ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
INSTITUTE OF DEVELOPMENT RESEARCH (IDR)

Practices and Challenges of Participatory Forest Management in Ethiopia: the case of Bonga Participatory Forest Management Scheme, SNNPRS

By: Henok Workeye

July, 2007

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Practices and Challenges of Participatory Forest Management in Ethiopia: The Case of Bonga Participatory Forest Management Scheme, SNNPRS

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Development Studies (Environment and Development)

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July 2007

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BY

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DEVELOPMENT STUDIES

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Acronyms

BoARD	Bureau of agriculture and Rural Development
CBFM	Community Based Forest Management
CBNRM	Community Based Natural Resource Management.
CSA	Central Statistical Authority
DAs	Development agents
EFAP	Ethiopia Forest Action Plan
EPRDF	Ethiopian People Revolutionary Democratic front
FMA	Forest Management Agreement document
FMP	Forest Management Plan
FPC	Forest protection committee
FUG	Forest User Group
GTZ	German Technical Cooperation
IUCN	International Union for Conservation of Nature
JFM	Joint Forest Management
NFPA	National Forest Priority Are
NGOs	Non Governmental Organizations
NTFPs	Non-Timber Forest Products
OGRBMPS	Omo Gibe River Basin master Plan Study
PFM	Participatory Forest Management
SNNPRS	Southern Nation's Nationalities and People's Regional States
UNCED	United Nation Commission for Environment and Development
ZOFED	Zonal Finance and Economic Development Office

Abstract

This thesis has attempted to examine the various factors influencing people's participation in participatory forest management (PFM) scheme and associated challenges entailed in its implementation. The study was conducted in parts of Bonga forest in Kafa Zone, Gimbo Woreda which is currently under PFM. Three forest user groups (FUGs) were selected purposely from three Kebeles of the Woreda. The justifications were the existence of different agents of deforestation, earlier period of formation, and relative physical accessibility. The nature of the study commanded methodological pluralism. Thus, combinations of surveys, qualitative and quantitative data collection techniques were employed.

The study showed that there are hosts of socio-economic, cultural and institutional factors at play affecting people's participation in PFM. Low level of income and education, among others, affects users' participation and thus, winning the acceptance of the poorest often marginalized communities to involve into PFM scheme was found to be challenging. Other user's attributes which impede participation include: Socio-cultural attitude towards women, community relationship related to ethnicity of individual member and past experience on collective action, size and solidarity of the group. The finding further shows some factors related to institutional attributes such as membership, conflict resolution and relation with external actors/agents. Others are clarity of boundary and ease of exclusion which is related to the resource attributes.

The current community management is reported to have brought considerable environmental and social benefit. Such as improvement in quality and quantity of trees and NTFPs both through reduced access and complimentary forest development activities. Moreover, authority and use rights through a signed agreement with the local government and most importantly increasing social acceptance and empowerment of the Manja community are the most important incentives (benefit) that promote members' participation. In this regards, the finding of the study further showed how PFM can be used as a means to promote the participation marginalized communities in forest management as well as well as enhancing social justice, and improving the forest resource management in their localities. Despite improvements in forest ownership through user approach compared to the previous state ownership, feelings of insecurity still exist among users. The sources identified were the existence of contending traditional property right regime on forest and NTFPs, unclear duration of rights, limited support from the side of the government and community past experience on property rights.

It is recommended that more efforts are required to strengthen PFM and win an explicit trust among parties. This can only be achieved when policy and legislation are reformed to accommodate PFM and when local forest users are empowered through full legislative backing and capacity building.

Key words: Participation, Participatory Forest Management, Forest Users, Benefit, Ownership Rights, Community

CHAPTER ONE

INTRODUCTION

1.1 Background

The reasons for the growing global concern with the environment are well established to require lengthy explanations. In many developing countries, environmental and natural resource degradation has assumed disastrous dimensions (Yeraswork, 2000). Particularly, there is a growing concern that much of sub-Saharan Africa's natural resource base and ecological environment are deteriorating mainly due to high population growth combined with unsustainable consumption pattern (Gibson et al, 2000). The main problems related to environment in the region are the loss of natural vegetation because of accelerating deforestation, intensive cultivation and grazing, land degradation and drought.

Ethiopia, like many other countries in Africa, has long history of controlling and managing forest resources through state mechanisms. For decades, forests in this country have been under state control with little or no recognition of customary property rights and there was no provision for community participation (Farm Africa, 2005). Stellmacher (2005) argues that governmental forest policy in Ethiopia primarily focuses on "rigid conservation", hence on exclusion of human interference, rather than on management of forest resources. Dessalegn (2001) even argue that the worst enemy of environmental protection program in this country was not peasant agriculture, nor population pressure, but the government itself.

It is widely believed that Ethiopia was once largely wooded and that total forest cover has been reduced from 40 percent to just 3 percent over the 20th century. Although the past extent of forest cover is debatable[1], the 1990 Ethiopia Forest Action Plan (EFAP) also estimated forest cover to be only 2.7 percent. Extensive forest fires in early 2000 have resulted in further losses. Dramatic deforestation has also been associated with political transitions from the imperial to Derg regimes

[1]. Contributing to contradictory findings is the dearth of accurate forestry data at the national, regional, and local levels; the lack of good institutional data; and the disparate definitions and measurement employed in studies of deforestation.

and especially from the latter to the EPRDF (Pankhrust, 2001). Various sources have also documented that during the last hundreds of years, the transformation of natural high forest to cultivated land and grass land have been most severe in the north and north eastern part of the country (MoA, 1998) where population has been concentrated for many centuries. It was only in the south and south west of the country where many forest blocks still remained (Dessalegn, 2001; Melaku, 2003; MoA, 1998). However, this seems to have changed during the last few decades (MoA, 1998; Matheos, 2001). Increasing human impact on the forest resource is most significant around settlements in south west highlands such as Mizan Teferi, Tepi, Gore, Metu and Bonga.[2] It is evident that if the described trend continues, the last natural high forest of south west Ethiopia will get lost in the near future (OGRBMPS, 1994).

Realizing the fact, the government has been trying to implement different forest conservation approaches over time, the most ambitious started in the 1980s with the incorporation of primary high forest areas as "National Forest Priority Areas" (NFPA). In 1986 Bonga Forest was also demarcated as "Bonga National Forest Priority Area" (BNFPA). In practice, however, this conservation policy proved to be defectively implemented and for the most part did not go beyond signposting NFPA boarders, since management plans were lacking or not realized, competences vaguely defined as structures dependant on inefficient governmental interference, and most importantly, needs and views of local communities were not taken into account (Matheos, 2001).

As Kidane (1994) further rightly puts it, lack of participatory approach in the planning and implementation of social forestry programs is one major reason for the limited success of past efforts in the forestry sector in Ethiopia and the initiative for community forest development should emanate from the farmers themselves. It is from this perspective that participatory forest management also called collaborative or joint forest management is introduced against the top-down or state owned community forestry projects. The latter approach is blamed by most to have contributed too little success and much failure of past conservation efforts.

[2] Bonga is found in Kafa zone. Kafa has one of the last two large remaining contiguous forest areas in the country. And coincidentally, Kafa, along with few of its surrounding areas, might be the last hope for conservation of the remaining Ethiopian forests (Matheos, 2001).

1.2 Statement of the Problem

The continued deforestation and forest degradation has revealed that conventional approaches that are in practice to manage forests in Ethiopia have not been able to guarantee the conservation of our forest resources. Instead, it undermined traditional common property regimes, disabled local resource management systems, and disempowered local communities in terms of both resource ownership and responsible use (FARM Africa, 2005).

Consequently, many scholars have argued that conservation efforts which were tried so far in Ethiopia are conventional and forceful. These methods instead of conserving have led to accelerated depletion of forest cover (Dessalegn, 2001; Ginjo, 2001; Yonas, 2002; Eyasu and Pippa, 2001). This has been also true of the South west broad- leafed highland forest of the Bonga area (Matheos, 2002; FARM Africa, 2005).

As it is noted in the introductory part, much of the south west highlands including Bonga forest are one of the 58 forest areas designated as high priority forests[3] in the country (OGRBMPS, 1994). Yihenew (2002:65) indicates that "out of the remaining total 2.7 million ha"...a good portion that is 24 percent is found in southwestern highlands. Currently there is high rate of deforestation[4] in the region. In Kafa Zone alone (Bonga forest), there is an estimated annual deforestation rate of 22500 hectare (Bech, 2002 sited in Stellmacher, 2005). In Bonga Forest, the consequences of absent, incongruous and defectively implemented governmental forest policies and land tenure rights, and the after effects of past and present governmental resettlement programs contributed to enduring conflicts on forest resources (Stellmacher, 2005). Similarly, OGRBMPS indicated that the principal resource conflict in the area has been between forestry and agriculture, and in the absence of effective forest management, the conflict is being resolved in favor of cultivation (OGRBMPS, 1994).

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[3] In an effort to cope with the rapid depletion of forests in recent years, the government has classified 58 of the most important high forest areas as National Forest Priority Areas (NFPA) see map (annex 9)

[4] Based on a recent forest monitoring study for southwest Ethiopia, till the 1980s , already 60% of the natural high forest of the area got victim of human expansion due to mainly population pressure, migration and resettlement program of the Derg regime(MoA,1998).

Hence, many people argued that this trend of accelerating deforestation in Ethiopia in general and Bonga forest in particular, which leads to environmental change, can be addressed if people enjoy secured livelihood. This requires that people are made full agents and beneficiaries of forestry projects (Zelalem, 2005). For this, an institutional change, among others, has been found to be an "adjusting screw" in order to promote sustainable forest use (Stellmacher, 2005).

It is from this perspective that participatory forest management (PFM) was introduced by FARM Africa to Bonga forest area since October 1996 with the aim of promoting sustainable utilization of forest produce through redefining user rights to the forest and empowering the village communities within and around the forest resources (FARM Africa, 2005). The core initiative is the establishment of a 'Forest user society' (FUS) or a 'Forest user group' (FUG) which gains governmentally authorized and exclusive use rights over a particular forest area and is bounded by a Forest Management Plan developed by NGO mediation in negotiations between representatives of local governmental bodies and local communities.

With regard to the participatory approaches, the question is posed who of the local community actually participate and make the decisions in the Forest Plan preparation process and overall forest management activities, hence the project runs the risk that it may represent merely interests of certain groups of the community. Besides the socio-economic status of resource users, culture, gender and ethnicity of individual community members may limit the opportunities available to weaker members to participate and benefit from the collective action. Sing (1992:16) has also disclosed that homogeneity and heterogeneity of a community in terms of class, ethnicity, assets, income, gender, etc are important determinants of people's participation. Zelalem (2005) further illustrates that, in normal circumstances the participatory forest management process should first start by analyzing the need for participatory forest management in the given socio-economic, cultural, institutional and political context of the area in question. As a matter of fact, this is an onset where the current research attempts to examine.

Thus, this study tries to assess the various factors affecting people's participation in participatory forest management and local people's attitude towards the approach.

1.3 Objectives of the Study

General Objective

- To investigate factors affecting people's participation in participatory forest management and solicit people's attitude towards the current management approach in Bonga forest area.

Specific Objectives

1. To identify and assess activity areas in which forest user groups participate.
2. To examine the various factors affecting people's participation in participatory forest management
3. To assess perception of the local community towards participatory forest management.
4. To explore the challenges of the current forest management scheme.
5. To draw lessons that will help for improvement of participatory forest management.

1.4 The Research Questions

1. In which activities do members of forest user group (FUG) participate?
2. What are the factors affecting household community members (FUGs) participation in PFM?
3. How do the local communities perceive the current management approach to the forest?
4. What are the challenges and constraints of the current forest management scheme?

1.5 Methodology

1.5.1 Research Design

The nature of research problems most often dictate the methodology of the study (Creswell, 2003).The current study aims at examining the various factors affecting people's participation in Participatory Forest Management and solicits people's view towards the new scheme. Hence, the study commanded methodological pluralism (i.e., combination of different data collection techniques), where by both qualitative and quantitative methods of data collection methods were employed. Such methods were helpful to find adequate information and to get individual, group and institutional views (Yearasework, 2000:296).

1.5.2 The Study Area

The study was conducted on part of the Bonga forest in Gimbo woreda, Kefa Zone in SNNPRS; about 430 km southwest of Addis Ababa. The forest area covers about 161, 424 hectares and includes forestland, settlement areas, grazing and agricultural land. Specifically, the study was carried out in parts of Bonga forest extended in three contiguous rural kebeles of Gimbo Woreda. The kebeles are Qeja Araba, Meligawa and Michity. The survey concentrated on those households registered as Forest User Groups (FUGs) under the Participatory Forest Management (PFM) Scheme.

1.5.3 Data Source

Both primary and secondary sources of data were used for this study. The primarily data were gathered through household survey targeted on forest user groups, focus group discussions, key informant interviews, and direct observation techniques. The survey generated both qualitative and quantitative data pertaining to their socio-economic and demographic characteristics, aspects of participation and perception etc. Views of those non user households were also included through focus group discussions. Further, secondary data sources include published and unpublished materials, books, journals, project reports and maps.

1.5.4 Sample Size and Sampling Method

The study primarily focused on parts of the Bonga forest which is currently under PFM scheme. There are eleven kebeles in Gimbo woreda that use the forest for different purposes. However the PFM scheme is being implemented in parts of the forest extended in six kebeles (Table-1). Currently, there are eight forest user groups (FUGs) formed at different time and all under the process of implementing PFM.

Table 1: Forest user groups in Gimbo woreda under PFM scheme

Kebele	FUG (forest user group)	Total forest area (ha)	Total no. of FUG members
Keja Araba	Wacha	439.5	75
	Obera	398	68
Michiti	Matapa	216	74
	Beka	602	123
Yeyebito	Agama	1200	263
Bita chega	Dara	800	173
Melegawa	Sheka	215	121
Kayakelo	Gogoma	450	45
Total		4320.5	942

***Source: FARM* Africa, 2005**

In order to undertake the study, three FUGs operating in three kebeles of Gimbo woreda were purposely selected out of the eight FUGs. These were Watcha FUG from Qeja Araba kebele, Sheka FUG from Meligawa kebele and Matapa FUG from Michity kebele (Table -1).

The three FUGs were purposely selected based on a number of justifications. Those management groups formed earlier (signed agreement document), physical accessibility of the households and the forest patches delineated for protection and development and further the selected Kebeles are homes to clusters of Manjo [6] households–marginalized occupational groups believed to heavily depend on wood to meet their subsistence needs. Hence, it is highly conceivable that the study kebeles represent perhaps the most difficult agents of deforestation: agricultural land encroachment, squatting, charcoal burning and fuel wood supply to near by towns and adjacent communities.

List of forest user groups household members in each respective groups were prepared using documents available at project and forest user group (FUG) offices. Then, simple random

6. The term "Manja" or, sometimes referred to as "Manjo" is a name referring to socio-culturally discriminated ethnic group in Kafa. Manja or Manjo is not only known to reside in Kafa alone. There are Majos in Dawaro, and sheka zone too. In these places as well, the Manjos or Manja belong to the marginalized groups. Although the terms are the same in all the three areas, ethnically the Manja of Kafa, Sheka and Dawaro belong to the three different ethnic groups respectively (Yonas, 2004: 14).

selection of FUG household members using lottery method was made proportional to the size of each FUGs found in each kebele. Accordingly, 90 sample households (30% of the total HH) were taken, i.e., 25(34%) households from Wacha FUG, 40(33%) households from Sheka FUG, and 25(34%) households from Matapa FUGs.

Table 2: Forest user Groups, total number of households in a delineated forest and sample households taken

Forest user Groups (FUGs) and their location (kebeles)	Total Forest area delineated(ha)	Total number of Households within FUGs	Sample households taken for the study
Wacha FUGs (Qeja Araba Kebele)	439.5	75	25
Sheka FUGs (Meligawa Kebele)	215	121	40
Matapa FUGs (Michty Kebele)	216	216	25
Total	**870.5**	**270**	**90**

1.5.5 Methods of Data Collection

I. Primary Data source

Structured Questionnaire

The study was based mainly on sample FUG members household cross-sectional survey using pre-tested structured questionnaire organized in a logical order of presentation. The survey generated both qualitative and quantitative data pertaining to:

- Socio-economic and demographic characteristics, aspects of participation, forest use and dependence
- Aspects of participation with respect to the PFM processes, forest management implementation issues, respect to community rules and by-laws, forest development and protection issues
- Factors enhancing or hindering member's participation, internal and external challenges related to PFM implementation.
- Response (perception) of forest user communities towards participatory forest management.

Key Informant Interview

In-depth key informant interviews were conducted with selected informants of forest user groups (FUG). These include: six male FUG members (two from each group), another six women FUG members representing each group, forest protection committee members (6 in number) with in the respective three forest user groups including chairpersons. Moreover, in-depth interview was also conducted with local government officials, Zonal and Woreda agriculture and rural development bureau experts (5 in number) and four project coordinators three of whom were forestry experts.

Focus Group

Focus group was also another qualitative method of data collection instrument used for this study. Accordingly, three focus group discussions from three FUGs and another three FGD were planned for non-user household members. However, only two FGDs were conducted due to difficulty in accessing them. Overall, a total of five FGDs were conducted, three of which, were for forest users in each FUG and two for Non-users from Matapa and Sheka FUG. The number of participants in a Focus group range from five to eight. And the general direction pursued in those discussions were left for the researcher to trigger issues for discussion and promote active group participation. All contents of the discussion were recorded in a tape recorder for later transcription.

II. Secondary data sources

The primary data gathered was supplemented by review of documents and other secondary sources. The following are the major secondary sources that were utilized during the study.

- Books and periodicals, PFM related publications, seminar papers, conference proceedings.
- Previous works done as Master's thesis and PhD dissertations as well as socio-economic and forest resource studies by line agencies.
- Statistical publications and maps
- All relevant documents and project reports, legislations, internal by-laws of FUGs.

1.6 Data Analysis

Regarding the analysis, the survey data was analyzed employing mainly descriptive statistics with the help of statistical soft wares (SPSS) and some statistical tests such as chi square. Further, information obtained from focus group, key informants and officials has been summarized and used in the triangulation of evidences.

The process of analysis was carried out by using qualitative description and descriptive statistics. The portion of data that was readily quantifiable (information from the closed questions of the questionnaire) was discussed using tabulation and cross- tabulation of variables with percentage values and other descriptive statistics. Readily non-quantifiable data (information from open-ended questions, key informant interviews, and focus group discussions) was discussed through qualitative description.

1.7 Significance of the Study

Despite recent moves in Ethiopia to devolve management responsibility to forest adjacent communities (such as through PFM), researches done on the subject are still quit inadequate. On top of this, the application of community forestry (such as PFM) varies across different social and environmental context (Yonas, 2004). Thus, this has made the learning so peculiar that a wealth of lesson needs to be drawn to mainstream community participation in to national forest policy and practice. In addition, it is also highly important to study factors affecting people's participation in participatory forest management, and gather lessons to apply them for further participatory forest management activities. Similarly, the lessons drawn from such study may contribute to current efforts by the government, NGOs and researchers to find better policy options to address the problem of forest degradation.

This study may also generate information for various purposes and potential users such as:

- Federal government bodies engaged in Environmental protection, Natural resource management and rural development.
- Local government, more specifically to Regional, zonal and woreda Natural resource and environmental protection desks.
- NGOs and Organizations working in forest development.
- Research institutes working in the area of Natural resource and rural development.
- Researchers who would like to make further study on the issue or other problems in the area.

1.8 Scope and Limitation of the Study

This study specifically focuses on analyzing or investigating factors affecting people's participation in participatory forest management, examine the various challenges entailed in its implementations, and solicit local people's perception towards the approach. The study area is limited to Bonga forest found in Gimbo woreda of Kafa zone, SNNPRS and hence making the findings specific to the case area. The study area is also related to the on going participatory forest management program in the area.

As PFM is too wide in its components, it may not be possible to address all the issues in this paper due to limited time and resource. Therefore, the paper covers only some selected indicators in some main components. Further, the study was done under several constraints and challenges, particularly during the process of data collection. Time spent in the field 34 days which was not sufficient to collect the necessary data from the selected FUGs situated at different locations. Further, due to inaccessibility of some of the households found scattered inside the natural forest, the researcher couldn't find some of the anticipated respondents. Hence, this can be taken as the major limitations. Nonetheless, the study is expected to be useful in efforts to mainstream community participation in to national forest policy and practice as well as to undertake similar research in other areas.

1.9 Organization of the Study

The thesis has five chapters. The first deals with the introductory section, the problem, and its approaches. The second chapter presents the review of literature and conceptual frameworks. The third part describes the study area, participatory forest management initiative, and features of the selected FUGs. Chapter four presents characteristics of the sampled respondents, treats the analysis and interpretation of data. Finally, chapter five deals with conclusion and recommendation.

1.10 Definitions of Operational Terms

1. **Participatory Forest Management (PFM):** A system that involves communities in decision-making regarding forest protection, development and utilization to realize their use rights on the resources.
2. **Forest Management Plan (FMP):** A document that contains activities and implementation plans of forest protection, development, regulation and monitoring.
3. **Forest User Groups (FUG):** An association (Households) organized to manage a particularly delineated forest for protection and utilization purpose.
4. **Forest Products:** Includes wood and non-timber forest products (NTFP) such as cardamom, wild paper (Timiz), Coffee, honey and other that are directly obtained from the forest or those that can be obtained by developing them in the forest.
5. **Benefit Sharing:** Obtaining any benefit derived from the forest resources by protecting and developing it.
6. **Perception**: Views (positive or negative) of people towards participatory forest Management (PFM) approach.
7. **Forest Tenure**: Is the forest holding system defined by the rule and regulation of regional government in the participatory forest management agreement.
8. **Use-right**: Refers to guaranteeing the right to use forest and forest product.
9. **Exclusive right**: Refers to guarantying the users to have full right on forest. This includes the right to use, sell and transfer to third parties.
10. **Non-Timber Forest Products (NTFP's):** Include products such as: forest grown coffee, cardamom (Korerima), wild paper (Timiz), and other products such as medical plants, grass and fodder, clay soil for pottery workers.
11. **The Forest Management Agreement (FMA):** It is an agreement document that defines the rights, responsibilities and duties of the government and the communities (Forest users).
12. **Non-users**: These are a group of people /individuals/ who are out of the forest user group but claim use right over a particular delineated forest.
13. **Forest Protection Committee (FPC):** These are a group of people (seven) assigned to lead a particular forest user groups (FUG) in order to implement forest management plan (FMP).
14. **Participatory Forest Management Activities**: include forest development, forest harvesting and forest protection activities detailed in FMP.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Resource Management Approaches

Before the coming of interferences from the state, in many parts of the world, local communities have been managing resources (such as forest) in sustainable manner. This is because local people were able to manage natural resources via complex interplay of reciprocity and solidarities. Their old age knowledge and skills played vital role in managing the resources. Nonetheless, the coming of state intervention with their keen interest to have control over those commonly managed resources brought a downfall to the traditional natural resource management systems (Borrini-Feyerabend, 2000). This has in fact led to much more undesirable environmental problems such as deforestation through out the world.

The concerted concern for managing natural resources dates back to the 1970s, since the emergence of alternative development approaches. Different actors/stakeholders have attempted to treat the environmental problems with simple, neat solutions focusing on biological and/or technical solutions and neglecting the social dimensions. Contrary to such views, however, resource management comprises ecological, technical, social, economic, legal, and political aspects (Castren, 2005). Taking this under considerations, Karki (2001) defines resource management as:

> *The process, by which resources are allocated, regenerated, managed, and conserved over time and space to meet the needs and aspirations of humankind. It involves an interaction of three major elements; the physical resource base (land, water, forests, wildlife, etc.); the production system (the mix of technologies and productive activities), and the social regulation (laws, rules and principles) that govern access to resources, their distribution and use.*

The following section provides two broad perspectives dictating resource management so far. These are the modernization perspectives and the post modernist approaches.

The Modernization Vs the Post Modernist approach to Resource management

Most of the conservation efforts made so far are detected under the modernization framework that fail to bring lasting effects though they have conveyed considerable success in the short run (Pretty and Shah, 1997).

The basic assumption behind the modernization approach is that farmers are the cause of natural resource degradation such as deforestation, soil degradation and overgrazing. Thus, it recommends the exclusion of people from forest to protect trees and wildlife and the adoption of externally developed conservation technologies (Pretty and Shah, 1997). For instance: Most Africans' national forest and parks management systems have been dictated by modernization approach too. Local communities do not participate in the management, as the basic concept in their design and management is to protect from them.

Consequently, most past conservation efforts of many countries ended up in little success due to the fact that policies of governments have been influenced by modernization of traditional conservation approach and were focusing on biological values of resources and ignored the people who depend on such resources (Berkes, 2004). In response to this, alternative approaches to resource management have been developed starting from mid 1980s and mid 1990s (Crany and Farrington, 1999).

Post modernism, the new approach to resource management rejects the "meta- narratives or large scale plans, technologies or theoretical interpretation that purport to have universal application" which were made so far in modernization framework (Pretty and Shah, 1997:40).

The new post- modernist approach to resource conservation rather incorporates and glorifies the term 'participation' of particularly local people in natural resource management (Pretty and Shah, 1997:40). Hams (1994, cited in Ginjo, 2001) similarly noted that local use and management of natural resource should underline the application of the participatory development approach. That means decision making power and responsibilities should be entrusted to the local population as far as possible and feasible, as the people should have an important share in the benefits of their efforts. Further, the participation of affected community in the planning and designing of natural resource management technologies also enables to incorporate indigenous natural resource management knowledge to the intervention package. Similarly, in recent years, a number of

professionals are looking back to customary and other common property systems to support such efforts. Common property systems adopted to cope with the new pressures of present day resources management, are being seen as legitimate and effective management alternatives for natural resource management (Ostrom, 1990; Gibson et al, 2000; Ben Irwin, 2001). This perspective will be used through out this paper.

The new post modernist approach is generally dictated by the principle of holistic and integrated approaches for sustainable resource management (Karki, 2001) which is part of a great transition towards what theorists call 'new conservation'(Berkes,2004).

The Holistic approach to resource conservation recognizes the management and use of a certain resource inevitably affects the management and use of another resource and emphasizes on participation, consultation before action, and shared decision making (Karki, 2001). This approach can consider all the different approaches simultaneously by factorizing both the internal and external into the management system/s proposed. In other words, as Berkes (2004) clearly indicated it, is an interdisciplinary approach to conservation that incorporates multiple scales of ecological, social, political and economic concerns. According to Karki (2001) some of the examples under the holistic approach are:

Sociological Approach: emphasizes the significance of cultural, ecological and social ethics, indigenous knowledge, the role of local people and local institutional arrangements (e.g. property right regimes) in resource management. Chamber (1991 sited in Karki, 2001) observes that the failure of a number of resource management programs can be linked to disrespect for local culture and wisdom. This approach involves research methods such as Participatory Rural appraisal (PRA) and institutional arrangements including consideration of administrative structures and procedures, policies and laws.

***Economic Approach*:** It is based on the premises that there is a need to rationalize the allocation of natural resources and optimize their use through competitive market economies to achieve maximum economic efficiency. This approach is restrained as it assumes that; a) cost and benefit from the use of natural resources are known and equitable b) cost and benefits from the resource can be isolated from those of another such as intangible benefit (aesthetic beauty, ecological uniqueness, biodiversity etc.)

Ecological Approach: considers the whole ecological system and the relation ship among its various components. It recognizes the dynamics of the ecosystem as the basis for resource management. This approach involves practices such as: resource inventory, identification of natural processes that affect ecological impairment.

Technological Approach: comprises comprehensive land use/resource management plans and their implementation for rational allocation and utilization of natural resource. It aims to monitor and mitigate environmental change using physical tools and modern technologies such as mapping, Geographical information systems (GIS), remote sensing etc.

2.2 Property Right Regimes over Resource: The Different Perspectives

Institutional arrangements like property right regime have important bearings on resource conservation and management. This is because some property right types provide incentives for such activities while others not.

Property right is a deliberate social construct (by an authority system) where rights over property are constitutionally or customarily conferred, outlined, and enforced by the state as well as by community (Melaku, 2003). Bromley (1998) defines property rights as institutional arrangement to govern access to land and other resources, as well as the resulting claim of the title holder on those resources and the benefit they generate. Property rights regimes define actors' rights of access and control to property (Yeraswork, 1995).They are, hence, socially defined entities (Yeraswork, 1995) or human inventions (McKean, 2000).Clarifying the difference and similarities between property systems, rights and owners is an essential first step toward an understanding of the interaction between people and forest (Gibson et al.; 2000).
Bromley (1989) as quoted in (Melaku, 2003) identified four types of property regimes: State, Private, Common, and Open access (non-property).

***Private property rights regimes**: Is* a situation where an individual exercises an "absolute" right over his property, particularly over natural resources, where there was no law to regulate utilization from the start or there was serious difficulty in implementing existing rules (Bromley,1998). Its advantage is generally the incentive one holds to develop or maximize the return from one's property; the legal capacity of the owner to dispose, or alienate and being able

to call up on the state power (more effectively) for the purpose of excluding others (Melaku, 2003). Nevertheless, individual interest as it has no bounds, might incur damage or a cost which pass to other non beneficiary groups or individuals or the public at large. In this case, their draw backs may become greater than their benefits particularity when it comes to ownership over natural resources such as forest (Melaku, 2003).

State (public) Property Regimes: The state as a social institution is assumed to be the ultimate bastion of the nation's resources, heritages and sovereignty. Such resources as national parks, conservation forests, waterways and riverbanks, mountains and gorges etc may remain under the protection of the state for protection purposes (Melaku, 2003). However, lack of awareness, corruption, institutional and organizational capacity, knowledge often prevents effective control and administration by the state (Melaku, 2003). According to Bromley (1998) where governments are weak, and their legitimacy is easily undermined, there is a tendency for resource degradation (as it is the case in many of the state Forests in Ethiopia) (Melaku, 2003).

Common Property Regimes: Here, two categories are identified: regulated and unregulated. The regulated common property is different from the unregulated in only one feature. In the former not only utilization is controlled, but also the benefit to members is proportional to input from each (Melaku, 2003). It is a property rights arrangement where resources are owned commonly and users allocate right and duties to members (McKean and Ostrom, 1995 cited in Melaku, 2003; McKean, 2000).It is based on inalienable land rights shared by members of a social group (Yeraswork, 1995).The typical feature of this category is that the individual is subordinated to the collective interest [...] and the resource belongs to finite group (McKean, 2000). However, unless these property rights are legalized they remain "defenseless and non-durable in the face of an intrusion by the state" (Melaku, 2003:51).

In unregulated common property regime resources are still owned commonly and non-members are excluded; but consumption may not be necessarily equal among members because utilization is uncontrolled. The difficulty to regulate resource use arises from such factors as size or nature of the property, as in the case with lowland grazing lands in Ethiopia (Melaku, 2003).

But it is different from open access resources. The widely referred Hardin's (1968) " Tragedy of the common" that " commons" will be over used and degraded because each user has every incentive to use as much resource as possible may hold valid to such customary tenure with little control of its use by individual members. Many scholars have also confirmed that Hardin's argument was a misplaced discourse and has little to do with regulated common property (Ostrom, 1990; Mackean, 2000; Timsina, 2003; Irwin.B, 2003). The concern of this study is, therefore, resource management under common property regime.

Open access "Property" Regimes: This is a situation where no one holds rights to a resource ,and nobody is excluded or they are "owned" and used by all, but cared for by none(Melaku,2003).According to Bromley(1998) the rule that governs resource utilization under open access is the rule of "first capture", the situation that would give rise to open access resource regime are two: the first is when the institutions suppose to manage the resources have failed and the second when the resources in question have not been included in a regulated system from the beginning. Open access is an acceptable method for resource management only when we need not manage resources at all (Mackean, 2000).

2.3 Arguments over Common Pool Resources

Surprisingly, there is very little agreement about which of the combinations and permutations of property rights types are wise or efficient, particularity concerning natural resources such as forest. McKean (2000) rather argues that natural resource systems on which we depend utterly are, we like it or not, common-pool resources. Misunderstandings over this issue have produced tragic consequences leading to much undesirable deforestation throughout the world.

Common property regimes, used by communities to manage forests and other resources for long-term benefit, were once wide spread around the globe. Some many have disappeared naturally as communities opted for other arrangements, particularity in the face of technological and economic change (McKean, 2000). Among the many justifications usually advanced for eliminating community ownership of forests was the argument that individual or public ownership would offer enhanced efficiency in resource use and greater long term protection of the resource. But in many instances around the world today, it is apparent that the arrangements

emerged to replace common- property regimes are ineffective in promoting sustainable resource management. Where people still live near the forests that their lives depend on, the transfer of their traditional rights in to other hands does not simultaneously transfer the physical opportunity to use these resources. Thus in many instances, the transfer of property rights from traditional user groups to others eliminates incentives for monitoring and restrained use converts owners- protectors into 'poachers' and thus exacerbates the resource depletion it is supposedly intended to prevent (McKean, 2000; Gibson et al., 2000; Willy,1998, World Bank, 2002). This has been witnessed in many sub- Saharan African countries including Ethiopia (Yonas, 2000, Irwin, 2003).

In Ethiopia instability of property rights system and the existing tenure system, i.e, public or state ownership, forced farmers to concentrate on short term gains rather than on long term benefits (Degefa, 1999 sited in Ermiyas, 2003). At different times the state has frequently redistributed land in few years time that took away the land held by one peasant to new holder disfavoring its sustainable management (Yeraswork, 2000).As a result, tree planting which is along term investment is lacking because of fear to lose the land with the investment. Thus, tenure insecurity is considered to be one of the underlying causes for rapid resource degradation in the country.

Realizing this, there is renewed interest now both in the lessons to be leaned from successful common property regimes of the past and present (McKean, 1992 sited in McKean, 2000) and in the possibility of reviving community ownership or management as a practical remedy where appropriate (McKean, 2000).Or in places where these no longer exist creating new institutions of common property for resources such as forest(Irwin , 2003).

Discussing the advantage of common property regimes over natural resources such as forests McKean (2000:37) states that:

> *Common property arrangements offer a way of parceling the flow of skim able or harvestable " income" (the interest) from an interactive resource system without parceling the stock or the principal itself. Many natural resource systems can be far more productive when left intact than when sliced up, suggesting that they should be managed as intact wholes, or certainly in large swathes, rather than in uncoordinated bits and pieces.*

This is particularly true of forest ecosystems. Inherent in this basic characteristic of common property the combination of individually parceled rights to flow with shared rights to an intact stock _lies the explanation for its appearance among human institutions (ibid)

Table 3: Stock and flow attributes of property rights regimes

	Individual property Rights	Common Property Rights	Public Property Rights
Rights to flow	Parceled	Parceled	Intact
Rights to stock	Parceled	Intact	Intact

Source: McKean, 2000

It is well recognized that property rights in resources have to be created, but according to McKean (2000) some other factors makes it impossible or undesirable to parcel the resource itself. These are (1) *Indivisibility*: particularly forests, may seem much more divisible (and fenceable) at first glance than other kinds of resource systems, but in fact forests may ceases to produce some of the products and benefits when divided (for instance, plant species in biodiversity forests that yield fruits, nuts, gums, fuel wood, timber, wildlife etc). But, these respond poorly to monoculture plantations that could be managed in smaller units (2) *uncertainty in location of productive zones*: forest resource users may well prefer to share the entire area and decide together where to concentrate use at a particular time, rather than parceling the area into individual tracts , and there by impose the risk of disaster on some of their members (those whose parcels turn out to be bad in a particular time). (3) *Productive efficiency via internalizing externalities:* If different persons own the uphill forests and the downhill fields and make their decisions about resource separately, they may cause harm to each other that requires numerous one-on-one negotiation to alleviate (Coase,1940 sited in McKean, 2000). An institutional alternative to this bilateral exchange is to create a common-property regime to make resource management approach jointly. Hence, joint resource management through common property regimes may enhance efficiency by internalizing what would have been externalities in a system of individual woodlots. (4) *Administrative efficiency:* natural resource systems are fundamentally interactive – forests provide watershed control, species are interdependent in a way we are often unaware of, and so on- and may well be more

productive in large units than in small ones. The society may also be too poor to support a large court system to enforce individual land titles, and even cheap fencing would be expensive by this society's standards. Hence, creating a common property regime here is a way of substituting collective management rules- which function as imaginary fences and informal courts internal to the user group. It is cheaper in these circumstances, and it is within the power of a group of resource users to create (ibid).

2.4 Attributes of Successful Common Property Regimes

Ostrom, (1999) sited in (Havnevik, 2006) put the following attributes in designing successful common-pool resource institutions. These include: Clearly Defined Boundaries; Congruence; Collective-choice Arrangements; Monitoring; Graduated Sanctions; Conflict-Resolution Mechanisms; and Minimal Recognition of Rights to Organize. Similarly, McKean (2000), after synthesizing findings from many individual case studies of successful and failed common property regimes puts the following attributes for successful common property regimes. (1) The criteria for membership in the group of eligible users of the resource much be clear. (2) Infractions of use rules must be monitored and punished, (3) the boundaries of the resource must also be clear, and (4) Distribution of decision- making rights and use rights to co-owners of the commons need to be egalitarian but must be viewed as 'fair" (one in which the ratio of individual benefit to individual cost falls within a range they see acceptable).

Further, in relation to this, (Gibson et al., 2000) tried to summarize different factors that multiple scholars identified as enhancing the likelihood that forest-resource users will organize themselves in the first place related to the use of a common-pool resource. These factors are:

Attributes of the Resource:

- *Feasible improvement*: the forest is not perceived to be at a point of deterioration and users should expect their forest to improve
- *Indicators:* The change in quality and quantity of forest products provide reliable and valid information about the general condition of the forest.
- *Spatial location, terrain, and extent* :the forest need to be sufficiently small, given the terrain, the transportation available that users can develop accurate knowledge of external boundaries and internal microenvironments, and they can develop low cost monitoring arrangements.

Attributes of users

- *Common understanding*: Users have a shared image of the forest and how their actions affect each other and the forest.
- *Discount rate*: Most users have a sufficiently low discount rate in relation to future benefits to be achieved from the forest.
- *Trust and reciprocity*: users trust one another to keep promises and relate to one another with reciprocity.
- *Autonomy:* users are able to determine access and harvesting rules without external authorities countermanding them.

Although it's often difficult to suggest all factor that make successful property work, McKean (2000:49) further suggests the following propositions for successful common property regimes. (See the table below).

Table 4: Attributes of successful common property regimes

socio-cultural support	Common property regimes will work better where the community of users is already accustomed to negotiating and cooperating with each other on other problems than where there are numerous existing conflicts and no indication of a willingness to compromise
Institutional overlap	Reviving recently weakened institutions, where the habits and techniques of negotiation and compromise are still in evidence, will be easier than trying to invent wholly new institutions among people who have never worked together before.
Administrative support	Reviving or creating common-property regimes where local and national governments are hostile are almost impossible. There is little point in trying unless local and national elites, or significant portions of them, are sympathetic to the attempt. This kind of support means legal recognition to strengthen the security and enforceability of common property rights.
Financial support	Apart from limited help with local start- up costs, financial support to local common- property regimes is probably undesirable because it might well undermine local cooperation. If an institutional forms is being adopted because it is efficient, it should pay for itself (by definition) and not require subsidy.
Conflict reduction	Where the size of productive management units permits a certain degree of segmentation or parceling of the resource, it is probably preferable to create non overlapping commons for different communities or nested arrangements rather than to have several communities sharing a single huge commons.

Source: McKean, 2000

2.5 Community Participation and Common Property Resources

A growing number of scholars and practitioners recognize the crucial role played by local people in natural resource management (Ostrom, 1990; Irwin.B, 2001; Yerasework, 1995). Community participation in resource management has been also widely advocated in recent past through a number of international environmental policy documents such as 'our common future", "caring for the earth" (IUCN, 1991), and " Agenda 21" (UNCED, 1992).

Scholars argue that policies emanating from central government generally give local communities few rights over natural resources with which they live. Such conditions generate incentive structures that encourage individuals to "poach" natural resource and discourage them from constructing or maintaining rules and institutions at the local level to regulate their resource use (Gibson et al, 2000; Karki, 2001). Therefore, granting property rights to local resource users play significant role in structuring human motivation and in creating or denying the possibility for collective action in common property resource management (Yeraswork, 2000).

Among others, many conditions have been put forward for successful local level common property resource management. For instance, (Gibson et al., 2000) put three requirements. (1) locals must value the resource (2) they must posses some property rights to the resource, and (3) they must construct local level institutions that control the use of resource.(details about the requirements of successful property regime is provided in the previous section)

This move in global and local development discourse, according to Twyman, (2000) is part of a wider reassessment of the goals of conservation by international bodies such as the UN (for example, the convention to combat Desertification and convention on Biodiversity both advocate community- based approaches), national governments North and South (for example, countries that have signed up to the sustainable development goals of Agenda 21), and NGOs and community based organizations across the world. Recognition of the need for wider livelihood approaches has led the World Bank, for example, to commit itself explicitly to the promotion of community forestry and other means of collaborative forest management in its latest forest policy (World Bank, 2002).

There is now increasing recognition that effective resource management must be linked with the issues of equitable access to natural resources, the promotion of sustainable livelihoods and the alleviation of poverty through participating and empowering process of development (Twyman, 2000). The discourse surrounding 'participation' and 'empowerment' has received increasingly critical reflection (Michener, 1998; Campbell et al., 2002). Michener (1998) differentiates between planner –centered and people centered benefits from participation. In the former, outcomes focus on administrative and financial efficiency. Participation is seen as facilitating local people's acceptance of new technologies promoted by outsiders; indigenous knowledge and local labor can be exploited and in kind contributions to programs can lower implementation costs. In the people centered perspective, it is the process which empowers poor people by enhancing local management capacity, increasing confidence in indigenous potential and raising collective consciousness, as well as meeting local needs and priorities.

Others have developed different typologies of participation. All suggest that genuine, people-centered, active or transformative participation leads to development which is truly empowering whilst planner centered participation tends to be nominal with local people acting as the passive recipients of development. Linking this concept to community based natural resource management initiatives is helpful in assessing the different motivations for, as well as participation in such projects by different stakeholders (Twymann, 2000).

According to Campbell et al. (2002) the meaning of participation ranges from almost complete outsiders control, with involvement of local people, to a form of collective action in which local people set and implement their own agenda in the absence of outside initiators and facilitators. Some also view participation as a means to an end while other views it as an end in itself (Yerasework, 2000; Pretty and Shah, 1997). Yeraswork further states that the issue of the participation-as-a-means versus participation as-an-end-in itself issue, is whether people's participation in decision making refers to their being consulted before decision are made or to their full involvement in actually deciding the matters.

Pretty et al., (1995) highlighted seven categories/ forms of participation; along a gradient of community involvement and empowerment (see table-5). At the least participatory end, of the spectrum, people are merely informed and do not contribute information or views. At the most

participatory end, participation is self- initiated. He further suggests that to avoid confusion in the use of the term participation, reference should always be made to the type of participation as most type threaten rather than support the goals of sustainable development.

Table 5: Types of Participation in Local- level Development

No	Type	Characteristics
1.	Manipulative participation	Participation is simply a pretence
2.	Passive participation	People participate by being told what has been decided or has already happened. Information shared belongs only to external professionals
3.	Participation by consultation	People participate by being consulted or by answering questions. No share in decision-making is conceded and professionals are under no obligation to take on board people's views
4.	Participation for Material Incentives	People participate in return for food, cash, or other materials incentives. Local people have no stake in prolonging practices when the incentives end
5.	Functional Participation	Participation is seen by external agencies as a means to achieve project goals, especially reduced costs. People may participate by forming groups to meet predetermined project objectives
6.	Interactive participation	People participate in joint analysis, which leads to action plans and the formation or strengthening of local groups or institutions that determine how available resources are used. Learning methods are used to seek multiple viewpoints.
7.	Self- mobilization	People participate by taking initiatives independently of external institutions. They develop contacts with external institutions for resources and technical advice but retain control over how resources are used

Source: Pretty et al, 1995.

Likewise, within common property resource management, genuine participation of different interest groups is important to minimize the risk of excluding access to certain resource poor groups.

2.6 What is Participatory Forest Management?

While Hardin's (1968) tragedy of the commons suggested either privatization or complete state intervention to manage common pool resources, a third possibility of their management through collective action of communities gained prominence later (Ostrom, 1990). Arguments for community based natural resource management include local people's familiarity with the

resource and their ability to adopt flexible and site specific management strategies. In view of community based management's potential to meet local as well as national interests, several governments have in recent years embarked up on this decentralized management approach (David and Richards, 1999 sited in Matta, 2004) in various forms and names such joint forest management (JFM), participatory forest management (PFM), and co-management. In addition, there has also been a significant trust from donor agencies for promotion of forest management strategies that dwell on collaborative approaches (Matta, 2004).

Participatory forest management initiatives are essentially common-property regimes and are a subset of the types of environments, resources, and conservation programs involving local peoples that can be more generally termed 'participatory conservation'. Participatory conservation is a way of approaching conservation initiatives, which has emerged along with participatory approaches to development since the 1970's (Wells et al; 1992). From the 1890s until the 1970's conservation was promoted throughout the world using exclusionary means (dictated through the modernization perspective) to preserve landscapes from human use, like national park or wilderness models from state led bureaucratic, technocratic or expert driven approaches (Western and Wright, 1994). These models remain common but have lost popularity for numerous reasons, particularly among non- biologists, for their lack of success excluding local residents (Often lower class and ethnic minorities) and protecting resources within their boundaries, as well as their inflicting negative social impacts on local populations' dependent on those resources (Berkers, 2004).

Reconsidering the roles of resident peoples in conservation is part of a greater transition toward what theorists call 'new conservation' which is a post modernist approach. These include interdisciplinary approaches to conservation that incorporate multiple scales of ecological, social, political, and economic concerns (Berkes, 2004).

The strategies and activities at work in participatory conservation initiatives are diverse and applied in many conservation approaches, including protected area outreach programs (PAOP). Co–management; joint forest management (JFM), community based conservation (CBC), community based natural resource management (CBNRM), integrated conservation and development projects (ICDP) and so on. Participatory conservation strategies have become so

pervasive, particularity among governmental and non governmental conservation and development organizations (NGOs) in tropical countries (Borrini – Feyerabend et al. 2004).

There can be both shallow (e.g., involvement in a limited set of activities such as revenue sharing) and deep (e.g., involvement in initiative definition, goals setting, and critical program evaluation throughout all stages) participation strategies at work in both cases. Therefore, participatory conservation can not be understood in terms of a particular strategy, policy, or management activity that can be chosen and implemented. Rather, it a process of decision making and negotiation required to involve the governance structures and livelihoods of local residents, which are made up of complicated political, social and economic issues (Infield and Namara, 2001).

Whether a participatory strategy is characterized as shallow or deep depends on the qualities of decision making and negotiation, particularity in their inclusiveness of multiple parties and interests. Why and how issues related to decision making and negotiation, such as authority, power, and knowledge, are incorporated into conservation initiatives vary according to strategies applied at particular sites in practice, which stem from the project organizers' perspective of the role of resident people in conservation.

Accordingly, there are various definitions given to participatory forest management among different scholars. Hobley (1996): Participatory Forest Management (PFM) is used as an umbrella term to include shared forest management, joint forest managements, collaborative forest management and community forestry. PFM attempts to secure and improve the livelihoods of local people dependent on forest resources by involving all stakeholders in the process of forest management, understanding their needs and situations, allowing them to influence decisions and receive benefits, and increasing transparency.

Dubois (1999:12) further defined it as: Participatory Forest management (PFM) or Collaborative Forest management (CFM) is basically a common property regime which entails two of Joint Management (JFM) and Community-Based Forest Management (CBFM).The latter being more devolutional as it involves both user and ownership rights over the resources.

Borrini- Feyerabend (2000:6) defines PFM as a " situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or set of natural resources." For the purpose of this research the last definition is found to be more appropriate and will be applied through out this thesis.

2.7 The Rationale of Participatory Forest Management (PFM)

As some authors rightly put it, PFM is a process oriented development and in this process the main actors are the government and community whether their roles and responsibilities can vary depending on the resource base (Borrini Feyerabend, 2000, Zelalem, 2004). There is no generalized model for a successful PFM approach, but in principle it should be based on the existing traditional use, management rules and traditional institutions (Zelalem,2004;Irwin, 2003).

The original argument for increasing community participation in the maintenance of rural conservation projects stemmed from the need to better target people's needs, incorporate local knowledge, ensure that benefits are equitably distributed and lower management costs (Wily, 1998 ; Chamberes,1991 sited in Karki,2001).

The economic rational behind PFM is that communities will conserve (sustainable utilize) forest resources if benefits of the management actions outweigh the costs of forest conservation. Therefore the issue is what benefits are the communities are gaining out of involving themselves in the process of forest management or tree planting in some cases (Zelalem, 2004). These benefits may also include more qualitative cultural values, recognition and respect (Zelalem, 2004).

The whole philosophy of forest co-management rests on convincing people of the benefit of sustainable utilization and by guaranteeing use rights to engage them in sustainable forest management. For this to be successful people must be convinced that it is indeed possible to maintain the resource over indefinite period of time provided use is regulated. Second, it must be possible to guarantee continued streams of benefit from forest products and services. When these are achieved people will be willing to invest in forest management and limit resource extraction (Yonas, 2002).

The issue of tenure is also very significant. Rights of access to and/or ownership of forest resources completely change the perceived and actual values of the resources to the community. Empirically, secure property rights have been linked to more sustainable forestry (i.e. less severe deforestation) (Castren, 2005). For example, Deacon (1990, sited in Castren, 2005) has observed, based on cross- country data, that ownership security in country (not just forest ownership, but overall property rights) lessons deforestation. He points out that security of ownership can be linked to other aspects of good governance and democracy, which all contribute to sustainability. Likewise, Tesfaye (1997) found that sense of insecurity was the main reason behind the failure of forestry plantation projects in Ethiopia. He explains that farmers are either reluctant to invest in such development activities or harvest rapidly from the common when they are not sure whether they can reap benefits from the final harvest. In a same vein, Yeraswork (2000:14) states that the stability of a tenure system may contribute to the emergence of secure and predictable rights of land holding, which is one of the necessary conditions for land users to be motivated to invest the improvement of the resource.

In this regard (Willy, 1998) argues that PFM "allows" forest adjacent communities to use certain products which tend to increase policing functions and reduce burdens of the state. It considers communities as 'rightful beneficiaries" than as "local source of authority and management".
Practically, there has been a long history of joint forest management (JFM) in India, Nepal and elsewhere in Asia (Wily, 1998). For instance Nepal's community forestry program is well known and is widely held to be an excellent example of PFM with 1.2 million hectare under community forestry and 15,000 forest user group (Khanal, 2007). Significant features of the program are: forest management agreements (operational plans) are negotiated between the forest department and user groups; under the legislation and guidelines the user groups are extensively involved in the design of operational plans (Fisher, 1995). This is in contrast to the situation in most Sub-Saharan African countries (including Ethiopia) where traditional polices still dictate that forest reserves remain 'free' from local people, and in which local people have no management role (Willy, 1998). But the fact is communities can not be excluded from the care and control of the forests that surrounds them regardless of the legal ownership of the forests, which may rest with government (Willy, 1998; Gibson et al., 2000).

2.8 Challenges and Constraints of Participatory Forest Management

Alongside academic works that demonstrated the potential of PFM, there also however exited a concern over the success and sustainability of these co management initiatives. Especially when applied in wider scales and broader contexts, the performance of this strategy has been found to be varying (Lele, 2000, sited in Rao Matta, 2005) requiring specific local and regional environmental context (Twyman, 2000; Yonas, 2007).

One of the prerequisites for successful PFM is local people's active and continued participation (Matta, 2005).Though the name PFM is used as a generic term to indicate local involvement in forest management, its specific application and types of forests with in which it operates vary widely. According to Yonas (2007), among the hundreds of PFM arrangements in many of African countries, the diversity in group size, group cohesion, and proximity to market is immense. The forests can be dry woodlands, moist tropical, coastal mangroves, commercial plantations and reserved or unreserved. The typology of PFM differs according to the communities' involvement ranging from simple consultation or cooperation to contracts, consignment and joint ventures. As such it is complex and highly context specific which prevents the possibility of blueprinting the PFM process at operational level (Yonas, 2007).

Further, to be realistic, one needs to recognize that community based resource management needs conducive environment and may become the most efficient land allocation systems only under specific circumstances (Matta, 2005). These include adequate capacity to invest in land quality and a scale of community that allows for low cost regulation among the community members (Castren, 2005). Unfortunately, setting up the system becomes more challenging when PFM is introduced in low value forest areas (Matta,2005) or if the forests need long term investment to obtain a worth while level of production capacity (Castren 2005).
Hence, under joint forest management or PFM the most important challenge is to create a structure where the community members have an incentive to follow the jointly agreed management plans. The internal coherence of the participating community acts as the guardian and reduces illegal and uncontrolled logging and the consequent efficiency losses.

When developing community based management systems, the appropriate definition of the community is also important. It is vital to assess who are the relevant stakeholders rather than simply identifying all the stakeholders. Communities are not homogeneous and efficient systems require through understanding of the internal structures and external linkages of the communities involved (Berkes, 2004). Further, there also needs to be the possibility and incentive to exclude outsiders and the community needs to have adequate social capital and skills to organize both internally and vis-à-vis the outside world (Castren, 2005). Another challenge in such venture (Karki, 2001) is the reluctance of government bureaucrats to relinquish power to local communities, particularly where they think this would threaten their control over the resources. Fisher (1995) observes that in Nepal District Forest Officers showed greater reluctance to release effective control of forests to user groups; they handed over management responsibilities but retained the powers and authorities over exploitation and sales of Forest products. Similarly, Saxena (1995 sited in Karki, 2001) describing the constraints of Joint forest management in India highlights several limitations. For instance, government policies hamper JFM initiatives and legal and organizational frameworks for JFM remain weak and controversial. In such cases, therefore, trust between local users groups and public administration is central to ensure successful management of the resource (Gibson et al., 2000).

In Ethiopia context, PFM has been initiated since the late 1990s. Currently there over 110 user groups formed at different times in different parts of the country including SNNPRS. However, the scheme has still been operating in a legal and policy vacuum. There are limited policy and legal provisions that supports community participation in forest utilization, development and management. At Federal level, the Federal constitution, the 1997 Environmental policy, the national biodiversity conservation (1998), the co operative establishment (proc. No.147/1998) encourages community participation in forest conservation and development. At regional level, the SNNPRS land administration and utilization proclamation No. 53/2004, and state forest management, development and utilization proclamation No. 77/2004 are among the enabling policy frameworks that support community participation. Although these umbrella national and regional policy documents in way or another emphasize the need to uphold the livelihood interest of communities and their involvement in the management of local resource, there are no subsidiary supporting laws, directives or provisions which allow their effective implementation.

2.9 Factors Affecting People's Participation in Participatory Forest Management

Yonas (2007) succinctly put three basic elements (factors) that affect people's participation in participatory forest management. Each in turn is branched in to a diverse array of factors or variables.

- **Resource attributes**: size, clarity of boundaries, predictability of resource flow, condition of resource, ease of exclusion.
- **Users' attributes**: size, proximity to resource & market, group cohesion/heterogeneity, norms of behavior, available skills & knowledge of resource, historical events.
- **Institutional arrangements**: membership, access, appropriation, monitoring & sanctions, conflict resolution, decision making arrangements, relationship with external agents.

In addition to the above elements that determine the success of PFM, scholars (MacKean, 2000; Yonas, 2007) further put the following elements that determine effective functioning of forest user group (FUG) under Participatory Forest Management arrangements.

- Ease of excludability (cost of preventing others from using the resource) favors PFM which is related to size & clarity of boundaries.
- More homogenous, smaller, close knit groups, with intimate knowledge of the resource and history of successful collective action are likely to succeed.
- Simple, flexible, fair rules that are supported by external arrangements (broader policy & practice including market & economy) are likely to favor PFM.
- Lack of rigorous & comparable indicators to measure these variables systematically is a serious drawback

Experience in many countries clearly indicates that when PFM is implemented appropriately, with sensitivity to local conditions and the various attributes mentioned above, it produces significant results. Such as ecological: conserve the natural resources, improve the extent and condition of forest, increase ecological benefits like maintenance of local climate, reduce erosion, and protect watershed; Economic: support sustainable rural livelihoods and so helping to alleviate poverty. It also brings non-economic benefits such as experience, skill development etc... for communities involved in the process (Pretty and Shah, 1997; Zelalem, 2005).

Although PFM has several benefits to all stakeholders, PFM is not a panacea: it does not provide a quick fix for forest conservation and it is not guaranteed to work in all circumstances (Zelalem, 2005). The fact is that PFM approaches must deal with a complex set of technical, social economic and political problems and obliviously developing such a system is often problematic.

Baral (1993) further states that the ethnic composition, political ideology and cultural with in the community could create problems at the user group level. He further indicates that "in order to have successful common property, every individual should have an equal level of participation in decision making. Within common property resource management, participation of different interest groups is important to minimize the risk of excluding access to certain resource-poor groups of people. Against this factors and challenges following conceptual framework is developed for the purpose of this research work.

Analytical Framework

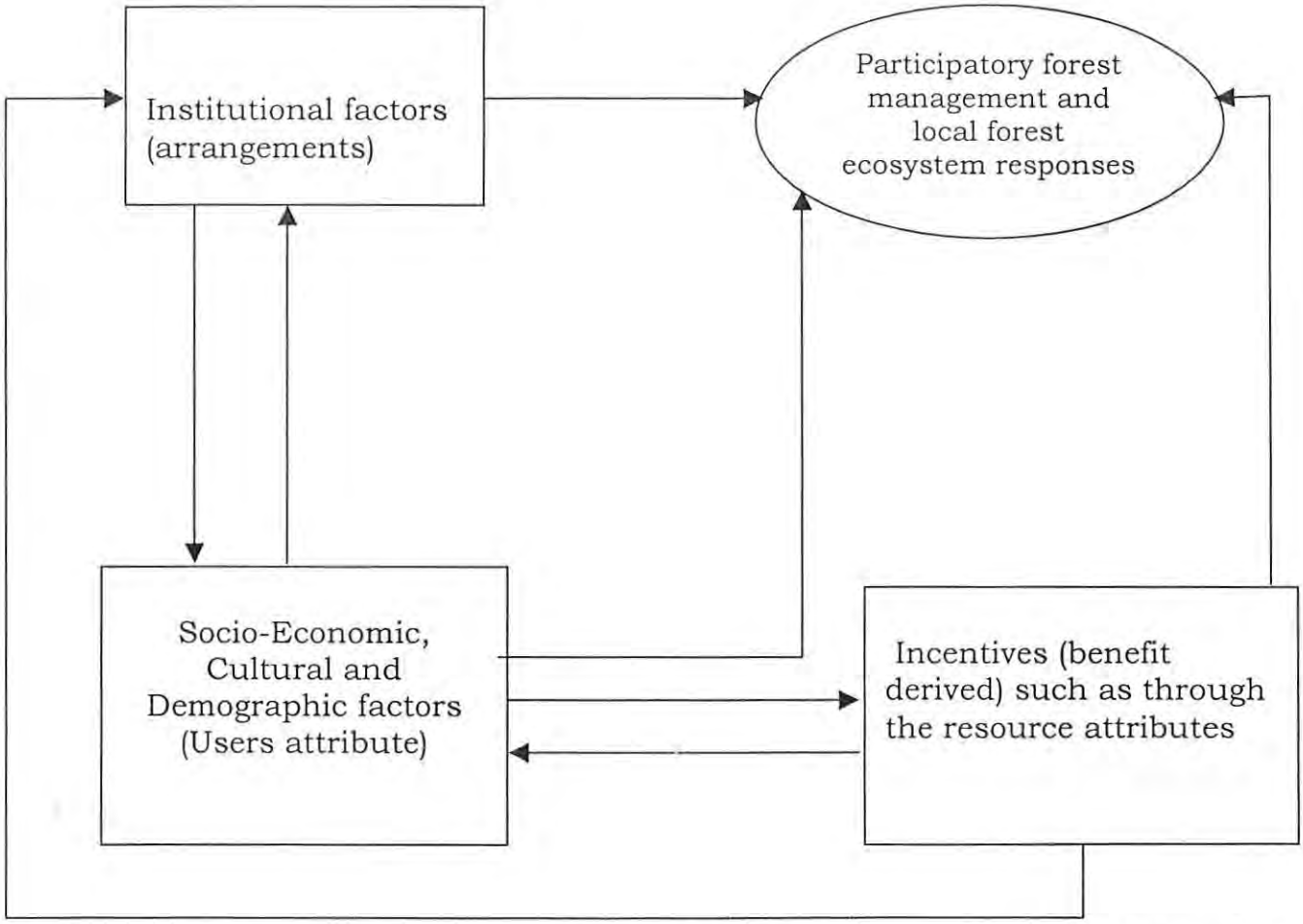
As it is already noted, community participation includes many different dimensions, however participation is not always beneficial or panacea for the conservation of forests because its values depends on the type of participation, on who participates, when they participate and under what circumstances. Strategies to promote participatory/ joint forest management require analysis of all dimensions and functional constituents of local communities as management unit (FAO, 1995).

According to Singh (1992:12), there are seven barriers which can lower people's participation in National Resource Management. These are easy availability of grants and subsidies, prejudices and discrimination against women, illiteracy and lack of awareness, factionalism and heterogeneity of population, disparities in wealth and social status, interference by politicians, and misunderstanding about the motivation and objectives of people's organization.

In a nut shell, the various factors affecting people's participation in participatory forest management can in fact be represented in the following simple analytical and conceptual framework. Given the complexity of forest –local community nexus the advantage of a simple frame work is that a large number of nested variables can be included and represented (Gibson et al, 2000).

At the core of the frame work are individuals who hold different positions (members of local forest- user group, forestry professionals, local regional, or national officials) who must decide on actions (what to plant, protect, harvest, monitor, or sanction) that cumulatively affect outcomes in the forest conditions, the distribution of forest's benefits and costs and ultimately on the effectiveness of participatory forest management. To simplify representations, the complex set of incentives and resulting behavior is initially represented in the framework as a single box. This "box," like all the other boxes in the framework can be opened and contains a nested set of other conceptual boxes with in it.

Figure -1 Analytical and Conceptual Framework representing Factors Affecting People's Participation in Participatory Forest Management.



Analytical and conceptual framework developed by the Author. Slightly adapted from IAD (Institutional Analysis and Development) framework relating multiple factors affecting local ecosystem sited in, Gibson et al, 2000.

Individual incentives (benefits) and behavior within the forest user groups (FUGs) are in turn affected by both the resource attributes and socio-economic and cultural factors (users attribute) as well as institutional factors (arrangement). Each of the factors on the left hand side of the frame work unpacks into a large set of variables. For example, unpacking the institutional factors that may affect human incentives and behavior with in FUGs would include, but not limited to, such variables as:

- Membership, access , appropriation ,monitoring and sanction ,conflict resolution, decision making arrangement, relationship with external agents /external support/,rules regarding who can harvest, when and how, and how much harvesting of different products is authorized or forbidden.
- The availability or type of measures that enhance member's participation or protection activities that is encouraged and by what means.
- The methods of monitoring and sanctioning forest use, existing or/and potential conflict.
- The degree of organization (at micro level) among forest users and the meaning of such organization in terms of individual incentive, National and Regional legislations (at macro level) on the use and administration of each types of forest, the availability of courts to resolve disputes over land and tree tenure.

While, the socio-economic, cultural and demographic factors or simply "users attributes" affecting participatory forest management can be explained again across a wide array of variables like the levels of awareness or education, group size and solidarity, gender and ethnicity of individual member in FUGs, disparities in wealth and social status etc.

CHAPTER THREE

THE STUDY AREA AND PARTICIPATORY FOREST MANAGEMENT INITIATIVE

3.1 Location

The study area is located in the Southern Nations nationalities people's Regional state (SNNPRS), more specifically in Kafa zone. The Southern Region is one of the nine Regional states of the Ethiopian Federal Government. The region is situated at 4^0 27' - 8^0 3' latitude North and $34^0$21' – 39^0 11' longitude East. The Region has a total area of 113, 539 km^2 ,and accounting for about 10% of the country, and it is divided into twelve (12) Administrative zones, five (5) special woredas and 72 woredas.[7]

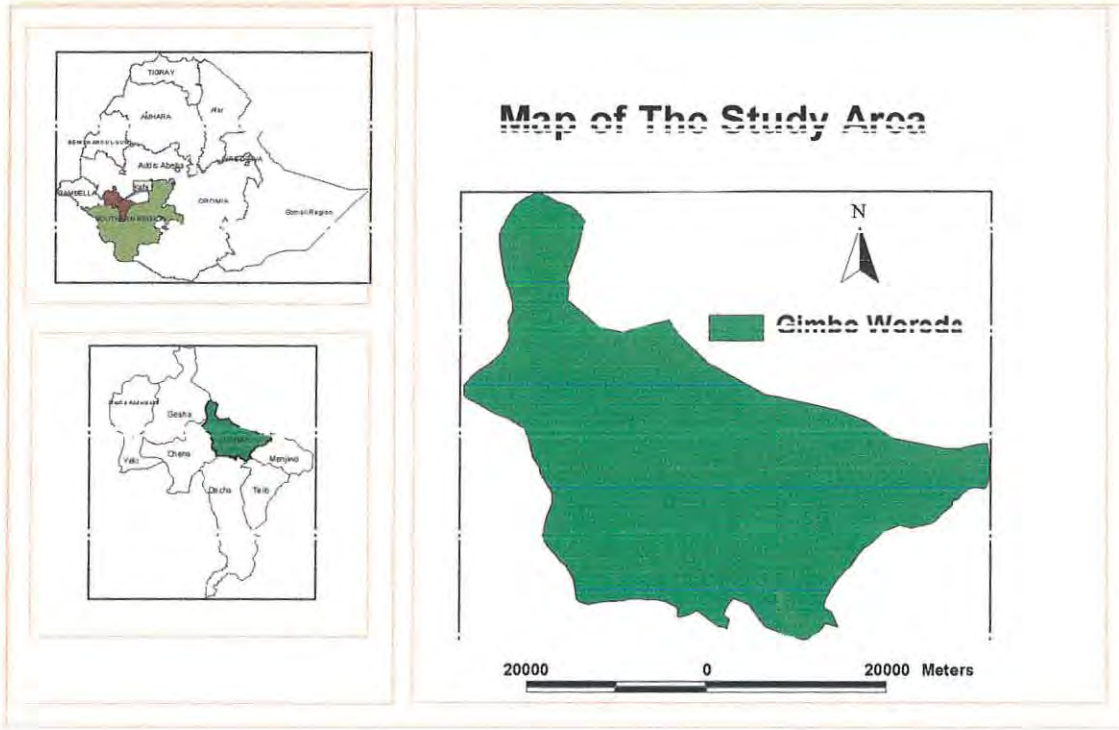


Figure-2 Map of the Study Area

7 The term "Zone" is given to an administration level below region and above woreda. whereas "woreda" is a term, which has been in use for quite a long time in Ethiopia to denote an administrative unit more or less equivalent to 'district' in English.

Kafa is one of the twelve administrative zones in the southern Nations, Nationalities and peoples' Regional state (SNNPRS). The zone lies between 6^0 15' north to 8^0 08'north latitude and 35^0 30' east to 36^0 46 east longitude. Kafa zone has the area of 11, 116.35 square kilometers ((9.65% of the Region). The zone comprises nine woredas (districts), which are subsequently divided in to 277 rural and 20 urban kebeles (the lowest administrative units). In order of their alphabetic sequence, the woredas are Chena, Cheta, Decha, Gesha, Gewata, Gimbo, Menjiwo, Saylem and Tello. Bonga, the capital of Kafa zone, is situated at 440 kilometers southwest of Addis Ababa and 105 kilometers south of Jimma.

3.2 Climate

Based on traditional agro-ecology, Kafa has three conventional climatic zones based on altitude and temperature. These are "Dega" (cold zone), 2500 – 3000 meters above sea level (m.a.s.l); "Woina Dega" (semi cold zone), 1500 -2500 m.a.s.l, and "Kolla" (hot zone), 500 – 1500 m.a.s.l (SUPAK, 2001). The zone lies between 500 to some 3500 m.a.s.l. Rainfall varies between 1,500 and 2,000 mm annually and is abundant during 7 to 9 months of the year. Generally, given a wide range of altitude (500 to 3000 m.a.s.l) , Kafa zone has abundant rainfall throughout the year, with mean annual rainfall raging between 1600 – 2200 mm and average annual temperature varying from 16^0c to 20^0c. It has abundant rainfall distributed nearly throughout the months of the year. This provides Kafa with the opportunity to grow crops twice a year (Matheos, 2001).

3.3 Physical Features

According to the Omo –Gibe River basin Development Master Plan study (OGRBMPS, 1994) the zone has two physical characteristics –the high lands and the low lands. The high lands occupy two thirds of the area excepting the Gojeb, on the northern and Decha low lands on the southern tips. The highlands are characterized by undulating and rolling plateaus between 1500 - 2100 meters above sea level, with slops in the range of 10-30%. According to the master plan study, the area has high rainfall and quite a long growing period ranging between 300 -360 days annually. Conversely, the lowlands occupy about one- thirds of the total area with relatively lower rainfall and higher temperature as compared to the highlands. The report further indicates that the lowlands lie between 600 -1500 m.a.s.l, with variable slopes in the range of 15 -45%.

Although the growing periods of these areas are reported to be more than 90 days they are indicated to have little agricultural potential (OGRBMPS, 1994). Nitosls and Acrisols form major soil type. This is actually reflected in the land use where there is a well- drained soil with moderate natural fertility and ease of working.

3.3.1 Bonga Forest Ecology

Bonga forest is a moist tropical forest located in Kafa zone. It covers a total area of about 161, 424 ha and lies within 07^0 00' – 7^0 25' N latitude and $35^0$55' – $36^0$37' E longitude, stretching across the boundaries of five contiguous woredas; namely; Gimbo, Menjiwo, Tello, Decha, and Chena. The altitude of the area ranges from 1000 to 3350 m.a.s.l, consisting of a highly dissected plateau, with flat to moderately undulating terrain on areas above 1500 m.a.s.l (Matheos, 2001).
The forest experiences one long rainy season, lasting from March/April to October. The mean annual rainfall ranges from 1710 mm at Bonga station to 1892 mm at Wushwush Station. Over 85% of the total annual rainfall, with mean monthly values in the range of 125-250 mm occurs in the 8 months long rainy season. The mean temperature is 19.4 degree Celsius at Bonga while it is 18.1 degree Celsius at Wushwush station, which is located 200m higher than Bonga (Matheos, 2001)

There are three major river bodies that drain the catchments of Bonga forest; they are Gojeb, Dinchia and Woshi rivers. The Gojeb River along with its numerous tributaries drains the north eastern part of the areas on the eastern block accounting for about 22% of the total catchments. The Dinchia River together with its tributaries drains the central parts of the forest. The Woshi River drains areas situated along the Woshi River drains areas situated along the Western most parts of the forest accounting for about 28. 8% of the total forest area (Matheos, 2001).

According to the recent inventory carried out by the Institute of Biodiversity conservation and Research through the GTZ – supported Forest Genetic Resources conservation project, Bonga forest is characterized by three distinct vegetation types (Matheos, 2001). These vegetation types are described below. About 106 woody plant species belonging to 74 general and 38 families were recorded during the inventory of Bonga Forest.

Upland Rain forest Vegetation: This vegetation occurs at altitudes between 1500 -2200 m.a.s.l and characterized by big tree species such as: Olea Welwitscii, Scheffleria abyssinica, Eupnorbia obovalifolia, etc.

Upland Humid Forest: Vegetation: This Vegetation occurs at altitudes between 2450 -2800 m.a.s.l and characterized by tree and shrub species such as Hagenia abyssinica, llex mitis, Myrsine Melanophloeos etc.

Sinarindunaria/Bamboo thicket: This vegetation occurs at altitudes between 2400 -3050 m.a.s.l and mainly characterized by bamboo thicket either in pure stands or may exist in mixture with other trees. Bonga forest is also endowed with numerous NTFP's basically forest coffee (Coffee Arabica), Cardamom (Afromomun Corrorima), wild paper (Timiz), and other spices. Honey is also the most abundant NTFPs.

3.4 Socio– Economic Characteristics of Kafa

3.4.1 Demographic Characteristic

The population of Kafa was estimated to be 789, 818 in July 2004 (SUPAK, 2004). Of this total, about 95.5 percent were estimated to live in the rural areas, while 7.5% was expected to dwell in the towns. The female male proportion was 50.9 to 49.1 percent. The average population density was 64.9 persons per square kilometer. The same source points that the Kafa household was indicated to inhabited population growth of 3.31 percent. If this trend of population growth holds, Kafa is expected to be inhabited by 1,692, 084 people by the year 2018 (ZOFED, 2004).[8] This would perhaps take the rude density to 152.2 persons per square kilometers, which implies more than double pressure on the existing natural resources. This actually calls for the earliest possible comprehensive policy interventions aiming at a wise utilization of natural resources for sustainable development. Kafa is dominated by Kafecho ethnic group, which is a significant majority (71.8%) of the population. The Amhara (6.7%), the Shekacho(6.4%), the Bench (5.2%), and the Oromo (4.8%). Dawro, Sheko, Chara, Nao, Meien, and Mezengir ethnic groups share the remaining small proportion in the area.

8. The zone department of finance and economic devleopmnt (ZOFED) estimate on the basis of growth rate in CSA, 1994: result for the [SNNPRS], Vol. 1., part (Addis Ababa, CSA)

3.4.2 Economic Characteristics

According to the 1994 population census, about 92.5 percent of the total population resides in the rural areas and primarily depends on Agriculture (CSA, 1994). The main farming instrument is ox –drawn plough, mostly among the Manjas, however, farming was reported to begin recently, more specifically, after the 1974/5 land proclamation, which gave the group a right to own plots of land in their known history (Yonas, 2004).

The land use data shows that about 56% of the total area in Kafa is arable, whereas 29.0 percent is forest and bush lands followed by about 14 percent land under settlements and other purposes (see table below).

Maize, sorghum *enset* (false banana), finger millet, barley and wheat are the major crops grown. Coffee and *teff* are also widely grown mostly for cash. Cattle, sheep, goats, poultry, donkeys, horses and mules are the major livestock kept by the farmers. Beekeeping and gathering of forest products is important mainstay among the Manjos.

3.5 Participatory Forest Management Scheme in Bonga Forest

3.5.1 Gimbo Woreda and its General Characteristics

Gimbo woreda is one of the ten woredas in Kafa zone. It has an area of 884.59 square kilometers. The all weather roads from Jimma to Mizan, and from Bonga to Masha, Via Daka Gesaha woreda capital, and Bonga to Ufaa enables Gimbo to access modern road transport from different angles.

According to ZOFED, 113 thousand people were estimated to live in Gimbo woreda in July 2004. Of this total, about 30.4 thousand (27.6 percent) were further estimated to live in the towns, during the same period, while the remaining 72.4 percent were expected to be rural dwellers. The age structure points that population less than 24 were 62.5 percent signifying the typical characteristic of younger population.

Gimbo has five settlement areas designated as "urban" or "towns". These, in order of their population size, are Bonga, Ufaa, Gojeb, Wushwush, and Diri. Population estimates for the towns range from the 20,000 in Bonga, to the lowest 1,400 in Diri. The remaining towns in the woreda are estimated to have populations ranging from little more than 2000.Based on a farming system study by (SUPAK, 2000).

Land use categories in terms of scale of Agriculture expansion.

1. Forest coffee based land use (Forest zone)
2. Forest /coffee/ cereal –based land use (transitional zone)
3. *Enset* /cereal –based land use (Transition zone in the Dega AEZ), and
4. Cereal based land use (deforested zone)

Further, as it could be noted from Gimbo Woreda land use (Table-6), about 40.1 percent of the total area is intensively cultivated. This is followed by the coverage of 26.5 percent undisturbed and 13.5 percent disturbed forests. The Wushwush tea plantation is another land use type, which covers about 26.2 km^2 or 3.3 percent of the total woreda size.

Table 6: Land cover /Use Gimbo Woreda

Ser. No	Sub class	Area (m2)	Area(km2)	Percent of total
1	Built-up area	7,058,192	7.06	0.80
2	Coffee investment	3,957,429	3.96	0.45
3	Dense/Bush	9,006,530	9.01	1.02
4	Disturbed Broad leaved mountain forest	85,954,502	85.95	9.72
5	Eucalyptus plantation	12,805,630	12.81	1.45
6	Highland disturbed forest	32,949,592	32.95	3.72
7	Intensively cultivated	354,767,502	354.77	40.11
8	Junipers plantation	8,549,493	8.55	0.97
9	Moderately cultivated	13,246,664	13.25	1.50
10	Open grassland	19,348,789	19.35	2.19
11	Perennial marsh	45,318,414	45.32	5.12
12	Seasonal swamp	27,870,016	27.87	3.15
13	Tea plantation	26,149,814	26.15	2.96
14	Undisturbed broadleaved mountain forest	234,274,350	234.27	26.48
15	Wooded/shrubs grassland	3,333,080	3.33	0.38
	Total	**884,590,000**	**884.59**	**100.00**

Source: (DoFED for Kafa Zone, 2003 sited in Yonas, 2004)

A recent study conducted by Kafa Development Program (KDP, 2004) reveals that the extent of cultivation of annual crops in terms of land allocation is getting higher and higher as new settlements clear natural forest. During the period of data collection for this study (Feb, 2007), it was observed that there is a massive on going intra- regional resettlement programmes in the zone as well as the woreda. This obviously puts additional stress on the existing natural Resources.

3.5.2 Participatory Forest Management Initiative and Characteristics of the Selected Research Sites (FUGs)

The Bonga Forest extends over parts of six woredas in the Kefa zone. With in these woredas, the kebeles which extend in to Bonga state forest have a total population of 71,282 (CSA, 1996). The PFM scheme is being implemented in parts of the forest in Gimbo woreda, which has ten of its Kebeles overlapping Bonga forest at varying scales.

Out of the eight FUGs implementing PFM in six kebeles of Gimbo woreda, three Forest user groups were purposely selected for the current study. These are Watcha, Sheka and Matapa FUDs from Qeja Araba, Meligawa and Michity Kebeles respectively (see Map). They are located at the south and southwest part of Gimbo Woreda. Watcha forest is bordered by Gopa River in the north, Barta River in the south, the Hirio (the defense barracks of the former king of Kafa) and Obera village in the east and Hawsho and Barta Rivers in the west. Both Watcha and Shaka forest in Meligawa kebeles are found adjacent to Bonga town.

Matapa forest in Michity kebele is found next to a large tea plantation (namely, Wushwush Tea Development Enterprise -WTDE). The forests are homes to clusters of Manja households – marginalized occupational groups believed to heavily depend on wood to meet their subsistence needs. Watcha and Matapa forest user groups (FUGs) are predominantly Manja households. Whereas Sheka FUG, members are both Kafa and Manja households. Table (7) presents some basic features of the selected FUGs. The forests under the FUGs range in elevation from 2100m-2500m.

Table 7: Some Basic Information on the Selected FUGs

Name of FUG	Areas * of forest (hectare)	Distance from the road (kms)	Elevation (meters)	Number of households
Wacha	439.5	0.5	2400	75
Sheka	216	1	2500	121
Matapa	215	0.5	2100	74

- *Excluding individual household farm plot*

They are close to an all weather roads compared to the other FUGs found in the woreda and thus more or less exposed to market forces. Although the selected FUGs and their settlements are situated with in the same ecological and administrative divisions and face similar level of market pressure, they differ in size, mix of community, age and resource endowments. As table -7 indicated, Wacha, sheka and Matapa cover 439.5, 215, and 216 hectares respectively. Sheka FUG has the largest members (121) followed by Matapa (74) and Watcha (75). In terms of forest area, Watcha is the largest. The other two cover more or less equal area. Watcha, Sheka and Matapa cover 439.5, 215, and 216 hectares respectively. Sheka FUG has the largest members (121) followed by Matapa (74) and Watcha (75) Table-1 chapter one. With respect to formation, the Watcha community is the first to sign PFM Agreement in Kafa zone Natural Resource Development Bureau in October 2002 followed by Matapa (2003) and Sheka (2004).

The Agreement is facilitated by FARM Africa in its Bonga project. The contract document contains internal by-laws which in principle, commit signatories to certain allocation of rights and responsibilities in forest management. Such documents were developed to provide a clear division of roles among forest users and officials and to create a sense of security in forest management by providing legal mechanisms to challenge any violation of rights of particular groups. The PFM plan and agreement defines the roles and responsibilities of the communities and the government.

Accordingly, the government objective is to: maintain and protect the quality and extent of the forest, ensure legal and technical backup and monitoring, ensure the conservation of biodiversity of the forest, and bring about a forest management system in which sustainable harvesting is realized through sharing of responsibilities. The community's objectives: obtain various benefit

in terms of goods/products and services from the forest on a sustainable basis facilitated through legal recognition by the government, limit resource extraction based on FMP prescription, develop forest so as to earn increased income, obtain support to stop non members harvesting of the forest so that a lasting forest management is realized in collaboration with the government.

3.5.3 The Functioning of the FUG and the Forest Protection Committee

In order to implement the forest management plan and agreement document and increase the decision making capacity on forest issue, the general assembly of each FUGs has elected an executive forest protection and development committee of seven members (see table 8).

Table 8: Institutional Information on the Selected FUGs

Name of FUG	Year of formation	General assembly	Executive committee	Meeting per year	Initial grant (seed) money (Birr)
Wacha	Oct 2002	75	7	7-8	4000
Sheka	June 2003	121	"	"	10,000
Matapa	Feb. 2003	74	"	"	6000

Election of executive committee for forest protection in principle, conducted democratically in a meeting of all the recognized forest dwellers. The committee comprises of seven members namely chairperson, deputy chairperson, secretary, cashier, and additional three members. Among the executive members, the secretary must be capable of reading and writing because he/she is the one who keeps the records for the FUG. The committee takes up lots of responsibilities such as execution of the management plan, dealing with cases involving violation of by-laws by individual members and non-members, identifying the protection areas and assigning people (prime protection responsibilities are given for people dwelling nearest to the forest patches, and developing measures of protecting and developing the forest, etc.

The forest committees are normally elected for three years. The sources of fund for the FUGs include: membership fee, sales of forest and NTFPs products, and fines and penalties. The committee has responsibility to fine those who tresses pass the community rules and by-laws of the FMP. When offenders are unwilling or unable to pay the fine or compensation demanded by the FUG, according to the by-laws, the village can take the culprit to court.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS

4.1 Background Characteristics of Forest Users

Among the three investigated FUGs, two (Wacha and Matapa) are exclusively homogenous groups of the Manja clan where as the third Sheka FUG has both Manja and Kafa people as members. Accordingly, among the 90 sampled households 24.4% (22) were Kafa clans, all from Sheka FUG, while 74.4% (67) were Manjo household members taken randomly from the respective FUGs.

The Gender profile of the 90 respondent's show that females were 36 percent, 30 percent, and 32 percent and males were 64 percent, 70 percent, and 68 percent in Wacha, Sheka, and Matapa FUG respectively. More female respondents were from Wacha where as more males were from Sheka FUGs. With regards to age distribution, the majority (67.8%) of the respondents are adults ranging between the ages of (31-50). Respondents in the three FUGs have more or less similar age distribution with a mean of 38.8, 36.6, 37.5, for Wacha, sheka, and Matapa respectively. In all the FUGs, more than 80 percent of the respondents were married. In the case of Matapa FUG, all of the respondents were married.

Generally, there was high prevalence of illiteracy in all the three FUGs. The effect of low level of education on people's participation in PFM will be discussed latter in this section. Especially Manja clans were more illiterate (76%) when compared to that of Kafa (54.5%).

Table 9: Educational status of Respondents of Sampled FUGs

FUG	Read and write	1-6	7-12	Illiterate
Wacha	3 (12)	1 (4)	10 (4)	20 (80)
Sheka	5 (12.5)	6 (15)%	2 (5)	27(67.5)
Matapa	4 (16)	3 (12)	2 (8)	16 (64)
Total	**12 (13.3)**	**10 (11.1)**	**5 (5.6)**	**63 (70)**

Source: Field Survey, 2007

Note: Figures in parenthesis are percentages

The three FUGs are predominately Orthodox. Wacha (83%), Sheka (47.5%) and Matapa (96%) followed by Catholic Wacha (9%), Sheka (35%) and Matapa (0%) and the rest were protestant followers Wacha being (8%), Sheka (17.5%) and Matapa (4%). Mean family size in the three FUGs was 6.27. With respect to specific forest user groups, Sheka was with the highest family size(6.78), followed by Matapa (6.2) and Wacha (5.52). One can see from the data that there is large family size among forest user groups which may add additional pressure on forest resource.

Table 10: Family size of the respondents in the three FUGs

Name of FUG	Family size			Mean family size
	1-4	5-10	>10	
Wacha	11(44%)	14(56%)	-	**5.5**
Sheka	10(25%)	23(57.5%)	7(17.5%)	**6.8**
Matapa	9(36%)	15(60%)	1(4%)	**6.2**
Total	**30(33.3%)**	**52(57.7%)**	**8(8.8%)**	**6.3**

Source: Field survey, 2007

In terms of occupation, the majority of the households (77.8%) of the three FUGs (Wacha, Sheka, and Matapa) are predominantly engaged in subsistence faming and NTFPs produce (Table 11).While the rest (22.2%) households depend on charcoal and fuel wood as their major occupation. The latter was most common among Manja households.

Table 11: Occupation of the respondents in the studied FUGs

FUG	Occupation			Total
	Farming and NTFPs produce	Fuel wood and charcoal	Other	
Wacha	16 (64%)	8(32%)	1(4%)	25 (100%)
Sheka	33 (82.5%)	7(35%)	-	40(100%)
Matapa	21(84%)	4(16%)	-	25 (100%)
Total	**70(77.8%)**	**19 (21.1%)**	**1(1.1%)**	**90 (100%)**

Source: Field survey, 2007

According to Yonas (2004), the collection of firewood and charcoal burning is an occupation left for socially marginalized and poor Manja household members. Focus group discussion with Manja household members at Wacha and Matapa FUG also reveled that charcoal making and fuel wood selling is a demeaning and low status symbol occupation left for the Manja community alone.

Patterns of landholding of the respondents in the studied FUGs showed that only 2.2 percent were landless. While 66 percent of the respondents had land size ranging from 0.5 to 2 hectares and the rest (28%) of the FUGs had land size greater than 2 hectares (table-9).

Table 12: Patterns of land holding of the respondents in the three FUGs

Name of FUG	Size of land holding in hectare					Average landholding size
	Nil	0.5-1	1.1-2	2.1-3	>3	
Wacha	-	8(32%)	10(40%)	7(28%)	-	1.8
Sheka	1(2.5%)	8(20%)	20(50%)	8(20%)	3(7.5%)	1.9
Matapa	1(4%)	8(32%)	6(24%)	5(20%)	5(20%)	2.3
Total	2(2.2%)	24(26.6%)	36(40%)	20(22.3%)	8(8.9%)	2.0

Source: Field survey, 2007

The pattern of land holding in each FUG showed that in Wacha all respondents own land; the overwhelming majority (72%) had land size ranging 0.5 to 2 hectare. The rest (28%) had land size of more than two to three hectares. In Sheka FUG, 2.5 percent of the respondents were landless. Those having land size ranging between 0.5 to1 hectares were 20 percent. The majority (70%) owned land ranging between 1 to 3 hectare. The rest (7.5%) had land size of more than 3 hectares. In Matapa FUG landless households constitute 4 percent. Those having land size between 0.5 to1 hectare and 1 to 3 hectare were 32 percent and 44 percent respectively. The rest (20%) owned land more than 3 hectares. It was also observed that some households, particularly at sheka and Matapa FUG, own land size as high as five hectares. Average land holding size for all the FUGs were 2 hectares. This result is more or less similar to that of SUPAK's survey where 83 percent of the farmer's in Gimbo Woreda was found to own land size of more than 2 hectares each while 17 percent had 2 hectare or less (SUPAK, 2000).With regard to specific user groups,

Matapa FUG has the highest mean land holding size (2.3 hectares) followed by Sheka (1.9 hectares) and Wacha (1.8 hectares).

Households in the studied FUGs keep quite a few numbers of cattle and sheep. This is because households particularity (Manjo) largely depend on fuel wood and NTFPs. Share rearing of sheep and oxen was introduced by the project as an intervention strategy for PFM scheme. Yet, 63 percent of the respondents have no livestock. The remaining 37 percent had livestock such as cattle, equine, and sheep.

The major sources of income were investigated for the surveyed FUGs. Primarily, two basic sources of income were identified. These were farm based and forest based incomes. The farm based income is generated through production of crops such as maize and *teff* largely at substance level. Nearly 50% of the households depend on this farm based in come. Forest based income includes NTFPs (mainly coffee, honey and spices such as korerima (cardamom) and timiz, (wild paper) and the sale of charcoal and fuel wood. The sale of NTFPs was found to be the major source of income for 17.8 percent of the respondents.

Table (13) Major sources of income of the respondents

FUGs	Major sources of Income							Total
	Sale of cereals	coffee and spices	Sale of Honey	Fruits and vegetables	Fuel wood & charcoal	Sale of pottery	Others	
Wacha	11(44)	3(12)	2(8)	1(4)	7(28)	1(4)	-	25(100)
Sheka	25(62.5)	3(7.5)	2(5)	1(2.5)	7(17.5)	1(2.5)	1(2.5)	40(100)
Matapa	9(36)	3(12)	3(12)	1(4)	7(28)	1(4)	1(2.5)	25(100)
Total	45(50)	9(10)	7(7.5)	3(3.3)	21(23.3)	3(3.3)	2(2.2)	90(100)

Source: Survey data, 2007 **Note: Figures in brackets are percentages**

Where as 23.3 percent of the respondents (all Manja households) depend primarily on charcoal and fuel wood. The rest 3.3 percent and 3.3 percent depend on sale of fruit and vegetable and pottery works respectively. Others (2.2%) depend on the sale of mushroom, grass, and medicinal plants as a major source of income.

Accounting to each FUGs, 44 percent of Wacha respondents had their income from sale of crops, 20 percent obtain their income from sales of NTFPs, 28 percent from sale of fuel wood and charcoal. 4 percent from fruits and vegetables, and again 4 percent obtained their income from sales of pottery. Similarly, 62.5 percent of Sheka FUG respondents were getting their income from sales of crops. 12.5 percent from sale of NTFPs and 17.5 percent from sale of charcoal and fuel wood. The remaining 5 percent got their income from sales of pottery and fruits and vegetables. Other (2.5%) depend on mushroom and grass. 36 percent of Matapa FUG respondents had their income from sales of crop, 24 percent from sales of NTFPs, 28 percent from sales of charcoal and fuel wood, the other sources were contributing for less than 2.2 percent, except sales of pottery and fruits and vegetables each constituting 3.3 percent.

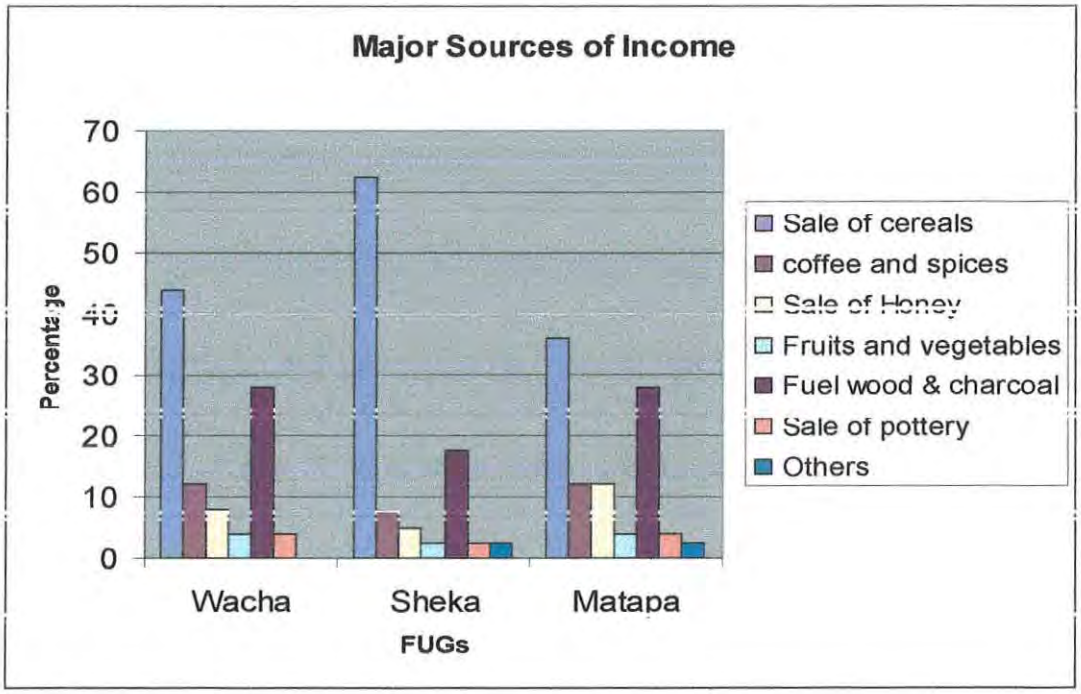


Figure-3 Major sources of income of the respondents

Source: Field survey, 2007

4.2 Users' Socio-Economic Attributes and Participation in Forest Management

Among the many barriers which lower people's participation in natural resource management, among others, include: disparities in wealth and social status and the problem of illiteracy (Singh, 1992). In this study, too, it is assumed that the socio- economic characteristics (e.g. education and social status) of forest user group members under participatory forest management scheme affect community participation. The results are discussed below.

Table 14: User's response on effects of low level of income and education on community participation in PFM

Questions		Response N=90	
Do low income and low level of education limits your participation in PFM?		Low Income	Low level of education
Yes	Fr	57	73
	%	63.3	81.1
To some extent	Fr	12	9
	%	13.3	10
No	Fr	21	8
	%	23.3	8.8

Source: Field survey, 2007

Focus groups in all the FUGs (Wacha, Sheka, and Matapa) and the majority of the respondents (63.3%) have the same opinion that the low level of income constrains community participation in PFM works. While 23.3 percent say it did not and 13.3 percent said to some extent (Table-14). This problem is mostly evident among the poor Manja households who are heavily depended on subsistence income generated from charcoal and fuel wood selling. The fact is that the poor forest users are mostly interested in maintaining a regular supply of forest products from the community forest. In interview, it emerged that the poorer household members could not afford to restrict access to firewood and other important NTFPs-but to continue to use the community forest to extract such products with out any restriction. As a result, it is learned that this transfer of rights of collecting economically useful forest and NTFPs products from individual households to FUG

has made some members not to comply with the common rules. For instance, the FUG record book shows that it is by and large the poor households who have paid the most fines for illegally using the forest. FGD at Wacha further indicated that:

> *Economically, the poor have to be active every day to sustain themselves and their family's livelihoods. For poor households, being FUG member does not provide an immediate sufficient benefit in respect of their basic needs; moreover, it is a waste of their 'productive time'. While the poor need regular supplies of forest products to sustain their livelihoods, any decisions to further protect the forest work against their interest.*

Moreover, results of the household survey also indicated that extent of member's livelihood dependency (such as for income) on forest affects their level of commitment to implement the forest management plan and associated by-laws.

Accordingly, extent of member's livelihood dependency on forest were measured in ordinal scale and cross tabulated with their level of commitment to implement the forest management plan and associated by-laws. The cross tabulated results of those variables revealed that out of the total 49 people who are fully committed to implement the forest management plan and associated by-laws, 40(81.6%) are either partially dependant or not dependant at all on the forests for their livelihood. While the rest 9(18.4%) are totally dependant on the forest for their livelihood. The chi-square test (table) also indicated that there is an association between member's levels of dependency on forest and their level of commitment in implementing the forest management plan and associated by-laws. Thus, it is learnt that the poor, in this case forest dependants, are less compliant to community rules and by-laws.

Table 15: Test statistic of member's livelihood dependence on forest and participation in forest management

Level of livelihood dependency on forest	Commitment to implement forest management plan and associated by-laws						X^2-test 28.411***
	Fully		Partially		Total		
	N	%	N	%	N	%	
Totally	9	18.4	30	73.2	39		
Partially	29	59.2	10	24.4	39		
Not dependant	11	22.4	1	2.4	12		
Total	49	100	41	100	90	100	

***= highly significant at 1%

Source: Field survey, 2007

In depth interviews with key informants further reviled that high workload of FUG members in forest management activities such as forest development, protection and monitoring works, two days per week engagement at community nursery establishments and tending of natural regeneration in side natural forest often prevent the poorest members from earning money that would have been obtained through the supply of charcoal and fuel wood to town and adjacent communities.

As a result, poverty often obliged members to focus on short-term benefits rather than long-term benefits expected to be generated from community forest management. Similarly, focus group of the Matapa FUG were of the opinion that the income they obtain from the sale of honey, coffee, and cardamom is not quite enough to support their family all year round. Because of this they are engaged in selling firewood and charcoal so as to generate more income for survival. Even the worst is during rainy season, according to an interview with project forestry expert, where price for fuel wood and charcoal products becomes high between the end of June and September. During this period, poor household member sell their fire wood and charcoal with high price without being deterred by high rainfall. This engagement, however, creates serious problem on community participation in PFM activities. Moreover, the low level of income constrain not only the availability of labor in forest management but also the commitment of other resources such as tools etc.

Here it is important to mention an account of a poor Manja women from Wacha village who exclusively depend on charcoal and fuel wood selling to Bonga town:

We are getting different benefits (incentives) from sale of communal forest products and also provided with a number of assistance from the project such as ox and sheep credits, and different agricultural inputs. However, the support is still inadequate for us to abandon our occupation and limit resource extraction. It is common to here poor members usually complaining their limited access to forest. They more often ask "when will the plants we planted grow and give benefits?" Literature also confirmed that involvement of local people and sustaining their interest in resource management is more complicated when the benefits are not high, immediate or widely distributed (Kerr, 2002).

The other most important aspect found to be most significant in relation to PFM activities in the investigated FUGs is low level of formal education. It affects or limits the level of understanding of individual member as well as the workings of forest protection committees (FPC). Regarding effects of low level of education on community participation in PFM, 81.1 percent of the respondents said low level of education limits their participation where as only 8 percent of them said it didn't (Table 14).

Overall, among the surveyed households, 70 percent of them were found to be illiterate. Although low level of education was a serious problem for members participating in PFM, the level of illiteracy is high among Manja households (76%) compared to that of Kafa FUG members (54.5%). Explaining the effect of low level of education on PFM activities, project forestry expert said that although the physical forest development and protection works may not need education *"low education effects arise in relation to fine and absentee record keeping, leadership quality of forest protection committee members, meeting record keeping, interpretation and implementation of internal by laws and forest management prescriptions and understanding of legal documents (agreements) signed"*. With respect to the internal by- laws, most members of FUGs found it difficult to understand, given their high level of illiteracy, the relatively bulky documents that needs considerable level of clarity to interpret, explain and communicate the legal implication.

In fact, the problem of illiteracy, as mentioned above is most serious at Matapa and Wacha FUG due to the fact that the Manja households which homogeneously dominated these groups has been the lowest beneficiaries of any social services (such as access to school) due to socio-cultural influences imposed up on them by the surrounding non-Manja communities.

4.3 Benefit Derived from Participatory Forest Management (PFM)

Many scholars argue that local people need to be benefit in some way if they are to manage common pool resources to meet the broader societal goal of environmental improvement (Ostrom, 1990; Gibson et al; 2000; Mckean, 2000; Yonas, 2007). In other words, while it is argued that one of the prerequisites for successful PFM is local people's active and continued participation (Lise, 2000), such a sustained participation in resource management is a function of incentives available to the participants (Matta, 2005).

Correspondingly, in all PFM initiatives investigated in this study, the participating villagers have more or less the same opinion that they have started to gain promising benefits from community forest management. The majority of them (81.6%) also reported that the benefits received (together with perceived future benefits) initiate them to participate in forest management activities. This factor particularity highlights the positive relationship between provision of incentives in which villagers are interested and the success and sustainability of PFM.

In general, 76.6 percent (table 15) of the survey households believe that access to forest for fuel wood, and construction materials (based on the management plan), exercise of controlled grazing, and beekeeping encourage communities in developing a strong sense of use rights over the forest resource compared to the previous situation. One of the key informant from Wacha village also stressed that as long as he protect and develop the forests, as indicated in forest management documents, he retain and exercise full use right indefinitely. However, 8.9 percent of the respondents reported that use rights have decreased compared to the previous situation under 'state' ownership. The latter views are in fact wide spread among households who entirely depend on the forest particularly on the sale of charcoal and fuel wood.

Table 16: Users' assessment of the benefits of PFM

Types of Benefits		Response					
		H.I	In	T.S.E	Dec	H. Dec	NR
Use rights over the forest resource	Fr	69	7	6	8		90
	%	76.6	7.8	6.7	8.9		
Number of trees (fuel wood and construction)	Fr	74	14	2			
	%	82.2	15.6	2.2			
Supply of wood production	Fr	13	15	15	43	4	
	%	14.4	16.7	16.7	47.7	4.4	
Forest grown coffee	Fr	42	34	10	2	2	
	%	46.7	37.8	11.1	2.2	2.2	
Soil erosion	Fr		1	21	24	44	
	%		1.1	23.3	26.7	48.9	
Fodder and Grass supply	Fr	61	22	7			
	%	67.7	24.4	7.8	18	65	
Flooding	Fr			7	20	72.2	
	%			7.8			
Household livelihood condition	Fr	7	48	21	14		
	%	7.8	53.3	23.3	15.6		
Forest product value	Fr	51	26	11	2		
	%	56.7	28.9	12.2	2.2		
Social equity (empowerment of marginalized groups)	Fr	21	41	26	2		
	%	23.3	45.6	28.9	2.2		

Source: Survey data, 2007

Note: H.I = Highly Increased, In= Increased, T.S.E = to some extent,
Dec =Decreased, H. Dec=Highly Decreased

Concerning overall forest condition often measured through quality and quantity of trees, 82.2 percent of the respondents reported that it has highly increased. 47.7 percent of the respondents, however, reported that supply of wood production (both for fuel wood and construction) has decreased. This actually had an obvious impact on values of forest products. For example, 56.7 percent of the respondents reported that there is high increase in values of forest products (Table 16).

The reasons why supply of wood production has decreased while the number of trees has increased is that fuel wood for sale other than own consumption is only allowed for poor households through the permission of committees (Forest management plans, 2002/2003). This is also true when there is a demand of wood for construction purpose. Project forestry experts and DAs also stated that forest resources gained in value because access to them (mainly for construction and fire wood) is no longer free; contrary to the previous *de jure* state ownership but *de facto* open access situation. FGD conducted in the three FUGs also stated that there have been a number of positive indicators of relatively good outcomes in forest conditions. For instance, the regeneration of indigenous trees and grasses were mentioned, compared to surrounding areas that have not been transferred to community.

Further, interview with chairperson of forest executive committee also revealed that firewood had been the dominant forest product extracted and its unregulated extraction has been causing serious damage on the growing stock as well as regenerating shoots. Following the formulation and implementation of FMP, the previous unrestricted fire wood extraction practice is highly regulated and controlled. Members are closely monitored to ensure that they use shrubs, not high value tree for burning charcoal; they sale fallen twigs and branches as firewood instead of felling and splitting mother trees, and restrictions on certain types of implements while entering to the forest. Thus, such measures have resulted in improved regeneration due to better survival rate of young plants as well as natural regeneration at numerous open areas. For instance, between the year 2002-2004, an estimated 13,470 different tree and coffee seedlings were produced by Watcha FUG alone (Anonymous, 2003). During data collection it was also observed that nursery management for establishment of new woodlots in degraded areas adjacent to natural forest was underway (see picture). These areas are now managed as enclosed areas with reduced grazing.

Figure 4 Nursery establishments adjacent to the natural forest at Wacha

Forest grown coffee is one of the most important NTFPs in the three forest patches. Interview with forestry experts confirmed that the forests accommodate patches of coffee of high quality genetic varieties providing a valuable good to forest fringe communities. Yet, utilization of forest coffee is predominately undertaken in traditional management systems in which local peasants gather coffee cherries directly from naturally regenerating coffee populations in the forests (Stellmacher, 2005). He further added that the intensity of human intervention reaches from simple annual harvesting, to clearing the undergrowth and pruning up to transplanting the seedlings.

Focus group and 46.7 percent of the survey respondents reported that since the start of PFM as an adjusting screw for rehabilitating degraded forests and NTFPs development, forests grown coffee has highly increased. This condition has motivated users as an incentive for forest management. The main areas of focus in relation to coffee development include: tending of natural coffee and coffee shade tree planting, and training of coffee quality control for members.

Another benefit generated through PFM that promotes participation for local resource users is control over soil erosion and flooding problems. The majority of the respondents agreed that restricted access to initially uncontrolled forest helped communities from being vulnerable to flooding and soil erosion problems. The survey household indicated soil erosion (48.9%) and flooding (72.2%) has highly decreased. Whereas 67.7 percent of them said grass and folder supply has highly increased (table-16).

Overall improvements in forest and NTFPs and stabilization of the resource base through PFM scheme have been reported to improve overall livelihood condition of forest users. Accordantly, 61.1 percent of the respondents said there is an increase in livelihood conditions – particularly among Manja households of Wacha FUG. While 15.6% rather stated that there is a decrease in livelihood conditions. Further, FGD conducted among Wacha forest user indicated various improvements in the following out come.

- production of wild honey
- Availability of year round pasture
- Fodder for bees
- Various livelihood supports generated from the seed money and community development fund (CDF)-ox-credit, and improved agricultural inputs.
- Community income generation through forest and non forest products.
- Relatively improved working relationship/partnership between community and forest professionals.

The other most important incentive (benefit) that promotes participation was empowerment of marginalized societies of Manja which constitute the majority of users. 45.6 percent of the respondents, hence, believe that PFM has decreased marginalization of this section of the society through empowerment; participation and equal benefit sharing schemes (see also the next section 4.7). Over all it may be concluded that a gradual accumulation of benefits of this type together with good resource attributes (the existence of different NTFPs) represents strong and continuous incentives for villagers to respect the management plan and associated by-laws.

4.4 Community Relationship, Past Experience and Participatory Forest Management

Participation of people in development activities to achieve social justice[9] has been a core concept in recent development discourse (Agrawal, 2000). In this regards, active participation of the poor, marginalized, and disadvantaged groups is sought, particularly in respect to local action such as natural resource management. PFM, if implemented with local sensitivity, can render equity, social justice and democracy required in resource management (Borni-Feyerabend, 2000).

9. Social justice relates to the distribution of roles and resources among members of a community in terms of social, political and economic decision making (Timsina, 2003)

Maintaining such attributes of PFM can in fact serve as an enhancing factor to win the dedication of people in forest management as demonstrated below.

The contending interests among different socio-economic groups with in the Kafa society over limited natural resources have increasingly become intense over the various historical periods (Yonas, 2005). These conflicting interests of values exist between the Kafa and Manjo on the one hand and settlers (new comers from other parts of the country) on the other (Yonas, 2005). The Kafechoes (including Manjos) have been the major ethnic group (71.8%) in the area (SUPAK, 2001).

Manja is one of the major clan in Kafa, which has been discriminated nearly from every socio-cultural and economic activities including access to natural resources. There has also been traditional status based on conflicting interests among the Kafechoes [10] and the Manjas on natural resource management (Stellmacher, 2005).

In spite of the existence of similar physical, spiritual and traditional beliefs, there has been contending interests between the two indigenous groups; contending interests in which one group segregating the other from claiming equal treatment in every socio-economic aspect in the area. Kafecho not only avoid eating with the Manjos, but also shaking hands, touching and living with in the same villages. As a result, the village of each group was located at considerable distance to avoid communication (Yonas, 2005).

Focus group discussions at Sheka FUG where the two groups are together under same management group revealed that the Manjas seem reasonably happy as their interests are being addressed to a certain extent in matters such as: participation in decision-making, equal benefit sharing and leadership in forest protection committee. Respondents also reported that among the most important benefit obtained under PFM was social equity. In this regards, 23.3 percent agreed that it has highly increased. Also 45.6 percent reported that social equity has increased. While 28.9 percent believed that, it increased only to some extent. The rest 2.2 percent reported that it decreased (see Table-16).

10. Kafa society represents one of the most complex castes- like hereditary social hierarchies (for further see Yonas, 2005: 48).

In a discussion about the issue of social exclusion and inclusion in the use and management of forest resources, focus groups, explained that they are gradually being liberated from the exclusive and oppressive social systems that have been in place for much of their lives and their relationship particularly with Kafecho household members has been changing. *"Previously we were not allowed to sit together with Kafa people, but now we can eat and drink our Tella* (traditional drink) *and Dabbo* (bread), *have coffee ceremony at communal works and FUG office"*. Although focus group discussants at sheka FUG noted this some informants in the group, on the other hand expressed their view that there are still some members who did not like to sit and eat together with them. They hoped that these members would ultimately change.

Some informants also stated that PFM has not only brought social justice among internal relations with in the user group but also with people outside. In terms of occupation, as discussed previously, the Manja were known as fuel wood gatherers and hunters. They were restricted to non-farming occupation because no one was interested to buy their food produce. FGD (Wacha, Sheka, and Matapa) indicated that since the introduction of PFM they are shifting to farming activities through credit facilities obtained from the grant seed-money. During data collection, different fruits and vegetables in the farm plots of many Manjo households were observed. In all the FUGs ware houses were also observed stocked with potato, *godere*, and other trees and coffee seed lings.

Here it important to note an account of a poor Manja woman from Wacha village:

> *Previously, I frequently sell firewood and charcoal in the local town. It used to be the only thing I did. And people used to look down on me. They wouldn't let me into their houses to deliver fuel and would just shout, 'Hine michiti' which is a derogatory word meaning 'the wood vendor'. Now I grow carrots, cabbage and potatoes and sell to same market place where I used to be disgraced. This time people call me 'Tagene' meaning 'madam'.*

The social dimension of this improvement in livelihood is the fact that it is slowly boosting the self-esteem of the Manja people, and bringing about attitudinal change among those who previously discriminate them, thus improving social integration & justice. Above all it is serving as a strong incentive to promote their effective participation in forest management.

A key informant from Sheka village expressing his view about improving social relationship:

> *Late in the afternoon, usually after communal works, someone may shout over from another Tukul inviting us for "Bunouyote", meaning come and drink coffee. Neighbors (both Manja and Kafa) get together to talk. Some of the discussions are about the communal works of our group but some may be about other village matters. We (the Manjas) feel that we are being included in social activities than ever before.*

Such views substantiate a few examples of how community forestry gives rise to a mixed response concerning the whole idea of people's participation and social justice, and how it can be used as a means to involve marginalized (untouchables) social groups in forest resource management.

4.5 Users' Empowerment and Representation in PFM Process

Empowerment and representation of forest fringe communities is an important factor to ensure sustainable forest management. In the case of participatory forest management representation and empowerment collectively describe initiative process (Borni- Feyerabend, 2000). These factors respond to who and what interests are represented, who implement and monitor management activities and with what authority.

According to (Borni-Feyerabend, 2000), the PFM process has three main stages. Notably: investigation, negotiation and implementation stages. The investigation and negotiation stages are essentially the planning and designing stages. The general purpose is first to identify the prevailing *de facto* use system for a particular area of forest (uses, users, use patterns, rights and rules, weather formal or informal, legal or customary) and the various interest groups, which usually relates with different uses. There is then a process of negotiations between interest groups to address there needs and resolve use conflicts. The capacity of the forest to meet the various needs also needs to be assessed and the resolution of the needs of the people and the capacity of the forest forms the basis of the management plan (FMP).

By using such information the communities and the forestry staff work together to delineate forest areas, develop Forest Management Plans (FMP) and Forest Management Agreements (including rights and responsibilities of communities and government) and securing legal signatures for these agreements. The implementation stages signals the official start up of the

implementation stage with full government support. Monitoring and evaluation are also part of this stage (see annex). According to local sources the understanding of all parties to the process was that the management plan, the by-laws and the enforcement system has to be developed in such process.

4.5.1 Community Participation over PFM Process

In order to see the extent of community participation over the processes of PFM, the following indicators were established. Accordingly, the following table represented data on community (forest users') involvement over the processes of PFM.

Table 17: Users' assessment of Community Participation in PFM Process

Question	Response						
How do you evaluate the extent of your participation in PFM process taking the following indicators?		V.H	Hi	Fair	Low	V.L	NR
Investigation process: (setting criteria for membership, and defining forest area)	Fr	4	4	2	61	19	90
	%	4.4	4.4	2.2	67.8	21.1	
Negotiation process: (Negotiations on FMP &FMA)	Fr	4	17	7	62	-	90
	%	4.4	18.9	7.9	68.9	-	
Implementation process: (Implementations of FMP)	Fr	72	10	5	2	1	90
	%	80	11.1	5.6	2.2	1.1	
Monitoring and evaluation	Fr	51	29	7	3		90
	%	56.7	32.2	7.8	3.3		

N.B: V.H =very High, Hi= High, V.L=Very Low

Source: Field Survey, 2007

As shown in the table, 67.8 percent and 68.9 percent of the household respondents said that the extent of their participation over the investigation and negotiation phases of PFM processes has been low respectively. When compared to participation over implementation phases (80%), the participation of forest users over the initial stages had been relatively low. This is mainly because

the investigation and negotiation stages were performed largely through selected 'representatives' from communities, most of whom latter served as forest management protection committee members. As a result, incidence of limited participation over the initial phases of PFM, according to informants, resulted in exclusion of some distant households who had either direct or an indirect claim on the use of the forests.

According to interview made with both project forestry experts and officials of the woreda, proximity to forest resource (also supported by 83.4% of the respondents), livelihood dependence on forest and willingness to participate were some of the eligibility criteria used for membership. However, there are some people, especially at Matapa, who are totally excluded from use. This was caused by, based on key informants account at Matapa, limited involvement of local communities during the initial phases of PFM such as in setting the selection criteria. Respondents' answer to the question "did you participate when the selection criteria was set?" was 25.6 and 74.4 percent respectively. From those who said "no", the majority (93%) put the reason that only selected 'community representatives' had been engaged in selecting the criteria for membership with out consulting all the communities concerned including distant users. Pretty (1995) calls this "passive participation" as it does not take in to account the wider community's response.

Focus group discussion with non members (Matapa) also explained that they have strong objection to the current scheme and have a view that forest is a natural creature and there customary right should be respected. Particularly, they expressed bitterly their out right rejection of access to previously hanged beehives, forest grown coffee and forage for their cattle.

In relation to this, focus group of Matapa FUG stated that: *those people who are dependent on the resource (as we used to do) and found themselves unable to participate in the planning and monitoring of the forest resource are posing a treat through illegal harvest of forest products.* In this respect, the provision of user-rights to certain selected households or to a single village particularly at Matapa FUG appeared to exclude a certain other secondary or tertiary users of the forest patches. In a similar vain (Gibson et al., 2000) argue that when rules are imposed by outsiders without consulting those who are most affected, local users are more likely to become robbers, rather than cops, towards the resources.

4.5.2 Decision making Power and Leadership Competence of Users

Forest users need to have considerable power on the level of decision making on access to common resource and actions such as: what to plant, protect, harvest, monitor or sanction (Mackean, 2000). This cumulatively affects outcomes in forest conditions, distribution of forest benefits and cost. In this regard, 60.4 percent of the respondents reported that their FUGs and forest protection committees are highly free and reasonable free (28.4%) from external influences such as government or political organizations while making decisions (Table 18). Regarding over all capacity of respective FUG and FPC in implementing PFM, 51.7 percent of the respondents agreed that their FUG and FPC are powerful while 40.2 percent said moderately powerful.

Table 18: Respondents' view about community Empowerment and Capacity

Questions	Response				
Who is in charge of implementing PFM at local FUG level	- Local forest user groups and forest protection committees - Woreda agriculture and rural development office - FARM Africa				
To what extents are FUGs and FPCs are powerful in implementing PFM?		Fr	%	NR	NNR
	Powerful	45	51.7	87	3
	Moderately powerful	35	40.2		
	Less powerful	7	8.1		
To what extent are they free from external influences such as government or political organization while making decisions on (forest development, protection and harvesting)	Highly free	49	60.4	81	9
	Reasonably free	23	28.4		
	Not free	9	11.1		
Is your forest protection committee capable to lead and coordinate PFM activities?	Yes	70	77.8	90	
	Fairly capable	16	17.8		
	Incapable	4	4.4		
Do they have commitment in implementing FMP?	Yes	75	90.4	83	7
	Fairly committed	6	7.2		
	Not committed	2	2.4		

Source: Field survey, 2007 NNR= Number of non response

Another issue involves in relation to decision making and leadership is the successful functioning of the forest management committees and their leadership competence in communities. Most of the problems involved around include fund mismanaging, inadequate commitment, and favoritism in some cases. In relation to this, household respondents said their forest protection committees are committed (75%) and capable (70%) to lead and coordinate PFM activities (table 18). Informants also repeatedly mentioned that discussions and meetings are passed through consultative and participatory process. At meetings issues are raised regarding forest protection, development and harvesting and decisions are passed on voting. Despite this, focus groups agreed that there is poor local government and limited community support for these committees. Further they state that it should be appreciated that committee members are implementing a considerable tasks on a voluntary basis and with no personal gain.

Forest protection committee chairperson from Wacha FUG reported that there is particular hostility among some of the officials of the woreda administration that most decisions from the committee are not honored by the officials and sometimes the latter give order against the decision of the committee further undermining its authority. Some also have still a reservation about the possibility of community's handling forest. Some informants also explained that committee members often lose their enthusiasm in implementation FMP owing due to limited support from the local government institutions at times coming to a virtual stopping of all activities.

Interview with the project forestry experts also revealed that at the start of PFM there was a lot of enthusiasm but little by little there seemed a declining support from government institutions despite communities' commitment and dedication to lead PFM activities.

4.6 Women's Participation

According to Singh (1992:12), among the many variables which can lower (affect) people's participation in natural resource management is prejudice and discrimination against women. Ensuring women's involvement in all aspects of PFM can help to ensure sustainable forest management.

Generally, women's participation in forest management activities including forest development, harvesting and protection as well as representation in village forest protection committees was found to be minimal (table 19).

Table 19: User's assessment on women's participation and empowerment

	Response						
Do women equally participate in forest management activities		Fr		%		NR	
	Yes	61		67.8		90	
	No	29		32.2			
What are the reasons that limit their participation in participatory forest management? If your answer to the above question is" NO" (based on priority)	Priority	Male are more effective		House work load		Other problems	
		Fr	%	Fr	%	Fr	%
	1	19	65.5	6	20.7	4	13.8
	2	11	37.9	14	48.3	4	13.8
	3	8	27.6	10	34.5	11	37.9
Do women equally represented in village forest protection committee?		Fr		%		NR	
	Yes	8		8.8		90	
	No	82		91.1			
Do women get equal benefit from participating in PFM?	Yes	79		87.7			
	No	11		12.2			

Source: survey data, 2007

Accordingly, 67.8 percent of the respondents (table 19) said women FUG members participate in different aspects of participatory forest management activities. But 32.2 percent of the respondents believe that they are not equally represented in forest management activities. Besides, focus group indicated that women participation is only restricted to few aspects of forest development activities mainly engaged at nursery establishments which primarily focus on coffee and tree seedling preparations. Women key informants also stress that two major factors limit the participation of women in physical forest management works: the forest management tasks which require men's labor such as forest guarding, assessment, monitoring

and housework load. As a result, women do simpler works mainly at nursery sites. Nevertheless, it was learnt that women share equal benefit as was indicated by 87.7 percent of the respondents (Table 19).

Women's representation in forest protection committee, however, was found to be negligible. Out of the seven people represented as forest protection committee in each FUGs (Wacha, Sheka, Matapa), only one women member was found at Wacha FUG as committee member while the rest are men members. 91.1 percent of the respondents also agreed that women representation in village forest protection committee is minimal (table 19). As explained by both project forestry experts and development agents (DAs), illiteracy and traditional socio-cultural conditions are serious impediments particularly among women of the three FUGs.

According to Agrawal and Gibson (2001), it is only when local communities see women's participations essential that real change is likely to take place. As managers, women and men may have different knowledge, skills and resources to offer. Community organizations for natural resource management will be better able to manage the resource sustainable, if women's resources are put to good use. If female users are not involved in setting rules for the use and maintenance of the resource, it will be difficult to ensure their compliance.

4.7 Size, Membership Homogeneity, and Participatory Forest Management

The optimal size of forest per community or matching group size to ecosystem size in order to ensure effective participation is one issue that needs further investigation. There are diverse views regarding this. (Oslon 1965 sited in Gibson et al., 2000) argue that smaller groups face lower transaction costs and are thus more likely to overcome collective action problems than larger groups. To the contrary (Agrawal, 2000) argue that a group needs to be large enough to mobilize sufficient resources for an effective monitoring program and challenge those who succumb to the temptation to break community rules and eventually to sanction them.

In this regard, 77.8 percent of the respondents were of the opinion that a smaller user group is more appropriate followed by medium user group (17.8%). This data, however, is some how crude that it is not based on the specific resource and users' attributes of each group. Hence, it is essential and appropriate to base the investigation in line with the attributes of each groups

mentioned above. Accordingly, the need to have weather a large group or a small seemed to have different opinion when triangulating the data obtained from the community, project and DoARD experts.

Focus groups at Wacha FUG rather think that the 439.5 hectare forest is too big to handle for 75 members. This view was in fact supported by 88% of the respondents. In relation to this one of the key informants from Wacha FUG stated that: *The limited numbers of households in the group (mostly poor) often face difficulty to mobilize a bigger labor pool and perform effective monitoring tasks across the whole extents of the forest. As a result, sometimes members are obliged to invite relatives from the neighboring villages to come and help them.* Chairperson of the group further sated that the support from kebele administrations is greatly reduced due to distance. The villages are set far apart and it would be virtually impossible to ensure regular supervision of progress by the Woreda Agriculture and Rural development office. Consequently, monitoring and enforcement of community by-laws were often problematic.

One of the expert in the bureau further told that the financial and human resource available to carryout policing the forest was often inadequate. In addition, forest guards who monitor and enforce the rules are poorly paid and, thus, not motivated to carry out their duties. As a result both forest users as well as non-users who choose not to comply with the rules can easily escape detection. This allows individuals to poach forests illegally and this remained to be the major challenge for community by-laws enforcement at Wacha FUG which is largely related to size attributed to both the resource and the users. Focus group discussants at Watcha also unanimously agreed that many of the forest protection problems in their group are mach more related to the ineffectiveness of their group to carry out policing the whole extent of the forest. The problem is further complicated not because of only mere big size but also difficult terrain and absence of clear boundary in some forest collidors which inhibits ease of exclusion (also discussed in the next section).

Quite opposite to the views of Wacha FUG, 95 percent of household respondents of Sheka FUG rather were of the view that their group is to large and unmanageable (Table-20). Some informants at Sheka rather argued that the problem is not only due to larger group size but also the heterogeneity of the people's interest in forest utilization and protection issues. Here,

heterogeneity refers to ethnicity and occupation of individual member. For instance, most Manja members in the group are highly forest dependants so that they are largely interested to sustain regular supply of charcoal and fuel wood as a matter of livelihood. While the other non Manja members are mainly depended on agriculture and other NTFPs. Therefore, such socio-economic differences sometimes create a favorable ground to blame one another for trespass and other illegal acts against the forest endangering group cohesion. A key informant from Manja clan reflected his discontent as: *why should we (the Manja) always blamed for illegal forest extraction just simply because we have been long known as charcoal and fuel wood collectors? Rather every one needs to bear the responsibility for any harm that may cause on the forest.*

Table 20 FUG members' assessment of the effect of group size on participation

FUG	Is the existing size of your FUG appropriate to ensure effective participation in PFM?				members	Hectares
	Yes		Large and unmanageable	Small and ineffective		
Wacha	Fr	3	-	22	75	439.5
	%	12		88		
Sheka	Fr	2	38	-	121	215
	%	5	95			
Matapa	Fr	23	-	2	74	216
	%	92		8		

Source: Field survey, 2007

Forest protection committee members at Sheka FUG further indicated that due to group heterogeneity, they at times face difficulties to create and maintain processes that would organize their members and ensure their contribution to PFM activities. Particularly, they sated that heterogeneity of the group in terms of clans in which one Manja and the other Kafa sometimes create problems in mobilizing labor in communal works apart from some good progress witnessed so far between these groups. In fact, as literatures confirm (for instance Mackean, 2000; Yonas, 2007), these problems are mainly due to limited or absence of past experience of the group on any collective actions. As explained in the forgoing sections, such limited experience on collective actions is due to the contending interests between these groups that more

or less persisted to the present day. Contending interests in which one group segregates the other from claiming equal treatment in every socio-economic aspect in the area including access to natural resources such as forest.

At Matapa FUG, 92 percent of the respondents argue that their group size is appropriate to run PFM activities (Table 20). Matapa forest, in contrast to the two forests, has a much greater level of monitoring and enforcement. Project forestry experts put the reason as much more related to both the resource and the users' attributes, *apart from strong group solidarity and homogeneity in the group, smaller size (216 hectare) with short boarder and a path around two sides of it enables monitoring more effective for 74 members.* Such views supports the relation between users' and resource attributes on the one hand and the success of PFM on the other. Local Kebele administration also asserted that group unity and solidarity have been reflected in some occasions. For instance, in Matapa FUG, the communities have been able to block the construction of a road that would have destroyed a large tract of forestland. Obviously, such group harmony and solidarity has come about due to the homogeneity of the group in terms of similar ethnic background and past experience on collective action.

The occurrences of conflicts on forest and NTFPs

Conflict over control and use of forest resources are an inherent condition of forest dweller communities. This is because there are competing demands for the use of those resources among the local communities who directly or indirectly depend on the forest resources. When individuals compete for scarce resources, when social groups perceive their interests are not compatible, and when those people who are dependant on the resource find themselves unable to participate in the planning and monitoring of its use, the situation becomes hostile and conflictive (Agrawal, 2000). Overall, 65 percent of the respondents reported that there are no conflicts while 20 percent reported the existence of conflict. The rest 14.4 percent reported that sometimes conflicts occur. The nature and intensity of conflict varies across the three FUGs. These differences arouse due to the specific attributes of the resource in each FUG such as location, clarity of boundary, condition of resource, and ease of exclusion (Yonas, 2007).

The problem of conflict over forest resource was most witnessed at Matapa FUG. Accordingly, 52 percent of the respondents in the group reported that there are conflicts concerning use of forest resource (Table 21). Such problems arouse due to the presence of external users rather than to any attributes of the members discussed as a merit earlier.

Table 21 Occurrences of conflict and resolution techniques

Questions	Response	Forest user groups (FUGs)		
		Wacha	Sheka	Matapa
Are there conflicts concerning the use of forest resource?	Yes	17%	13%	52%
	Sometimes	41%	37%	45%
	No	42%	50%	3%
What conflict resolution methods/steps are in practice?	Steps			
	Mediation through FPC and elders	14.5%	26%	6.4%
	Court decisions	85.5%	74%	93%

Source: Field Survey, 2007

The proportion of respondents who claimed the existence of conflicts in Wacha and Sheka FUG was 17 percent and 13 percent respectively (Table 21). Further, focus group discussion and individual interview revealed that the conflicts often encountered are two types in their nature. One is minor conflict among members with regard to the use of forest and NTFP products. In relation to this, some informants stated that there are ill-feeling among some members dissatisfied due to the restrictions imposed over the previous unlimited access. This ill-feeling sometimes intensify and creates problem on participation in forest management. The second and the most important is conflict with non-members claiming customary rights over a particular forest and NTFP products. The latter has been witnessed particularly at Matapa FUG. In all the FGDs conducted, particularly, at Matapa the issue of outsiders who intrude in to the forest was emphatically raised. Especially at Matapa, it was stated that communities found it impossible to stop outsiders as they may be armed at times, so threatening life and property.

The conflict resolution techniques (table-21) in the FUGs, according to the responses, involve two stages: the first is advice and mediation through FPC and elders and the second is court decisions at all levels. Committee member at Matapa explained:

> *There is inadequate support from the side of the government in this regard. The legal system is overburdened and slow. Some cases take as long as three to four years and are dismissed altogether at the end for lack of sufficient evidence. The committee members are of the opinion that it is possible to stop these people if there is a coordinated effort and commitment on the side of the government.*

Figure 5 Partial view of Matapa Forest (Mitchity Kebele)

4.8 Clarity of Boundary and Related Forest Protection Problems

Among the many factors that influence the successful functioning of common property arrangements (such as PFM) is the issue of boundary between users and non-users (Mackean, 2000; Ostrom, 1999 sited in Havnevik, 2006). In relation to this (McKean, 2000: 45) rightly argue that "clearly marked or even will understood boundaries can be an inexpensive substitute for fencing". Besides, it lessens forest protection problems.

This study has also revealed that in some cases the boundary between users and non-user is not either very clear or not accepted by all concerned. Accordingly, 37.8 percent of the respondents reported that there is boundary distinction problem. Such problem is most serious at Watch FUG where 96 percent of the respondents reported such case. Interview with chairperson of FPC at Watch also disclosed that such boundary problem sometimes encourages innocent error and ignorance as excuses for trespass and theft by out groups. Further, forest protection and monitoring tasks are impaired due to difficulty in terrain conditions and relatively large forest area. Table-22 presents some of the major forest protection problems based on priority.

Table 22 Users' response regarding major Forest Protection Problems

Response based on priority		Forest protection problems				
		Human encroachment (poles, timber)	NTFP collection (non-member)	Expansion of farm land (both)	Unauthorized fuel wood cutting and charcoal burning (member)	Livestock grazing in forest (non-member)
First	Fr	43	24	19	-	4
	%	47.8	27	21.1	-	4.4
	NR	90				
Second	%	20	39	27	-	4
	Fr	22.2	43.3	30	-	4.4
	NR	90				
Third	Fr	11	12	50	17	-
	%	12.2	13.3	55.6	18.9	-
	NR	90				

Source: Field survey, 2007

As it is clearly shown in the above table, forest protection problem encountered are diverse in nature and all are related to the presence of diverse users who depend on the forest ecosystem directly or indirectly for various purposes.

Most serious forest protection problems encountered by the said respondents according to priority are first: Human encroachment for poles and timber (47.8%), NTFP product collection (27%), expansion of farmland (19%), and livestock grazing (4.4%). Second severe problem: NTFP product collection (43.3%), expansion of farmland (30%), human encroachment (22.2%)

and livestock grazing (4.4%). Third: expansion of farmland (55.6%), fuel wood cutting and charcoal burning (18.9%), NTFP product collection (13.3%) and human encroachment for poles and timber (12.2%).

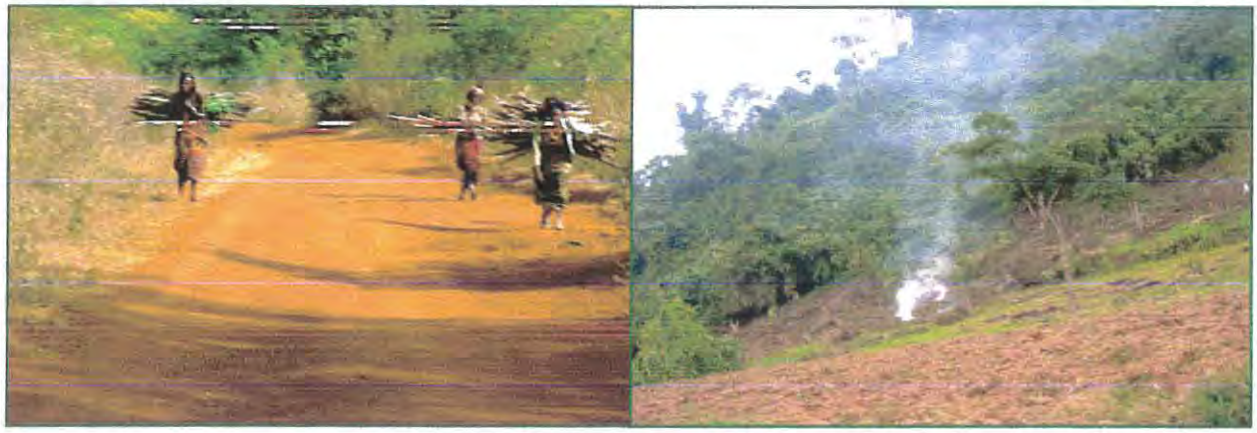


Figure 6 Some of the major forest protection problems (fuel wood gathering& charcoal burning)

Informants further confirmed that illicit tree felling by outsider (unemployed young people from Bonga and Wushush town) is one of the most serious problem. These people often process the wood into planks and construction poles usually at night and get it smuggled to near by towns and other smaller urban settlements in the vicinity. Further, most acts of illegal NTFP collection is posed mainly through non- members claiming customary use rights particularity over forest grown-coffee and traditional beehives. In this regard, FGD conducted at Matapa FUG with non-users (most of whom are kafa households) expressed their view as follows: *the boundary delineation process was carried out with out sufficient assessment of the area and consensus with the people claiming use rights.* They further affirmed that the forests have been freely used by their fathers and forefathers since antiquity and they strongly oppose this transfer of rights of collecting economically useful forest and NTFP products from individual households to some groups. Project and DoARD experts rather where of the view that the prime forest protection responsibility had to be given to the nearest communities rather than distant communities in order to ensure effective forest management.

Illegal Expansion of farmland (in terms of both government rule and community by laws) by newly formed families of members is also another problem. Similarly, such problems also occurred through non-members. For instance, evidence of expansion of farmland by ex-

servicemen who were given plots by the kebele authorities at the edge of the community forest (eg sheka FUG) was observed. Focus group of sheka FUG also told that there is even one household residing inside the forest and continually expanding its farm into the forest and also bringing relatives from far places. And yet, no action has been taken what so ever against the household.

In addition, informants are of the opinion that due to high population growth coupled with increasing demand for wood products in the towns, more and more young people are clearing adjacent forests which are not currently transferred to community. In fact this, too, remained as a potential trait to the forests which are currently transferred to local community under PFM scheme.

4.9 External Support and Community Participation in PFM

The implementation of PFM is not only challenged by the internal characteristics of the users and the resource attributes in which they depend on but also with their relation with external agents (stakeholders) and the various support obtained from them (Yonas,2007). This topic discusses the extent and condition of support of stakeholders (other than the community) in supporting community participation in PFM activities.

The PFM initiative is a jointly agreed roles and responsibilities between the government and the communities. Hence, in principle, the government is the major external organization that assists the local forest user community or FUGs. The NGO play a mediation role by granting a local start up capital accessibility. Accordingly, 90 percent of the respondents put FARM Africa as the major contributor and 36.6 percent of them put the government (the Woreda Agricultural and Rural Development office and woreda administration or council) as the second major contributor (Table 23). The main types of assistance that FARM-Africa provides according to the magnitude of the assistance given are finance (83.3%), training and technique support (78.2%).While government support is mainly limited to legal support.

The agreement signed with the community, however, clearly shows that the government provides the community with the necessary technical support (FMA document, article 5, and sub article 2). However, interview with forest protection committee members revealed that in almost all stages

of implementing PFM so far the major support is being contributed by FARM Africa project forestry staffs. Almost all unanimously agree that the support that should have been obtained from DoARD DAs is far less inadequate. Further, the majority (95.6%) of the respondents also reported that the current level of support of the government is inadequate.

Interview with an official of the woreda Agriculture and rural development bureau revealed that it would be impossible to assist the FUG with the current level of funding from the government. Overall financial and technical support provided so far were all possible though external funds sourced by FARM Africa.

Table 23: FUG members' response regarding external support

Question	Response				
	Organization	Fr	%	NR	NNR
Which are the major organizations that assist FUGs	Woreda council (administration)	27	30	90	
	Agricultural office	33	36.6		
	FARM Africa	81	90		
	I don't know	6	6.6		
What are the types of support the woreda council and agricultural and rural development bureau giving you?	Training and technical support	11	27.2	70	20
	Finance	3	4.3		
	Legal support	58	82.8		
What are the types of assistance FARM Africa provide?	Training and technique support	61	78.2	78	12
	Financial support	65	83.3		
	Legal support				

Source: Field survey 2007

The project personnel are also of the opinion that much of the future activities may depend on how much fund can be secured. Community fund has not equally been strengthened and consolidated in all the FUGs. One of the DA (development agent) at Sheka FUG indicated that: *the community has agreed to limit resource extraction to make their forest use sustainable.*

However, since the villagers are poor, they need more compensatory measures for the resulting loss in benefit. He further stressed that this is a serious challenge of PFM initiative and activities.

Similarly, all focus group members agree that the current level of support they are getting from the local government is not satisfactory. Accordingly, 81.1% of the respondents sated that their FUG strongly need external support (Table 23) while only 1% reported that it doesn't need. Some of the inadequate resources stated, among others, are technical, legal and financial support. Respondents were also asked to prioritize their needs for external support and the responses are presented below.

Table 24: FUG members' assessment of the need for External Support

Responses						
Does your forest user group need external support?	Strongly need	Fr	%	NR	NNR	
		73	81.1	90	-	
	Need	9	10			
	Fairly need	7	7.8			
	No	1	1.1			
If yes, what kinds of support (according priority)	Priority		Finance	Supplies	Legal support	Training
	First	Fr	48	11	18	13
		%	53.3	12.2	20	14.4
	Second	Fr	15	29	30	16
		%	16.7	32.2	33.3	17.8
	Third	Fr	16	35	14	25
		%	17.8	38.9	15.6	27.8
	Fourth	Fr	9		11	
		%	45		55	
	NR	90				

Source, Field survey, 2007

The type of support demanded by the said respondents according to priority are: finance (53.3%), legal support (20%), training (14.4%), and supplies (12.2%) as first priority; legal support (33.3%) supplies (32.2%), training (17.8%), finance (16.7%) as second priority; supplies (38.9%), training (27.8%) finance (17.8), and legal support (15.6%) as third priority, and legal support (55%) and finance (45%) as forth priority.

One can see from the response that the most pressing need for the FUGs is financial support. Interviews with FPC chair persons also revealed that members, especially the poor, need reliable alternative non forest livelihood options or they should be secured with reliable forest revenue so as to win their genuine will to limit resource extraction. The small amount of money generated from sale of communal sale of NTFPs is not yet strengthened enough to support the existing members. Given the long gestation of forest, achieving reliable forest revenue at this stage of PFM is, however, a serious challenge.

With regard to the financial problem, both project and agricultural experts argue that PFM budget should be institutionalized as early as possible. Otherwise, they expressed their fear that during take over confusion and cessation of activities may disrupt on otherwise smooth operation. Normally, projects terminate and give way for more permanent institutions to take over initiative and their activities. In this case, line agencies of Agriculture and Rural Development are expected to assume responsibility. The question is, however, how ready these public institutions will be by the end of the projects to assume responsibility and continue the activity sustainably.

Community rule enforcement

Success of community organizations lies in enforcing regulations. In community forest management such as PFM, community rules and by-laws should be supported with full legal backings. In this regards, poor law enforcement is also another challenge that adversely affects the morale of the community in implementing PFM. This is particularly the task of the government through its justice and police unit. However as the record books of the FUGs shows, a number of abuses have been reported over time largely committed by people outside of the groups In relation to this, the chairperson of the Wacha FUG had to say this:

> *Penalties given for community by-law offenders are not equivalent to the offense. Besides, cases last for years at the end of which witness are required to remember details of the long past event. Consequently, cases often dismissed at the end in the name of insufficiency of evidence. This encourages several offenders to keep on committing the same mistake.*

In some cases, too, some Woreda and DoARD staffs are strangers to the process of PFM despite joint roles and agreement to safeguard community by-laws against offenders (FMP, 2001/04/04). Informants repeatedly mentioned that the woreda administrations often shy away form the task pointing out it is the duty of the line agencies. According to project forestry experts, the DAs from the woreda agriculture and rural development bureau usually lack the initiative to be involved, and assume that it is the duty of the FARM-Africa's staff or those working in the project. Their area of focus is mainly on other assignments given as a key task by DoARD. Moreover, in some cases, too, lack of capacity in relevant government offices was believed to threaten even the survival of the instituted FUGs.

4.10 Resource Tenure Security and Participation

Security of tenure of resources users is an important issue in natural resource management. Tenure helps to determine whether local people are willing to participate in the management and protection of forests (Bromely, 1998). The central argument is that granting more access rights can be an incentive for conservation by local people.

As it is repeatedly mentioned the forest management agreement document signed between communities and the local government contains internal by-laws and allocates rights and responsibilities in forest management (FMA, 2001/04/04). Based on interview made with local officials, such documents were developed in order to provide a clear division of roles among forest users and local government officials. It is also meant to create a sense of security in forest management by providing legal mechanisms to challenge any violations of rights of particular groups, and by making each group accountable for meeting its responsibilities. In this regard, respondents were asked whether they feel sense of security of ownership over the forest resource or not. Accordingly, 64 (71.1%) of the respondents reported that they feel secured ownership rights, while the rest 26(28.9%) did not feel.

Members' sense of ownership rights has been found to have a positive contribution with members over all participation in PFM activities. For instance, out of the 64 members who feel sense of ownership, 59(90.2%), obviously the majority reported that feeling of sense of ownership strongly enhanced their participation in overall PFM activities while the rest reported

that it slightly enhanced. Similarly, sense of ownership right is also found to have a positive association with member's commitment to implement the forest management plan and associated by-laws. Accordingly, member's sense of ownership security towards the forest resource were measured in ordinal scale and cross tabulated with their commitment to implement the forest management plan and associated by-laws. The cross tabulated result of those variables revealed that out of the total 49 members who were fully committed to implement the forest management plan and associated by-laws, 44(89.8%) of them were those who have a feeling of ownership security towards the forest resource. While the rest 5(10.2%) are those who doesn't feel a sense of ownership right. The chi-square test (table below) also indicated that there is an association between member's sense of ownership right and their commitment to implement the forest management plan and associated by-laws.

Table 25: Test statistics showing the relationship between sense of security and commitment in implementing forest management plan and associated by laws.

Sense of security of ownership towards the forest resource	Commitment in Implementing the forest management plan and associated by-laws						X^2-test
	Fully		Partially		Total		
	N	%	N	%	N	%	
Yes	44	89.8	20	48.8	64		18.279***
No	5	10.2	21	51.2	26		
Total	49	100	41	100	90		

***=highly significant at 1%

Source: Field survey, 2007

Literature also asserted the fact that farmers' investment on land management such as tree planting is much more related to tenure security and it remained one of the underlying causes for flow resource degradation in Ethiopia (Kidane, 1994). On the other hand, the sources of insecurity reported by 26(28.9%) of the respondents are discussed below.

4.10.1 Sources of Insecurity of Forest users

The sources of doubt and insecurity are many according to the respondents; they are categorized into four and discussed below.

- The existence of contending traditional property right regimes on forest and NTFPs
- Unclear duration of rights stated in the forest management agreement document (FMA)
- Limited support from the side of the government
- Community past experience on property rights

Traditional property right regimes on forest and NTFPs

The question of claims based on customary rights for certain forest and NTFPs by people from outside the forest often complicate the working of forest-user communities under PFM. Such problems arise often due to insufficient stakeholders' involvement and negotiations at early stages of the PFM process (Irwin, 2003). Past experience also demonstrate that building on existing institutions rather than establishing new ones is a course of wisdom (Yonas, 2007).

In almost all forest patches of Bonga including the three researched forest patches, there are traditional property right claimed by people living adjacent and at times near by towns for a particular forest and NTFP products (forest coffee, honey) and this in fact also found to have an effect on people's participation in PFM. This problem was found to be most serious at Matapa FUG, it was noted in a focus group discussion that there had been people who claim traditional property right over different forest products. Some of this people live in near by and adjacent villages and some live in near by town of Bonga and Wushwush.

In this respect, (Stellmacher, 2005) indicated Bonga forest is almost entirely divided into plots informally owned by autochthonous peasants living adjacent to the forest and property rights depend on the particular feature of the forest resource. According to him, hanging beehives in a particular forest plot, for instance, is the exclusive right of the concerning forest 'owner' (Manja or Kefa). The collection of dry firewood is predominantly perceived to follow 'first come, first served' system, nevertheless Manja people reported firewood to be their exclusive rights. All stakeholders agree that use of timber for construction of community member's houses is open access. In general, the more valuable a product is the more limited is its open access character.

Moreover, local Kebele administration is well informed about this traditional forest resource property rights (Stelmacher, 2005).

Focus group at Matapa FUG noted that PFM has put a solution (at least temporarily) for the degradation of forest products which used to be open access such as commercial wood for construction materials and farm implements, firewood, grazing of livestock etc. But the issue of outsiders (often distant users) who claim traditional ownership right is still unresolved. According to them, one important non-users claim in this respect that hinders forest protection and monitoring activities by users is that of installing traditional beehives and harvesting of natural coffee inside the natural forests for individual benefit. Such claims were also reported to exist even among members who handed over their own plots for communal purpose upon negotiating. In relation to this, an informant opposed that the hoarding of money generated from NTFP to boost community fun has deprived substantial portion of members from directly benefiting by selling NTFP from the forest due to reduced access.

Focus group discussion held at Matapa with the non users who claim user right explained that:

> *Following the demarcation of the forest for community use, we have been banned from collecting honey from our beehives that we already had and from hanging new ones in the forest [Matapa] unless we work by joining this [Manja] people.*

In this regard project foresters told that there had been negotiations and discussions with people claiming use rights. However, many of them are not willing to participate partly due to physical distance and partly due to social problem. For instance, Kafa non-users are not willing to join Matapa FUG (which is dominated by the Manja households) and choice to continue forcing themselves in to the forest often threatening members. Moreover, chairperson of the Matapa FUG explained that most act of illicit tree felling is recorded by this people in the pretext of harvesting honey. Further, they are not willing even to be held accountable for any fire that might be caused in the process of extracting honey.

Figure 4 Beekeeping using traditional hives as one of the major income generating activities in Bonga forest (Matapa FUG)

Overall, the issue of non-users claiming traditional use right is found to have an adverse effect on community participation and remained to be one source of insecurity for members in participatory forest management particularly at Matapa forest patches.

Duration of rights

According to informants, some articles have also led members to be skeptical about the continuity of the scheme. For instance, one of the articles in the agreement document (Article 7, sub article 3 of Wacha Forest Management argument document) states: *The forest property remained under the state while the FUG provided with use right.* Further, the document forbids land use change by the FUG while the government party can, up on paying the necessary compensation take over the forest if it so requires employing the resource (land for other purposes. Hence, according to the contractual agreement document, forest users were given 'the right to use', i.e., undefined use rights, and not 'ownership' of forest. Therefore, the rights are conditional, transitory and dependant that the users (FUGs) keep the forest as far as the government wishes them to use and develop the forest. Consequently, most respondents stated that this option left the government with probably unwarranted authority that exposes most members to be doubtful regarding the continuity of PFM. Literature has also confirmed that when a government, which previously denied access to forest resources, vested only use right but still

maintained the ownership right over forest, the new scheme have often not been met by a feeling of trust (Lindsay, 2004).Thus, community confidence in the continuity of the scheme is an important factor influencing successful management of common-pool resources in the area.

Limited support from the side of the government

Strong partnership between the community and the government is required in order to institutionalize a successful PFM scheme (Kerr, 2002). Although the forest management document elaborately talked about the role of the government in safeguarding the interest of the community, the present level of partnership is too poor to allow such kind of engagement.

The overall poor capacity of the zonal and woreda administration and its bureau of agricultural and rural development (BoARD) to facilitate the process of co-management arrangement is also a source of doubt. As discussed previously, helping villages to set up the right kind of management systems, providing technical backstopping, intervening when communities fail and mediating among villages are essential assistances which are critically in need.

Asked regarding the future, informants responded that most community members still need overall technical and financial support besides some trainings to empower them with participatory skills. In relation to this one of the key informants state that *unless those people whom their livelihood depend on forest have access to alternative livelihood sources, I doubt the continuity of the scheme.* A project forester also emphasizes the economic aspects involved in implementing PFM. *"Unless we produce economically viable solutions, we fail. That means as soon as we (project) withdraw, things may be back to the pre project condition.* On the other hand, interview with BoARD experts have made it clear that securing additional budgets for PFM process is difficult as funds are hard to come by even for other more urgent activities. Moreover, most community members feel that there is limited action being taken on these 'non-users' coming from near by villages and towns. The local police are usually neglected as a minor player contrary to the reality on the ground. Besides, the legal system is overburdened and slow. Some cases take long time and are dismissed altogether at the end for lack of sufficient evidence. Often penalties given are not usually compatible with the offence and several offenders even keep on committing the same mistake even after covering the penalties. All these are, in fact, sources of doubt for most community members regarding the continuity of the scheme.

Community Past Experience on Property Rights

Frequent change in property right regimes associated with different government change led the community to be skeptic regarding the continuity of the scheme. Focus group discussants bitterly remember the past exclusionary approach that inhibited them from using the forest up on which their livelihood depends. For instance, they bitterly remember the villagization program carried out by the past regime destroying their garden and chopping down their *enset* plants. So that there former holdings were subsequently turned into plantation sites by the forestry department. They argue that: *these forest departments past deeds have caused suspicion on the part of the community.* Further they asked, *"How do we be sure that this community forest management will not change in the future?"*

Moreover, most informants mentioned their memories of past experience and their negative perception about *limat,* an ordinary term for 'development' in which the government led reforestation programs implemented through mass mobilization. One of the key informant also expressed his suspicion saying *"Government could displace us after the forest get improved or give it to an investor"*. Some also fear that people may come to settle into the forest as part of the on going intraregional resettlement program in the area. Most importantly, focus group at Matapa also felt the lack of clear policy regarding community forest ownership both at regional and national level.

4.11 Perception of the Local Community towards Participatory Forest Management (PFM)

The overall analysis of survey responses indicated that the majority of them have positive attitude or perception towards PFM. It was found that such views has come about not only due to incentive structures (benefit) derived through the changes in quantity and quality of forest and forest products but also the social and psychological benefit accrued to individual participants and the groups as a whole.

Regarding PFM, 88.9 percent of the respondents believe that it is an important solution to alleviate the destruction of forest. Whereas 11.1 percent of them believe that it is less important. The respondents were asked to state the major reasons why they feel PFM is an important solution for forest conservation. The response mentioned by the respondents is indicated as follows.

Table 26: Reasons for positive attitude of forest users towards PFM

Reasons stated	Total responses	Percent %
Reduced deforestation	82	91.1
Better availability of NTFPs(coffee, spices)	78	86.6
Regeneration of important tree species	56	62.2
Community authority and empowerment	75	83.3
Improvement in social equity and accountability	69	76.6
Others	27	30
Total	90	

Source: Field survey, 2007

N.B. Note that the response do not add up 90 and percentage 100 due to multiple response.

As shown in the table above, perceivable change in quality and quantity of the forest made much of the respondents to have positive attitude towards PFM. Among others, the reduction of deforestation rate through reduced access and better availability of NTFPs are the two major reasons why members developed positive view to the approach. Out of the 90 respondents, 91.1 percent stated that the forest management activities carried out so far has reduced the deforestation rate and 86.6 percent of them are impressed with the increasing availability and better condition of NTFPs inside the natural forest. In addition, the authority or empowerment and improvement in social equity and accountability are the two reasons why 83.3 percent and 76 percent of the respondents positively perceive PFM respectively. Natural and man made regeneration of important tree species is also another motivating factor for 62.2 percent of the respondents. Other factors reported by 27 percent of the respondents include: high level of cooperation and unity among members, and good working relationship with project personnel.

In almost all the cases, the regulations on the use of forest resources through people's institutions brought in a general feeling in the villages that forests are of some 'value' and not free for all, unlike the previous situation. Further, the political processes and the interactions among the users (particularly between Manja and Kafa people) after the onset of PFM in the area has not only led to the development of opportunity for discussion and debate over forest uses or abuses but also to substantial collective action in the communities resulting in forest protection.

Apart from high degree of commitment and motivation in governing the forest resource, the growing acceptance of Manja household members is found to be a particularly motivating factor to perceive PFM positively. Interestingly, one informant emphasize the psychological benefits that, commonly sited in literature, i.e. sense of belonging to the forests and having a stake in the management of the resource playing as a positive motivational factor towards PFM. Similarly, one of a woman key informant at Watcha FUG stated that in addition to increasing social recognition of her community (Manja), a strong desire to get out of poverty and low status occupation is a particular motivating factor to perceive PFM positively.

Security of use right and perceived future benefit to some extent is also a motivational factors for member's participation in PFM. On the other hand, feeling of insecurity of ownership due to the various factors discussed earlier was found to have a negative influence on members' confidence with regard to the continuity of the scheme. Accordingly, 37.8 percent of the respondents are totally confident with regard to the continuity of the PFM scheme. Where as 45.5 percent are partially confident, and the rest 16.7 percent are doubtful regarding the continuity of the scheme.

4.12 Legal and Policy Framework

Policy and legislative frameworks that support community participation are basic requirements in any participatory development efforts (Timsina, 2003). In other words, people's participation in natural resource management is also affected, at times strongly, by the broad legal and political environment in which users and the resources are embedded (Castren, 2005). Yonas (2007) termed this 'institutional attributes'.

In Ethiopia policy papers and guidelines at the federal and regional levels are quite inadequate to promote people's participation in forest conservation and development. The Federal constitution, the 1994 forestry proclamation (Proc. No. 94/1994), the Environmental policy of the 1997, the cooperative establishment proclamations (Proc. No. 147/1998), the SNNPRS regional Forestry and land administration proclamations of the 2003/04 are some of the legal documents which to certain extent are calling people's participation in forest conservation and development.

For instance, section 3.3 of the environmental policy encourages "the participation of communities, the private sector and the state in designing and implementing forest development programs". The national Biodiversity conservation and research approved in 1998 also

encourages "public participation in biodiversity conservation, development and utilization". With Regards to forest law/proclamation, the conservation, development and utilization of forest resources in Ethiopia is regulated by the 1994 forestry proclamation. At Regional level, the SNNPRS land administration and utilization proclamation no.53/2003 and state forest management, development and utilization proclamation no.77/2004 are among the enabling policy environment and legal frame works in the sector that ensures participatory resource management. The important issues considered here are good governance and equity in resource utilization with out which maintaining sustainability may not be possible.

Although these umbrella National and Regional policy documents in one way or another emphasis the need to uphold the livelihood interests of communities and their involvement in the management of local resource, there are no subsidiary supporting laws, directives or provisions which allow there effective implementation. Rather, as Yearaswork (2001) rightly put it these umbrella policies such as the Federal Environmental policies remain "mere declarations of intent" implying the gap between policy and implementation. In relation to this, Melaku (2003) stated the following:

> *In most cases Ethiopia forestry laws remained rigid and un implement able [...] the laws were devoid of clear objectivities or were given multiple purposes beyond the comprehension, the commitment and clerical capacity of the implementing agencies; undefined clauses and political opportunism also destroyed the very essence of the laws and their effective realization. Except for the 1965 legislation, the 1980 and 1994 forestry laws remained without regulations to facilitate their implementation.*

Currently, forest user groups under PFM scheme, including those found elsewhere in the country are operating in a legal and policy vacuum. There are no Federal or Regional policies with respect to promoting PFM. In a recent International conference held in Addis Ababa in March 2007 on the theme "Participatory Forest management, Biodiversity and Livelihood in Africa" a number of academicians and practitioners emphasized on three main areas where critical attention need to be put. These are: (1) institutional or legal framework under which PFM is currently operating (2) developing technical capacity and equity of PFM such as increasing forest value, equity, and gender issues (3) looking the possibilities of the involvement of other sectors

such as training and research institutes and the private sector. Most participants further argued that such an arrangement can work only in an atmosphere of explicit trust among parties. This can be achieved only when policy and legislation are reformed to accommodate PFM and when local institutions are empowered through full legislative backing and capacity building.

Project forestry experts also stated that major flaw in the current PFM approach is its application as a foreign–funded project with fixed targets and tenure rather than a demand driven policy prompted by long-term commitment to the philosophy of decentralized management. Further they argued that if decentralized governance rather than receiving foreign assistance is the main motive behind PFM, there could be several incentives that could be provided by Federal and regional governments on their own to promote it. As one of the project team leader put it: "*it is a waste of time and resource unless the approach get institutionalized*" key assumption in this observation is that such a policy discourse will set off dynamics and result in an increased recognition of the public good value of forests at the state level and ensuring a sustained flow of funds to forest- fringe communities for their service in forest protection.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

An important precondition to a successful participatory forest management arrangement is an unconditional acceptance of the following three principles by all stakeholders involved: community rights to ownership of forest resource must be recognized, community participation must be built on existing formal and informal structure (If they exist), and effective mechanisms must be in place to enforce community rules and regulations (IRG, 2000).

The study has revealed that there are multiple socio-economic, cultural and institutional factors at play that affects people's participation in participatory forest management. This in fact is determined by the broad Scio-economic, cultural, institutional and political context of the area in which users operate (Timsina, 2003).

The socio-economic condition of forest user household members in the studies FUG is generally based on subsistence crop farming (forest farming) and harvesting of forest products. Members are highly characterized by low level of income and education. The majority are illiterate. Especially, this is observed among Manjo household members whose livelihood so strongly attached to the collection of firewood and charcoal burning. Winning the acceptance of the poorest often marginalized communities to involve in to PFM scheme was found to be challenging. This is because they are highly interested in maintaining a regular supply of products rather than spending a relatively longer hours at communal works. Forest users' level of education also affects the level of community participation in PFM. It was found that the low level of education limits the level of understanding of both specific forest user household member and forest user group (FUG) as an institution operating though the forest protection committee (FPC). Such tasks as fine record keeping, meeting records, interpretation and implementation of internal by-laws and forest management prescriptions require considerable level of understanding.

Further, current tangible benefit derived and future perceived benefit expected are essentially motivating factors to engage in PFM works compared to the previous *de jure* state owner ship but *de facto* open access situation. The current community management is reported to have brought considerable environmental and social benefit. In this regard, improvement in quality and quantity of trees, regeneration of important three species, increasing availability of NTFPs (forest coffee, spices, grass and fodder supply) through reduced access and complementary forest development activities (Nursery establishment of coffee and tree seedlings) are worth mentioning. Moreover, the powers devolved to the community, authority to decide themselves and accountability transferred though a signed agreement with the local government and most importantly social equity and empowerment of users are the most important incentives (benefit) for members' participation in PFM activities.

The findings show that participatory forest management will be effective if the community concerned is empowered and represented in all PFM process. This probably mitigate the danger of excluding most concerned communities with traditional property rights as it is found in Matapa FUG in this study. Such problems arise due to limited involvement of stakeholders at the initial stage (investigation stage) of the PFM process, which set membership criteria and initial gathering of information on users and use areas. Such conditions have created a potential treat from 'out groups' in latter implementation stage.

Generally, women's participation in forest management activities including forest development, harvesting and protection as well as representation in village forest protection committees was found to be minimal. According to Agrawal and Gibson (2001), it is only when local communities see women participation as essential that real change is likely to take place. Group size, together with the various resource attributes (such as extent and condition of the resource, clarity of boundary and ease of exclusion) are another factor that influences effective participation in a group. The findings of the study also gives rise to mixed responses concerning the whole idea of people's participation and social justice based on traditional socio-economic status of Manja and Kafa household members.

One of the major factors believed to threaten the survival of the instituted FUGs and overall forest users' participation is the declining support form the side of the government. In a co-management arrangement, the government is expected to be the major organization that assists the local forest user community. But, a major flaw in the current PFM arrangement is its application as a foreign funded project with fixed target and tenure rather than a demand driven policy prompted by long term commitment to the philosophy of decentralized management. Yet, limited financial legal technical and limited commitment from the side of the government remains a big challenge. In fact, this is one source of doubt for the community regarding the continuity of the scheme.

In general, the finding shows that the majority of FUG members have positive attitude towards PFM. It was found that such views have come about due to improvements in forest resource conditions, empowerment and accountability of users and devolving of power to local resource users compared to the previous exclusionary approach. Granting ownership right on forest resource use also determined whether local people are willing and communicate to participate in the management and protection of forest, implementation of by laws and community forest management prescription (Bromley, 1998). The study found out that household members who feel lesser sense of ownership are less committed to the implementation of the by-laws. Similarly, significant numbers of households with low sense of ownership are found to have doubt and insecurity regarding the continuity of the scheme. The sources of doubt identified were: the existence of contending traditional property right regimes on forest and NTFP's, unclear duration of rights, limited cooperation from the side of the government, and community past experience on property rights.

In conclusion, as Ethiopia searches for ways to manage its forests, the lesson from this study may be instructive to policymakers. The past State centered polices appeared to have failed in many maintaining many of our forests. Besides, the costs of maintaining a top down institutional arrangement necessary to protect forest resources are far too high. Alternative that appreciate the preferences and capabilities of local communities should be weighed, not only because they appear to reduce the costs to the state of managing numerous small forests but because they appear to be more effective in maintaining the remaining few forest patches in relatively good condition.

5.2 Recommendations

On the basis of the discussion and analysis of the findings and the conclusions reached, the following recommendations are forwarded.

- The low level of income of the community limits community participation in participatory forest management activities. At the initial stages of PFM restricted access to forest resource affects the livelihood of the community, mostly the poor. This is only until a sustained flow of benefit is generated from the forest. Household community members (especially the poor), therefore, need to have appropriate compensatory measures for the resulting loss in benefit. Such efforts need to include: promotion of off-farm and on-farm employment, NTFPS based livelihood particularly on improved beekeeping (apiculture), micro-financing through strengthening community development fund (CBO). Further, given the existing relatively large land holding size, encouraging tree planting on private holdings is important to keep the pressure off the natural forest and support livelihood.
- Active and willing involvement of the community is sought in PFM activities. A sustained change in overall forest condition and household livelihood improvement is likely to be realized when the community have power, responsibility, feel ownership and are committed. Thus the forest user groups (FUG), apart from technical assistance, should be free in their effort and decisions regarding forest development and harvesting.
- Women need to participate in all aspects of PFM particularly in leadership. Though it is not an easy task due to traditional socio-cultural conditions. Yet, manipulating the community with one executive committee may not work rather establishing women group to ensure their empowerment needs to be considered.
- External support, particularity targeted at livelihood improvement should be planned in such a way that it enhances self-reliance in a given period of time not dependency indefinitely. PFM is a long term process. If it is to be sustained an appropriate time frame must be developed and adequate fund allocated. In addition, the stakeholders' integrated involvement must be strengthened. The present level of partnership between FUGs and other stakeholders is too poor to allow such kind of engagement. Special effort to up grade partnership is needed among government project staffs, zonal and woreda agricultural and rural development staff, police and justice, and the community.

- Extensive training should be given to committee members (e.g. on various participatory techniques) to build their capacity in carrying out their duties (management skills and documentation) and ensuring the legality of the committee will make it possible to strengthen accountability. Further it is important to assess the capacity of the communities with regards to the exercise of democratic rights in electing representatives in election processes. Each decision in the collective action has to be legitimate, transparent and accountable, so that members should be able to trust that relevant rules and regulations are being up held and their interest is being protected.
- A way of harmonizing benefit still have to be worked out to avoid conflicting equity demands among members of the community. In order to address the question of claims based on customary rights by people from outside the forest, searching for ways to incorporate them as members (especially those living adjacent to the forest) or reaching at an acceptable scheme of rights systems which all concerned will agree on are optional for consideration. Further, low cost conflict resolution mechanisms and execution of justice need to be improved.
- One of the main areas where the project needs to work with the community is to build capacity in the development of monitoring and evaluation systems of planned forest management activities. Monitoring and evaluation for forest management plans should be a critical part of the overall management of the forest resource by communities.
- Property right arrangements should be unambiguous and there should be effective and reliable legal mechanism to protect community interest. And the community should be provided with unambiguous security of tenure over forest resources so that they get recognition in light of other users or non-users and also be confident enough to invest their labor and time for long-term benefit.
- Finally, to ensure effective implementation of PFM an institutional structure must be in place at national, regional, and local level in order to scale up the scheme. There should be clear national policy and legal framework that supports PFM with full political commitment and legislative backing. Every effort at all levels has to be made to lobby policy makers at Federal and regional level to promulgate relevant laws, and institutional structure, which can also give technical and financial support to the effort and enables the inclusion of PFM as part of annual and five year national, regional and local development plans.

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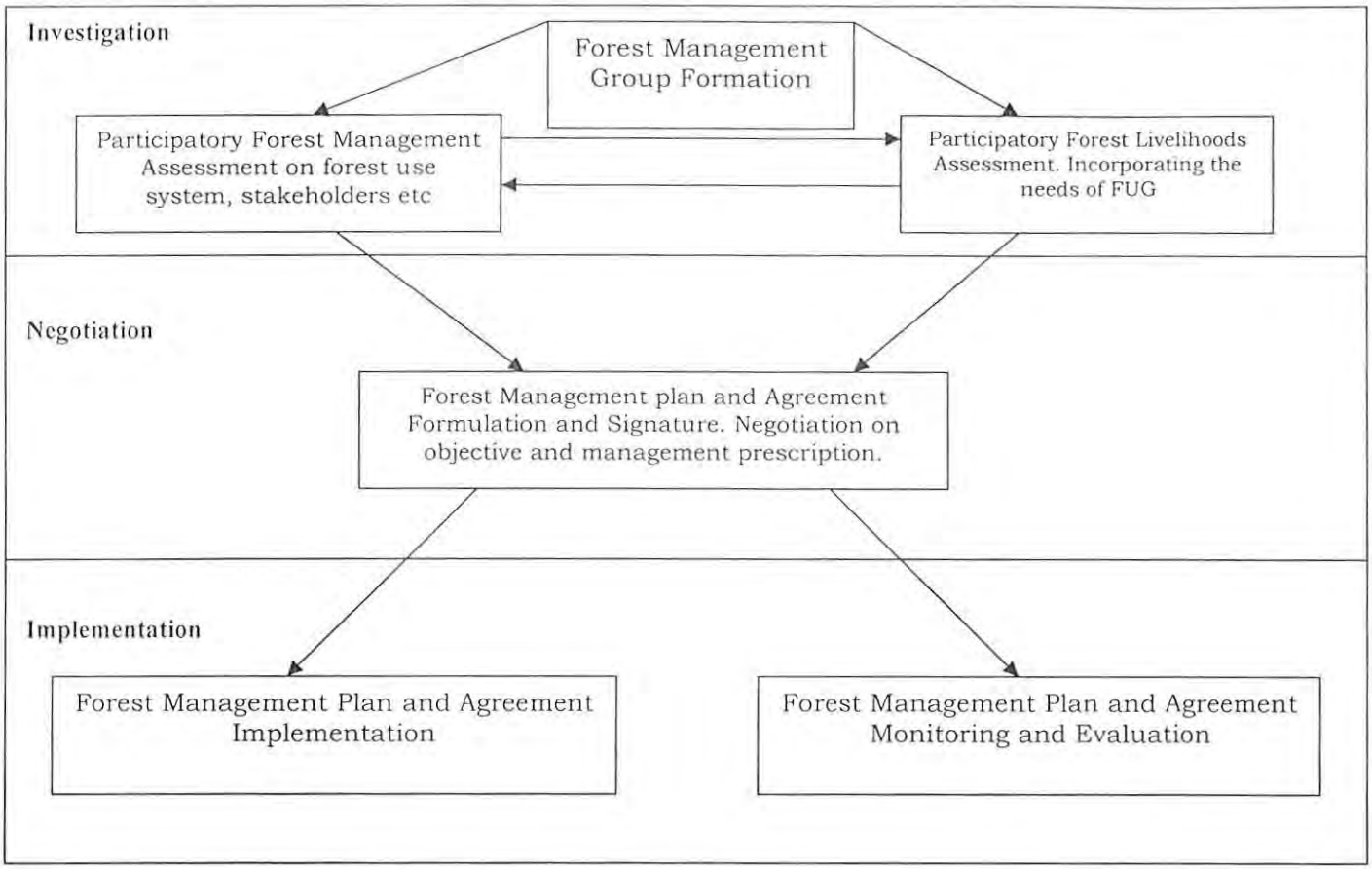
Annex -1 Participatory Forest Management Process Diagram



Source: Irwin, 2004

- **Investigation stage**: Gathering information about the forest users and resource use; establishing a forest management group; defining the forest area; assessing the condition of the forest resources; and analyzing forest-based livelihood opportunities.
- **Negotiation stage:** The negotiation of forest management plans and agreements (including rights and responsibilities of community and government); securing legal signatures for these agreements.
- **Implementation stage**: Community forest management groups implement their forest management plans and uphold the forest management agreements, with full government support. Together, the community and the government monitor and evaluate both the process and the forest resources.

Annex-2

Questionnaire

A Study on Practice and Challenges of Participatory Forest Management in Ethiopia: The Case of Bonga Forest, Kafa Zone

To be conducted by the researcher assisted by enumerator

Objective of the survey

The basic objective of this survey is to explore practice and challenges of participatory forest management by way of analyzing activity areas of forest user groups and the various socio-economic, cultural and institutional factors affecting people's participation in an effort to promote sustainable forest management and household livelihood.

Dear Respondent

This questionnaire has a research purpose. The out come of this research will help to identify problems and challenges of participatory forest management by investigating the practice in some selected sites of Bonga natural forest. It is believed that the study will gather useful information for the community, the government and non-governmental organizations in designing mechanisms to ensure effective participatory forest management. Therefore, I kindly request the cooperation of respondents in filling out the questionnaire. I confirm you that all data will be treated confidentially.

Demographic and Household Profile

1. Sex of respondent (HH head) 1. Male 2. Female..... ☐
2. Age of respondent..... ☐
3. Marital status..... ☐

   1. Married 2. Unmarried 3. Divorced 4. Separated 5. Widowed
4. Educational status..... ☐

   1. Illiterate 2.Read and write 3. Grade 1-6 4. 7-12 5. .>12
5. Religion. 1. Orthodox 2. Muslim 3. Other (specify) ☐
6. Ethnicity (Manja)..... ☐

   1. Kafa 2. Manjo 3. Other (specify)
7. Family size Male.....Female.....Total..... ☐
8. Land holding size (ha) 1. Own..... 2. Rented ... 3. Others

9. Number of livestock owned-----
   1. Cattle... 2. Horse and Mule 3. Sheep 4. Goats..... ☐
   5. Bees ..... 6. Others.....
10. What activities other than farming do you do? (Circling more than one is possible)
   1 Petty trade 2. Collecting and selling firewood 3. Bamboo craft
   4. Pottery
   5. Basketry ..... 6. Wavering..... 7. Other (specify)... ☐
11. What is your major source of income? .....
   1. Sale of cereal crops (maize, sorghum) 4. Sale of fruits and vegetables
   2. Sale of coffee and spices 5. sale of fuel wood
   3 Sale of honey 6. Others (specify

Forestry issues and participation in Management

/Forest user group selection/

12. What was the most important criterion to be selected into forest user Group
   1. Poorest of the poor 6. Duration of stag in the area
   2. Proximity to forest resource 7. There was no clear selection criterion
   3. Land holding size 8. I don't know 9. Others
13. Who set the selection criterion?..... ☐
   1. Village leaders 2. The project staff 3.Agricultural office 4.Others (specify)
14. Did you participate when the selection criterion was set? ..... ☐
   1. Yes 2. No 3. I don't remember
15. If No why? (Max. of two responses in order of priority)
   1. _____
   2. _____
16. Was their any problem regarding FUG selection? ..... ☐
   1. Yes 2. No 3. I don't know
17. If yes, what do you think is the most important one?
   1. Exclusion of households
   2. All household did not have equal chance to participate
   3. Women did not equally participate with men
   4. Village elites were given more opportunities
   5. Others (specify).....
18. For how long have you been in FUG? _____ Years

Extent of participation over PFM process

19. What is the extent of your participation in participatory forest management taking the following indicators?

/ Forest area allocation (delineation)/

20. Does the forest have a clearly demarcated and recognized boarder?.. ☐
   1. Yes 2. No
21. If no. Does that create problem. ..... ☐
22. What problem(s)?
   1. _____
   2. _____
23. How far are you from the forest reserve? /minute/hours.....
24. Does distance create problem in managing the forest reserve? ...

1. Yes 2. No

25. If yes what problems.....

/Forest management activities/

26. Do you participate in Forest development activities?(Such as tending, planting trees)
    1. Yes 2. No
27. Do women participate in the forest and NTFP development activities?
    1. Yes 2. No
28. In which activities do they participate more?/planting/harvesting/protection

    _____

    _____

29. Which products are you allowed to harvest?

Indicators	Rating				
	Very high	High	Fair	Low	Very low
Investigation process: (setting criteria for membership, and defining forest area)					
Negotiation process: (Negotiations on FMP &FMA)					
Implementation process: (Implementations of FMP)					
Monitoring and evaluation					

/Forest Protection problems/

30. Which do you think is the most serious problem with regard to forest protection? (rank up to three)

No.	Forest protection problems	Tick	Rank	By whom? (Members or Non members)
1	Human encroachment (for poles, timber etc)			
3	Expansion of farmland			
4	Fuel wood cutting and charcoal burning.			
5	Livestock grazing			
7	Unauthorized NTFPs collection			
8	Other specify)			

Community capacity, empowerment and Implementation of Forest management plan

31. How do you evaluate your commitment in implementing the forest management plan associated by laws?
    1. Fully 2. Partially 3.Never
32. If the answer for question 40 is (partially or never), Why? (Max.of 2responses in order of priority) 1._____
    2._____
33. To what extent are your FUGs and forest protection committee Powerful in implementing the FMP?
    1. Highly powerful 2. Moderately powerful
    3. Less powerful 4. Not powerful ☐
34. Is your forest protection committee capable to lead and coordinate forest development, harvesting and protection activities? .....
    1. Yes capable 2. Less capable 3. Not committed
35. What about their commitment? ..... ☐
    1. Committed 2. Less committed 3. Not committed
36. If incapable and not committed, what do you think is the problem?
    1. Lack of training 2. Lack of incentive
    3. Corruption 4. Others

/External support /

37. Does your forest user group (FUG) need external support? ..... ☐
    1. Strongly need 2. Need 3. Fairly need 4. Do not need
38. If Yes, what type of support (put according to priority need)..... ☐
    1. Finance 2. Supplies 3. Training
    4. Legal support 5. Others (Specify) _____
39. Is the current level of support you are getting from the government adequate?
    1. Yes 2.No 3.I do not know
40. Have you ever gotten training? ..... ☐
    1. Yes 2. No
41. If yes, on what activities do you get training /what important knowledge and Skills do you acquire?
    1. Knowledge_____
    2. Skill_____
42. Have you acquired adequate training necessary to continue on your own?
    1. Yes 2. I need more training

Women participation/

43. Do women equally participate in forest management activities? ..... ☐
    1. Yes 2. No
44. If No, why? (Put according to the weight of the problem).....
    1. Male are more effective 2. Housework lead
    3. Capacity problem 4. Others (specify)
45. Are women equally represented in the leadership of the forest protection committee? ☐
    1. Yes 2. No
46. Do women of the village equally participate in the use and control of forest?
    1. Yes 2. No

/Size of forest management unit /

47. Which forest user group size is appropriate to ensure effective and efficient participation in PFM? ..... ☐
    1. Larger (than the existing) 2. Medium 3. Smaller (than the existing)
48. Is the existing size of your forest user group appropriate to insure effective and efficient participation in PFM?
    1. Yes
    2. The size of the FUG is large and unmanageable
    3. The size of the community is smaller and has less resources
    4. Others (specify)
49. Do you feel security of ownership over the forest resource? ☐
    1. Yes 2. No
50. If yes, to what extent does feelings security affects your participation in forest management?
    1. Strongly enhances 4.Stongly hinder
    2. Slightly enhance 5.slighitly hinder
    3. Neutral
51. Do you attend meetings? 1. Always 2. Sometimes 3. Never ☐
52. How do you evaluate the rate of your and your family member's participation in forest management activities? .....
    1. Very actively 2. Actively 3. Less actively 4. Not involved
53. Do all community members equally participate and contribute in forest management?
    1. Yes 2. No
54. Are there conflicts concerning use of the forest resources with in members..... ☐
    1. Yes 2. Some times 3. No
55. If yes, what conflicts? _____
56. What conflict resolving methods are applied in the community?
    1. _____
    2. _____
57. Are there any losses you have encountered because of participation?
    1. Yes 2. No
58. Do the following constrain the degree of your participation in PFM?
    1. Low income 1. Yes 2. No ☐
    2. Low level of education 1. Yes 2 No ☐
59. Do you and your family depend on the forest for your livelihood
    1. Totally 2. Partially 3. Not at all
60. If your answer for Q. 68 is 1 or 2, does this dependence on forest hinder you to participate in forest management .....
    1. Strongly 2. Slightly 3. Not at all
61. Do you expect any benefit from participating in forest management? ..... ☐
    1. Yes 2. No

62. If the answer is yes indicate the benefit gained from participatory management using the following

Indicators	Rating				
Benefits	Highly increased 1	Increased 2	To some extent 3	Decrease4	Highly decreased 5
62.1 Use rights over the forest resource					
62.1 Number of trees					
62.2 Supply wood production					
62.3 forest grown coffee					
62.4 Soil erosion					
62.5 fodder & grass supply					
62.6 flooding					
62.7 Household livelihood condition (Income improved reduce poverty)					
62.8 forest product value					
62.9social equity (empowerment)					

/Perception/

63. Can you say that PFM is the best solution for forest management? ...
    1. Yes 2. No
64. If No what do you suggest as the best means of conserving the forest?
    1. Sole government control
    2. Distribute to private individual households
    3. sole community (with out intervention from outside)
    4. Indigenous institutions
    5. Other (Specify) _____
65. If yes for Q 79, what change do you observe in forest condition? (Put them in rank)
    a. Reduced deforestation
    b. forest products value has increased through limited access and improved forest condition
    c. Regeneration of important species
    d. Better availability of NTFP (Coffee, spices)
    e. Community authority and empowerment
    f. other (specify)
66. Are you confident with the continuity of the current scheme?
    1. Fully confident 2. Partially confident 3. Doubtful
67. If doubtful or partially confident, why? ----------
68. Is the assistance given so for by the project adequate? .....
    1. Yes 2. No
69. Does the assistance create self-reliance or dependency?
    1. Self-reliance 2.dependency
70. Should the assistance be continued or discontinued? .....
    1. Continued 2. Discontinued
71. If your answer is the assistance should continued why?

72. To what extent does the forest management activities carried out so far has decreased the degree of deforestation? .....

1. Highly decreased 2. Decreased 3. No change 4. Rather increased

73. What are the major factors that **encourages/promotes/** your participation in forest management? Please list down two reasons by priority.

1._____

2_____

77. What are the major factors that **discourages/hinders/**your participation in forest management? Please two factors based on priority.

1._____

2._____

Annex-3
Checklist for Focus group Discussions

General questions

1. What was the condition of the forest (ownership and utilization) before the introduction of participatory forest management?
2. How do you come to be a member of forest user group (FUG)?
3. What experience does the village community have in the past in terms of managing resource collectively? Were community members able to safeguard common interest through collective action? For the future do you believe that continuing with collective action can result in more benefit?

Question related to participation in to forest management

4. What is the extent of community participation in all the process of PFM? (Investigation, negotiation, implementation)
5. What is the extent of capacity and commitment and democratic nature of the village forest protection committee? What are the strength and weakness?
6. How do you evaluate the degree of empowerment of the community in terms of adequacy of power and capacity to make discussions, execute FMP and enforce decision without external interference?
7. How often do you come to meetings and how is the process and the way people make decisions in meetings and discussion forums?

Socio-economic conditions and participation in forests management

8. How do you evaluate the current socio-economic strength of the village members in terms of level of income, and education?
9. Does low level of income and education limits the degree of participation in forest management?
10. Does heterogeneity (wealth status, ethnicity, gender etc) create problems on participation?
11. What do you think are the factors that promote members' participation in forest management?
12. What is the extent of tangible social and economic benefit that the community members receive as individual and group?

Forest management unit

13. Is the existing village community size manageable to run PFM successfully? What should be the appropriate size?
14. How do you evaluate the degree of solidarity and cohesiveness of the village community towards collective action in PFM?

Women participation

15. Do women in the FUG equally participate in the use and control of the forest? What problems do they face? What solutions were given to their problems?

16. What social position do women assume in your community in relation to men? What are the challenges that make difficult women participation? (Such as cultural, economic, social etc problems)
17. How is the representation of women in forest protection committee? And Factors influencing there decision making?

Outside supports

18. How do you evaluate the extent condition of out side support? (Resource, training, legal, administration)
19. If out side support is reduced or discontinued; do you think that members will be capable willing and committed to continue the scheme?

Forest dependence, livelihood condition and Perception

20. For what purpose do you utilize forest? To what extent are you dependant on forest resource? Does this dependence create participation difference?
21. What are the major benefits that you get by being a member of FUG? What about the losses?
22. Are you satisfied with your empowerment and decision making in the community? And the level of out side support you are getting? What challenges do you face related to participation in forest management? What solutions do you propose?
23. Do you believe that forest management scheme carried out under PFM so far decreased forest depletion and improved forest condition? If no way?
24. Is there a conflict with in FUG and/or with other communities who claim use right? How often do conflicts occur? How are conflicts resolved?

Annex-4

Focus group discussion check list for Non-Forest user households

1. Who owns the forest before the introduction of PFM? And in what condition
2. Which communities, groups and individuals are do you think currently engaged, in FUG/ enjoy access to forest resource? Do they deserve ownership of the forest resource?
3. What do you think are the criteria used to guarantee use right to the forest?
4. What do you think are the reasons for your exclusion?
5. Do you think that the forest reserve needs to be managed in such a way?
6. For what purpose had you been using the forest before? How about now?
7. Did you have any involvement during the process of FUG formation? Have you ever been involved during the investigation stage? What was your contribution?
8. Who do you think shall own the forest reserves? Government, private, open to all, selected community?
9. Do you want /willing to be/ a member of forest user group in the future?

Annex-5

Discussion guide for key informants

1. How do you come to be a member of forest user group (FUG)?
2. Is there any loss you incur by being member of FUG?
3. What benefit do you get? Have your livelihood improved?
4. What relationship exists between members?
5. Who of the local community actually participate and make decisions in the forest management plan?
6. How often do you come to meetings and how is the process and the ways in which people make decisions in meetings and discussion forums
7. Has ever been a conflict (misunderstandings) about share (ownership) of forest products (timber, coffee, spice, honey, fruits etc.)
8. Do forestry staffs and communities work in harmony? And what are the challenges?
9. What are the factors that promote or enhance members' participation?
10. Have you expected any improvements on the status and condition of the forest
11. What do you think are the challenges of Participatory Forest Management Scheme?

Annex-6

Discussion guide with Forest user groups Executive committee (chairpersons)

1. Who owns and use the forest and in what condition before the introduction of participatory Forest management?
2. Do you think the forest management plan (FMP) is being implemented effectively? Do all members know the details?
3. Are you comfortable with the bylaws of the forest management plan? Is there a threat to the forest from the surrounding community (interest groups) who claim use right over the forest resource?
4. Which communities groups and individuals are most dependants on the forest resource? Is this a matter of livelihood or economic benefit?
5. Does the forest face any threats from outsiders (such as loggers)? If yes what did you do? What was the reaction of the local government
6. Does heterogeneity (income, ethnicity, gender) create problems on participation?
7. How do you accommodate the interests of different groups in the forest (fuel weed sellers, coffee and honey harvesters, cattle keepers)

Annex-7

Discussion guide with zonal and Woreda Agriculture and Rural Development officials

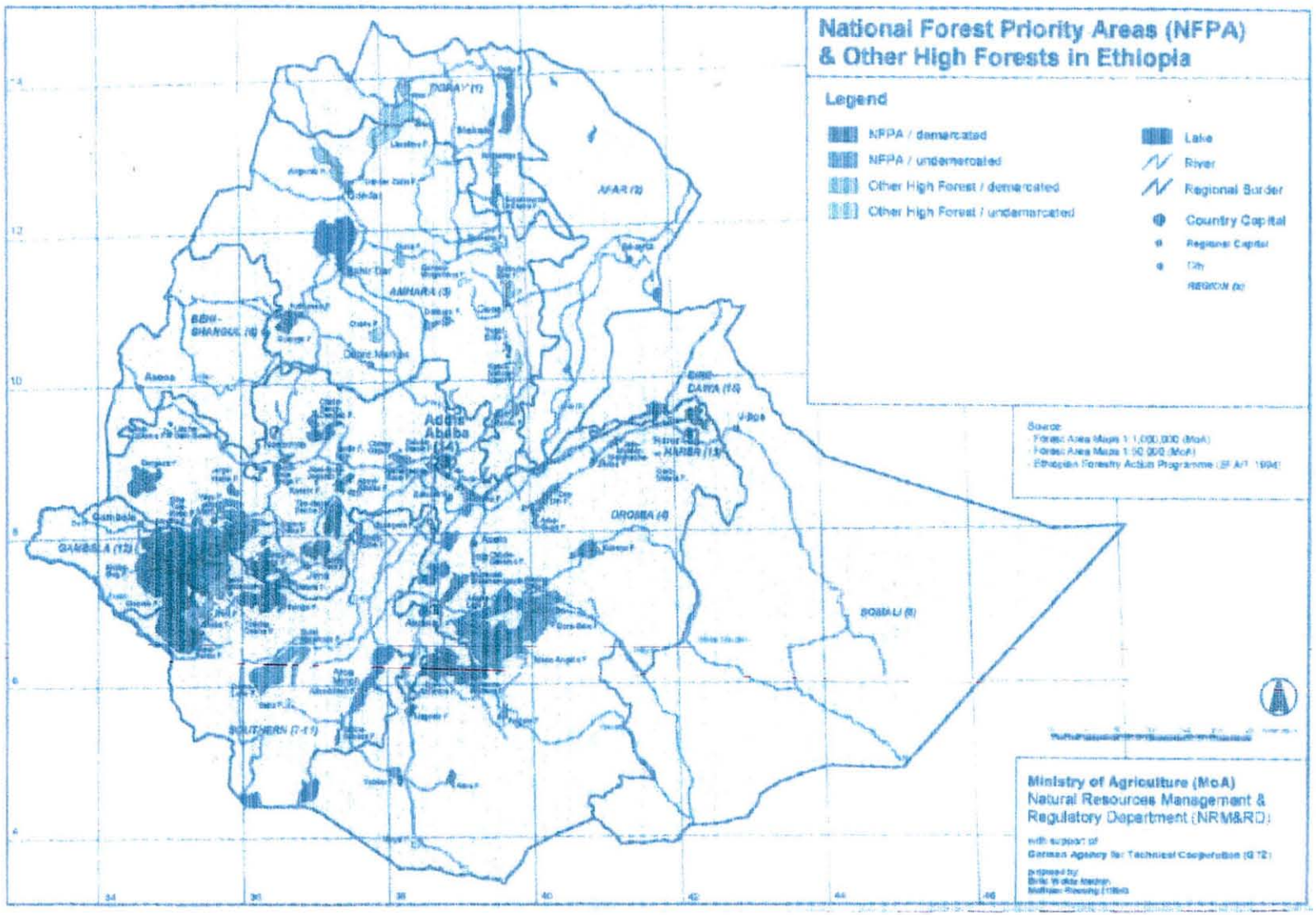
1. Does the forest have a clearly demarcated and recognized boarder?
2. Does the forest face any threats from outsiders (such as loggers) If yes what did you do? What was your reaction?
3. What is your opinion about the community (FUG) access to the forest? Do you think that it is effectively regulated?
4. What do you think are the challenges and constraints of PFM?
5. Is there a clear understanding between governments a community over the forest management? How about enforcement mechanisms (Judiciary and Police)?
6. What local capacity and opportunities do exist for community forest management?
7. Do you think there is a harmony between the protection objective of the government and harvesting needs of the community?
8. Was these a negotiation and agreement with other interest groups around (surrounding) the forest that claim ownership rights?
9. What is your action so far in integrating /considering project activity in the woreda government plan?
10. Have you observed any improvement on the status and conditions of the forest so far?

Annex-8

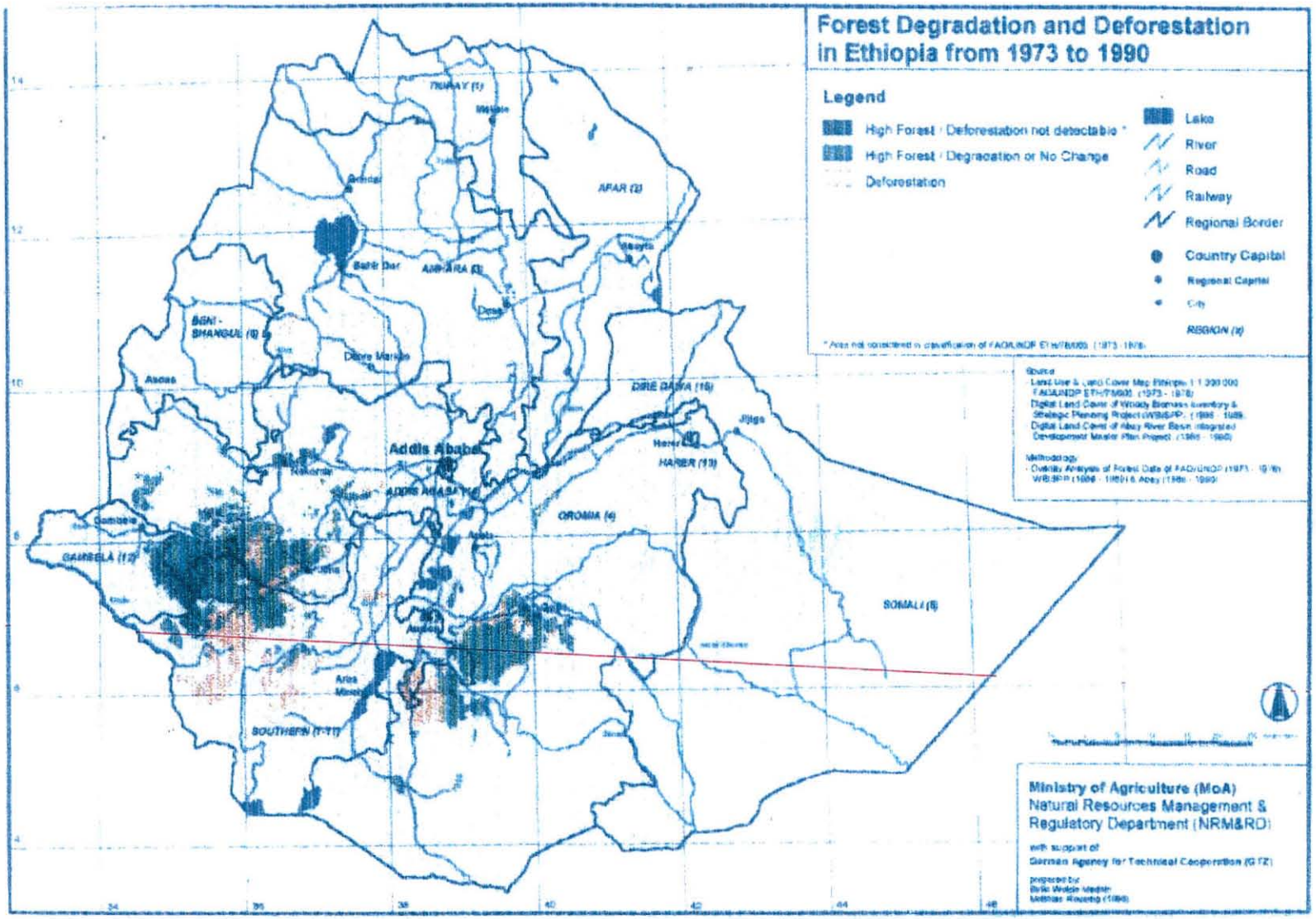
Discussion guide with project coordinators (Forestry experts)

1. Does Heterogeneity of members (Income, gender, and ethnicity) create problem on participation?
2. Do community rules and sanctions supported with legal enforcement?
3. Do forestry staffs and communities work in harmony? And what are the challenges?
4. In what forest conservation areas do the project emphasizes? (nursery, plantation, conservation of high forest)
5. What are the criteria used to guarantee use right on forest?
6. How do you accommodate the diverse interests and needs of the users?
7. What do you think are the challenges and constraints of PFM?

Annex 8


National Forest Priority Areas (NFPA)
& Other High Forests in Ethiopia
Legend
NFPA / demarcated
NFPA / undemarcated
Other High Forest / demarcated
Other High Forest / undemarcated
Lake
River
Regional Border
Country Capital
Regional Capital
Source:
Ministry of Agriculture (MoA)
Natural Resources Management &
Regulatory Department (NRM&RD)
with support of
German Agency for Technical Cooperation (GTZ)
prepared by:

Annex 9


Forest Degradation and Deforestation in Ethiopia from 1973 to 1990
Legend
High Forest / Deforestation not detectable *
High Forest / Degradation or No Change
Deforestation
Lake
River
Road
Railway
Regional Border
Country Capital
Regional Capital
City
REGION (#)
* Area not considered in classification of FAO/UNDP ETH/78/005 (1973 - 1978)
Source
Land Use & Land Cover Map Ethiopia 1:1 000 000
FAO/UNDP ETH/78/005 (1973 - 1978)
Digital Land Cover of Woody Biomass Inventory & Strategic Planning Project (WBISPP) (1986 - 1988)
Digital Land Cover of Abay River Basin Integrated Development Master Plan Project (1986 - 1990)
Methodology
- Overlay Analysis of Forest Data of FAO/UNDP (1973 - 1978) with WBISPP (1986 - 1988) & Abay (1986 - 1990)
Addis Ababa
DIRE DAWA (15)
HARBER (13)
OROMIA (4)
SOMALI (5)
GAMBELA (12)
BENI-SHANGUL (9)
AFAR (2)
AMHARA (3)
SOUTHERN (7-11)
Ministry of Agriculture (MoA)
Natural Resources Management & Regulatory Department (NRM&RD)
with support of
German Agency for Technical Cooperation (GTZ)
prepared by:
Belay Woldie Mesfin
Matthias Rieseling (1998)

Declaration

I, the undersigned, declare that the thesis is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

Declared by:

Henok Workeye

Candidate

Confirmed by:

Worknesh Negatu

Advisor