surveillance.

Women are not members of the GGFs in any of the three villages. They have their own cooperatives for development and social cohesion. In Gallo and Bawiga women have formed cooperatives for very lucrative NTFP activities such as production of shea butter and soap.

5.6 Price of wood

The woodcutters receive payments for wood through both official and unofficial channels. Officially the payments are made in Gallo every Tuesday and Friday, unofficially the payment may be received in the forest. Receiving the payment in the forest is becoming common practise especially in Bawiga and Nadono. This form of payment guarantees the woodcutters direct compensation as the trucks often get stuck in mud on their way to Gallo, which means that the woodcutters have to wait for payment. The woodcutter negotiates with the truck driver for the price of one truck of wood, in general a truck of 20 m^3 is paid at 35 000 FCFA (1750 FCFA m^3), some woodcutters receive even 40 000 FCFA when no receipt is provided, however the truck is overloaded consisting of approximately 30-40 m^3. The woodcutter negotiates the price for the overload. The overload is not declared and no charges are paid on it, therefore the price of the truck is significantly higher. If the whole payment is collect in Gallo the woodcutter is paid 22 000 FCFA for a truck of 20 m^3 (1100 FCFA/m^3), the official price. Only the surplus is paid in the forest. Nowadays the limits of a cubic meter are no longer respected. The cubic meters are in practice always larger than the standard size.

In general the relationship between the truck drivers and woodcutter is good, like a partnership. When the truck drivers come to pick up the wood, the woodcutters state clearly their price. If the drivers accept the price they go together to pick up the wood. The price for the truck is always negotiated before the truck enters the forest. It happens that woodcutters have disagreements with the drivers about short wood (one m^3, when the most commonly cut length is 2m x 2m x2m). The drivers take the wood in rows according to the metal structure on the truck. One part of the structures is 7000 FCFA. Sometimes the drivers accept to take only a half a "range" at 3500 FCFA and the wood cutter is left with the remaining of wood. Sometimes the limits are arbitrary. The drivers take wood up to the 3rd level of the truck's structure and pay 5000 FCFA and there remains one empty "range" on the truck. Regularly the truck drivers take only half amounts but charge more - the woodcutters come out as losers each time.

Picture 2. Truck drivers and woodcutters in Gallo repairing an overloaded truck.

5.7 Rules and regulation

Before the woodcutter were not aware of different cutting techniques and cutting periods. They would clear forest for agricultural land by clear cutting the forest, including the Shea trees. Fire was used to clear areas and therefore there was no regeneration of the trees. The new knowledge the woodcutters have received has not only helped them regenerate the forest, but also conserve and regenerate trees on their farm land. In the beginning the management and cutting was well organised and the cutting techniques and rules were respected. Nowadays people do no longer respect the rules and cut even outside the defined plots and the forest. This decreases the forest cover and there is less wood to cut on the plots.

However, in all three villages the woodcutters are well aware of the rules and regulations concerning the community forest. In each village there are from 2 to 4 people who make surveillance rounds in the forest to monitor any illegal activity. The chief of the unit is responsible for formal surveillance. The people who monitor the forest are remunerated for tires for their motorcycles. In addition to formal surveillance, there exist traditional customary practices and rites for protecting the village forest. The village chief is responsible for the rites that ensure the protection of the forest by spirits. Under the customary rules, illegal activity is severely punished; for example if the person has conducted illegal practises and does not confess it, he may even die. According to the majority of the interviewees illegal activities in the forest are rare. However the observations in the forest (as described previously) show that not all the rules are respected.

At the moment of the interviews, it was forbidden to cut green wood and make fires in the forest. The most common illegal activity is uprooting of the trees and poaching. There are people that come from Ouagadougou to dig out roots of the trees for medicinal use. They may have authorisations, but the GGF can forbid the activity. Once a month unit chiefs gather in Gallo to make rounds in the forest. Independently from this, rounds are made by members of the GGFs to see if there are people cutting outside the defined zone. When illegal activity is

encountered the unit chief informs the Union, which then takes action. The sanctions depend on the attitude of the person and the gravity of the action. If he is cooperative, the issue can be dealt with on the spot (fine or confiscation of wood). If he resists he can be sent to the state forest officer. The most common sanction for illegal cutting of wood is confiscation and fines. The money from the confiscated wood goes into the VDF. The most severe sanction is imprisonment. The confiscation of wood has decreased illegal cutting. Many clandestine cutters do not go into the GGFs' forest to cut because of the distance and the meagre quantity of wood. They prefer to cut closer to the village where the forest is more abundant. Many of these clandestine cutters are members of GGFs. The member is allowed to remain a member in the GGF if he promises to respect the regulations. Normally the people that conduct illegal activity are new people, not many are recidivists.

5.7.1 Green Brigade

One member of the Green Brigade was found in Gallo. According to him the Green Brigade is an organisation of 75 villages, consisting of members from 4 provinces (Ziro, Nahouri, Bazega and Zoundwéogo). The brigade patrols for clandestine fires and illegal transporters of wood as well as animal that degrade the forest. The surveillance work is conducted in collaboration with the State Forest Service. Members of the brigade receive training in identification of different animal species in order to conduct also inventories of animals in the forests. The interviewee had attended a 4-day training in the bush, for registration of different animal species encountered in the forest and identification of animal footprints.

The members receive remuneration for data collection; 125 FCFA per animal of which 20 FCFA goes to the forester. For the interviewee, income from the Green Brigade represents 8000-8500 FCFA a year. When patrolling in the National Park Kaboré-Tambi, every 3 months he receives 18000 FCFA. He considers that the remuneration is not enough. Often he is urged to leave to the forest immediately for many days of monitoring, leaving behind his activities in the village. According to the interviewee the Green Brigade members are poorly paid by the state because they do not have an education for the job, although they do the job better then the forest services and they know their forests very well. In total there are 9 monitors from all the different villages.

5.8 Benefit sharing

The woodcutting activity creates benefits for the woodcutters, villages and the state. In addition to monetary benefits the woodcutters identified some non-monetary benefits they have obtained.

5.8.1 Village development fund

The villages benefit from a village development fund, officially called the working-capital fund. The village development funds have been used to build schools, and build and repair wells. The village development fund provides financial assistance in the form of loans to members in case of sickness or some other unexpected event that prevents the woodcutter from cutting wood. The payment made to this fund is between 500 and 1500 FCFA per truck of wood, most commonly cited amount was 1000 FCFA per truck (50 FCFA/m^3). In one village woodcutters said that only 10 FCFA per m^3 go into the village development fund.

Some say that this money is taken in the forest, others say in Gallo. The woodcutter receives a receipt for the wood that he provides to the truck driver. This receipt serves as the basis for the amount to be transferred into the village development fund.

The village development fund is an important resource for guaranteeing water in the village, as the wells are often broken. In the beginning of the cutting season the woodcutters may receive a loan to buy cutting equipment and to cover any running costs. The loan is deducted at the moment of payment for the wood. In the case of illness the woodcutters confer and withdraw money from the fund for the ill person. The money is reimbursed from the person's exploitation once he is capable of returning to work, however when there is famine and the woodcutter is not able to reimburse, the cooperative members discuss the situation and provide a donation if necessary. In general, everyone in the cooperative benefits from donations and loans when needed.

None of the three villages manage their village development fund. It is managed by the Union's sales delegate in Gallo. According to interviews the sales delegate has only access to the accounts, and the President of the UGGF and the Technical Director manage the money. In the beginning of the project each village had full control over the fund and the money was kept in the village. With time, keeping an increasingly large amount of money in the village became complicated and insecure and the money was transported to the Union. At this moment the GGFs lost control over the fund. No interviewee was able to say how much money was on their account and there was great confusion about the location of the account. In general no one has access to the bookkeeping in any of the villages. Some interviewees said that whenever they make a request for a loan they are told that there is no money. They ask themselves how one can know if there is money or not if one does not have access to the accounts. If you contradict "them", it means that you are wrong. During the past 30 years they have not seen any accounts or figures. At the meetings in the end of each year end nothing of the sort is discussed or presented. The woodcutters ask to see the accounts, but so far they have not had access to them. According to an interviewee the money is taken and managed in the name of the whole village, but no village can declare that the money is theirs. The fund is managed as a common fund for all the GGFs of Nazinon forest. When a GGF desires to obtain money from the village development fund they go to Gallo to make a request at the sales delegates office. The GGF delegates two people to collect the money. Often these people are the representatives of the GGF office: the President, Treasurer or Secretary.

Rumours say that money from this fund has been used for buying a car for the UGGF to support their work. However the car has been sold, but no one has been informed how the money from the sale of the car has been used. One source commented that the village development fund is no longer their preoccupation as the money is managed poorly; the most important for the woodcutters is to obtain the money from the wood they have cut.

In Bawiga the last significant investment made with the village development fund was in 1999 when they built the village school. No investments are made nowadays and the benefits are considered individual rather than collective. Before benefits were distributed at village level, even elderly people who were no longer capable of cutting wood benefited from the village development fund.

In Gallo some frustrations could be heard about unequal distribution of the village development fund (500 FCFA/truck). A resource said that not everyone benefits from the village development fund. In Gallo, however they have been able to make significant

investments with the financing from the village development fund. They have built the village's first school, wells and paid the carts for the woodcutters. The village development fund has also provided a financial contribution to the village health centre (*Centre de Santé et de Promotion Sociale*). Also a part of the mosque has been financed from the village development fund. Sometimes donations are given to members who are in need. One interviewee in Gallo said he had benefited personally from the village development fund: 1) for his wedding, 2) christening of a child and 3) sickness. All occasions have been donations.

In Nadono the general opinion is that the village development fund (1000 FCFA/truck) is managed in a collective manner; there is no discrimination among the different ethnic groups. The money has been used to build a school and a house for a teacher, maintaining and building the wells (contribution to one well was150 000 FCFA) and also for repairing roads. What is considered important in their cooperative is unity: there is solidarity between the members. Any activity that they wish to finance with the money from their fund, is first discussed in the group. Even those who are not able to cut wood, benefit from the income from the forest through the village development fund they have created. Whenever there is a problem they may use the money from this common fund. The fund provides financing also for traditional activities in the village. The village chief may come and ask the cooperative for a donation for ceremonies such as for ceremonies against the drought, an event that touches the whole village. In Nadono the village football team was able to buy football shirts for a football cup organised by the Mayor. The fund had also provided credits for the woodcutters to buy carts. The fund also provides 3 types of credits: 1) for pregnant women who do not have the means to go to the hospital, 2) for woodcutters that injure themselves, and 3) for woodcutters that are need of money, but have their wood in the forest. On the whole the fund has increased each woodcutter's credibility to access credit. In Nadono the responsibility of the village fund has been given to a member who enjoys credibility from the other members. It is a person who can at any given moment provide the money, even at night, or at day time can go and pick up the money in Gallo. Two people manage the receipts and have control over the money; whenever there is a problem in the village they discuss together with all the members, decide on the amount to withdraw and two people are chosen to pick up the money.

5.8.2 Forest management fund

The UGGF has a forest management fund that is provided with 600 FCFA per m^3 of wood. The GGFs have requested that union to repair the roads many times, without any result. The union says to the woodcutters that the amount of wood produced is not enough to repair the roads. The woodcutters are asked to bring the wood out of the forest before it starts to rain, in order for the Union to have enough resources to finance the repair work. The woodcutters think that this is a false pretext as there should not be a fundamental difference between the money from fresh wood and from dry wood; the price for both is the same. The amount of trucks that have taken out wood from the forest this year should be enough to pay the repairing according to the woodcutters. Woodcutting is carried out as mass production under a short period of time; from the beginning of January until end of March, which is the warmest season in Burkina Faso. It is physically impossible to bring the wood out of the forest at the same time as cutting (before May). Certain villages think that there is a problem in the management of the forest management fund rather than an insufficient amount of wood. The opinion is that there is malpractice at union level.

Several discontentments towards the union were expressed during the interviews in the three villages. One problem that was brought up was the case of the carts for transporting wood that

the Union had provided to the woodcutters. The general understanding had been that the carts were provided free of charge, however when the carts arrived the union demanded payment at the price of 75 000 FCFA. The amount would be deducted from the payments made for wood. However, it is difficult for a woodcutter to even take out 10 000 FCFA suddenly. According to the Union's sales delegate the village development fund of Gallo had financed the carts to the GGF of Gallo. The opinion in the villages was that it is not reasonable to call something aid and ask the person to pay more than he is capable. Secondly the previous sales delegate embezzled large amounts of money from the funds to build private schools in Ouagadougou, buy land and trucks for wood transportation. According to the Technical Direction he has been judged in court for his acts. On the whole there has been a relatively frequent change of the union's sales delegates. According to rumours three previous sales delegates and treasurers have died "naturally" one after the other. It has been said that they refused to give money every Friday to the "untouchables" (certain men of the Mossi tribe who have no role in wood production. The Technical Direction of the Union supposes these people are intermediaries in the transportation of wood and therefore receive a payment from the sales delegate. There is however a certain influence of the Mossi tribe in wood production in the research area as the President of the UGGF is also a chief of the Mossi tribe. The governance trend of the whole country is reflected in the governance of the UGGF, since for over 20 years it is the same people that manage the union. The members of the GGFs enquire why smaller organisations would function differently than the state.

In one of the villages the woodcutters describe their relation with the union as if the woodcutter were the eaters of the union's scraps. They are informed only when there are some benefits or donations that the union has received. Rarely do the benefits come down to the GGF level. The Union does not represent the woodcutters' interest. According to one interviewee the Union grows fat at the expense of the GGFs. All the income the woodcutters receive is obtained from their own hard work and effort. The benefits that the union gains from their work never come back to their level. How they see the union is the law of the more powerful. The woodcutters cannot influence the situation as they depend directly on the union. They remind however that, it is not union itself as the association of the different GGFs that does not function or is bad; it is the people who represent and manage the Union. It is not normal that the people in the management positions of the union have mandates for more than 20 years. The immobility of the management positions has constituted a big mess in the management and there is no visibility or transparency in the union's actions. According to an interviewee "it becomes an impunity that only deepens". The people who in the beginning were given the management positions were simple woodcutters, but their interests have changed along the way. Some of the woodcutters believe that the management body of the union has become rich thanks to the money collected for the funds and should therefore be changed. However one interviewee pronounces that "We should not dream, the chief of the union is an untouchable, during over 20 years he has grown roots, if you try to "uproot" him you will fall, not him".

In the beginning everyone was very satisfied about how the Union was managed. The common wish is to return to the time of the beginning project when woodcutting provided good income and benefits for everyone. The need is not material; the woodcutters would prefer to have good working conditions to work efficiently, such as good roads.

5.8.3 Non-monetary benefits

The three GGFs agree that they have also benefited from non-monetary advantages thanks to their organisation into a community forest management group. The existence of the group has improved social integration between the three villages that share forest management units. Every time the members of different GGFs meet to solve problems, the relations are strengthened. At community level the creation of a GGF has brought many non-monetary benefits to the village in terms of governance. According to various interviews the villages are managed in a more participative manner. Before the existence of the GGF, there was no consultation with the different parties when facing problems or making decisions that affect the whole village. The activity within the GGFs has taught people to listen to others as well as help not only the members, but all habitants of villages to organise themselves when facing a problem.

Another benefit is the increased credibility of the members. Being a member of a GGF allows them to obtain loans from the village development fund to solve unexpected problems or make investments; before this was not possible. Another significant non-monetary benefit from the GGF is the creation of jobs for the young, especially in Bawiga and Nadono. Nowadays the young men no longer migrate to Cotê d'Ivoire to work on plantations. With woodcutting they receive an equal pay and stay in the village.

Some woodcutters say that the GGF can be seen as a school of training for them. They see a difference between villages that have a GGF and those that do not. Those that have a GGF are more convincing when they meet. The GGF has permitted them to increase their awareness and conservation of the forest; forest management in taken seriously.

5.9 Difficulties in local governance

All three GGFs report degradation in their forest and an increasing lack of respect of the regulations. According to numerous interviewees organisation was perfect when the "white man" managed the forest in other words when the forest was managed by the FAO/UNDP funded project[3]; management was stricter, now there is only disorder. Before there were defined periods for cutting the wood, outside which is was forbidden to cut. Now the control over the forest has decreased and people cut outside the defined period and even on plots that are not destined for cutting that year. Before there were monitors that made rounds in the forest and forbidden activity was very difficult to carry out. On the whole the collective interest of the woodcutting activity was a priority in contrast to the situation today, when individual interest is the priority. Nowadays the lack of control encourages illegal activity. In addition the roads used to be kept in good condition, which permitted the wood to be taken out of the forest, thus allowing a steady income for the woodcutters. The woodcutters also obtained also extra income from repairing the roads. The young people in the villages collected stones for repairing the roads and were remunerated for this at approximately 10 000 FCFA.

[3] This could be that when the forest was run by a third party (FAO/UNDP project) there was less individiual interest to gain financially from the forest. In general the aim of development projects is to run efficiently and effectively and obtain required results that benefit whole communities rather than enrich a small number of individuals.

With the departure of the "white man", disappeared the systematic follow up and control of the forest and woodcutting. This has placed major inconveniences for the woodcutters, for example the woodcutter may call for a truck to pick up his wood from the forest, but the truck may spend several days before it reaches the main road and the post of the union's sales delegate, due to the poor condition of the forest roads. Consequently the woodcutter must wait to be paid for his wood and loses his time in the forest trying to get the truck out of the forest; time lost from agricultural activities.

"Our ultimate wish is that the roads would be repaired and the trucks can access the wood. We do not wish for money; repairing the roads in the name of everyone is more efficient. If money is given it is not sure that it will reach the right destination, some will use it for their personal interests".
(Jean-Matthieu Nessao Batitien from Bawiga)

The woodcutters are the first victims of the poor state of the roads, as their livelihoods depend directly on the income from wood. If the trucks cannot get out of the forest their income is blocked. The situation will only get worse from this moment onwards until August as the rain increases. A yearly experienced problem is the wood rotting in the forest. The union says that money is taken from the funds to repair the roads, but nothing is done. Some interviewees mentioned the union sending special trucks that pick up sand in Ouagadougou. These trucks come into the forest to pick up stones to fill in the holes in the roads. Usually the roads degrade immediately after the first rain, Therefore it is not a sustainable solution. When the beginning of the Nazinon project started the roads were taken care of and wood was easily transported from the forest. Since the project has ended the management of the roads has deteriorated. It is rather at village level that they maintain the roads. The woodcutters fill their carts with stones and fill the holes in the roads. They are aware that the forest management fund is also for repairing the roads. Some woodcutters say that a part of that money has been used to buy trucks for transporting wood instead of repairing the roads.

It is not only the poor condition of the roads that is the problem, also inequity and lack of transparency in the management of the funds which constitute a major problem. Many times they have waited to receive aid, but they have never benefited from this aid. Every time some form of aid is proposed to them, it is to be bought, as happened with the carts, finally financially better off people such as merchants, bought the carts.

The state of the forest has degraded significantly during recent years. The amount of wood has decreased since the beginning of the project. The woodcutters would like to enlarge the plots of their units in order to exploit greater quantities of wood. In the beginning when they created the boundaries for each zone, they could not believe that it would be difficult today to fill a truck. The situation will only get more difficult. At the moment they cut plots that have been reseeded by them. There is less wood now due to the form of exploitation. Before they only cut the trunk and the branches, but now the truck is filled at different levels which results in a higher demand for wood. There are also producers of charcoal that exploit the forest. The remaining trees that the woodcutters leave in the forest for regeneration are cut by the charcoal producers. In other words the demand for wood is many times higher than what the forest is capable to produce. The charcoal producers are normally external people and the GGFs are not informed about their activity. The GGFs have not been able to identify and catch the people illegally producing charcoal.

There is also a problem of overloading the trucks. Once the woodcutters saw that the trucks overloaded continuously and lost completely the control over the stock of wood. For example a woodcutter may produce 20 m³ of wood and be sure of the amount, but the truck will take much more, in total around 26 m³. The part that goes beyond 20 m³ does not arrive to the wholesalers. The truck drivers sell the wood on their way to Ouagadougou. Now the price in the forest for a truck is between 35 000 and 40 000 FCFA. Only the part passing the official 22 000 FCFA is paid in the forest. The rest is collected in Gallo. Woodcutters have taken an initiative to fight against overloading by demanding to be paid for the overloading part. With the collect of short wood there is a problem of the drivers creating a leak of money from the GGF when they collect only half a pile of wood. If the woodcutter is not supervising loading checking the driver will go and complement the half piles of wood in another village and leave the receipt in the last village were the wood is collected. This means that the contributions from that wood go into the benefit of the village that has received the receipt. Finally this woodcutter's village development fund is not provided.

On the whole woodcutting is considered as a degrading activity in all three villages, it is conducted only because of necessity. In this case certain people benefit from the suffering of others and keep the others in poverty. Currently the woodcutters do not have the choice to do other activities. If they did they would prefer to do something else. If they had an alternative to woodcutting they would be very grateful.

5.10 Future of the forest

Organised forest exploitation is a rather new activity in the region. Many woodcutters said that their parents did not cut wood. Nowadays there is a great number of people using the forest. The forest is not the same as it was 20 years ago. There is a decrease in the quantity of wood, which means that in the long term there will be a sustainability problem and the existence of the whole woodcutting activity is in danger. The woodcutters will be forced to change profession.

A certain regeneration of the forest is taking place, thanks to the cutting techniques; a proof is that after cutting numerous tillers can be seen growing from the stump. However the regeneration is very slow and the woodcutters do not have the time to wait for the trees to grow to a sufficient size.

Picture 3. Regeneration of trees

Picture 4. Full grown tree

Picture 5. Contrast of a newly cut plot and plot of approximately 20-years

The future is a major concern because currently when looking against the past years, they are no longer able to provide the same quality and quantity of wood as 20 years ago. In Nadono the woodcutters experience a decrease in individual productivity as trees are smaller nowadays. In addition the quantity of dry wood has decreased. Tomorrow they will not be able to provide the wood they provide today. The forest is finishing. They ask themselves what could be the alternative for this? What could they do tomorrow if there is no more wood to cut?

The woodcutters need other dry season activities. They would prefer not to cut the forest and expand and intensify agricultural production, but they need water for this. In Nadono the woodcutters have tried to build a place to conserve water, but due to inexistent technical experience the construction was not solid enough. A dam would decrease the pressure on the forest, in other words the number of people exploiting the forest. Now there is more woodcutting than the forest can support; woodcutting will end at some point.

5.11 Other groups benefiting from the forest

Besides the GGFs and the state other more marginal groups, such as the women and Peul that benefit from the forest. Their activity is less visible but they are directly dependent on the forest.

5.11.1 Women and the forest

Women are not members of the GGFs in Bawiga, Gallo and Nadono, nevertheless they carry out numerous income generating activities in the forest such as collecting fruit from shea and soumbala trees. Due to the physical nature of woodcutting and the distance to the forest women prefer to exploit NTFP.

In Bawiga the women are organised into a cooperative in which they produce shea butter and soumbala. Together they determine a day for collecting shea nuts. Soumbala is collected individually, but the seeds are assembled on a determined date. The women determine a period for the sales of the products and the money from the sales goes into the cooperative's fund. There are 37 women in the cooperative and they participate as a cooperative in decision making in the village. In addition to NTFPs the women's cooperative in Bawiga cultivates a common field, where they produce peanut. The fund finances the cultivation of their common field (fertiliser, pesticides and labour). The women's cooperative has also provided financing for building and repairing the village wells. At individual level the women use the money from their cooperative activities for buying animals or to pay the education of children who are in college. The credit is often used for buying pigs or to buy food.

Being a part of the cooperative has allowed them to access credit, which they use individually for their activities. During the year they reconstitute the money they have borrowed from the cooperative and they make an additional payment to the fund.

In Gallo the women have their own cooperative for producing honey; none are members of the GGF, whereas in Nadono some women cut wood, mainly firewood. They are not members of the GGF either because they have their women's association. In this group they help people on their field in return of remuneration. The main activities that women from Nadono have in the forest are wood cutting, and the collection of detarium fruit and shea nuts from the trees and seed production. The intensity of cutting is less than for men. If the women manage to cut enough to fill one truck, they considered it significant, since woodcutting is physically demanding activity and not the primary activity of women.

Also for women forest activities complement each other as each activity has its specific period including a time for agriculture. However agriculture does not provide as much income as it did before when it rained more abundantly. The lack of rain has also forced the women to find additional activities to satisfy their needs. The women in Nadono are not organised into a cooperative to collect NTFPs. Everyone collects for their own account. The women sell seeds to the UGGF each year. The Technical Direction comes to the village to weigh the seeds and take the production with them. When seeding time comes the women receive payment. Before a kilogram of seeds was paid approximately 100 FCFA. The women do not know the price of the seeds at the moment. The reason to wait with paying the women is that the Technical Direction waits to see how much each village has produced to pay all the women at the same time.

Picture 6. Woman making shea butter in Nadono

In Nadono the women have their own association. When there is work needed in the village, such as building the school, the women are asked to participate. There exists a system of solidarity in the village; e.g. from a certain age onward, certain people are asked to participate in village work. The women's association is always invited to participate in village meetings. In addition to their field each member contributes 1000 FCFA to the fund each year. There are two women who manage the money. When there is an investment in the village and their financial participation is requested, they meet to decide how much they are able to invest.

The difficulties for the women in the forest are that it is far from the village and they do not have transportation means. The nuts they collect are heavy and they have to carry them on their heads. It is also difficult to take food and water to the forest without a mode of transportation. There is also a competition with animals, especially elephants, which eat the nuts and also destroy trees. There are fewer trees as elephants destroy many fruit trees such as shea and detarium.

5.11.2 Peuls and the forest

The Peuls are a livestock-breeding nomad ethnic group that has become more and more settled outside villages. The Peuls are considered as part of the villages and they are invited to participate in village decision making. In Bawiga, Gallo and Nadono the Peul have their own associations to defend their interests and to express their opinions. The Presidents of their associations express the problems they encounter to the village chief. Often their voice is

heard in village decision making and they participate actively in the development of their villages.
In the forest of Gallo a Peul family was geographically stuck between the classified forest, where they had no right to enter, agricultural land, and the villages of Gallo and Bawiga. It is difficult for them to find food for their animals and they are easily fined and animals are confiscated if they enter the forest. The main problem is access to water as they rely on rain water from the ground. In the dry season they have to cut branches for feeding animals, and are forced to move around in order for the animals to have enough water and feed.

Picture 7. A Peul with his calves

In Gallo the Peul are in desperate need of water. There are six wells in the village, but all are in the centre of the village. As the Peuls have to stay outside the village due to their cattle they have to walk long distances for water. The GGF has initiated and financed 4 wells, which are located in the village. Peuls understand that these wells have been built near the households of the members of the GGF, but one of the state financed wells could have been placed closer to them. Whenever there is a problem or common financing is needed they are always solicited, but their needs are never seen to, although they are listened to. In Gallo the Peul have participated in financing the mosque and health centre.

The forest plays an important role in the livelihoods of the Peul as their animal graze in the forest. The forest provides their animals with forage at any moment. Due to the nearness of the classified forest they must graze in the protected forest (GGF) to avoid problems. If a cow enters a classified forest, it is confiscated and the Peul must pay a high fine. In general there are no conflicts with the GGF. However, during winter (dry season) when there is not enough forage, the Peul are obliged to cut branches off tress. If they are caught, they have to pay a fine from 50 000 to 250 000 FCFA. It is enough that the forest monitors sees a Peul in the forest with a knife, without cutting, to confiscate the knife. However, sometimes the knife is needed to kill an animal that is suffering. Especially children with knives are fined without any evidence, as they are less able to defend themselves.

Another Peul in Gallo does not cut wood at all because, according to him cutting wood is an illegal activity. He says that the Ministry for Water and Forests has established laws, in order to put into place norms. For him it is an option to not cut wood, as he has understood that this law was put into place because the decrease of trees has a negative affect on amount of rain. As an example he takes Zinaré, where according to the interviewee it does not rain anymore, because there are no more trees. The existence of the GGF will not stop the cutting of trees; therefore he does not want to do something that compromises his future.

According to the Peuls interviewed, in general they do not cut long wood. They may cut short wood and it is mostly children that cut it. The most common reason for a Peul to cut wood is an urgent need for money. Peul are not members of GGFs because woodcutting is not their main activity; they are breeders. They do not receive financial aid from the GGF, but rather rely on friends or sells animals to solve financial problems.

6 Analysis and discussion

This chapter aims to address the research questions stated in chapter one, based on the theoretical and conceptual framework and the empirical data. The following research questions are answered by grouping them into different themes which bring forward the key issues that have risen from data analysis.

- What role do forests play in current livelihoods in the villages and who are the stakeholders?
- What are the structures in place for forest land and forest products ownership and decentralised forest management?
- What are the experiences with existing mechanisms to distribute benefits from forests and other natural resources and are they legitimate?
- What could be the consequences of REDD implementation at local level and its implications for benefit sharing?

6.1 Actors' interests, stakes in the forests and their futures and compensations

Field data and observation show that forest products, mainly commercial fuel wood production and NTFPs, contribute significantly to individual subsistence needs. This confirms that livelihoods are directly dependent on forest resources. A member of one GGF said that "if we were not able to cut wood it would be a catastrophe as it is such an important generator of income and benefits to the village - as long as there is no other dry season activities". Therefore it is evident that a REDD project would have a significant impact on the livelihoods of the local communities. The actors causing deforestation and forest degradation in Nazinon are the local forest dependent population (causing a considerable amount of carbon missions) on the contrary to large industrial logging firms in the tropical forests.

"The forest is no the same as it was 20 years ago. There is much more people using the forest. There is a decrease of the quantity of wood, which means that in the long term it poses a problem of sustainability and the existence of the whole woodcutting activity leading people to change profession".
(Batika Baignan, Unit chief from Bawiga)

This confirms the need for a REDD that can be adapted to different local circumstances. It is apparent that a one and only REDD that fits all countries is impossible, which also Kanninen et al. (2007) argue for.

Various actors have a stake in the Nazinon forest. These stakeholders can be identified at local, regional and national levels of which the local level or grass root level stakeholders are the most visible group consisting of woodcutters, women and the Peul. The three local stakeholder groups have very different exploitation habits. In all three villages women are organised for collection of NTFPs, especially shea nuts and detarium fruit. In Gallo women even produce honey and soap for sale. Women's activities in the forest are considered lucrative and they finance both common investments in the villages and contribute to household livelihoods and children's education. The forest provides grazing areas and fodder for the Peuls' animals. According to one Peul, these young herder-breeders also cut short

wood when they are in need of cash. Although not focused on in this study, there are other stakeholders higher up in the wood supply chain that will be severely affected by a REDD project. These groups are the transporters and merchants of wood, retailers as well as consumers in the larger cities. The state is also a stakeholder, which is present at all levels: local, regional and national, having political and economic interests that will be affected by REDD. Despite the local communities probably being the most and directly affected by REDD the other groups will have significant losses of income and consumers may have to pay a very high price for wood, if woodcutting is completely forbidden. The significant dependency on fuel wood and the economical and political interests connected to it could lead to leakage to other geographical areas.

This study has confirmed that the Nazinon forest has many stakeholders that depend on the services and products provided by forest – and the most effected by REDD would be the poor local communities. In order to have a pro-poor REDD all different groups should be considered as stakeholders and be compensated for their loss in income and subsistence products in case their access to the forest and forest products is restricted under REDD. The fuel wood transporters and merchants are powerful stakeholders and the state tends to see to that the fuel wood needs of the consumers in Ouagadougou remain satisfied, leading possibly to a REDD that corresponds to the interests of the most powerful stakeholders.

6.2 Land ownership

There is a divergent view on property in Burkina Faso. As in many African countries that have been affected by colonial forest policies, also in Burkina Faso all land is owned by the state (e.g. Skutch and Ba, 2010). The state has not recognised customary land rights practiced by the local communities. The locals consider their agricultural land as their own, but forests as state property, even though in theory they have been given management and user rights and may have sacred areas in the state's forest. What this implies for REDD in the Nazinon forest is difficult to predict. If an equitable benefit sharing mechanism is established and the local communities are considered as beneficiary stakeholders, land ownership should not be a problem. On the other hand if the state claims all rights to carbon credits from the forest and does not share the financial benefits with the stakeholders, the woodcutters, women and Peul could sabotage all REDD initiatives. Their stakes in the forest are too significant to ignore as their livelihoods depend on the forest. The fact that the local forest dependent communities do not own their agricultural nor forest land, means that they have no guarantee to financially benefit from a REDD project. Another challenge from a land ownership perspective is agro forestry. If agro forestry is included in REDD the local communities could start planting trees on their farm land. However here again the state may claim all rights to carbon credits created as it is the sole legal owner of land.

6.3 Malfunctioning of the current forest governance system

This research was conducted in the Nazinon forest due to the state Forest Department considering the forest as a good example of CFM. The forest has a long history of CFM and could be a future REDD forest. The field data, however, shows serious discrepancies in local forest governance, especially at the UGGF level. Main discontentment of the local woodcutters concerned the poor and un-transparent management of the Forest Management Fund, Village Development Fund and support services provided by the union. The discontent

is mainly toward the Union's management personnel, not the system itself (which is considered good). The management of the UGGF is recruited by the state, no elections are organised and it does not seem to be accountable to its members. Many interviewees recalled the days of the beginning of the Nazinon project when the forest was managed by different people and the CFM system functioned well. The funds were said to be managed transparently; the villages were able use their VDF for common investments and the working conditions were better. The woodcutters felt more equal with the Union and that their interests were better promoted. One focus group member stated that "many of the benefits from the early days of the project have disappeared. The persons who managed the project before were concerned about the collective interest of the forest. When the project was handed over to local management, everyone sees only their own interest". Accusations about embezzlement only reinforced the perception that the current CFM structure does not function. One member claimed that "those that work hard in the forest receive nothing and those that sit in the offices and do not cut wood receive the largest amount of money" and he continues by saying that "some become rich on the expense of the woodcutters".

The Nazinon community forest management project functioned in the beginning because it was by a third party (FAO) which did not have individual financial interests in the forest. The project also received external funding, making it less reliant on revenue from the forest. The fact that local management has failed to continue the project sustainably and profitably is a demonstration of bad governance and individual interest that are often related to the management of natural resources. This is a discouraging sign for REDD implementation and would mostly likely require long term capacity building in good governance at state and local level and very strict third party monitoring of governance and measuring, reporting and verification of carbon stocks conserved and created.

The lack of trust and respect toward the union has led the woodcutters to seek justice by their own means in other words selling their wood in the forest, which allows extra income and independency from the union. This has deteriorating effects on the forest due to important amounts of wood extracted, but not recorded. No taxes are paid from this surplus wood and the village and forest management funds are not alimented; a clear demonstration of individual interests outweighing collective interest. The union and state have turned their blind eye to this extremely visible behaviour.

The malfunctioning of the UGGF and the lack of trust toward it is one of the major problems with forest governance in the study area. It can also be an obstacle for implementing an equitable REDD project in the Nazinon forest, if the existing CFM structures are used as a basis for sharing benefits and managing the forest. The empirical results show that currently money from the wood disappears along the supply chain once the wood leaves the forest. This leaves in doubt about the situation being different under a REDD project if the same supply chain is used to vehicle REDD benefits down to local communities. It is possible that the money will disappear at the same points as currently, leaving again the woodcutters as the losers. This shows that elite capture is already visible in the case of Nazinon, and therefore the prospects for an equitable REDD are rather poor.

Using existing, but functioning and effective decentralised forest management structures is recommended by Kanninen et al.(2007) due to their legitimacy and ownership by local communities. In Nazinon this perspective seems very challenging due to the numerous above mentioned problems. An equitable REDD mechanism, if based on the existing structure would require reform of the CFM structure and governance in order to create trust in the

system and empower the local communities in forest management and involve them in a REDD project.

Considering that the government officials regard the Nazinon forest as an example case, it is obvious that they do not have an in-depth understanding of all the dimensions of REDD and what implications such a complex mechanism would have on the whole wood supply chain and the diversity of stakeholders if they decide to use the CAFs as REDD forests. If CFM in the Nazinon forest is truly a good example forest governance, how is the situation in other forests? It is hard to believe that governmental officials are not aware of the mismanagement of the forest, which leads to speculation on the intentions of the government vis à vis REDD in this forest. Rather surprising is also the fact that Burkina Faso was chosen as a pilot country for the FIP due to among other criteria its "potential to initiate transformational change taking into account the high planning and implementation capacities of the institutions dealing with rural development, forest and environment, a recognized high level of forest governance, and the generally high involvement of an empowered civil society and local communities in rural development activities" (FIP, 2010). The FIP expert report also sees that Burkina Faso has successfully decentralised forest management responsibilities and rights to local communities, mentioning especially the GGFs. The report goes as far as to say that the existing CFM structure provides a sustainable supply of fuel wood without compromising resource sustainability due to the 20 year rotation cycle. The CFM structure is also said to assure revenues to local communities. The FIP expert group would like to streamline the existing CFM structure in the country and beyond to create new mitigation benefits. All these factors stated by the FIP expert group are key elements for an equitable REDD in the Nazinon, however they have been proven to be the contrary in this study.

6.4 Government's aims and position vis-à-vis REDD

It is unclear what the government's real intentions for REDD are and how it will succeed in fulfilling its promises to involve the local stakeholders and obtain its objectives for REDD preparations stated in its Confirmation of Participation in the FIP. The level of knowledge and understanding of all the dimensions of REDD is very limited and only a few people at the highest positions in the Ministry for the Environment are familiar with REDD. The multiplicity of perceptions of REDD could be identified in conversations with representatives from different governmental bodies; the state is interested in removing the pressure from natural forests, but suggests artificial forests and plantations as the solution for increasing forest cover in the country. This could jeopardise the livelihoods of the forest dependent communities; as plantations do not provide a multitude of services and income generation as do natural forests. This solution could push the local communities out of the forests and only a few would have the opportunity to participate in the management of plantations and thus benefit financially. If the CAFs are transferred back to state management and are used for REDD projects the local communities will be left outside the financial benefits of REDD and their income and livelihoods would most likely deteriorate.

There is also a contradiction between the government stating in its Confirmation of Participation in the FIP, that the local communities will participate in the REDD decision making steering committee; and the governmental representatives expressing their concern for involving the local communities in REDD, not preparation and design, but rather implementation. In both cases the governmental representatives were from the MECV. The discourse on plantations and artificial forests shows similarities with India's and Conference

of Ministers in Charge of Central African Forests' (COMIFAC) REDD proposals. Unlike the tropical forests in India and the COMIFAC countries, Burkina Faso's dry forests have much lower carbon value and a much higher degradation rate by local populations (Skutsch and Ba, 2010), which means that the local populations will be much more affected by a REDD project compared to populations living in tropical forests, which are in general degraded by industrial logging. In this sense REDD has very different implications for local communities in dry and tropical forests and this should be taken into account when designing a REDD project in the Nazinon forest.

6.5 Issues of Implementation

REDD is an overwhelming concept that is considered as one of the solutions to climate change (e.g. World Bank, IPCC among many others). Its vastness has created numerous REDD proposals and different parties demand different aspects of forest and land-use change activities and management to be included in the mechanism. The diversity of views of REDD and how it should work can be seen in the global REDD discussions and the different REDD proposals. Many proposals are based on national interests instead of global sustainability and with their market orientation they disregard pro-poor strategies and exclude forest dependent communities (Okereke and Dooley, 2010). It is crucial for the local communities in the Nazinon forest what type of REDD proposal is used in Burkina Faso. Based on the data analysis for this research Norway's REDD proposal seems like an appropriate example as it applies a phased approach and suggests a step by step implementation while emphasising participatory forest management, equity and stakeholder consultation. It is evident that reform is needed at all levels of the current CFM structure in the Nazinon forest if it is to be used under a REDD project, on the contrary to the FIP expert group's perception. Also for this reason the three step approach is interesting as it starts with ground level reform of land tenure in regards to customary land rights and reinforcement of forest governance (Okereke and Dooley, 2010; La Viña, 2010), which this study proves to be weak currently the Nazinon forest. The fact that the three-phase approach suggests compensations for activities that are not directly linked to emissions reductions during phases one and two would be beneficial for the case of Nazinon. Following this type of proposal would permit a gradual move, requiring "graduation" from each step, in other words stakeholders would be well prepared for the different aspects of REDD before moving ahead with the actual fully functioning mechanism. Since the activities conducted under Norway's REDD proposal are directed toward the wellbeing of local forest dependent communities (Okereke and Dooley, 2010) it would provide a good foundation for a participatory and equitable REDD project in the Nazinon forest. Norway's proposal is also interesting when looking at environmental and social safeguards since it provides safeguards to prevent conversion of natural forests to plantations. This is an important fact seeing that the government of Burkina Faso considers plantations and artificial forests a solution to deforestation and forest degradation.

If a REDD proposal such as Norway's proposal, including the phased approach would be implemented in the Nazinon forest it would firstly provide grant money in the beginning of the project to finance REDD preparedness activities, such as developing a national REDD strategy, multi-stakeholder consultation, establishing safeguards and minimum monitoring capacity. At village level this would imply increased decision making power, ownership of the REDD project and ideally an improved governance structure. The reform of land tenure would provide security over not only agricultural land, but also access to forest resources, including possible carbon credits in addition to fuel wood and NTFPs. Including the local

stakeholders in REDD preparations would allow them to influence decisions affecting their livelihoods and increase the possibility of including existing forest activities, such as woodcutting, collection of NTFPs as well as grazing in the national REDD strategy, in a sustainable manner, in order to preserve the livelihoods of the local communities. Transferring land tenure to the local communities in the Nazinon forest could lead to improved forest management, due to increased responsibility and ownership over the forest and consequently increased interest to conserve such an important source of income. The fact that there is good consensus and social cohesion within the villages provides possibilities for improved CFM under a REDD project. However this would require a decreased presence and involvement of the government in the forest (seeing the current lack of trust toward the government and union in addition to lack of transparency) in order to create a legitimate REDD mechanism. Norway's REDD proposal requires systems for monitoring not only the forest and carbon sequestration, but also stakeholder participation, gender equality and rights and livelihoods of local forest dependent communities, as well as benefit sharing. How this is to conducted is not specified.

Such a REDD proposal in the Nazinon forest can encounter opposition, especially from the wood transporters and merchants, who would no longer be able to gain extra "black" revenue from the overloading of trucks and if the quantity of wood extracted is decreased. Although a decreased supply of wood should logically increase the price of wood, if there is not government interference on the market. An improved SFM system under REDD could ideally bring back rigorous measures in forest exploitation, monitoring and control. An improved governance system would leave less room for current malpractice and the villagers (including woodcutters, women and the Peul) would be more committed to SFM if they are assured to receive a decent compensation for their activities within a REDD project. The transporters and traders of wood can be a source of resistance and may influence government decisions on a future REDD strategy due to their powerful position in the wood supply chain. In addition governmental bodies and especially the UGGF can be an obstacle when designing and implementing a REDD project that increases transparency and the power of local communities. The government and the union would have to face increased accountability and transparency, which could lead to them loosing extra financial resources that they have benefited from in the current CFM structure.

Considering that the existing REDD initiatives are already based on false assumptions, as could be seen in the FIP's expert report and the discourse of the governmental officials there exists a basis for negative outcomes from a REDD project in the Nazinon forest. If a REDD project is built on the existing system it is apparent that those who are enriching themselves will continue to do it under REDD at the expense of the forest and/or the local forest dependent communities. An extreme scenario could be that all forest related activity is forbidden and the local stakeholders are driven out of the forest in order to create maximum carbon sequestration. This option does not however seem feasible due to the significant dependency on fuel wood and the powerful position of transporters and merchants of fuel wood. Under this scenario the local populations would most likely cut wood anarchically to meet their subsistence needs and consequently the opportunities for increased carbon sequestration would be low and would create a potential for geographical leakage where forest exploitation activities would move to other areas creating an even larger pressure on neighbouring forests.

There exist, nevertheless possibilities for positive outcomes. The field data shows an increased awareness about climate change, forest management and conservation. The concern

regarding deforestation is encouraging people to find alternative income generating activities and there is existing know-how on forest monitoring and SFM practises. The main element that is currently missing is good governance practises. A REDD proposal, such as Norway's would allow moving gradually decision making power and responsibilities from the Union and the state to the GGF (if a REDD project is built on the current CFM structure). Allowing sustainable forest exploitation activities would provide additional income to the woodcutters and women and permit the Peul to graze in the CAF, and thus be able to stay in the village and not migrate for new grazing areas. A combination of carbon credits sold and sustainable forest exploitation would secure livelihoods in the area. Local stakeholder participation in monitoring and controlling activities would build capacity within the community, increase ownership of the REDD project and empower the local communities for decision making in other areas affecting their livelihoods.

It should be noted that REDD is not an overall solution to climate change mitigation and improvement of livelihoods in the area. Agriculture being the main activity for fulfilling subsistence needs and with production decreasing, it has a significant pressure on the Nazinon forest and therefore it is crucial to intensify and improve agricultural productivity in parallel to a REDD project.

This analysis can be seen in relation to existing literature on REDD and community forest management. The research has demonstrated several similarities with research conducted by among others Fairhead and Leach (1995), Cline and Cole et al. (1990), Ribot, (1999) and Krutilla et al. (1995) on the state of forests in West Africa and the drivers of degradation. A combination of forest management policies and land tenure regimes since the colonial period, and more recently population increase, agricultural expansion, migration and fuel wood extraction are the main drivers of deforestation and forest degradation in the Nazinon forest. Trends in change in land use in the studied villages are much in line with the findings from Paré et al. (2008) and Ouedraogo et al. (2009). The documented problems in forest management in regards to REDD and SFM in addition to the existing realities discovered during the field data collection have become clearer after the data analysis. On the whole the case of Nazinon fits the concept of REDD, as significant degradation of the forest could be observed and there exist opportunities for decreasing deforestation and forest degradation with efficient and effective forest management and alternative income sources. However the carbon credits created in a dry forest such as the Nazinon forest are estimated to be rather low (Westholm, 2010) and complementary income generating forest activities are necessary to sustain the livelihoods of the local communities that depend on forest resources. Okereke and Dooley (2010) go as far as to say that poor countries, such as Burkina Faso, with small, dispersed and heterogeneous forests are likely to be left out of REDD due to high measuring and monitoring costs. As market-based REDD mechanisms prefer least cost solutions, no funding may be left for pro-poor REDD strategies (Peskett et al., 2008). Going beyond the technical challenges of a REDD project in the Nazinon forest, this research has focused on management and governance aspects by limiting the research to three villages in the Nazinon forest. This has allowed a better understanding of the realities of local forest governance, possibilities for benefit sharing as well as challenges from a REDD perspective.

When considering equitable benefit sharing of REDD money between the different stakeholders is a complex task, requiring sufficient local governance structures and capacity (Angelsen and Atmadja, 2008).The GGFs, women and the Peuls, all being rather weak organisations, may not be able to defend their rights to REDD benefits and forest resources as well as their collective interests. Therefore empowering this groups to participate in REDD

decision making and implementation is crucial. Similarly Peskett et al. (2008) emphasise the importance of involving the local communities and indigenous groups in the design of REDD and its implementation, however it could be a challenge due to very low literacy rates of these stakeholder groups.
Vatn and Angelsen (2009) underline the need for democratic and legitimate institutions for equitable sharing benefits from REDD. Having in place legally appropriate institutions is not enough; they also need to enjoy democratic support, which is obviously not the case in the Nazinon forest. In addition Vatn and Angelsen (2009) and others such as Peskett et al. (2008) draw attention to elite capture of benefits destined for compensating the losers. Elite capture can occur at different institutional levels and is therefore a significant challenge in REDD projects since what ever form REDD takes this risk is present. Vatn and Angelsen (2009) suggest independent third party audits to fight against this problem. Sunderlin et al. (2009) also remind that malfunctioning systems where forest resources are managed by the most powerful ones could be drivers for taking over more forests from communities who could consequently strive for revenge by sabotaging REDD projects.

In relation to land ownership and pro-poor REDD, Peskett and Brockhaus (2009) have stressed the risks of unclear land tenure and its effect on marginalisation of rights of local communities. The state will have a dominant role in managing and distributing REDD benefits as REDD is most likely to be implemented at national rather than at project-based level. Likewise Vatn and Angelsen (2009) emphasise the need for institutional legitimacy and the legitimacy of REDD in regards to the challenge of transferring of rights and responsibilities from state to local communities by distributing decision-making power and access rights to productive systems.

7 Conclusions

The aim of this study was to research local forest governance structures in an area in Burkina Faso in relation to REDD initiatives and analyse possibilities for benefit sharing from REDD. By investigating local-level experiences and practises in governance of forest resources, and the current governance structures and institutions I try to reveal structures that could be used for equitable benefit sharing and the implementation of an effective mechanism to distribute monetary benefits to village members from avoided deforestation and forest degradation (REDD)

The study has shown that there exist both opportunities and threats for a REDD project in the Nazinon forest. The opportunities for an equitable benefit sharing from REDD can be funded on:

- Existence of a CFM structure
- Social cohesion at village level
- Concern of the local communities for the future of the forest
- Experience in monitoring and control of the forest
- Interest of the international community to support REDD preparations in the country

There exists however significant threats and challenges for REDD implementation and benefit sharing, which can be summarised as:

- Lack of transparency and trust in current local forest governance
- Diverging perceptions on land ownership
- Lack of understanding of REDD and its dimensions at government level
- Weak civil society in the forest sector
- Local communities have not been transferred the promised decision making power and management responsibilities of their CAF

Burkina Faso is in a position in which there is huge interest and ambitions from international donors to invest in REDD preparedness. The requirements for transparency, monitoring and control of international donors could increase the likeliness of an equitable national REDD strategy where the local forest dependent communities are given an important role in REDD design, planning and implementation and they are able to benefit financially from their efforts to reduce deforestation and forest degradation. Although international donor funding and presence is not a guarantee for avoiding elite capture. A REDD strategy that is equitable and allows the participation of local communities is only possible if the international donors have a realistic picture of forest governance and the realities of the local communities to base their funding criteria and requirements on. Unfortunately this does not seem to be the case currently when looking into FIP's intentions in Burkina Faso.

The fact that people living in the Nazinon forest are obliged to excessively cut wood to meet their subsistence needs is a driver of deforestation (even though it may not be the main driver). Providing the means through REDD compensations for the local communities to decrease deforestation and forest degradation and participate in reforestation activities to enhance carbon stocks could have a positive effect on local livelihoods. Moving away from woodcutting is a desired goal for the woodcutters, but is possible only if they have an

alternative income generating activity or are compensated for the income lost from abandoning woodcutting.

Based on the data analysis it is clear that if an equitable REDD mechanism is to be implemented in the Nazinon forest the forest governance structure would need to be reformed before any REDD preparations are commenced. The underlying problems in forest governance and CFM are profound and require fundamental, but rather simple changes before moving ahead with complex REDD strategies. For example, establishing in cooperation with local communities an equitable and transparent SFM scheme could be a good starting point, as Burkina Faso needs a longer track record of functioning SFM and CFM. In addition reinforcing the civil society and local communities would facilitate the transfer of power over forest management to the local communities and enhance their participation in decision making regarding their forests and livelihoods. Capacity building in technical issues such as measuring, reporting and verification of carbon stocks, of both local and governmental actors is necessary in order to involve local stakeholders in a REDD project as well as to provide reliable data to carbon buyers. Capacity building in good governance of the governmental bodies involved in possible future REDD implementation seems also necessary based on the findings of this study. Fundamental changes in forest governance are necessary before any hope can be given to implementation of a REDD project that would benefit also the poor and forest dependent communities. A functioning REDD mechanism that provides equitable benefit sharing will in addition require a reform in land tenure and land use planning, to secure local communities their right to the carbon sequestrated. Reform in the agricultural sector is essential in order to decrease agricultural expansion. This could imply regulations on the demand for agricultural and forest products, taxes and subsidies for more efficient agricultural production as well as agricultural or reforestation subisidies for regions from which people migrate to Southern Burkina Faso. Additionally subsidies for alternative energy sources could reduce deforestation and forest degradation. In general all incentives for decreasing the drivers of deforestation go hand in hand with REDD preparations.

In addition a large scale follow up of the current CFM structure and governance issues should be conducted at field level in order to base REDD preparations on a truthful setting and be aware of and take fully into account the implications of REDD with respect to local governance, livelihoods, benefit sharing possibilities and how local communities can participate in REDD.

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Personal messages

Mr Cyrille Kaboré
Engineer in Forests and Water/ Direction General de la Conservation de la Nature
Personal meeting, May 14, 2010

Mr Adama Doulkom
Director of Forests / Ministry of the Environment and Cadre de vie (Ministère de l'Environnement et du Cadre de Vie)
Personal meeting May 10, 2010

Mr Robert Bayala
Provincial Director / Ministry of the Environment and Cadre de vie (Ministère de l'Environnement et du Cadre de Vie)
Personal meeting, May 26, 2010

Mr Obue Dango
Technical Director of Nazinon Forest
Personal meeting, May 17, 2010

Mr Issor Zane
Vice President of GGF in Silimba
Personal meeting, May 17, 2010

Appendix 1: Questionnaire - Individual interview questions

INTERVIEW QUESTIONS - VILLAGE

Date…… Location……..

Name…… Member of GGF?

1. SOCIO-ECONOMIC STATISTICS

1. Gender ……
2. Age of respondent ……
3. Household size ……
4. Education level ……
5. Profession/Occupation ……
6. Residence status (indigenous/migrant) ……
7. Main income generating activities:

AGRICULTURE

1. Do you own agricultural land?
    a. Size
    b. How did you receive the land?
2. What do you produce?
3. Is the production enough for your household's needs?

FOREST

4. What activities do you have in the forest?
5. How are these activities carried out ?
6. Do you employ help ? Who ? How does it work ?
7. How much do you produce ?
8. What propotion do forest products contribute to your income?
9. How do you receive the payments? When? From whom?
10. How do you use the income from forest products?
11. Who in the family decides how this income is used?
12. What would you do if you could not exploit the forest?

Forest Management Group

13. Why are you a member of the group?
    a. Since when?
14. Have you had to stop other activities due to membership?
15. Do you receive information about forest management and about the group?
16. What do you think about the functioning of the group ?
    (equity/transparency/distribution/decision making etc.)
17. Which activities are forbidden in the forest?
18. Is there a surveillance system ? Who ? How ?
19. What are the sanctions/punishments for illegal activity ?
20. Who decides on the sanctions/punishments ?
21. Do you have a village development fund? How does it work? Have you benefited from the fund ?
22. What benefits has the village gained from the local management of the forest?
    a. Monetary
    b. Non-monetary
23. What do you think about the distribution of the reveunue from forest products in teh village ? Why? Better than before ?
24. Have you seen a change in the forest and in your income since you have been a member of the forest management group?

Appendix 2: Guideline to men's focus group discussions

1. Presentations
2. What do you know about the forest?
3. What activities are conducted in the forest?
4. What is their level of implication in the GGF?
5. What is their position in regards to the UGGF?
6. What would they like to change in the GGF or in general in the management of the forest?

Appendix 3: Guideline to Women's Focus Group Discussions

1. Presentations
2. What activities do the women have in the forest?
3. How are the women organised for their activities in the forest?
4. What type difficulties do they encounter in the forest?
5. What is their level of implication in village decision making?
6. What is their relationship with the GGF?

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