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Editor's note

The conventional approach to natural resource management has tended to either ignore altogether or give peripheral attention to the important role institutions have come to play. However, empirical evidence available indicates that institutions form a fundamental link between people and their environments, and that it is through these institutions that individual and collective actions associated with access to, control over, and the use of natural resources are organized. Natural resource management is often shaped by a number of overlapping institutions (both formal and informal) from the social, political, economic and cultural spheres. These institutions, in turn, are interconnected with and influenced by each other as they operate at various levels i.e. local, district, regional, national and international. Local-level institutions are of particular importance in this regard. There is thus growing recognition of the importance of local-level institutions and their centrality when exploring and developing natural resource conservation and use concepts.

This book is a product of a research conducted on local-level institutions influencing the conservation and use of coffee forests in South-Western Ethiopia. And it is the outcome of good co-operation between four organizations: Ethiopian Agricultural Research Organization of Addis Ababa, Center for Development Research at Bonn and the Universities of Mainz and Hohenheim. The research starts from the hypothesis that only by integrating political and institutional factors in the design of coffee forest management policies their chances of success can be advanced. Political and institutional factors influence the decisions taken by local farmers – decisions such as to use certain goods and services from coffee forests e.g. coffee beans, spices or honey or to expand into virgin coffee forests or not – that the coffee forest management policy aims at changing. The study also hypothesizes that institutions are not uniform, well-integrated sets of procedures, but rather a complex web of overlapping and sometimes even contradicting, formal and informal rules. Pure top-down approaches – even simple decentralization – are therefore likely to fail. This institutional study considers policies, legislations, strategies and programs and thus goes beyond mere organizational analysis. It integrates institutional analysis into the design and implementation of coffee forests conservation.

The author underscores the importance of local-level institutions in the conservation and use of coffee forests. He analyzes the influence of various institutions ranging from formal, with documented and transparent rules for transactions and decision-making (e.g. regulations, membership, executive structure and powers, fines, taxes, duties and obligations, etc) to informal community-based institutions, where rules and roles are usually not documented (e.g. indigenous social organizations, social safety nets, saving and credit institutions etc.).The study suggested an increasing decentralization and devolution of decision-making power and responsibility to local governments, NGOs, other organized sectors of civil society and to traditional institutions and authorities so that coffee forests can be managed sustainably.

For the editors, Volker Hoffmann

Author's note

Coffee forests are of significance importance to Ethiopia. They house diverse communities of plants and animals among which we find wild coffee (*Coffea arabica* L.) populations. However, they, together with the genetic resources of the wild coffee and the associated flora and fauna, are disappearing rapidly as a result of deforestation of the ecosystems, especially in the past few decades. The underlying causes of the deforestation are social, economic, political, and institutional. Efforts geared towards the sustainable conservation and use of coffee forests should therefore be holistic including biological, economic, technological, social and institutional measures. They should also improve communication and information flow among multiple stakeholders from various sectors (private, communal, government) at all scales (local, national, regional and international).

This book is an outcome of a research undertaking on local-level institutions influencing the conservation and use of coffee forests. The field work was conducted under constantly changing institutional environments. The most important and striking of all is the nationwide civil service reform program. The reform process led to the re-organization and restructuring of various government organizations and therefore to the re-definition of mandates and responsibilities; the issuance and reformulation of policies and legislations; and the re-assignment and re-allocation of staff. Indeed, it is encouraging to witness such an institutional reform program put in place. However, since the process was just started, one has no other option but to wait and see as well as hope that it would lead to the change that has long been awaited for i.e. the sustainable conservation and use of forest resources in general and coffee forests in particular. Whatever outcome the institutional reform is going to yield in, the future development of the country is very much dependent on the sustainable conservation and use (management) of environmental and natural resources. The design and implementation of effective and efficient institutions is thus one of the factors that lead towards the achievement of this.

Many people have contributed to the success of this research. My advisors Professor Dr. Thomas Bierschenk and Professor Dr. Volker Hoffmann deserve the utmost appreciation. I would like to thank Professor Bierschenk for providing me with constant guidance and supervision through out my study. I am also very much indebted to Professor Dr. Hoffmann for taking his precious time in reading through the draft manuscript, literally page by page, and in providing me with valuable comments and suggestions. Professor Hoffman has also assisted me a great deal in terms of facilitating the administrative procedures leading towards my defense without whose kind assistance it would have taken me much longer than required. I would like to thank the Federal Ministry of Education and Research (BMBF), Germany for financing the research and the Center for Development Research (ZEF) of the University of Bonn and the staff of the International Doctoral Studies Program for providing me with an excellent working environment.

I would like to thank my institution, the Ethiopian Agricultural Research Organization (EARO) for granting me with study leave. I thank the Oromiya and Southern Nations, Nationalities and Peoples Regional States, and the Yayu and Sheko Woreda Agricultural and Rural Development Coordination Offices for their role in facilitating the field work. I

would like to thank friends and colleagues at ZEF namely Drs. Samson kassahun, Tadesse W/Mariam, Degenet Abebaw and family, Lulseged Tamene, Edilegnaw Wale, Mekuria Argaw and family, Tsegaye Yilma and family, and Daniel Tsgai. Ethiopian PhD students in the coffee project namely Taye Kufa, Admasu Shibru, Feyera Senbeta and Kassahun Tesfaye deserve special thanks for it is with them and from them that I have shared resources; endured hardships in the filed; exchanged valuable ideas and learnt a great deal about coffee, respectively. I would also like to extend my appreciation to the German colleagues in the coffee project namely Till Stellmacher, Alice Beining, Christine Schmidt and Anke Rojhan for all the good times we have had together, both in the field and in the office, and for the exchange of valuable ideas that have shaped some of my thoughts. Project coordinators Drs. Manfred Denich and Franz Gatzweiler deserve due respect for all the assistance rendered. I would also like to thank Mrs. Irit Eguavoen who was kind enough to spare her precious time in reading through some of the draft chapters and in forwarding valuable comments and for translating the summary to German.

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Family members in both Ethiopia and Germany deserve especial thanks. I am highly indebted to my father Tesfaye Toli and my mother Aster Zato. Their constant encouragement has always been the source of my inspiration and their prayers the source of my strength. I thank my brothers Theo, Niky, Tegene, Tedy and Tagelegn and sisters Tegy, Tamar, Tamenech and Tezebt for persistently and untiringly encouraging me and thereby making me feel at home away from home. I would also like to extend my sincere appreciation and thanks to family members in Germany namely the Kohler family i.e. Alfred Kohler, Mechtild and family, Helmut and family, Walter and family, Ursula, and Ulrike. I would like particularly to thank Ursula, my connection with the Kohler family; for all the countless things she has done for me. Last, but by no means the least, I would like to extend a special thanks and heartfelt gratitude to my fiancé Etenesh Bekele for her patience and for all the encouragement and support. Thank you all for everything and may God bless you all overwhelmingly.

Teklu Tesfaye, July 2006

Table of Contents

List of tables and figures

List of tables

List of figures

List of acronyms

ACF	Advocacy Coalition Framework
ACI	Actor-Cantered Institutionalism
AEZ	Agro Ecological Zone
ANRDO	Agricultural and Natural Resource Development Office
ARDMO	Agricultural and Rural Development Coordination Main Office
ARDO	Agricultural and Rural Development Office
ATVET	Agricultural, Technical and Vocational Education Training
CAMPFIRE	Communal Areas Management Program for Indigenous Resources
CBD	Convention on Biological Diversity
CBD	Coffee Berry Disease
CBNRM	Community Based Natural Research Management
CIP	Coffee Improvement Program
CMDT	Company Malian for the Development of Textiles and other Engineering Products
CoCE	Conservation and use of wild Coffee populations in Ethiopia
CoM	Council of Ministers
CPR	Common Pool Resource
CSE	Conservation Strategy of Ethiopia
CTA	Coffee and Tea Authority
EARO	Ethiopian Agricultural Research Organization
EEA/EERI	Ethiopian Economic Association/ Ethiopian Economic Research Institute
EFAP	Ethiopian Forestry Action Program
EIAR	Ethiopian Institute of Agricultural Research
EPA	Environmental Protection Authority
EPC	Environmental Protection Council
EPE	Environmental Policy of Ethiopia
EPLAUA	Environmental Protection, Land Administration and Use Authority
EPRDF	Ethiopian People's Revolutionary Democratic Front

EWCDA	Ethiopian Wildlife Conservation and Development Agency
FAO	Food and Agricultural Organization
FaWDA	Forest and Wild Life Conservation and Development Authority
FCE	Forest Coffee Ecosystem
FCU	Forest Coffee Unit
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
FHH	Female Headed Household
GNP	Gross National Product
HPR	House of People's Representatives
IAD	Institutional Analysis and Development
IAR	Institute of Agricultural Research
IBC	Institute of Biodiversity Conservation
IBCR	Institute of Biodiversity Conservation and Research
IUCN	International Union for Conservation Network
JICA	Japan International Cooperation Agency
KA	Kebele Administration
KEC	Kebele Executive Council
KEPC	Kebele Environmental Protection Committee
KII	Key Informant Interview
KRLRCC	Kebele Rural Land Registration and Certification Committee
LGP	Length of Growing Period
LIAM	Legal-Institutional Analysis Model
MCTD	Ministry of Coffee and Tea Development
MHH	Meal Headed Household
MoA	Ministry of Agriculture
MoARD	Ministry of Agriculture and Rural Development
MoFED	Ministry of Finance and Economic Development
MoNRDEP	Ministry of Natural Resources Development and Environmental Protection

NAS	National Academy of Science
NEIP	National Extension Intervention Program
NFPA	National Forestry Priority Areas
NGO	Non-governmental Organization
NIE	New Institutional Economics
NRDEPT	Natural Resources Development and Environmental Protection Team
NRM	Natural Resource Management
OEPO	Oromiya Environmental Protection Office
ORS	Oromiya Regional State
PGRC/E	Plant Genetic Resource Centre/Ethiopia
PKA	Peasant Kebele Administration
PMO	Prime Minister Office
PRA	Participatory Rural Appraisal
RDCO	Rural Development Coordination Office
REPC	Regional Environmental Protection Committee
RFPA	Regional Forestry Priority Area
RLAUC	Rural Land Administration and Use Committee
RLRC	Rural Land Registration Committee
SNNPRS	Southern Nations, Nationalities, and Peoples Regional State
SSA	Sub-Saharan Africa
TGE	Transitional Government of Ethiopia
UKA	Urban Kebele Administration
UNCED	United Nations Conference on Environment and Development
UNFPA	United Nations Fund for Population
WEC	Woreda Executive Council
WEPC	Woreda Environmental Protection Committee
ZEPC	Zonal Environmental Protection Committee

1 Introduction

1.1 Establishing the setting

Historical accounts available indicate that at the beginning of the twentieth century, 35% (ca. 42 million hectare (ha)) of the total landmass of Ethiopia was covered with high natural forests (EFAP 1994). However, deforestation claimed a significant part of the forest cover and it reduced the proportion of the area under high natural forests dramatically over the years. Towards the middle of the twentieth century, the proportion of the forested area shrunk to assume the 16% level (IUCN 1990). Forest degradation continued unabated in the decades that followed and towards the end of the twentieth century, the figure stood at the 3.6% level (WBISPP 2004). At the turn of the 21st century, the situation got even worse and the total area under high natural forests assumed the 2.6% level (Ibid)[1]. Much of the remaining area under high natural forests today is located in less accessible and/or relatively less populated areas of the south and southwest parts of the country (REUSING 1998; DEMEL et al. 2003).

Some scholars have tried to classify the forest vegetations of Ethiopia (LOGAN 1946; CHAFFEY 1979; FRISS 1986, 1992). However, the classification by FRISS (1992) is the most commonly and frequently used. FRISS classified the forest vegetation of Ethiopia into seven different types: lowland dry peripheral semi-deciduous Guineo-Congolian forests, transitional forests, Afromontane rainforests, undifferentiated Afromontane forests, dry single-dominant Afromontane highland forests, dry single-dominant Afromontane forests of escarpment, and riverine forests (FRISS 1992). The Afromontane rainforests and transitional forests are considered to be of significant importance particularly because of the occurrence of wild coffee (*Coffea arabica* L.) populations. Forest formations in the south and southwest, which are the subjects of the present study, fall under these categories (FRISS 1992) and they form part of the transitional vegetation between the moist and the dry montane rainforests (ZERIHUN 1999).

The Afromontane rainforests are the richest in species composition and floristic diversity and they have the best stratification (FRISS et. al, 1982). They are also assumed to be the natural habitats and therefore the centres of origin and diversification for the wild populations of *Coffea arabica* (VAVILOV 1951; ZEVEN 1982; MEYER 1965). The coffee plant grows wild in these forests as undergrowth bush or small tree reaching up to 8m in height at altitudes ranging between 1,100-2,000 meters above sea level (m.a.s.l) (FRISS et al. 1982). However, the maximum concentration of the wild coffee population in these forests occurs at altitude range of 1,300-1,600 m.a.s.l. (FEYERA 2006). The fact that the wild population is found distributed well over a range of altitudes indicates the ability of the species to grow over a wide range of environmental gradients. The wild coffee population

[1] There are different estimates of the annual rate of deforestation in Ethiopia. The Ethiopian Highlands Reclamation Study (EHRS) conducted through financial assistance of the Food and Agricultural Organization of the United Nations (FAO/UN (1986) and the Ethiopian Forestry Action Program (EFAP 1994) are the two frequently used in citations, estimate the annual loss of high natural forests in Ethiopia to range somewhere between 100,000 to 200,000 hectare.

together with the associated flora and fauna form what are known as Forest Coffee Ecosystems (FCEs) (STRENGE 1956; SYLVIAN 1955).

The forest coffee ecosystems, housing diverse communities of plants, animals, and microorganisms, are homes for fragile abiotic components (DEMEL 1999). They are habitats where the two ecosystem functions i.e. energy flow and bio-geo-chemical cycling take place via complex interactions among organisms and their physical environment. Numerous delicate and continuous processes, some of which are responsible for the evolution of new taxa occur in these ecosystems making the ecosystems significantly important as far as biodiversity conservation is concerned (DEMEL ET AL. 1990). The fact that these forests are subjected to rampant deforestation that has claimed significant proportion of the forest resource base of the country and that threatened the biodiversity and therefore the genetic diversity of the wild coffee populations and the associated flora and fauna makes them pivotally important in biodiversity conservation (TADESSE ET AL. 2002). The conservation of forest coffee ecosystems is therefore the conservation of the genetic diversity of the wild coffee and the associated fauna and flora (forest coffee ecosystems) (PAULOS and DEMEL 1998).

1.2 Coffee: Importance and production systems

The agriculture-based economy of Ethiopia is highly dependent on the production and export of coffee. Coffee is Ethiopia's most important export crop, constitutes more than 60% of the foreign exchange earning, and four to five percent of the GDP (EEA 2001). About 25% of the population is dependent, directly or indirectly, on the production and marketing of coffee. Ethiopia is the seventh largest producer and the ninth largest exporter of coffee worldwide. Nearly the entire coffee produced in Ethiopia is *Coffea arabica* L. Coffee is grown on approximately 400,000 hectare (ha) and the average annual production is estimated to range between 100,000 to 200,000 tons. Nearly half of this is consumed locally. Ninety-six percent of the coffee production comes from smallholders who predominantly practice forest, semi-forest or garden coffee production systems while the rest comes from commercial farms, which are either private or state-owned and they are often characterized as plantation coffee (CTA 1999).

Coffee grows at various altitudes, ranging from 550-2,750 m.a.s.l. However, the bulk of it is produced between altitude ranges of 1,500 – 1,800 m.a.s.l and this altitude is considered to be highly suitable for coffee production. Annual rainfall in the coffee-growing regions of the country varies from 1,500-2,500 mm (DEMEL 1999; DEMEL and ASSEFA 1994). The pattern of rainfall distribution is bimodal in the southern and eastern and monomodal in the western coffee growing parts of the country, respectively. This rainfall distribution has enabled coffee harvest at different times of the year, ensuring a continuous supply of fresh coffee beans all year round. Although coffee grows in varying temperature regimes, it grows best in the cool and shady environment and the ideal temperature is considered to range between 15-25°c. This temperature regime prevails in most coffee growing regions of the country (MESERET 1996).

In Ethiopia, there are four different coffee production systems. They are forest-coffee, semi-forest coffee, garden coffee and plantation coffee (DEMEL 1999; DEMEL et al. 1998, TADESSE and DEMEL 2001). The production systems are characterized by the intensity of

management interventions employed, by the species and genetic diversity[2], and by the productivity (yield per hectare) (TADESSE and DEMEL 2001). The management intervention increases along the forest coffee-garden coffee production system gradient whereas productivity decreases along the same gradient. Species and genetic diversity increases as we move along the garden coffee-forest coffee production system gradient. The various coffee production systems co-exist thereby demonstrating a gradual transformation from one system to the other i.e. from forest coffee to semi-forest coffee; from semi-forest to garden coffee and eventually to plantation coffee production system (WISERUM 1997).

The forest coffee production system is a system where the coffee grows naturally under the shade of the natural forest. The management intervention employed is limited to mere clearing of the undergrowth (shrubs and climbers) during harvesting with the objective to enhance picking of ripe cherries from the forest floor (MENJOUR 2000). The coffee population in this system is wild and offers a wide diversity of options for selection and breeding for disease resistance, high yield and quality in terms of aroma as well as flavour (TADESSE and DEMEL 2001; PHILIPPE 2002). The system is predominantly practiced in the south and southwest parts (West Wolega, Bench-Maji, Keficho-Shekicho, Metu and Jima), and southeast parts (*Bale*) of Ethiopia, and accounts for about 10% of the total coffee production (DEMEL et al. 1998).

The semi-forest coffee production system is a system where the coffee grows under semi-managed forests. The forest management interventions employed include thinning of over storey big trees, removal of ground vegetation particularly shrubs and climbers (weeding) and enrichment plantings in patchy areas in the forest. The system also involves planting naturally regenerated or artificially raised coffee seedlings from outside in patchy areas of the forest (DEMEL et al 1998). Thinning is selective as farmers only remove those tree species that they think are "harmful". Removal of underground vegetation (weeding) is practiced two to three times depending on the level of weed infestation and labour availability. Management interventions are obvious in this system and so are the designations of the coffee plant ownership (MENJOUR 2000). The system is predominantly practiced in the southwest and southeast (see above) parts of the country and accounts for about 24% of the total coffee area and about 35% of the total coffee production (CTA 1999).

The garden coffee is a system of coffee production where farmers grow coffee in their garden or around their homesteads. The intensity of management employed is high compared to that of forest and semi-forest systems (DEMEL et al. 1998). Farmers use household refuge with the intention to ameliorate the fertility of the soil and weed their coffee fields a number of times. In this system, the plant density is high ranging from 1,000 to 1,800 coffee trees per hectare (MENJOUR 2000). There are instances, although very few, where one could possibly find naturally grown coffee plants in this system and hence the possibility of finding wild coffee material. The system is predominantly found in the southern and eastern part of the country (Sidamo, Gedeo, South and North Omo, Harar-

[2] MEYER (1965), who was the first to systematically collect wild coffee materials and to come to the definite conclusion that the coffee population in the forests are real wild, explicitly points out the fact that the genetic variability of the coffee in the Ethiopian rainforests is much larger than the one in Latin America and in other areas of the world.

ghe, Wolega and Gurage *Zones*) and accounts for about 35% of the total coffee production (CTA 1999; DEMEL et al. 1998).

Plantation coffee is a system of coffee production where the coffee is grown on large scale commercial plantations which is either owned by the state (currently put up for sale/privatisation), or privately and/or on some well managed smallholders' coffee farms. It is the most intensively managed of all the three systems. Management interventions employed include the use of improved seedlings, spacing, proper mulching, weeding, shade regulation and pruning as well as the application of chemical fertilizers and pesticides. The sources of planting material (improved coffee seedlings) are mainly research establishments. This system is expanding tremendously lately in the name of investment promotion. It accounts for about 15% of the total production (DEMEL et al. 1998).

1.3 Problem statement

Deforestation in Ethiopia has always been rampant and thus reduced the forest cover to a mere less than 3% of the more than 35% of its original coverage at the turn of the twentieth century (EFAP 1994). It not only resulted in reducing the area under high natural forests but also in significant loss of the associated flora and fauna in particular and biodiversity in general. At present, very few areas of the country are covered with natural forests the last bits of remnant forests are concentrated in the corridors of the south and southwest part of the country. These forests are of significant importance not only to the country in particular but also to the world at large because they harbour a variety of plant and animal communities and they are the natural habitats for the wild populations of coffee (*Coffea Arabica* L.) (KIDANE 2002; DEMEL et al. 1998). The on-going deforestation has therefore threatened not only the forest resources but also the associated biodiversity.

A number of factors (environmental, social, political, economic and cultural) can be held responsible for deforestation in Ethiopia (YONAS 2001; DEMEL et al. 2003). The causes/factors can be broadly grouped in to two viz. direct and indirect factors. The most important direct factors of deforestation in Ethiopia are forest clearance to get access to agricultural land and grazing field, collection of fuel wood, construction material and animal feed/fodder and collection of spices and medicinal plants (EFAP 1994; EPA 1997). The most important indirect factors of deforestation are institutional in their nature viz. the lack of properly worked out, comprehensive and effectively functioning policies, legislations (rules and regulations), organizations, strategies, programs and projects (KIDANE 2002).

Ethiopia's population has more than tripled (from around 20 million during the Emperor (1965) to 77.4 million at present (UNFPA 2005)). Over 85% of this is agrarian, generating livelihoods from agriculture (crop and livestock production), forestry and pastoralism. Agriculture being the main occupation, with population increase the demand for agricultural land also increases. The increasing demand for agricultural land (crop and livestock production) has often been fulfilled by claiming form the forest (forest conversion into agricultural and grazing land) and therefore posed significant threat to forest resources. The process (forest conversion into agricultural land) eventually led to land use conflict (forestry-agriculture) and ultimately to deforestation and biodiversity loss. With increased population, the demand for non-timber forest products such as coffee, honey, spices, me-

dicinal plants and fuel wood and construction material also increased tremendously over the years thereby posing significant pressure on forest resources (GIRMA 2003). The lack of alternatives e.g. energy sources, health service etc. has exacerbated the situation subjecting forest resources to further and thus eventual overexploitation and ultimate deforestation (TAYE 2003; EFAP 1994).

Ethiopia has got the largest livestock population in Africa with over 30 million cattle, 27 million camels and 42 million sheep and goats (EARO 2002). However, livestock production is carried out in the most traditional way thereby contributing significantly to environmental degradation in general and land/soil and water resource degradation in particular. The most important aspect of livestock production that posed significant threat to forest resources is the age old open grazing scheme and the unregulated collection of fodder and animal feed from the forest. Such traditional livestock production system accompanied with the absence of appropriate institutional measures e.g. breeding policies, stocking rate regulations and improved livestock husbandry practices, increased the rate at which tree and shrub species and fodder and grass species have become increasingly scarce. The process gradually led to forest resources degradation and ultimately to deforestation and biodiversity[3] loss.

The country has never been privileged to have comprehensive and properly worked out environmental and natural resource management institutions viz. policies, legislations, organizations, strategies and programs. In situations where it had policy and legislative provisions, they were poorly developed, top-down, in their formulation and implementation, and were fragmented among various government institutions (MELESSE 2001). As a result, they not only failed to prevent forest resource from degradation but also faced a great deal of resistance from local communities when implemented since they were based primarily on the "exclusionary" principles. They, in most cases, legitimatized state control of forest resources and led to communities' losing the sense of ownership and therefore acted as incentives for their involvement in unregulated utilization and hence forest degradation and biodiversity loss (BERHANU and MILLION 2001). Environmental monitoring and impact assessment laws have often been lacking or were poorly designed and implemented. This has resulted in fostering the implementation of investment activities that have had detrimental impact on forest resources (KIDANE 2002; KUMILACHEW 2001).

The lack of comprehensively worked out policies and effectively functioning legislative frameworks, strategies and programs has been accompanied with the lack of stable and properly functioning organizations (DEMEL 2003). The organizational structures established lacked the necessary human, financial and physical resources; were exposed to repeated restructurings and lacked true decision making power and authority. The nature of coordination and linkages that existed among the various organizations has also been very weak often leading to redundancy, duplication of effort and institutional conflicts (MELESSE 2001). This has negatively influenced the implementation of policies, legislations, strategies and programs and therefore exacerbated the process of forest resource degrada-

[3] According to the Convention on Biological Diversity (CBD), biodiversity is defined as *"the variability among all living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." It is a concept that embodies eco-system diversity, species diversity and genetic diversity.*

tion and biodiversity loss (YONAS 2001). The effects of lack of stable organizations, conflicting regulations, and unresolved differences of interests between and among government organizations are best illustrated by the deteriorating forest resource base of the country (KUMILACHEW 2001).

The massive resettlement[4] schemes of the socialist (military) regime (*Dergue*) (1976-79) have also been instrumental in contributing to deforestation. They were not preceded by proper environmental impact assessment, designed in a top-down fashion and they were driven more by political motives. They were coercive and thus pulled a large part of the rural population out from their production and social nexus with out their good will. As a result, the rural population of both ends (receiving and sending) have developed resentments, severely resisted the schemes and later embarked on destructive exercises (DESSALEGN 1988; ALEMNEH 1990; WOLDE-SELASSIE 2000, 2004). For example, during change of government in 1991, forests that had been planted and terraces that had been built under environmental and ecological rehabilitation programs were destroyed. The program of environmental rehabilitation has failed because it did not take the interests of the local population into account and was, obviously, not conforming to their established strategies of survival (DESSALEGN 1988).

Since 1991, the government of Ethiopia has embarked on decentralization of political and administrative power. The decentralization, which was aimed at enhancing development endeavours and the management of natural resources, is claimed to have involved, among other things, the transfer of decision making power and authority from the central government to the local government. However, the process was similar to what has been referred to in the literature as deconcentration, the transfer of decision making power and authority to lower level administrative wings of the government. It therefore failed to achieve the objectives it was meant for i.e. enhancing development in general and the management of natural resource in particular. Regional governments still do not have the ultimate decision-making power and financial autonomy of true federal states (NIGGLI 1992; YONAS 2001). Besides, the decentralisation is taking place in an environment where authoritarian modes of governance are still characteristic at all levels of governance (KUMILACHEW 2001; GEBRE MARKOS and DERIBE 2001).

1.4 Research objectives

This research is part of a collaborative research project entitled the *Conservation and Use of the wild populations of Coffea arabica in the montane rainforests of southwest Ethiopia* (CoCE)[5]. The aim of the CoCE project is the conservation and use of the montane rain

[4] Resettlement in Ethiopia has a long history. But the first organized resettlement scheme was started by the then socialist government in mid-November 1984. It was carried out in three distinct phases: November 1984-May 1985; October 1985-January 1986; and November 1987-March 1988. Sender areas included the former *Tigray*, *Welo*, *Shewa*, *Gojam* and *Gondar* provinces where as receiver areas include *Welega*, *Kafa*, *Illubabor*, *Gojam* and *Shewa* provinces (AFRICA WATCH 1991).

[5] The main objective of CoCE is to assess the genetic diversity and the economic value of the Ethiopian coffee gene pool (*Coffea arabica* L.) and to develop concepts of model character for conservation and use of the genetic resources of *Coffea arabica* in its center of diversity (Afromontane rainforests) in Ethiopia. The wild coffee population is used as a flag species in the conservation of the forest coffee ecosystem.

forests with occurrences of wild coffee populations in the southwest Ethiopia. The project envisions to conserve the genetic diversity of forest coffee plants in particular and the associated flora and fauna in general, by employing the ecosystem conservation approach. It is thus a research and development project embracing a number of scientific studies that include both natural and social sciences[6]. It is within the framework of the overall objective of the CoCE project and the objectives of the sub-project dealing with institutional analysis (Sub-project 6) that this research aims at achieving the following general and specific objectives.

1.4.1 General objective

This research has two general objectives. The first is to analyse local level institutional arrangements (policies, legislations, organizational structures, strategies and programs) that influence the conservation and use (management) of coffee forests. The second is to contribute, by way of suggesting viable and efficient institutional arrangements, to the development of the anticipated conservation and use concept aimed at the conservation of the wild population of *Coffea arabica* L. and the associated flora and fauna (Coffee Forest Ecosystems).

1.4.2 Specific objectives

The CoCE project aims to contribute to the *in-situ* conservation of the genetic resources of the wild coffee population at its natural habitats. However, the wild populations of *Coffea arabica* are part of the montane forests and occur in association with diverse flora and fauna in the forest. The conservation of the wild population of *Coffea arabica* can therefore only be guaranteed if these montane rainforests (coffee forests) themselves are protected. Within the framework of the general objectives stated above and that of Subproject 6, the specific objectives of this research are:

(1) To describe the structure and function of the local level action arena i.e. coffee forests and their attributes, participants and their attributes and participants' coffee forest utilization strategies

(2) To analyze local-level organizations (politico-administrative structures, organizational structures and community based organizations) that influence the conservation and use of coffee forests

(3) To analyze local-level institutional arrangements (policies, legislations, strategies, programs and projects) that influence the conservation and use of coffee forests

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[6] CoCE has six sub projects. Sub-project 1 is a vegetation study dealing with floristic diversity of the forests with wild coffee occurrences; sub-project 2 is a genetics study dealing with the diversity of wild coffee genes; sub-project 3 is an physiology study dealing with moisture tolerance of the wild coffee materials; sub-project 4 is pathological study dealing with disease resistance of the wild coffee materials; sub-project 5 is an economics study dealing with the cost benefit analysis of alternative land use systems and the economic analysis of conserving the wild coffee population; and subproject 6 is a social science study dealing with the analysis of institutional factors affecting the conservation and use of the wild coffee population in the forest.

(4) To analyze the interactions between and among the various local-level institutions, and between the local and higher level institutions as they influence the conservation and use of coffee forests

(5) To draw conclusions and suggest policy implications that contribute toward the development of sustainable conservation and use concept for coffee forests and to suggest future areas of research

1.5 Research questions

In the past, environmental and natural resource management concepts have often been formulated and implemented without understanding the institutional environment and without taking the interests of different actors and their respective resource utilization strategies into account. However, institutional and social factors as well as understanding the resource utilization strategies of users are important in determining the success and/or failure of conservation and use concepts. In view of this fact, the research attempts to answer the central question "what are the local level institutions that affect the conservation and use (management) of coffee forests in the southwest Ethiopia? Within the framework of this central question come the following sub-questions:

1. What is the nature of coffee forests and what are the attributes that characterize them?
2. Who are the local-level actors (resource users) involved in the management (conservation and utilization) of the coffee forests and what are the attributes that characterize them as well as coffee forest users?
3. What are the coffee forest utilization strategies employed by the various actors (resource users) at the local-level and what are the outcomes of the strategies?
4. What institutional arrangements are operational at the local-level and therefore influence/guide coffee forest management decisions?
5. What kind of organizational arrangements are operational at the local-level and therefore influence the conservation and use (management) of coffee forests?
6. How do institutional mechanisms interact with each other at the local-level and with higher-level institutions as they influence coffee forest management decisions?
7. Should existing institutions/organizations be enlisted as they are, should changes be made them or should new ones be devised/established in order to be able to manage coffee forests in a more sustainable manner?

1.6 Organization of the thesis

This thesis is organized in seven chapters. Chapter one establishes the setting, describes the various coffee production systems in Ethiopia and explains the importance of coffee to the economy. It sets the research in perspective by providing the reader with the background needed to understand the central focus around which the thesis revolves i.e. forest (wild) coffee. The chapter also defines the problem statement that this research is trying to address, the objectives it is set out to achieve and the questions that guide the research un-

dertaking. Chapter two is devoted to the discussion of the research methodology. It provides a description of the contextual factor i.e. the country background, the study area and the forest coffee units (FCUs) under investigation. It also describes the types of data collected, the levels at which they were collected, the methods used in collecting them as well as the strategies employed in identifying the sample farm households that took part in the various interviews, discussions and the survey.

Chapter three discusses theoretical issues and the conceptual framework. It starts by describing the changing paradigms of natural resources management and the theoretical debates that surround them. It also addresses important conceptual issues that often arise in the natural resource management debate namely decentralization, property right systems, institutions and organizations. It ends by describing the conceptual framework that the research used. Chapter four, the first empirical chapter, describes the action arena: the local level playing field. It specifically addresses the two important components of the action arena namely coffee forests and their attributes and coffee forest users and their attributes. It also discusses the interaction between coffee forests and users i.e. coffee forests utilization strategies employed by participants of the action arena.

Chapter five discusses the third important component of the action arena i.e. institutions, when used in their organizational sense. It analyses three important organizational arrangements that influence the management of coffee forests at the local-level namely: politico-administrative structures, government organizations and community-based organizations. Chapter six, which is a follow on from chapter five, examines institutions, used in their 'rule of the game' sense that influence coffee forest management decisions at the local-level. The chapter starts by identifying the levels at which coffee forest management decisions are made and continues with the analysis of the various institutional arrangements that influence these decisions. Finally, chapter seven highlights the conclusions derived from the analysis in this research and their policy implications. It ends by giving a brief description of future areas of research.

2 Methodology

2.1 Country background

Ethiopia is a country located in the horn of Africa. It stretches between 3 and 18 degrees north latitude and 33 and 48 degrees east longitude and has a total area of 1,127,127 sq km (MoFED 2002). The country is divided into four main geographic regions viz. the Ethiopian Plateau, the Great Rift Valley, the Somali Plateau, and the Ogaden Plateau. The Ethiopian Plateau, located in the central part of the country, lies between 1,524-1,829 m.a.s.l. and covers more than half the country. The Great Rift Valley traverses the country from northeast to southwest dividing the country in to two highlands located on each side of the valley. The Somali Plateau is a geographical region located in the eastern part of the country and lies above 4,267 m.a.s.l. The Ogaden Plateau (457-914 m.a.s.l.) is located in the eastern part of the country and is largely a desert (ALEMNEH 2003). The country is landlocked, the entire coastline along the Red Sea (ca 1000 km) being lost with the *de jure* independence of Eritrea on 24 May 1993.

The type of government in Ethiopia is ethnic based federalism. The country is governed by a constitution (FDRE 1995), which provides for a president as chief of state and a Prime Minister as head of government. The constitution provides for the establishment of regional governments following population settlement pattern, language and consent of the people. Accordingly, there are nine ethically divided Regional Governments namely: Tigray; Amahara; Afar; Oromiya; Benishangul-Gumuz; Gambella; Southern Nations, Nationalities and Peoples; Somali; and Harari; and two City Administrations namely Addis Ababa and Dire-Dawa (FDRE 1995). Each Regional Government in turn is made up of *Zonal*, *Woreda* and *Kebele* Administrative structures[7]. At all levels of governance the government is made up of the legislative, the judiciary and the executive (for the detail see chapter 5).

Ethiopia is the second most populous country in sub-Saharan Africa (SSA), with a population count of 77.4 million, and an annual population growth rate of 2.6% (UNFPA 2005). There are more than 77 ethnic groups the *Oromo*, *Amhara*, and *Tigre* ethnic groups being the three dominant jointly making up for more than three-fourth of the population. The national language is *Amharic*, although over 70 languages and 200 dialects are spoken. Eighty-eight percent of the population lives on the highlands (altitudes above 2,000 m.a.s.l) that constitute 44 % of the land mass. The highlands are settled hoe and ox-plough agriculture dominated. The rest of the population lives on mid highlands (areas located between altitude ranges of 1,500 - 2,000 m.a.s.l.) and lowlands located at altitudes below 1,500 m.a.s.l. The mid highlands are transitory between the highlands and the lowlands whereas the lowlands are predominantly inhabited by pastorals with some scattered rain-fed farming practiced occasionally (EPA 1997).

[7] A Zone is an administrative structure below the Region and above the Woreda. It is not constitutionally recognized but operates based on the power delegated to it by the Regional government. The Woreda is the lowest constitutionally recognized administrative structure constituted by Kebele and sub-Kebele administrative structures known as Development Teams.

Agriculture is the main stay of the economy contributing 45% of the gross national product (GNP), making up for more than 80% of the export earning, and employing over 85% of the population (MoFED 2002). It is predominantly subsistence and has remained to be so almost for centuries. Coffee is the major agricultural commodity and export crop providing over 60% of the foreign exchange earnings and about 25% of the population derives its livelihood from its production either directly or indirectly. Other traditional major agricultural exports of importance include live animals, hides and skins, pulses, oilseeds, and the traditional "*chat*", a leafy shrub that has psychotropic qualities when chewed. The export of flowers, sugar, vegetables, and fruits, gold, marble, limestone, and small amounts of tantalum is also serving as source of foreign currency. The industrial sector is largely state-run and is mostly restricted to agricultural processing and the manufacturing of consumer goods. The leading manufactures include processed food, beverages, textiles, leather, chemicals, metal products, and cement (MoFED 2002).

The country is divided into diverse agro-climatic zones. Traditionally, the agro-ecologies are categorized into *Wurch* (above 3,200 m.a.s.l); *Dega* (2,300-3,200 m.a.s.l); *Weyna Dega* (1,500-2,300 m.a.s.l); *Kola* (500-1,500 m.a.s.l) and *Bereha* (below 500 m.a.s.l) (ALEMNEH 2003). According to the most recent classification, the country is divided into 18 major and 49 sub agro ecological zones[8] (EARO 2002). The variations in agro-ecologies have resulted in a great diversity of climate, soil and vegetation, making the country one of the very rich countries in biodiversity in Africa in particular and the world at large. The country is designated as one of the twelve centres of plant origin and domestication in the world (VAVILOV 1951; WESTPAL 1975). The richness in biodiversity is also attributed to the geographical location of the country which is near the historical entry point of many initial migratory flora and fauna populations from Asia (SYLVIAN 1958).

2.2 The study area

The study was conducted in the southwest part of the country where the last remnants of Afromontane rainforests, which are the natural habitats of the wild coffee population, are found. Both *Yayu-Huruumu Woreda* of the Oromiya and *Sheko Woreda* of the Southern Nations, Nationalities and People's Regional States are located in this region. Southwest Ethiopia is diverse in terms of physical environment with extensive highland plateaus situated at altitude over 2,000 m.a.s.l, and extensive vast plains, bordering the Sudan in the west and Somalia in the east, situated at 800m above sea level. Annual precipitation in the region varies from 2,400 mm in the extended highland plateaus to less than 1,000 mm in the vast plains of the lowlands, and the vegetation grades from tropical montane rainforest to savannah grasslands. The region is considered as one of the last natural resource frontiers in the country (WOOD 1993). The region is also considered as one of the most divers in its socio-economic and cultural make up and is often referred to as the melting point of diverse ethnic groups ranging from the *Amharas*, *Oromos*, *Tigres* and *Gurages*

[8] The Agro Ecological Zones (AEZ) classification is based on FAO's classification which defines agro ecologies based on rainfall, soil moisture availability, and in terms of length of growing period (LGP) derived using a water balance model and temperature conditions during the length of growing period (LGP).

that constitute significantly large proportion to the *Kambata*, *Mejenger*, *Menja*, *Shako*, *Meenit*, *Bench*, and *Kaffa* that constitute the minority (Ibid.).

2.2.1 Yayu-Huruumu

Yayu-Huruumu, hereafter referred to as *Yayu* for short, is one of the 13 *Woredas* of Illubabor *Zone*, Oromiya Regional State. It is situated at 540 km southwest of Addis Ababa on the Addis-Metu highway. The *Woreda* has a total of 39 *Kebele* Administrations out of which 37 are Peasant *Kebele* Administrations (PKAs) and two (*Yayu* and *Hurrumu*) are Urban *Kebele* Administrations (UKAs). The population count is 104,300 out of which household heads count 18,615 (16,796 male and 1,819 female) and family members (children, retired household members and relatives in the household) count 85,685 (37,973 male and 47,812 female) (*Yayu Woreda* Office of Agriculture Annual Report, 2004, Unpublished).

The *Woreda* is situated within an altitude range of 1,139 and 2,591 m.a.s.l., the majority of it lying between 1,300-2,100 m.a.s.l. Topographically, 79% of the *Woreda* is plain, 19% hilly, and the remaining 2% rugged mountainous, making it vulnerable for erosion and hence environmental degradation. Quite a substantial proportion of the area of the *Woreda* lies in areas with slope ranging between 8-30%. The *Woreda* experiences a mean annual maximum temperature of 28^0C, a mean annual minimum temperature of 19^0C and a mean daily temperature of 23^0C. Rainfall is monomodal (the average being 1597 mm per annum) the highest amount being received between June and October and in the reminder of the year the rainfall is distributed between March and April (Ibid).

Four ethnic groups are dominant in the *Woreda*, namely *Oromo*, *Amhara*, *Gurage* and *Tigre*, in that descending order of proportion. The original settlers are the *Oromos* while the rest are immigrants who have come to the area either through the 1984 government initiated large scale re-settlement program or through self initiated (spontaneous) resettlement schemes that have taken place in the past and are still taking place. Two types of religions practiced by residents of the *Woreda* namely Orthodox Christianity and Islam, the former being the most dominant. There are also other religions such as Protestant Christianity and traditional belief, although practiced by a very small proportion of the residents (Ibid).

Agriculture is the main source of livelihood for residents of the *Woreda*. It is practiced in the form of crop production, livestock production, forestry and apiculture. Crop production involves the growing of both annuals and perennials. Annual crops that farmers grow include large cereals (maize and sorghum), small cereals (tef[9], barley, wheat and finger millet), pulses (faba bean, field pea, chickpea, haricot bean), oil crops (Soya bean, rape seed), vegetables (potato, cabbage, garlic, shallot, onions, beet root), root crops (taro, sweet potato), and spices (pepper, cardamom, ginger, turmeric), in that descending order

[9] *Tef* (*Eragrostis tef* (Zucc.) Trotter) is a cereal crop and a major staple food in Ethiopia. The grain is ground into flour, fermented and made into *enjera*, sour-dough type flat bread. It is also eaten as porridge or used as an ingredient of home-brewed alcoholic drinks. The straw is considered to be excellent forage, superior to straws from other cereal species.

of importance. Perennial crops include coffee, *enset*[10], *chat*, spices and fruits (banana, orange, mango, papaya, lemon, and avocado) and sugar, in that descending order of importance (*Yayu Woreda* Office of Agriculture Report, Unpublished).

Livestock production is the other source of livelihood. It involves the rearing of cattle (oxen, cow, heifers and bulls), the keeping of pack animals (mules, horses, and donkeys), rearing of small ruminants (sheep and goats) and poultry keeping. Oxen are particularly important in agricultural production since they serve as source of traction. Sheep, goats and poultry are used as sources of income and insurance against financial distress. Bee keeping has also been an important occupation for significantly large number of farmers and a source of financial income. Non-farm activities that residents derive a living from include pottery, charcoal making, woodcarving, blacksmith, petty trade, timber production and fuel wood selling, with varying proportions of farmers engaged in each (Ibid).

The total area of the *Woreda* is 162,901 hectare (ha). Out of this, 45,231.2 ha is occupied by cultivated crops and 90,890.7 ha by forests (90,773 ha is natural forest and 117.3 ha is plantation forest), all of which is government protected forest. This indicates how rich the *Woreda* is in terms of forest resources. Within the government protected forest, a total of 10,244 ha is designated as wild coffee conservation site known as Forest Coffee Units (FCUs). Area under coffee (plantation, garden and semi forest coffee together), grazing land, and wetland is 11,730; 7,493.4 and 3,713.3 hectare, respectively thereby reflecting the high importance coffee has in the livelihoods of residents. The total area taken up by rivers, roads and others is estimated to amount 3,842.4 hectare (Ibid).

Because of relatively good vegetation cover and rich flora, considerable wild life species are reported to have been in existence in the *Woreda*. Prominent among them are large wild life species such as buffalo, leopard, lion, medium wild life species such as antelopes, baboons, bush pig, impala, fox, hyena, and small wild life species such as monkey, civet cat, porcupine and rabbit. Four major rivers flow in the *Woreda* namely *Geba, Dogi, Saki* and *Berber*, in that order of importance. There are also small tributaries to these big rivers and most of them flow to river *Geba*, which forms the main watershed.

2.2.2 Sheko

Sheko is one of the 9 *Woredas* in the *Bench-Maji Zone* of the Southern Nations, Nationalities and People's Regional State (SNNPRS). It is situated at 560 kilometres from Addis on the Addis - Mizan Teferi highway. There are two alternative highways to get to Mizan Teferi from Addis: from Addis to Jima and through Bonga to Mizan Teferi (short distance), and from Addis to Jima and then through Metu to Tepi and finally to Mizan Teferi (long distance). The *Woreda* is divided into a total of 24 Peasant *Kebele* Administrations (PKAs). The population of the *Woreda* is 31,730 out of which 16,203 are male and 15,527 are female. It is situated within the altitude range of 1000 and 2,400 meters above sea level (*Woreda* Office of Agriculture Annual Report 2003, Unpublished).

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[10] *Enset* is a perennial crop grown mainly in the southwest part of the country. It is used as both human food and animal feed. The stem and root are the parts that are used as human food whereas its entire part can be used as animal feed.

The total area of the *Woreda* is 276,370 hectare. Out of this, 28% is plain, 49% is hilly while 23% is mountainous. Sixty percent of the *Woreda* is categorized as low land or "*Kola*" lying in the altitude range of 1,500-1,800 m.a.s.l and 40 % is categorized as mid altitude or "*Woyna Dega*" lying in the altitude range of 1,800-2,200 m.a.s.l. Although it is difficult to get an official record of the temperature regimes and data on rainfall, the *Woreda* is reported to be humid and receives rainfall in all months of the year except between October and February when it some times gets dry (DEMEL et al. 1998).

The *Woreda* is diverse in terms of socio-economic make up. A mixture of ethnic groups resides in the *Woreda* namely, *Sheko*, *Bench*, *Amhara*, *Kafa*, *Mejenger*, *Meenit*, *Oromo*, *Tigre*, *Gurage*, *Dawuro*, *Kambata*, *Wolayta*, *Hadiya*, *Mocha*, *Yem* and *Dizi*, in that order of importance. The presence of a mixture of ethic groups is a result, among other factors, of the resettlement schemes launched in the past in the main and due to self-initiated or spontaneous resettlements over the years. There are four types of religions practiced in the *Woreda* namely Orthodox Christianity, Protestant Christianity, Islam, Traditional Belief (Idol worshipping or "*Kalicha*") and Paganism, in that order of importance (*Woreda* Office of Agriculture Report, Unpublished).

People in the *Woreda* earn their living (livelihood strategies) by engaging themselves in either one or more of the following occupations i.e. farming (crop and/or livestock production, coffee production), apiculture (bee keeping), and small handcraft activities (pottery, wood work and horn work). Farmers cultivate different crops that include annuals (maize, sorghum, tef, barley, wheat, finger millet and soybean), perennials (coffee, enset and sugar cane, orange, banana and papaya), vegetables (potato, tomato, onion, garlic, beet root, carrot, Ethiopian cabbage, cabbage and pepper, and pumpkin), root crops (taro, cassava and yam), and spices, condiments and stimulants (turmeric, Ethiopian cardamom, ginger, Indian long pepper and *chat*) (DEMEL et al. 1998).

According to the recent census of livestock conducted in 1997, the total number of livestock in the *Woreda* is 38,044. This includes different species of farm animals namely cattle (oxen, cows, bulls, heifers, calves, sheep, and goats), pack animals (horses, mules, donkeys) and poultry (chicken). The *Woreda* is also known for a special hornless cattle breed endemic to the *Woreda* known as "*Sheko* breed". Bee keeping, pottery, blacksmith, charcoal making, woodcarving, timber production, basket and mat making, and tannery are also the major non-farming activities that are practiced by members of the community to generate income (Ibid).

The land use of the *Woreda* is such that 12,240 ha is agricultural land covered by cultivated crops (6,675 ha by annual crops and 5,565 ha by perennial crops), 226,927 ha by forests (222,999 ha natural and 261 ha plantation forest and 3,667 ha secondary vegetation), 25,328 hectare is potentially cultivable land, 847 ha marshy land, 608 ha grazing land, 3,052 ha unproductive (marginal) land and 7,368 ha is covered by others (roads, villages etc.). Coffee is the number one crop in the area and the total area under coffee is 5,526 ha of which 1,645 ha is covered by forest coffee, 3,287 ha by semi-forest coffee, 781 ha by planted coffee and 594 ha by rejuvenated coffee. Besides, evidences available indicate that the area under coffee has always been on the increase demonstrating the importance coffee has but also inflicting a serious damage to the forest resource base since the expansion in area claims a great deal from the forest (*Woreda* Office of Agriculture Report, Unpublished).

Sheko is endowed with gracious Afromontane rainforests, which are reported to be natural homes for coffee. Of the total forest that exists in the *Woreda*, 417,000 ha is demarcated and designated as Gura-Ferda National Forest Priority Area (NFPA) by the then Ministry of Natural Resources Development and Environmental Protection (MoNRDEP). Of the total forest area of the *Woreda*, 60% is undisturbed while 40% is disturbed. The forests, besides providing various economically important services also serve as sanctuaries for wild life. The wild life species that are reported to exist in the forests include antelopes, baboons, buffaloes, bushbuck, bush pigs, colubus monkeys, elephants, jackals, hyenas, leopard, lions, wart dog, "*werebo*" and wolf. There are four rivers in the Woreda that belong to the Baro drainage, namely Alenga, Beko, Bergi and Gacheb Rivers (DEMEL et al. 1998).

2.3 The Forest Coffee Units

Although measures for the conservation of Afromontane forests and the associated flora and fauna were called for as early as in the 1980ies; practical measures have not been taken until the second half of the late twenties (WHITE 1981). In fact, in the 1990s a conservation project for in-situ conservation of the Ethiopian wild coffee populations was developed but was never implemented due to lack of funds (DEMEL et al. 1998). Having recognized the crucial role that coffee plays in the lives of millions of farmers and because of the significant threat posed to the wild populations of *Coffea arabica*, the government launched a project called Coffee Improvement Program IV, this time securing financial assistance from the European Union. One of the objectives of the project is the conservation, *in situ*, of the wild coffee genetic materials. The in situ conservation of the wild population of *Coffea arabica* is certainly important in the long-term with regard to the range of resistances to disease and pests, adaptation to environmental stress (e.g., cold, drought, water logging), and the caffeine content or tree architecture (PAULOS and DEMEL 1999). And this is thought to be best achieved through *in situ* conservation measures (DEMEL et al. 1998; PAULOS and DEMEL 1999).

Cognizant of the above-stated facts, a total of eight natural forests with wild coffee occurrences have been identified and designated as Forest Coffee Units (FCUs). They are *Berhan-Kontir*; *Geba-Dogi*; *Amora-Gedel*; *Boginda-Yeba*; *Harena*; *Maji*; *Dawa-Tobi*; and *Mankira*. Except *Harena*, which is located in the southeast and west, all the others are located in the south and north of the Ethiopian highlands, and the Great African Rift Valley, respectively. The principal objectives (goals) of designating the FCUs are to conserve, *in-situ*, the genetic diversity of the wild coffee population in particular and the associated flora and fauna (Forest Coffee Ecosystem) in general. One of the advantages of *in situ* conservation is that the natural evolution processes the various floras and fauna in the forest can be maintained (DULLOO et al. 1998). The conservation approach used is the ecosystem approach; and the aim is to establish sustainable production and utilization of the forest resources and the conservation of the wild coffee genetic resources to develop varieties with the capability of producing high yield and better quality, resistance to known disease and insect pests and; and at the same time to contribute to the global issue of environment (DEMEL et al. 1998). Two of the FCUs that are the focus of the present study are Geba-*Dogi*) and *Berhan-Kontir*.

2.3.1 Geba-Dogi

Geba-Dogi is a Forest Coffee Unit named after the two rivers that flow in the area namely *Geba* and *Dogi*. River *Geba* is the major river that covers the majority of the watershed in which we find the FCU and into which most of the tributary rivers flow.

2.3.1.1 Location

The *Geba-Dogi* FCU is located in *Yayu-Hurrumu*[11] *Woreda*, Illubabor *Zone* of the Oromiya Regional State. It lies in the valley that contains a dense forest through which the Addis-Metu highway passes. The FCU stretches along the two sides of the *Geba* River. Its boundaries are formed by Geba River in the north, Metu *Woreda* in the west and southwest, *Setema* and *Sigmo Woredas* of Jima *Zone* in southeast and Southern Nations, Nationalities and People's Regional State (SNNPRS) in the south. It is situated between 8°05′45"-8°31′45" north latitude and 35°06′36"-36°00′00" and 36°05′08" east longitude covering a total area of about 1353 square kilometre (ca 10,000 ha). A total of 11 Peasant *Kebele* Administrations (PKAs) share the boarder of the FCU, and three rivers flow through it namely: Geba, Dogi and Saki (DEMEL et al. 1998).

2.3.1.2 Forest description

The FCU forms part of the *Yayu* NFPA that covers an area of 150,000 hectare. Of this, 63,800 hectares is believed to have been consisting of wild coffee population (DEMEL et al. 1998). The FCU covers around 20,000 ha of which 10,000 ha is designated as a buffer zone and the remaining as a core zone. The vegetation type of the forest is transitional rain forest, with abundant humid evergreen vegetation and afro-montane species. It is semi-deciduous; the trees being leafless only for a short period of time and usually not all species in the vegetation become leafless (deciduous) simultaneously. A riverine forest along the river Geba at the southern edge of the forest forms part of the forest (KIDANE 2002). Some thing like 25% of the FCU is designated as forest coffee and the remaining (75%) is designated as semi-forest coffee (DEMEL et al.1998).

2.3.1.3 Climate and topography

The area in general and the FCU in particular enjoy a salubrious tropical climate with an average annual rainfall of 1,633.5 mm. The rainfall pattern is monomodal with monthly rainfall rising steadily from May reaching its peak between June and August. The months with the lowest precipitation are November, December, January and February, receiving about 5% of the annual total. Nearly 75% of the annual rainfall is concentrated between May and September, and the remaining 20% falls within the months of March, April and October. Mean maximum and mean minimum temperatures are 24.78 and 10.66 degrees, respectively. The altitude varies from 950 m.a.s.l. in Geba valley to 2,150 m.a.s.l. right in the middle of the forest coffee unit (DEMEL et al. 1998). Compared to other FCUS, *Geba-Dogi* has the highest abundance of wild coffee plants per unit area although the forest is one of the highly disturbed. Locally, however, the distribution of the wild coffee popula-

[11] *Yayu-Hurrumu* is a merger of two *Woredas* namely *Yayu* and *Hurrumu*. It was through the very recent (2002) reorganization of administrative units that the two *Woredas* were merged and gave rise to *Yayu-Hurrumu*.

tion is clumpy or patchy. These patches were either very dense and vast or thin and sparse but they occur very close to each other (often less than 20 m distance between the various patches (FEYERA 2006).

2.3.2 Berhan-Kontir

Berhan-Kontir got its name from the village that is located very close to it called *Berhan*, which literally means light in *Amharic,* the national language in Ethiopia and "*Kontir*" which is a thorny tree species that is dominant in the forest.

2.3.2.1 Location

The FCU is situated in *Sheko Woreda*, Bench-Maji Zone of the Southern Nations, Nationalities and Peoples' Regional State (SNNPRS). It forms part of the 101,055 hectare of the then Gura-Ferda and now *Sheko* National Forest Priority Area (NFPA) demarcated by the then Forestry and Wildlife Conservation and Development Authority (FaWDA). The FCU is located between $35^0$15` East longitude and $06^0$55`North latitude. It lies adjacent to the main road that connects Mizan Teferi, the capital of the *Zone*, and Tepi, a capital town of nearby *Zone* called Shaka. The boarder of the FCU is shared by four Peasant *Kebele* Administrations, namely Mehal *Sheko*; Shimi; Gez-Meret; and Ayebera.

2.3.2.2 Forest description

The forest is rich in biodiversity and contains different tree species, shrubs and wild coffee populations. It represents the transition rainforest between the Afromontane rainforest and the lowland forest (FEYERA 2006). The area of the FCU is about 10,000 hectare. The demarcation of the FCU claimed a significant portion of farmers' holdings. Besides, local farmers who own mainly the exterior and adjacent portion of the FCU are converting it gradually into semi-forest coffee area by thinning out bigger trees and by planting coffee seedlings, although this is considered illegal. Agricultural expansion (conversion of forestlands to agricultural land) that has been on the increase has significantly impacted on the forest condition of the FCU. Some 30% of the FCU is designated as forest coffee where as the remaining 70% is semi-forest coffee (DEMEL et al. 1998).

2.3.2.3 Climate and topography

The annual average temperature ranges from 16.5 – 32^0C and the average annual precipitation is reported to be 2,200 mm. The area is characterised as humid receiving rainfall in all months of the year except between October and February, when it relatively gets dry. The FCU occurs on undulating to steep slopes the lowest point of the forest lying at an altitude of 900 meters above sea level and the highest pick at an altitude of 1,900 meters above sea level. The specific locality where the highest pick of the FCU occurs is called *Amora-Gedel* and it is a locality well known for its abundance in wild coffee populations. Two big rivers flow through the FCU namely: Beko and Gacheb (Ibid). Although the forest was identified and designated as one of the National Forest Priority Areas, it does not seem to have been given the necessary attention it requires and this has subjected it to overexploitation as a result, it is one of the highly disturbed forests.

Figure 2.1: Map of Ethiopia and location of the Forest Coffee Units (FCUs) investigated.

2.4 Data collection and sampling procedure

Data collection and sampling procedure are vital components of a research undertaking upon which the quality of the research results and conclusions derived depend. The following section describes the types of data collected, the levels at which they were collected and the methods used in their collection as well as the sampling procedures followed in identifying sample units from which data were collected.

2.4.1 Types of data collected

In the present study, two types of data set were used viz. secondary and primary. Secondary data were collected by reviewing and consulting available policy and strategy documents, quarter, bi-annual and annual reports of institutions and organizations and proclamations, rules and regulations issued by both the federal and regional governments. These were supplemented by primary data collected using the various data collection techniques mentioned below. The types of primary data collected include socio-economic and demographic issues, resource endowment issues, livelihood strategies, and forest and wild coffee management conservation and use (management) institutions.

2.4.2 Data collection methods

The methods of primary data collection employed in this research include selected Participatory Rural Appraisal (PRA) tools. Participatory rural appraisal (PRA) is a research methodology that includes a growing family of participatory approaches and methods that emphasize local knowledge and enable local people to make their own appraisal, analysis, and plans (McCracken 1988; IIED 1991; Chambers 1992). The method places particu-

lar emphasis on empowering local people to assume an active role in analyzing their own living conditions, problems and potentials in order to seek for a change of their situation. It also helps researchers to learn a lot about the practical situation on the ground, and about local people's knowledge and the wisdom they have accumulated over the years while farming or doing whatever occupation they are involved in. The main reason for applying this method (PRA tools) in this research is because the research is development oriented, and to ensure the involvement of rural people (local level participation), whose lives the outcomes of the research are intended to influence, in both the research process and later in the design and implementation of the anticipated conservation and use concepts.

The PRA tools that this research employed include Key Informant Interviews (KIIs), Focus Group Discussions (FGDs), and Participant Observation (PO). A formal household survey was also conducted through structured questionnaire administration to enrich data collected using PRA tools by way of capturing the socio-economic and demographic factors, resource endowment and management issues, livelihood strategies, the perception of farmers and other interest groups in conservation, and farmers' participation in institutions that influence the conservation and use (management) of coffee forests.

2.4.2.1 Key Informant Interviews

Key informant interview (KII) is a method of data collection that involves obtaining information from a community resident who is in a position to know the community as a whole, or the particular portion the researcher is interested in. That community resident can be a professional person who works with the group the researcher wants more information about, or a member of the target audience. Key informants can be young or old, or from a variety of socio-economic levels or ethnic groups. There are many ways to get the information the researchers wants from a key informant. One can talk with them in an informal way, or use formal techniques, such as written questionnaires, telephone interviews, personal interviews, group interviews or community forums and public hearings. The researcher can also make this a one-time event, or something he/she does on a regular basis to stay current with community developments (SEIDMAN 1991).

Key informants are persons (or group of persons) who have unique skills or professional background related to the issue/intervention being evaluated, are knowledgeable about the area and about communities, or have access to other information of interest to the subject being investigated. They can also be individuals or group of individuals who have a way of communication that represents or captures the essence of what the participants say and do. Key informants can help the researcher better understand the issue being investigated, as well as the communities, their backgrounds, behaviours, and attitudes, and any language or ethnic considerations. They can offer expertise beyond the realm of the researcher. They can be surveyed or interviewed individually or through focus groups (Ibid).

In the present study, the KIIs were particularly implemented at *Woreda* (district) and local (farm household) level. In order to conduct the interview, the research deliberately targeted certain selected individuals who were believed to have particular insight, knowledge and information about the area and the topic of interest. They included farmers, the elderly, experts (subject matter specialists and development agents of the bureau of agri-

culture), businessmen, and officials with various capacities i.e. *Kebele* chairpersons and bureau heads. These Key Informants were identified with the help of *Kebele* Administrators and Development Agents. The interviews with key informants were held with the help of a semi-structured guide developed for the same purpose. It was used to facilitate the interview by way of controlling both the pace and direction of the interview and, at times, redirecting the discussions that often followed the interview but in somewhat relaxed and flexible manner (MERTON et al. 1990). To ensure flexibility and interaction, the interview guide was structured around main issues viz. socio-economic circumstances, livelihood strategies, resource endowment and conservation, collective decision and action, and institutional matters.

2.4.2.2 Focus Group Discussions

Focus Group Discussion is a technique of primary data collection that involves a facilitated group discussion in which open-ended questions are asked in a way to trigger discussion amongst a panel of participants. It is a facilitated group discussion in which an interviewer asks a particular group a series of questions. The group members then provide a response to the questions, and a discussion ensues. In the process, more effort is given to reducing the structure of the content so that the information is gained from the participants rather than being determined by the questions asked. This method is particularly suited to preliminary research where some time-economy is a need, and where a more structured approach may be premature. It starts in an open-ended fashion with the minimal questions that will keep the group members participating. By starting with very general questions, and little guidance about the topic from the facilitator, it provides some protection from allowing the questions the researcher asks to limit the answers he/she gets. The process, on the other hand, is structured. This gives a higher quality of information and more efficient use of time (DEBUS 1995).

In conducting FGDs, the role of the researcher is often limited to setting the course of the discussion going uninterruptedly by posing a question by way of kick starting the discussion and then facilitating the entire discussion. FGDs allow the researcher to have an insight into, and proper understanding of, the issues that were often difficult to deal with if and when approached individually. The major strength of the FGD technique is that it ensures group dynamics. Besides, the interaction among members of the group usually generates a wide range of perspectives and outlooks in relation to the topic under investigation. The challenge the researcher often faces while conducting the FGDs is that the researcher will have less control over the proceedings rendering FGDs often to be less systematic (MORGAN 1997; STEWART and SHAMDASANI 1992).

In the present study, focus group discussions (FGDs) were used only at the community level. They in general relied heavily on the use of semi-structured interviews but for small groups usually between 5 and 10. In each of the research sites, 3 to 4 FGDs were held with 4-6 members in each group at a time. Farmers who took part in the FGDs were identified with close collaboration of development agents and chairmen of the respective peasant *Kebele* Administrations. Discussions were then held in agreed location at agreed time. The reasons for holding discussion with the different FGDs were to further enrich the information generated through key informant interviews and the formal survey as well. Besides, it was intended to capture the variation in terms of differential experiences, knowledge and perceptions among the various groups pertaining to the issue under inves-

tigation. Analogues to key informant interviews, the discussion guide was structured around socio economic, livelihood strategies, natural resource (forest and wild coffee) management issues, collective decision and action as well as institutional issues, this time the intention being to get the reflection of the group.

2.4.2.3 Participant Observation

Participant observation (PO) is a technique of qualitative data collection technique where the researcher immerses him- or herself in the subject being studied, presumably to gain understanding, perhaps more deeply than could be obtained, for example, by questionnaire items (JORGENSEN 1993). Arguments in favour of this method include reliance on first-hand information, high face validity of data, and reliance on relatively simple and inexpensive methods. The downside of participant observation as a qualitative data-gathering technique is increased threat to the objectivity of the researcher, unsystematic gathering of data, reliance on subjective measurement, and possible observer effects (observation may distort the observed behaviour (ADLER and PETER ADLER 1994; BECKER 1993).

Although the time the researcher had spent in the field and amongst the community was not that long (three months in the first field trip and a month and half in the second), it had enabled him to actually interact with farmers and observe the way of life that farmers pursue, the physical condition of the resources, the actual utilization of forest resources and the wild coffee by farmers and various interest groups. The researcher, in as much as possible, took time to observe, interact with and to travel deep into the heart of the community. The travel at times demanded more than half a day on foot inside the villages, as most often the villages were located at a certain distance from each other. The fact that some of the trips coincided with coffee harvesting seasons made it easier to actually witness the practice as it happened. However, it at the same time posed a challenge in terms of holding effective discussions since farmers were busy taking care of their coffee. However, the researcher had strategically approached the challenge by setting the discussion time either early in the morning or late in the afternoon when they were relatively free.

2.4.2.4 Household survey

Formal structured survey is an ordered way of obtaining information from respondents and enables precise and statistically analyzable data to be obtained (BYERLEE et al. 1980, 1982). It involves designing questions in structured way, pre-testing them before hand and then collecting the data by administering the questionnaire on a strategically selected sample of interviewees. It is often used with the aim to quantify and verify information generated through qualitative methods like the ones mentioned above and thereby for checking if there are associations/correlations among some of the variables upon which data were collected. It also assists to generate information that helps to test the significance of the relationship/correlation among some important variables. Its main limitation is that it puts the interviewee into a perspective of predetermined and researcher designed framework (Ibid).

In conducting the structured formal survey in this study, a questionnaire was designed before hand that covered major issues like socio-economic factors, resource endowment, re-

source utilization pattern, institutional factors and collective decision and action. The questionnaire was then pre-tested on selected sample farmers at each of the research sites. After gathering feedbacks, the questionnaire was modified to its final version. This was followed by identification of the Peasant *Kebeles* from which sample households to be interviewed were in turn selected. The *Woreda* office, *Kebele* representatives and development agents were instrumental and have played a crucial role in the identification process of both the peasant *Kebeles* and sample farmers.

Hired enumerators took part in conducting the formal survey. In order to realize this, first the researcher identified potential enumerators from each of the localities and then trained them on the questionnaire. In fact, it was not easy to identify well versed enumerators so the process of identifying enumerators took time but also provided me with the opportunity to get to know the area since it involved frequent travelling. After having gone through some difficulties, the researcher managed to find well versed enumerators some of which were college graduates just got back from college and were awaiting appointment by the *Woreda* Office of Agriculture. The enumerators were then given the assignment to experiment with the questionnaire before they went out and interviewed sample farmers. A discussion was held with the enumerators the following day and then I clarified issues that were not clear to enumerators. Finally, they held the interviews with the sample farmers identified for the purpose.

2.4.3 Levels of data collection

Data were collected at three levels i.e. farm household level, community level, and local/district level. At the farm household level, data were collected using quantitative data gathering techniques and by conducting a household survey, which aimed at capturing households' socio-economic information, economy and livelihood strategies, resource use and allocation profiles; and community trust and collaboration and households' actual participation in local institutions. This was made possible through formal questionnaire administration.

At the level of the community, data were collected through interviews and discussions with individuals, key informants, focus groups and with community leaders as well as experts. A check-list prepared for the purpose was used to guide the interview and discussions. Through this interviews and discussions, it was made possible to gather information on existing institutions supplemented indeed with information on the local economy (principal livelihood strategies) and local society (ethnic/religious composition), information on the community's perspective on the quality of the institutions, their experience with collective action, and their views on local institutions as well as the need for conservation of forest resources and the wild coffee population.

At the local (*Woreda*) level (defined as the administrative level above the village or community), data were collected thorough expert interviews and document reviews. At the district level in particular, information on the general functioning of the district administration and its relation with civic organizations, relevant government institutions involved in resource management, laws, rules, regulations, policies etc. were collected through interviews (using the interview guideline developed for the purpose) with appropriate personnel in the various organizations. The interview and discussion were facili-

tated by a check list prepared for the purpose. Available documents in the form of reports (annual, bi-annual and quarterly) and policy and strategy documents have also been assessed.

2.4.4 Sampling procedure

The sampling procedures employed were both purposive and stratified random. The selection of *Woredas*, the Peasant *Kebele* Administrations, and farmers who took part in the key informant interview and focus group discussion was done purposively. Accordingly, the *Woredas* where the FCUs are located are purposively identified and sample peasant *Kebeles* that were targets of this research were also identified purposively depending on their proximity to the FCU i.e. they are adjacent or very close to the FCU. This had to be done because the study is a specific one dealing with the conservation and sue of coffee forests.

In the selection of sample farmers to be interviewed in conducting the formal survey, stratified random sampling technique was employed. The criterion used in the stratification was gender of the household head. First from the list that contained the names of households resident in the Peasant *Kebele*, both male and female headed households were identified. This was followed by a random selection of household heads. Accordingly, a total of 240 farmers (208 male headed and 32 female headed) were randomly selected from the two sites. In *Yayu*, a total of 140 farm households were selected out of which 117 were male headed households (MHH), constituting 84 % of the respondents, and 23 were female headed households (FHH), constituting 16 % of the total selected. In *Sheko* on the other hand, a total of 100 farm households were selected out of which 91 were male headed households (MHH) and 9 were female headed households (FHH).

2.5 Data analysis technique

Data analysis is the most complex and demanding of all of the phases of a qualitative research, and the one that often receives the least thoughtful discussion in the literature. It might be easy to create a qualitative data set. However, generating findings that transform the dataset into new knowledge by employing the appropriate data analysis technique is a challenging task. Qualitative research, unlike quantitative research, requires data analysis techniques and processes throughout all phases of the research.

This research employed both qualitative, in the main, and quantitative data analysis techniques. Although there are many qualitative data analysis techniques, the methods this research used are ethnographic, narrative and discourse analysis in the main. These were used through immersion and engagement of the researcher in the fieldwork and in the various data collection techniques. This is because, the research, being qualitative, involved concurrent data collection and analysis processes, with new analytic steps informing the process of additional data collection and new data sets informing the analytic processes. The methods used involved thick description of cases, analysis of documents and organizational set ups and a thorough description of the actual situation and existing realities on the ground and the description and analysis of institutions that were found to have been influencing coffee management decisions. The quantitative data analysis tech-

nique involved the use of descriptive statistics (percentages, mean and standard deviations) and mean comparisons.

3 Theoretical debates and the conceptual framework

The debate on natural resource management started when writings on the management of common pool resources first appeared on literature. The conventional debate was dominated by the Malthusian perspective which frames natural resource management problems as an imbalance between social needs and aggregate resource availability and portrays communities as destroyers of natural resources (HARDIN 1968). The alternative perspective of the debate that emerged in the 1980s on the contrary attributes natural resource management problems to the politics of resource access and control among diverse social actors and gives particular recognition to the important role communities and their institutions have come to play in the management of natural resources. The aim of this chapter is to discuss the changing paradigms/approaches and the debates of NRM and the theoretical considerations that influenced the debates and dictated the approaches. The chapter also describes the conceptual framework employed by this research.

3.1 Approaches to natural resources management

The approaches to the management of natural resources such as fisheries, forests, and grazing lands have evolved over the years and so did the theories that influenced them. Two basic questions have often been raised in connection with the theory and practice of natural resources management such as fisheries, forests etc.: (i) who should be responsible in managing natural resources, and (ii) what kind of institutional arrangements ensure efficiency, equity and sustainability in NRM. In the effort to answer these questions, scholars essentially fall into two broad categories: those that advocate for the centralized approach to natural resources management (NRM); and those that advocate for the bottom up approach to natural resources management. Each of these groups in turn backs its choice of the approach to natural resources management by theoretical justifications.

3.1.1 The centralized approach

The centralized approach to NRM is an approach where the central government plays a key role. According to the principles enshrined in this approach, the ultimate power and responsibility of owning, controlling, providing and managing natural resources (property rights) rests with the central government. Thus, it is the responsibility of the central government to devise institutions viz. laws, policies, strategies, and programs and for establishing organizational structures, at various levels of the governance hierarchy, that ensure the sustainable management of natural resources (CAPONERA 1992; FREDERIKSEN 1992, FREDERIKSEN et al. 1994). The central government may want to delegate part of its decision making authority and power to lower level government agencies (decentralization), community institutions or even to private entrepreneurs (privatization). However, these practices (delegation and privatization) are not seen as contradicting to the basic principles enshrined in the approach so long as the ultimate control over the resource (ownership) remains in the hands of the central government (CARNEY and JOHN 1999).

The approach gained momentum with the rise of the modern nation-state, the power of technology and of the global economy. Concomitant to these changes, many governments considered communal ownership of natural resources as inefficient. They eventually exer-

cised the wholesale trade of natural resources such as forests in the name of development and national interest (ANDERSON et al. 1975). Three factors have often been cited as sources of the inefficiency associated with the communal ownership and therefore for the justification of this approach: rent dissipation (GORDON 1954); high transaction and enforcement costs (DEMSETZ 1967); and low productivity (NORTH 1990, 1995). Because of these problems, the proponents of this approach argue, resources held in common are destined to face the "free rider" problem, underinvestment in the maintenance of the resources and ultimately the "tragedy of the commons". A common policy prescription suggested by the advocates of this approach is therefore to give an end the common property right system by creating a system of public property rights system.

The proponents of this approach used theoretical considerations in justifying their choice for such an approach. The theoretical justification has its roots embedded in the conventional theory of managing the commons (common pool resources). Hardin's theory of "tragedy of the commons" (HARDIN 1968) is the fundamental theory used to justify the centralized approach. It is often referred to in the commons literature as the conventional theory of managing the commons. However, HARDIN was not alone in coining the theory. Almost a decade before HARDIN, GORDON also made a similar statement supporting the theory in the article he wrote entitled "The Economic Theory of a Common-Property Research: The Fishery" where he stated the following:

"*There appears then, to be some truth in the conservation dictum that every body's property is no body's property. Wealth that is free for all is valued by no one because he who is foolhardy enough to wait for its proper time of use will only find that it has been taken by another... The fish in the sea are valueless to the fisherman, because there is no assurance that they will be there for him tomorrow if they are left behind today.*" (GORDON 1954, p. 124)

The conventional theory stipulates that resources held in common - such as rivers, forests, irrigation systems and grazing lands – do not have property rights at all (are open access), and are therefore subjected to overexploitation (HARDIN 1968). When resources are held communally, no individual bears the full cost of resource utilization and no body wants to invest in the maintenance of the resource. Thus, the resources would be subjected to the "free rider" problem and to overexploitation. This is what HARDIN refers to as the 'Tragedy of the Commons' (Ibid). A number of authors have also written in support of HARDIN's theory and assumed "common property resources" to have a "non-property" or an "open access" scenario for which rights or duties have not been defined (DALES 1968; DASGUPTA and HEAL 1979).

The fundamental assumptions upon which the conventional theory was based and the centralized approach is justified include: resources generate a highly predictable, finite supply of one type of resource unit in each relevant time period; users are homogenous in terms of their assets, skills, discount rates, objectives, access to information and cultural views. It also assumes that resource users gain property rights only to what they harvest and they make no effort to change the situation since they do not communicate and since their activities are not coordinated because they act independently (HARDIN 1968).

The empirical validity of the centralized approach and the theories used to justify it were not challenged until the 1980s where growing evidence derived from many empirical

studies on common pool resources suggested otherwise. The results of the extensive field studies on commons up to and including the 1980s showed the performance deficiencies associated with the centralized approach to NRM (BERKES 1983, 1989; OSTROM 1990; BROMLEY et al. 1992; AGRAWAL 2001). They also showed how resource users (communities) have self organized themselves to vigorously protect and enhance the conservation of natural resources; that they are diversified and rational in their decision making and resource utilization behaviours. Results from the studies also showed that communities have important time- and place-specific knowledge that they have developed over the years and institutional arrangements that they forged to facilitate collective action that enhance the management of natural resources (AGRAWAL 1999; OSTROM 1990). HARDIN himself came to realize the fact that "common property resources" are different from "open access resources" and "common pool resources", and he corrected his own fallacy by writing the article "The Tragedy of the Unmanaged Commons" where he attributed tragedies to "unmanaged commons" as opposed to "common property resources" (HARDIN 1998).

Indeed, tragedies have occurred when resources were held and managed communally (common property right systems) like the collapse of the Pacific sardine fishery (MCHUGH 1972), and the collapse of the Antarctic blue whale fishery (CLARK 1980). However, these tragedies have emanated not from ignorance of the community as such but rather from performance deficiencies of government agencies and failure of state policies and strategies to recognize the ability of local communities to self-organize themselves, and the autonomy of resource users to continue their own resource use practices (ARNOLD and CAMPBEL 1986; AGRAWAL 2001; ARNOLD and STEWART 19991). For many years before nationalization, resource users have self-organized themselves to manage "common pool resources" and crafted institutions that helped them manage resources effectively (OSTROM 1990). The transfer of property rights from communities to either the government, in situations like the tragedy cases motioned above, or the private sector has, therefore, eliminated the incentives for monitoring and restrained use, resulting in conversion of once "owner-protectors" into "poachers". It exacerbated the resource depletion it was intended to prevent as opposed to saving it from misuse and therefore from degradation (NETTING 1981; MCKEAN 1992; BERKES 1992; AGRAWAL 1994).

The schematic representation by HARDIN and bolstered by several theoretical metaphors to guide the centralized approach threatened institutional arrangements that local communities had once devised to limit entry and promote use and forced them to lose their legal standing. As a result, resources that had once been under *de facto* common property regimes enforced by local communities customary rights were converted to a *de jure* government property regime, but reverted in effect to a *de facto* open access regime. The shift in property right systems from communal to state/public therefore not only failed to prevent resources from being subjected to degradation but has also painted a disempowering pessimistic vision of the prospect of community ownership (OSTROM and WALKER 1997).

The undesirable outcomes of the centralized approach to NRM have been well documented for Thailand (FEENY 1988); Niger (THOMPSON 1977; THOMPSON et al.1992); Nepal (ARNOLD and CAMPBEL 1986; MESSERSCHMIDT 1986), and India (GADGIL and IYER 1989; JODHA 1986, 1990), and the USA (CORDELL and MCKEAN 1992; CRUZ 1986; DASGUPTA 1982). The common message that came out from all these research undertakings regarding the impact of nationalization was that the approach did not ensure efficient

and effective management of natural resources and therefore did not prevent resources from continued degradation (NAS 1986). The fact that the approach left resources under *de facto* open access regime and subjected them to continued degradation forced scholars in the field to revisit the approach and to reconsider the theoretical justifications hence the bottom-up approach.

3.1.2 The bottom up approach

The bottom-up approach, which has come to be popularly known as Community Based Natural Resources Management (CBNRM), is a natural resource management regime characterized by local communities playing a central role in identifying resources, defining conservation, utilization and development priorities, choosing and adapting technologies and implementing management practices (MAM KOSAL 1996). The approach, although as diverse as the number of countries and development agencies that have been experimenting with it, follows some basic principles viz.: decentralization, local level participation, communal/joint property rights, and some amount of local control over the resources. It has emanated from the observation that communities have self-organized themselves to manage common-pool resources, and have often devised long-term, sustainable institutions for governing these resources (OSTROM 1990; AGRAWAL 2001; CHAMBERS and MCBETH 1992; CHITERE 1994).

The approach is underpinned by the theoretical considerations of collective action. The study of collective action has matured dramatically since OLSON first challenged scholars by positing a general theory in his path breaking book "The Logic of Collective Action" (OLSON 1965). His theoretical predictions related to the incapacity of individuals, except under limited conditions, to solve, on their own, what are now known as collective action problems. The theory is still evolving and rational choice theory, the theory of moral economy, and the classical Game theory (Prisoner's Dilemma Game) are all variants of diverse representations of a broad and still-evolving theory of collective action (OSTROM 2005). The theory argues that selective incentives are the key inducement for individual participation in collective action (PRETTY 2003). Given good knowledge about local resources, appropriate institutional, social, and economic conditions, and processes that encourage careful deliberation, communities can work together and act collectively to use natural resources sustainably over the long term (O'RIORDAN and STOLL-KLEEMAN 2002; DRYZEK 2000; UPHOFF 1998).

Theories of New Institutional Economics (NIE), organizational theory and the theory of Common Property Resource Management (CPR) have also produced evidence that local communities are indeed successful in managing resources, although under certain conditions. For instance, CHOPRA and DASGUPTA (2002) have found out that CBNRM programs have emerged as development drivers although their role as the safety net dominates everywhere. Similarly, ANDERSON et al. (2002) established the linkage that microcredit programs release pressure on local common pool resources, and build up favourable physical and social capital, thus having significant positive impact on conservation of local common resources. Exemplifying the swing toward community, a recent collection of theoretical essays on community-based conservation revealed that communities down the millennia have developed elaborate rituals and practices to limit off take levels, restrict access to critical resources, and distribute harvests (WESTERN and WRIGHT 1994).

Empirical evidence available e.g. Zimbabwe (CAMPFIRE)[12], India (Joint Forest Management), and Mali (*Gestion des Terrioirs*)[13] provide evidences in which local communities have exercised natural resource management responsibilities and decision-making powers (RIBOT 1999, 2001). Results from these experiments revealed that democratic local level institutions can be the basis of effective local environmental decision-making; that communities have or can develop the skills and desire to make and effectively execute natural resource management decisions, and that community level management can have ecologically and socially positive effects (Ibid). Thus when communities still live near the resource, their lives dependent on them, and when they have physical opportunity to use the resources, the transfer of their traditional rights into other hands would result in making them lose the incentives they might have and in creating competition among each other and with new users and claimants in a race to extract as much as possible of which they would probably destroy the resources (THOMPSON et al. 1992).

The CBNRM approach, although promising, did not escape criticism from scholars. The main criticism targeted the concept of "communities". The first criticism targeted the conceptualization of communities as territorially fixed, small, and homogeneous, which are characteristics believed to have supposedly fostered interactions among members and promoted desirable collective decisions. However, the conceptualization of "communities" as neatly bounded units of interdependent users, who share common norms and interests, captures the realities of few, if any, existing communities (LI 2002; AGRAWAL and GIBSON 2001; CAMPBELL et al. 2001). It fails to attend to differences within communities, ignores how differences affect processes around conservation and the differential access of actors within communities to various channels of influence. It also undermines the possibility of "layered alliances" spanning multiple levels of politics. Thus critics suggest the need to understand and recognize the patterns of differentiation within communities and resource utilization behaviours arising thereof and to take these differences in to account when designing conservation and use concepts.

AGRAWAL and GIBSON (2001), in their efforts to depict the productive relationship between communities and their environment, and to make the issue more relevant to policy-making, argue that greater attention needs to be given to three critical aspects of communities: the multiple actors with multiple interests that make up communities, the processes through which these actors interrelate, and, especially, the institutional arrangements that structure their interactions. Within communities, groups and sub-groups negotiate the use, management, and conservation of natural resources. They attempt to implement the agreed-upon rules resulting from their negotiations and try to resolve disputes that arise in the processes of implementation of rules. These three types of local interactions (negotia-

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[12] CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) is a programme designed to assist rural development and conservation. It works with the people who live in these communal lands, supporting the use of wildlife as an important natural resource. It is helping people in these manage resources in ways that are more sustainable and appropriate

[13] *Gestion Des Terriors* a World Bank initiative and a test for the development of methodological approaches to improved natural resources management with the participation of the villagers (target group), the engineering departments evolving/moving in the zone (CMDT-Company Malian for the Development of Textiles and other engineering departments) and the support of a private engineering and design department

tions, implementation of agreed rules, and dispute resolution) are in turn influenced by the existing distribution of power and the structure of incentives (institutions) within a given social group (FOUCAULT 1983) as well as by larger social forces that impinge on local interactions be it in the name of decentralisation of local level participation (SANDERSON 1994; MEYER and TURNER 1994 cited in AGRAWAL and GIBSON 1999). For community based natural resource management approaches to be effective therefore understanding the differentiations among community members, effective decentralisation and genuine local level participation are important (RIBOT 2002).

3.2 Decentralization: Forms, motives and impacts on NRM

Several current development, poverty reduction and natural resource management themes intersect and contribute to the growing interest in enhancing local level participation and the management of natural resources. One of the clearest themes of intersection is decentralization, or "rolling back the boundaries of the state" (RASMUSSEN and MEINZEN-DICK 1995). This applies to both administrative decentralization which attempts to move decision-making power and authority down to the local level, and to financial decentralization which aims to shift responsibility for payment down to local entities, particularly users. Development agencies, non-governmental organizations and governments around the world are therefore promoting the concept of decentralization as an important policy instrument aimed at increasing the participation of local communities in ensuring development in general and in enhancing the management of natural resources (RIBOT 2002). The concept of decentralisation has, however, been surrounded by a cloud of confusion as many have tried to define it.

3.2.1 What is decentralization?

The concept of decentralization has been defined quite variably. As a result, there is apparent lack of consensus regarding the concept and what it actually stands for (CONYERS 1990; RIBOT 2001). RIBOT (2002) defines decentralization as the process where by the central government formally transfers powers to actors and institutions at lower level in a politico-administrative and territorial hierarchy and changes the institutional infrastructure for local resource management and, in some cases, creates an institutional basis for more popular and participatory management and use of natural resources. MANDODO (2000) conceptualizes it as the process by which bundles of property rights, including regulatory and decision-making powers, responsibility for planning and implementation, and administrative capacity, is variously transferred to local agencies such as local governments and/or communities.

The concept of decentralization in this research is defined as the downward transfer of administrative, economic and financial decision making power and authority to accountable and representative authorities and institutions at the local level with meaningful powers that constitute the basic institutional elements from which to expect efficiency, equity in the overall development in general and in environmental and natural resources management in particular (RIBOT 2001). This definition tallies to the concept of rolling back the boundaries of the central state. The role of the central state is limited to one of facilitating development endeavours by issuing effective and efficient institutions i.e. policies

and legislations that aid in monitoring development and natural resource management endeavours. The concept also embodies the establishment of democratic institutions that ensure effective governance and thereby enhance genuine local level participation and empowerment.

3.2.2 Forms of decentralization

The existing body of literature identifies four forms of decentralisation: deconcentration, delegation, privatisation/partnership and devolution (BLAIR 2000; OSMANI 2001; RIBOT 2002). They differ from each other by the degree to which decision making power and authority are transferred from the central government to lower levels of government, institutions and society. The decision making power and authority at the local level increases as one moves along the deconcentration, delegation, privatization and partnership and devolution gradient implying that much decision making power and authority is concentrated at the local level in devolution compared to other forms of decentralization. It is therefore important that one properly understands each as the influence each have on development in general and natural resources management in particular is variable.

Deconcentration is a form of decentralization where decision-making power and responsibility is transferred down to local branches of the central state, such as administrators, or local technical line-ministry agents or departments (OSMANI 2001; RIBOT 2002). In deconcentration, the ultimate decision making power and responsibility is concentrated within the hands of the central government. Institutions or individuals to which power and authority is transferred have only execution power (rule implementation) since it is only part of the decision making power that is transferred down to the lower level. It can therefore be said deconcentration is half decentralization with the central government having the decisive decision making power.

Delegation is the assignment of specific decision-making authority or transfer of managerial responsibility for specifically defined functions to either public corporations or special authorities outside the regular bureaucratic structure (RONDINELLI and NELLIS 1986; KLUGMAN 1994; OSMANI 2001). Delegated institutions, private limited companies or corporations for that matter have very limited power to change decisions made by those who have delegated them. If it is a must that changes are needed in the decisions made, they will have to consult those that have delegated them. In this form of decentralization, there is less power and authority compared to deconcentration.

Privatisation and partnerships refer to the transfer of responsibility of public functions to either private entrepreneurs or voluntary organisations (OSMANI 2001; RIBOT 2002). Privatisation is described as the shifting of responsibility and authority to the private sector and it is often established between the central government and private or voluntary organizations. Partnership is a form of decentralization where the government transfers resources to either private entrepreneurs or voluntary organizations that enter into an agreement or a contract with the government on the basis of an indicative programme. The government therefore makes a close follow up of activities private companies are carrying out and check if they are commensurate to the agreed plans and are in accordance with the terms of contract. In both privatization and partnership, as is the case in decon-

centration and delegation, therefore, the ultimate decision making power lies within the hands of the central government.

Devolution is the transfer of legislative, political, administrative and financial authority to plan, make decisions and manage development in general and manage resources and public functions and services in particular from the central government to local authorities (SAMOFF 1990; VON BRAUN and GROTE 2000). In devolution, power is completely transferred down to the lower level and the role of the central government is limited only to one of facilitation and monitoring. This is a form of decentralization where decision making is highly decentralized. The role of the central government is to make sure that national level law, policies, and strategies are observed and adhered to. The ultimate decision making power, in this form of decentralization, rests with the local institutions.

3.2.3 The motives for and impacts of decentralization: Empirical evidences from Africa

The motives for decentralization are variable indeed. However, the two main motives of decentralization are increasing the efficiency and equity of development in general and natural resource management in particular, and increasing local level participation and democracy (MAWHOOD 1983; ROMEO 1996; CROOK and MANOR 1998). Having these motives in mind, at least 60 countries in the world, and virtually all African countries between the early 1960s and the late 1970s, embarked on decentralization of one or the other form (RIBOT 2002). Such decentralizations across developing countries in general and Africa in particular have shaped/reshaped and are shaping/reshaping the local institutional environment in which rural development and natural resource management takes place, promising to have profound effects on who manages, uses and benefits from nature.

The impact of decentralization on the management of natural resources depends on the form of decentralization being exercised. This is because the exercise of authority and control over the making of rules about the use, management, and conservation of resources; the implementation of the rules that are created; and the resolution of disputes that arise during the interpretation and application of rules varies from one form of decentralization to the other (OSTROM and SCHLAGER 1996; AGRAWAL and RIBOT 1999; AGRAWAL and OSTROM 2001). It is therefore important to look at the various forms of decentralization.

The impacts of decentralization exercises in Africa in general are mixed i.e. some times positive, some times negative and some times neutral. The experience in Zimbabwe (CAMPFIRE) (RIBOT 2002) was positive whereas the experiences in Malawi (NIJENHUIS 2003) and Benin (BIERSCHENK and DE SARDAN 2002) were negative. There are also cases where its impacts were neutral (BIERSCHENK 2003; ELLIS et al. 2003). In cases where they have failed, evidences available indicate that downwardly accountable representative authorities with meaningful powers that constitute the basic institutional element from which to expect the local efficiency, equity and development benefits that decentralization promises have not been materialized (AGRAWAL and RIBOT 1999; MANDODO 2000). Besides, often decentralisation schemes have been carried out without systematically exploring the impact of policies on existing institutional and power relations of the community and local people's values, their access, use and management of natural re-

sources (Ibid). Therefore, power imbalances created in the process have rather been translated in to inequalities of access to natural resources instead of improving the management of natural resources.

Decentralizations in Burkina Faso, Cameroon, Guinea, Malawi, and Niger involved devolving decision making powers to various unaccountable local bodies, threatening local equity and the local environment (RIBOT 2001). In most of the cases, decentralization of control over resources without sufficient environmental management and use guidelines reportedly has led to over exploitation (WALKER 2000). Almost a similar situation prevails in Ethiopia where a hasty decentralization in the absence of clear guidelines and local level capacity has led to uncontrolled exploitation and therefore degradation of forest resources (YONAS 2001). BIERSCHENK and DE SARDAN (2002) and NIJENHUIS (2003) have also indicated the unintended outcomes of decentralisation projects in Benin. They argued that the local politics is characterized by extreme complexity, fluidity and by a myriad of institutions and loci of decision making without clearly organised hierarchical relations of subordination and dependence. In many instances of decentralization, the appropriate mix of powers and functions of different local actors in environmental matters is at best poorly defined (ONYACH-OLAA and PORTER 1999). Further, there is little empirical data from which to derive the best local institutional arrangement (property right systems) to show which factors link these institutional reforms to decentralization and improved social and ecological outcomes (LITTLE 1994).

Several attempts have been made to explain the failures of many decentralization exercises in Africa[14] (MAWHOOD 1983). Some scholars have argued that the source of failure is traceable to the inherent weaknesses of local bureaucracies; others trace the failure to the absence of marginal capacities in the central government. There are some, although few, scholars who blame the failure on the structure of politics in a developing country and the political economy of underdevelopment (MAWHOOD 1983). The consensus among most of the studies as regards the reasons for the failure of most decentralisations in Africa include: too much emphasis on administrative (deconcentration) rather than political (devolution) decentralization; considerable hesitation in the implementation, and in most cases, lack of genuine decentralization of decision-making powers and tax and personnel resource; increased workload of central officials as they are called upon to manage more responsibilities directly and indirectly throughout the country (RONDINELLI and NELLIS 1986; MAWHOOD 1983).

For decentralization to be successful, a number of prerequisites including formulation of clear enabling legal and policy frameworks, clear allocation of roles, responsibilities, resources and accountability should be fulfilled; and mechanisms for conflict resolution need to be in place. Effective decentralization with the motive to enhance NRM is very much connected to clearly defined property right systems as its outcomes are linked to secure resource tenure, equitable access to resources; control over decision making, which

[14] An in-depth assessment of the experience of decentralization in some selected countries of Africa could be found in DELE OLOWU'S "Local Organizations and Development: The African Experience" In: MCGINNIS, M. (ed.) 1999. Polycentric Governance and Development. Readings from the Workshop in Political Theory and Policy Analysis. Ann Arbor: University of Michigan Press pp 209-240. The article was originally published as "Local Institutes and Development: The African Experience", *Canadian Journal of African Studies* 23 (2): 201-31

all are characteristics features of a well defined property right systems. Besides, effective decentralization is sensitive to cultural traditions and local knowledge and, where appropriate, recognizes ancestral and therefore customary rights of local communities, which ones again define property rights in the traditional way (RIBOT 2001). Therefore governments involved or are aiming to involve in decentralisation need to take in to account prevailing local level circumstances and institutions. Failure to do so will be a major set back to the overall effort and will contribute significantly to the inefficiency of development efforts in general and environmental and natural resources management endeavours in particular.

3.3 Property right systems: Types, changes and impacts

The importance of properly defined property right systems in enhancing natural resources management has attracted the attention of legal, economic and social scholars. However, there is a long standing debate and controversy over the meaning, the sequence of development and the superiority of one property right system over the other and the impact of property right system on natural resources management (OSTROM 2000; OSTROM et al. 1994). It is therefore important that we understand what property right systems are; the different forms; their emergence and change over time as well as the impact of the various forms on natural resource management.

3.3.1 What are property right systems?

The concept of property right systems has no single or universally accepted definition. Various scholarly communities e.g., lawyers, economists, anthropologists, sociologists and political scientists have tried to define the concept but their definitions varied significantly. For example, Liberal (1996:31) defines property right systems as "all actors' rights, which are recognized and enforced by other members of society to use and control valuable resources". FEDER and FEENY (1991) on the other hand define the concept as bundles of characteristics, which comprise exclusivity, inheritability, transferability, and enforcement mechanisms. HANNA et al. (1996) conceptualise property rights as institutions that ensure the access to and control over property or asset and as systems that denote the process through which people are connected to the natural environment. They are bundles or rights that include the right to access, exclude, utilize (withdraw), own, manage and transfer property.

All the above definitions clearly indicate that property right systems are humanly devised constraints and sets of mutually recognized claims and decision-making powers (institutions) over the resource systems (GIBSON et al. 2000). They determine how and by whom a resource is owned, accessed and utilized, whether that resource is owned by a single individual a group of people or the government. As humanly devised arrangements, it is the society that approves the uses selected by the holder of the property right with governmental administered force and with social ostracism. The fundamental purpose of properly defined property right systems, and their fundamental accomplishment, is therefore to eliminate destructive competition for control of economic resources and to enhance their sustainable management. Well-defined and well-protected property right systems replace

competition by violence with competition by peaceful means and therefore ensure the sustainable management of natural resources (Ibid).

3.3.2 Types of property right systems

The literature on natural resources management identifies four types of property right systems although the divisions are arbitrary and since in practice resources can be held in overlapping, and some times conflicting combinations of these regimes (FEENY 1988; BERKES et al. 1989; BROMLEY and CERNEA 1989; OSTROM and SCHLAGER 1996). They include open access; private property system, common (group) property system; and state (public) property system. While more complete property rights are preferable to less complete rights, any system of property rights entails considerable complexity and many issues that are difficult to resolve.

The open access property right system depicts the absence of property rights (BROMLEY 1992). Under open access, no one has responsibility for resource management i.e. ownership, and there is little to effectively prevent "free riders" from exploiting the resource without contributing to its maintenance (though some individuals or "privileged groups" may provide maintenance services, if the benefits are great enough). This property right system works well only when there is little need to manage a resource at all: when demand is too low to make the effort worthwhile and most public goods fall under this category (GIBSON et al. 2000).

Private property right is defined as a system where rights to own, exclude and to regulate resource use and to transfer use right are vested on the individual. The concept of "individuals" is to do with the clarity, security, and exclusivity of the right, and does not actually include any stipulation of a single individual. Because, at times a limited number of individuals could come together and form groups such as private limited companies and corporations, which are but considered as private property (MCKEAN 1992). The extent and degree of private property rights fundamentally affect the ways people compete for control of resources. With more complete private property rights, market exchange values become more influential and the market values of property reflect the preferences and demands of the rest of society. This creates an interesting paradox: although property is called "private," private decisions are based on public, or social, evaluation. This property right system is believed to be the appropriate institution for private goods since they exhibit subtractability and excludability characteristics (GIBSON et al. 2000).

Common property right system is a system where ownership, access, control and management responsibilities are limited to a specific group of users who hold their rights in common (BROMLEY and CERNEA 1989; BROMLEY et al. 1992). In such a property right system, individual members can not simply transfer their right of access or benefit sharing to others with out the approval of the other members (co-owners) in the group. This is because under such property right systems, decisions are made jointly and every member of the group is entitled to bear the cost of maintaining the property as well as claims equal shares from the benefit accruing. Rules and regulations that guide the management of such resources are established jointly by the group and members are expected to adhere to them. MCKEAN (1992) argues that resource systems that are common-pool are not open

Property rights systems in natural resources management emerge in response to competing needs and therefore conflicting claims over resource use (property) and resource systems (FEENY 1988). For whatever reason they may emerge, they do change over time. They change by virtue of their roles in guiding and constraining resource-use and human interaction. They do change for different reasons, and people tend to develop certain perceptions and be predisposed to react to these changes. The feedback process by which human beings perceive and react to changes in property rights systems is a major factor determining the path of property right change (NORTH 1990).

One of the theories explaining the change in property right systems is the evolutionary theory of land rights. The evolutionary theory has the view that "ubiquitous competition would weed out inferior institutions and would be rewarded by survival of those that better solve human problems" (NORTH 1990:7). This theory conveys the privatisation of land as inevitable development scenario that results from the expected rise in land values (PLATTEAU 1996). But there is no certain link between individual title and higher productivity as a growing number of case studies show otherwise (LANE 1998). If competition is ever-present and if it unconditionally leads to the demise of inefficient institutions, then why do inefficient institutions persist? Inefficient but persistent property rights and institutions were first considered as anomalies, but afterwards attributed to the prevalence of transaction costs (BARDHAN 1988).

PLATEAU (1996) himself questioned the relevance of the evolutionary theory to Sub-Saharan Africa and examined if individualization of land rights is advisable in this region. He concluded that most of the benefits attributed to land privatisation are grossly overestimated and recommends the seeking for "more appropriate solutions that rely on existing informal institutions at community level". BENJAMINSEN and LUND (2003) also criticize the linear model of evolutionary theory and indicate that the path of property right system change is contingent on available institutional opportunities. Without totally dismissing the theory about the evolution of land rights towards formal titles, they warned that a formalization process that overlooks the dynamic nature of rural life and people's identities may aggravate conflicts. This is because a change in property right systems certainly has an impact on the management of natural resources.

3.3.4 The impacts of changes in property right systems on NRM: Empirical evidences

For whatever reason they might change, the changes in property rights systems seriously affect the nature and behaviour of natural resources management. The impacts are some times positive and some times negative. SNEATH (1998) shows great differences in grassland degradation under traditional, self-organized group property regime (communal ownership) versus central government management (public ownership). According to his findings, grasslands owned and managed by the traditional pastoralists in Mongolia were better managed than the state owned agricultural cooperative grasslands in China. More recently, the Chinese solution to the problem was privatising the grassland for herding households. However, evidences available indicate that the rate of grassland degradation was still severe as compared to the one in Mongolia. Hence socialism and privatisation are both associated with more degradation than resulted from traditional group property regime (SNEATH 2000).

Similarly, the impacts of common property systems are mixed as in some they proved positive e.g. the case of forest resources in Nepal (ARNOLD and CAMPBELL 1986; BROMLEY and CHAPAGAIN 1984) and in others they proved negative, although in such cases the failures are attributed to government failure (ANDERSON 1987). This has emanated particularly from the fact that communities are considered to be similar in the practice of the property right system. Attention to social difference and its implications have been remarkably absent from the recent wave of 'community' concern in environmental policy debates. Absent, too, has been attention to power as a pervasive feature of social relations, and to the ways that institutions, which might appear to be acting for a collective good, actually serve to shape and reproduce relations of unequal power and authority, marginalizing the concerns, for instance, of particular groups of women or poorer people (KABEER and SUBRAHMANIAN 1996; GOETZ 1996).

The impact of changes in property right systems on natural resources management are reflections of the wider economic and social changes in the nature and form of communities and their resource use practices. The dynamics and irregularities in property right systems changes yet remain mostly unexplained. No single type of property right system works efficiently, fairly and sustainably in relation to all common pool resources. This is not to say that none of the property right systems work. But one of the key questions facing a shift in property right systems at present is: under what conditions would each of the different property tight systems work? This shows the need to identify and properly describe the practical situation of the resource (resource attributes) and the nature and attributes of participants and the institutions that mediate the participant-participant and resource system-participant interactions before recommending this or the other property right system. Besides, it is important to recognize the principles associated with robust property right systems (attributes of the institution) that have successfully governed the management of natural resources (OSTROM 1990). Much more information must thus be known about the specific values of large number of parameters before judgements can be made concerning the efficiency and therefore superiority of a particular property rights system over others.

3.4 Institutional analysis and natural resources management

NRM is a complex process involving a number of actors, networks and institutions at various levels, interacting with and influencing each other in various different ways. It is the plurality and frequent interactions between and among the actors, networks and institutions at the various levels that leads either to conflict over natural resources use, or to competing bases for claims (MEARNS 1996, SWALLOW et al. 1997). Institutions and the information on them facilitate the interactions and improve the networks and linkages among individuals and collective decision making as well as coordination and cooperation between different actors. In addition to studying biophysical, demographic and economic impacts on forest resources management, it is also important to understand underlying causes and consequences of institutional factors. In some locations and areas, people deplete forests through unregulated extraction, while in others they develop institutions to sustainably manage them (POTEETE and OSTROM 2002).

Learning about institutional development, forms and change as well as their impact on forest resources management is critical in the development of policies and strategies that can enhance the probability of the sustainability of the management of forests and other

natural resources. Scientific understandings of change in forest systems, as well as the effectiveness of efforts to promote sustainable forest use, depend upon well-grounded theories about the development, evolution, interaction and consequences of institutions. Institutional analysis has therefore become important in explaining the problems associated with natural resources management. However, there have always been controversies as regards what institutions are their various forms, their evolution, the way they differ from and are similar with organizations, and the roles they play in enhancing the management of natural resources (Ibid).

3.4.1 What are institutions?

The concept of institutions remains ambiguous with profound lack of clarity in the contemporary development and natural resource management discourse. It seems there is more agreement to what they are not than to what they are. Often, two different, although very much related, meanings are given to the term institutions in discussions of development in general and natural resources management in particular. The first is the notion of institutions when they are used to denote "the rule of the games" and the second is the notion of institutions when they are used to denote "organizations" (VAN ARKAIDE 1990).

3.4.1.1 Institutions when used to denote the "rules of the game"

Many have tried to define institutions when used in "the rules of the game" sense. UPHOFF (1986) defines institutions as "complexes of norms and behaviours that persist over time by serving collectively valued purposes". DE JANVERY et al. (1993) on the other hand define institutions as complexes of norms, rules and behaviours that serve a collective purpose. NORTH (1995) conceptualizes institutions as "the rules of the game of a society" while OSTROM (2001) described institutions as "prescriptions that humans use to organize all forms of repetitive and structured interactions or situations including those within families, neighbourhoods, markets, firms, sports leagues, churches, private associations and governments at all levels". GARDNER et al. (1997) define institutions as humanly devised rules that mediate the interaction between human beings and the environment and stipulate what actions are required, permitted, or forbidden in particular situations. SCHOTTER (1981) on the other hand defined institutions as regularized patters of behaviour that emerge from underlying structures of sets of rules in use.

In this research, the concept of institutions, when used in the "rule of the game" sense is defined as humanly devised policies, rules, regulations, strategies, programs, norms, networks, behaviours and patterns that shape or define the human-human and human-environment interaction. They are generally understood as rules and norms that stipulate what actions are required, permitted, or forbidden in particular situations. They could be formal, legally recognized, or written such as environmental policies or informal, legally unrecognized and not written like traditional forest reinsure management practices. They include rules developed by both the government and local people and that regulate the behaviours of coffee forest users and that regulate the interaction between them on the one hand and between themselves and the environment on the other. Representing restrictions and options at the same time, they provide incentives to and define the decision space of coffee forest users and reduce uncertainty about the behaviour of other actors. The institutions and the information on them thus facilitate individual and collective decision mak-

ing as well as coordination and cooperation between different actors (RUTTAN and HAYAMI 1984; BATES 1995; IMMERGUT 1998; POMEROY 1998). However, the outcomes of the coffee forests-participants interaction are very much dependent on the effectiveness of the institutions that mediate the interactions. Effective and efficient institutions reflect the collective choice of participants and they therefore ensure sustainable management of the natural resource under consideration.

3.4.1.2 Institutions when used to denote "organizations"

Institutions, when used in their "organisations" senses refer to structured entities of recognized and accepted roles. These structured entities of recognized and accepted roles can be formal as in the case of government ministries, commissions, agencies, banks, schools, cooperatives, or informal as in the case of community-based organizations. Formal organizations refer to fixed set of written rules of intra-organization procedures and structures. They usually have written rules that ostensibly leave little discretion for interpretation. Informal organizations on the contrary are the sum of relationships and communication links among members, which are not often written (POWELL and DIMAGGIO 1999).

Organizations establish common purpose for the people that make them up and their roles in achieving that purpose. They exist only because there is a set of 'working rules' or underlying institutions that define and give meaning to those organisations (IMMERGUT 1998, UPHOFF 1986). They are the 'players' and 'structures', or "groups of individuals bound together by some common purpose to achieve objectives" (NORTH 1990). Organizations and institutions may therefore overlap i.e. a given organization may or may not be an institution, and a given institution may or may not be an organization. For example, a local bank branch is an organization but not an institution, while money is an institution but not an organization (POWELL and DIMAGGIO 1999). Organizational elements are linked by institutions often explained as explicit purpose, mission, goals, policies, rules and regulations, work ethics and procedures that guide how, and to what end, activities are to be fitted together (Ibid).

3.4.2 Institutional analysis: What is it and why do we need it?

Institutional analysis is defined as "the process of analyzing the design and performance of an institutional arrangement" (IMPERIAL 1999). It is a tool that helps one to propose "a more general explanatory theory" to predict and explain behaviour (OSTROM 1986). With wide application to environmental policy, environmental and natural resources management and conflict resolution, institutional analysis has emerged as a field that holds great promise but remains far underdeveloped (INGRAM et al. 1984; OSTROM 1986). This emanates from the problem associated with the understanding of why institutions are crafted and sustained, and what consequences are generated in diverse settings (OSTROM 2005).

Often, institutional analysis is carried out for two basic reasons. The first is to understand, from an insider's perspective, how local resources are currently managed: what institutions are operating at the local level to manage resources. The second is to determine the best way to manage local resources based on a sound knowledge of current local management regimes (LEACH et al. 1999; MOORE 2005). Questions that are often addressed in dealing with institutional analysis include how effective/ineffective are existing institutions for resource management? Should existing institutions be enlisted in their current

forms, or should new forms be created that are patterned on local ones? At what levels should institutional reforms be made to ensure sustainable development and natural resources management?

Institutional analysis contrasts with conventional approaches to natural resource management where institutions generally either do not figure (for instance, in Malthusian analysis which links people directly with resource availability), or are equated with the type of 'community organization' with which such approaches have typically found it convenient to work with (e.g. the village management committee, the watershed development committee, and so on) (LEACH et al. 1996; OSTROM 1998). However, households, extended families, communities, communication and exchange networks, government, non-governmental and joint-ventures (mixed private-government organizations) are all subjects of institutional analysis, with the incentives and disincentives coming from particular organizational configurations as well as obligations and entitlements in the form of informal rules and norms, formal laws, contracts and property rights. Representing restrictions and options at the same time, institutions provide incentives to and define the decision space of actors and reduce uncertainty about the behaviour of other actors. Institutions and the information on them thus facilitate individual and collective decision making as well as coordination and cooperation between different actors (UPHOFF 1998).

3.4.3 The nature and importance of local-level institutions

Institutions operate at a range of levels i.e. international, regional, national and local. Local institutions are those, which operate somewhere in between, above the household and below the national levels (UPHOFF 1986). They facilitate decentralization and enhance natural resource management by providing a local entity for decision-making and resource mobilization. Community based natural resource management schemes and privatization which is aimed at improving financial performance and cost recovery also lead to dealing with local institutions because, in the majority of situations in developing countries, it is administratively unfeasible for each individual to operate independently in NRM. Besides, the themes of participation and democratisation, mentioned above, stress the involvement of citizens affected by programs, for social goals of empowering local people as well as goals of improving program performance. For these, local level institutions offer an organized forum for communication and local input.

Local institutions are important in any public regulations of relevance, such as property rights, delegation of decision-making competence to the local level (decentralization), rights of reorganization, environmental and natural resource regulation (OAKERSON 1992). Their functioning becomes easier when the arrangements in the external environment are supporting the process. UPHOFF (1991) points the importance of both horizontal and vertical linkages. In other words, existing institutions seem to be better off if they are a part of a larger institutional system than if they are performing in isolation. Similarly OSTROM (1990) finds the use of "nested enterprises" constituted of a number of institutions on different levels to be a design principle for stable natural resource management in more complex systems. Thus, local level institutions are of paramount importance in enhancing decentralization and local level participation and in ensuring sustainable natural resource management.

3.5 The conceptual framework: The analytical tool

The conduct of institutional analysis, like any other scientific inquiry, requires the use of a conceptual framework or an analytical tool. Conceptual frameworks organize diagnostic and prescriptive inquiry by providing the most general set of variables that should be used to analyze all types of settings relevant for the framework (OSTROM 2005). There are several promising frameworks[15] that facilitate the conduct of institutional analysis viz. the Actor-Centred Institutionalism (ACI) framework (MAYNTZ and SCHARPF 1995), the Legal-Institutional Analysis Model (LIAM) (LAMB 1980; WILDS 1990), the Advocacy Coalition Framework (ACF) (SABATIER and JENKINS-SMITH 1993), and the Institutional Analysis and Development (IAD) framework (KISER and OSTROM 1982; OSTROM 1986; OAKERSON 1992; OSTROM et al. 1994).

This research employed the Institutional Analysis and Development (IAD) framework (KISER and OSTROM 1982; OSTROM 1986) mainly because of two reasons: its use in wider fields of study and its compatibility with various theories. The framework has been used to facilitate institutional analysis in various fields viz. the study of land boards in Botswana (WYNNE 1986), the evolution of coffee cooperatives in the Cameroon (WALKER 1998), the performance of housing condominium in Korea (CHOE 1992); the regulation of the public phone industry in the United States (SCHAAF 1989); the evolution of rules and their performance related to ground water basins the Southern California State of the USA (BLOMQUIST 1992); the effect of incentives on donor and recipient behaviour related to international aid (OSTROM et al. 2002); the effect of rules on the outcomes of common-pool resource settings throughout the world (OAKERSON 1992; OSTROM 1990; OSTROM et al 1994). The framework is compatible with a large set of theories such as economic theory, game theory, transaction cost theory, theory of collective action, social choice theory, decentralization theory, conventional theory and theories of public goods and common pool resources (OSTROM 2005).

The IAD framework, which was first developed by KISER and OSTROM (1982) and later further developed by OSTROM (1986, 1994, 1999), is a multitier conceptual map; the simplest schematic representation of an action arena that can be unpacked in a step wise manner (OSTROM 2005). It is a meta-theoretical toolbox created to facilitate organizing diagnostic perspectives and analytical capabilities in order to give statements about performance of institutions and most important structural variables of institutional arrangements (Ibid). The action arena, the space where participants interact with each other and with the state of physical world, the interactions being affected by exogenous variables (institutions) and producing outcomes (positive/negative) that feedback on participants,

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[15] The Actor-Centred Institutionalism (ACI) is a framework that is more helpful in the analysis of the identification of the problem-solving and goal attainment capacity inherent in societal institutions. It is most frequently used in studying policy formulation process through the interaction of key actors. The Legal-Institutional Analysis Model (LIAM) is a computerized model that is used to determine the likely behaviour of each organization in a conflict over natural resources management. It is used extensively in assessing natural resources management strategies and natural resource conflicts (LAMB 1987). The Advocacy Coalition Framework (ACF) is used to analyze the process through which actors manipulate the rules and regulations in order to achieve their goals over time. All the frameworks are compatible with theories of decentralization, community and participation, game theory, rational choice theory, collective action theory and conventional theory.

the state of physical world and perhaps on the exogenous variables themselves, forms the central part of the framework (KISER and OSTROM 1982).

The structure, function and outcomes of any action arena are influenced by three clusters of variables: (1) the rules (institutions) that influence the interaction among participants on the one hand and between participants and their environment on the other; (2) the state of the physical world (resource systems) and the attributes it exhibits, and (3) the stakeholders/actors involved in undertaking various actions in the action arena (resource utilization strategies) and the attributes they exhibit (KISER and OSTROM 1982; OSTROM 1994; OSTROM 2005; POTEET and OSTROM 2004). The degree of importance institutional analysts give to each of these clusters of variables is different: some give particular attention to resource systems and their attributes while others pay attention to participants. Still some consider institutions as the most important determinant of the action arena. However, it is the interaction among the three clusters of variables that determines the structure, function and outcome of the action arena and this research also gives due attention to all of the variables i.e. resource systems, participants and institutions, and the interactions among them.

Rules (institutions) form the central part of the action arena in general and institutional analysis in particular. They are the result of implicit or explicit efforts to achieve order and predictability among humans by creating classes of persons (positions) who are then required, permitted or forbidden to take actions in relation to required, permitted, or forbidden states of the world (CRAWFORD and OSTROM 1995; OSTROM 2005). They are used to denote four different but often interrelated and very much connected concepts viz. regulations, instructions, precepts, and principles (OSTROM 2005). When rules are used to denote regulations, they refer to something "laid down by an authority" viz. announced, put in to effect, enforced, disobeyed, broken, revoked, or reinstated e.g. policies and legislations (CRAWFORD and OSTROM 1995). When rules are used in their instruction sense, they denote "strategies" that are laid out to solve specific problems, and when they are used in their percept sense, they refer to a maxim for prudential or moral behaviour (norms). In their sense of principle sense, they refer to physical laws e.g. the earthy moves around the sun (OSTROM 2005).

Resource systems are the physical states of the world or resource systems upon which participants act i.e. utilize, conserve, develop or manage such as forests, lakes, grazing field. A number of attributes characterize the resource systems and the attributes are found to be important in influencing the structure and function of the action area and its outcome. The attributes include excludability, subtractability; resource flow (mobility); size; natural boundedness; the presence of storage in the system; the physical constraints on information sharing, and the acquisition of common knowledge (POTEETE and OSTROM 2002; OSTROM et al. 1994). The understanding of the nature of each of these attributes and the interaction among them is vital in the conduct of institutional analysis and in ensuring the sustained management of natural resources.

Excludability is one of the attributes of the resource systems and it refers to the ease with which owners of a resource system (could be private, communal, or public) exclude others from utilizing the resource (withdrawing resource units) where as subtractability, another important attribute of resource systems, refers to rivalry i.e. the degree to which a unit of resource system utilized by an individual or group is unavailable to others. Re-

source systems that are highly excludable (less costly to exclude) and highly subtractable are often categorized as private goods where as resources that exhibit low excludability and low subtractability are often categorized as pure public goods. Common pool resources are resources with low excludability but high rate of subtractability (OSTROM 2000). Putting resources that exhibit the attributes of common pool goods under private or pubic ownership (property system) or the vice versa often leads to mismanagement and hence degradation. It is therefore of paramount importance that the institutional analysts consider the attributes (excludability and subtractability) the resource systems are portraying while defining property rights.

Size is one of the attributes of resource systems and it refers to unit or units of a resource system (e.g. area of forest in hectare, the size of an irrigation dam) whereas storage refers to the stock available in the system (e.g. the density of trees in a forested area, the amount of water (cubit meter) in a dam). Natural boundedness refers to the degree to which it is easy to demarcate the resource system where as constraint on information sharing and the acquisition of common knowledge refer to the ease at which one can generate sufficient information and knowledge regarding the resource system (KISER and OSTROM 1982; OSTROM 2005). Resource systems with small size, less mobility, naturally bounded and relatively good storage systems make the resources more suitable to local management. He also states that predictability of resources ability has an impact on the ability of users to allocate resources and carry out activities that would expand supply (AGRAWAL 2002).

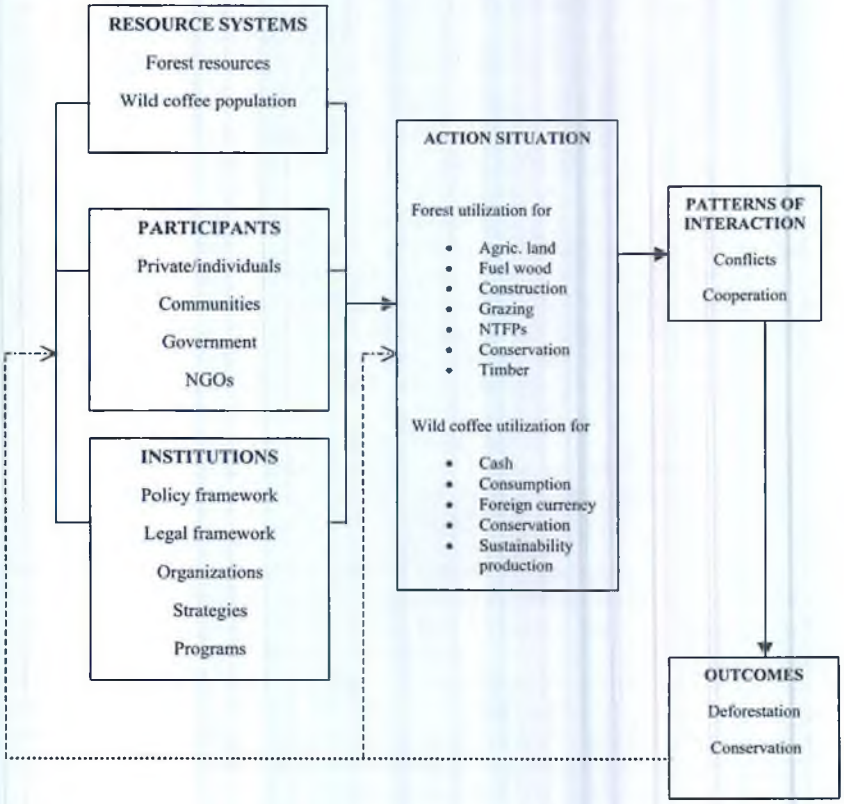
The third set of variables that affects the structure of an action arena relates to participants and their attributes. Participants are the actors/stakeholders that are engaged in the management (conservation, protection, utilization) of the resource systems. Their number, status as individuals or groups, and their individual attributes are important in affecting the structure and outcome of the action arena. The larger the number of participants, the more complicated the interaction among themselves and with the physical state of the world and the more difficult the design and implementation of institutions. Participants can be individuals or "composite" depending on the status they have in any given action situation. Under specific conditions, a group of individuals may share key characteristics and their aggregate behaviours can be predictable from the knowledge acquired about a sample of the individuals. In such a situation, a group of individuals can be considered as one. When a group of individuals are considered as one, they are called "composite" participants (OSTROM 2005). The presence of "composite" participants makes the interaction relatively less complicated as opposed to large number of individual participants and hence the design and implementation of rules.

Participants' attributes include their dependence on the resource system; their shared understanding of the physical condition of the resource system; their perception of the impact of their own actions on the resource system; the degree of homogeneity among users; the trust among themselves; participants' autonomy to devise institutions to govern the use of resource system; and their prior organizational experience from cooperating on other issues of their common concern (POTEETE and OSTROM 2004). The more dependent participants are on the resource system, the more homogenous communities are in terms of their socio-economic attributes, the more the level of trust among users and the more similar are their shared understandings, the more the likelihood that they will organize their actions, devise institutions and enhance the management of resources (OSTROM

2005; OLSON 1965; HARDIN 1968). Contestations have, however, emerged regarding group size, and homogeneity (shared interests and norms) (AGRAWAL and GIBSON 1999, 2001). The assumption that small groups and homogeneity enhance the efficiency of collective action has not been always true. AGRAWAL and GIBSON (2001) and POTEETE and OSTROM (2004) have also clearly indicated the fact that the relationship between group size and homogeneity is not always linear.

When the IAD framework is applied to the structure of this research (when it is operationalized), it is defines as the decisions and actions participants (private entrepreneurs, communities, governments or non-governmental organizations) make to manage the resource systems (coffee forests) the decisions and actions of participants being influenced by institutions i.e. policies, legislations, strategies, organizations, customary practices and local informal organizations. The patterns of interaction among participants and between them and the environment may lead either to conflict and cooperation and the ultimate outcome to either deforestation or conservation.

Figure 3.1: The IDA Framework adapted from OSTROIM, 2005.



4 The action arena: The local level playing field

The action arena is the space in which resource users interact with each other and with the resource system. The interactions among users and between users and the resource systems is influenced by both internal (e.g. resource endowment and decision making practices) and external (institutions) factors. It is this interaction that determines the structure, functioning and outcome of the action arena. In the framework of this research, the action arena is defined as the space in which coffee forest users interact with each other and with coffee forests in the process of managing them (conservation, utilization, and development). The interactions are influenced by internal factors such as resource endowment of users and their access to resources and external factors such as institutions (policies, legislations, strategies, organizations (formal and community-based informal), programs and projects). The interactions also affect the structure and functioning of the action arena and yield in outcomes that impact on resource users themselves (e.g. shortage of fuel wood), on coffee forests (degradation/conservation) or on the institutions (rule making/breaking). This study addresses all the three components of the action arena i.e. resource systems and their attributes, participants and their attributes and rules (institutions) that guide the participant-participant and participant-coffee forests interactions. However, as this is a local level study the action arena considered and the interactions assessed are those that take place at the local level; the local level being defined as the politico-administrative structure including and below the *Woreda* Administration (WA) (for details see chapter 5).

4.1 Resource systems: The coffee forests

In any given action arena, what actions are physically possible, what outcomes corresponding to the actions can be produced, how actions are linked to outcomes, and what is contained in the participants' information sets that allows them to take that action are all affected by the resource system and its attributes (KISER and OSTROM 1982). Understanding the nature of the resource systems and their attributes is thus crucial in the conduct of institutional analysis. The resource systems investigated in this research were coffee forests, which are defined as Afromontane rainforests with occurrences of wild coffee (*Coffea arabica* L.) populations. For ease of understanding, they are referred to as Forest Coffee Units (FCUs) or coffee forests henceforth.

Geba-Dogi and *Berhan-Kontir* are the two coffee forests (FCUs) considered as the resource system. *Geba-Dogi* forms part of the *Yayu* and *Berhan-Kontir* the *Gura-Ferda* National Forest Priority Areas (NFPAs), respectively. The NFPAs are among the 58 NFPAs designated by the former government for conservation purposes (KIDANE 2002; TADESSE et al. 2000). The FCUs are demarcations within NFPAs and they provide participants i.e. both local communities, governments (both local and federal) as well as non-governmental organizations and private entrepreneurs with both direct and indirect goods and services. The direct goods and services the resource systems generate include source of agricultural land, forest products particularly timber, fuel, and construction material, and non timber forest products particularly spices, honey, coffee, grass, medicinal plants, and fodder. The indirect goods and services include reducing soil loss, climate regulation, carbon sequestration, and biodiversity refuge as well as other environmental services.

The coffee forests, in addition to hosting diverse communities of plants and animals, are the natural habitats of the wild Arabica coffee population and hence the centre of origin and diversification (DEMEL 1999). The wild coffee population occurs in both the forest and semi-forest coffee production systems and in very few occasions in garden coffee systems as well. However, the proportion (number of coffee trees) is often high in the former than in the later mainly because of high intensity of management (human intervention) in the former (DEMEL et al. 1998). Just like coffee forests, the wild coffee populations have also direct and indirect values. The direct values are the utilities coffee dependent actors (e.g. communities, government etc.) derive from the direct consumption of the beans and the cash money they earn from the sale of the beans, as well as the foreign exchange the government earns through their export. The indirect values are the intrinsic breeding values i.e. high yielding and disease resistance traits embedded in the wild genetic materials and their contribution to the floristic diversity of the forest (PAULOS and DEMEL 1999).

4.2 Attributes of coffee forests

A variety of coffee forests attributes affect the structure, function and outcome of the action arena at the local level. However, not all of these variables have been fully researched as many of them are yet to be incorporated in to a body of fully developed and coherent theory in the conduct of institutional analysis (OSTROM 2005). The following section describes the most important attributes of coffee forests that are important in the design and implementation of institutions that influence their conservation and use (management).

4.2.1 Excludability

Excludability refers to the ease with which specific group of users or individuals can be prevented by those who own the resource (resource providers) from the utilization of the resource when the resource is already produced (OAKERSON 1986; UPHOFF 1986; OSTROM 2005). The practice of exclusion entails a cost that the owner is bound to bear and it is called cost of exclusion (OSTROM 1990). When it is costly to exclude users from the benefits of a good or service that has already been produced or when resources exhibit low excludability, it is likely that the resource would suffer from a potential free-rider problem (OLSON 1965). The free-riding problem can in turn lead to overexploitation and underinvestment in the maintenance of the resource system (RASMUSSEN and MEINZEN-DICK 1995). It (high cost of exclusion) eventually leads to over-exploitation and ultimately to resource degradation. Resources that exhibit the characteristic feature (attribute) of low excludability are often categorised as public or common pool goods/resources (THOMPSON 1997).

The coffee forests (*Geba-Dogi* and *Berhan-Kontir*) have been officially "owned" and "managed" by the government since long time ago and are hence public properties. The government, as the owner of the coffee forests, has thus been responsible for the design and implementation of institutions (policies, legislations, organizations, strategies and programs) that are aimed at ensuring their sustainable management. However, the evidence derived from this study as well as empirical evidence available (EFAP 1994; EPA 1997) show that this is not the case. The institutions designed and implemented by the government could not exclude coffee forest users effectively and thereby enhance their

management. Rather, coffee forests continued to have been utilized in much uncontrolled manner by both local communities, immigrants, private entrepreneurs and even by the states. The absence of management plans (EFAP 1994) and the sheer fact that coffee forests, just like other natural forests, continued to disappear in much faster rate in the country at large and in the study area (southwest) in particular is a rather clear evidence of the ineffectiveness of government initiated institutional measures to prevent the resources from rampant exploitation. Without effective institutions that ensure effective exclusion, public goods, like coffee forests in this case, will not be produced in amounts sufficient to meet demand. They would instead be exposed to the "free rider" problem and their unregulated utilization eventually results in severe degradation (THOMPSON 1997).

When resource systems that exhibit the attributes of low excludability (high cost of exclusion) are owned and managed publicly (public property right system), like the coffee forests in our case, designing institutional mechanisms that honestly reflect participants' felt needs and particularly local communities' preferences and their willingness to pay for their maintenance becomes complex and difficult, if not impossible (OSTROM 2005). It is also difficult to translate individual preferences into collective choices that adequately reflect individual views and to ensure sustainable resource management in such a situation (ANDERIES et al. 2004). This seems to be what has been happening to the coffee forests under investigation. In fact, the government, to some extent in the past and increasingly today, has issued a number of policies, legislations and strategies. However, they were not effective in excluding users from uncontrolled utilization and in preventing the resources from rampant exploitation and therefore in ensuring the sustained management of the resource systems.

Perhaps, too many "paper parks" may have been created in the form of institutional measures (policies, legislations, strategies and programs). Nonetheless, most of them were disabled by "illegal" harvesters at the local level since they did not incorporate their felt needs. The process ultimately led to the "free-rider" problem and underinvestment in the maintenance of coffee forests. This, accompanied by the joint consumption nature of the coffee forests (public) as opposed to separable consumption (see subtractability below) and the attribute they exhibited (low excludability) has acted as disincentive for coffee forest dependent communities to produce, manage and conserve the resources; the process eventually leading to overexploitation and ultimately to degradation.

Given the current scenario (the attributes the coffee forests exhibited, the property right systems and the situation they are subjected to i.e. degradation), one may argue that the solution to the prevailing problem (coffee forests degradation) is a shift in property right system i.e. either privatization (private property right systems) or communal ownership (communal property right system). However, it should be noted from the outset that a shift in property right system alone may not always and necessarily translate to effective management and to sustained provision of the coffee forests at the local level. There are evidences where such a shift in property right system did not necessarily lead to effective exclusion and therefore sustainable management of natural resources (BALAND and PLATTEAU 1994). This is because, such a shift is dependent not only on the low excludability of the coffee forests but also on other attributes (see below) as well, the nature of relationship among them, their generality or limitations, and the existence of necessary or sufficient conditions for fostering collective action as well as the attributes of participants

and the nature and type of institutions (AGRAWAL and OSTROM 2001). It is therefore important that we give due attention to and analyze other attributes of coffee forests and the attributes of resource users as well as the strengths and weaknesses of the institutions that guide their utilization before suggesting this or the other type of property right system.

4.2.2 Subtractability

Subtractability refers to the degree to which the use of resource units by one individual or a group of individuals reduces the amount available to others when the resource is already produced (OSTROM et al. 1994; OSTROM 2005). When the use of resource units from a resource system by one individual or a group subtracts from what is available to others and when the flow leads to scarcity relative to the demand (less production of the resource), users will be tempted to try to obtain as much as they can of the flow for fear that it will not be available later (OSTROM 2005). This trend, if not mediated by effective and efficient institutions (policies, laws, strategies and programs) will lead to mismanagement and therefore to degradation. Resource systems that exhibit such characteristic feature (high degree of subtractability) are often considered as common-pool resources (MCKEAN and OSTROM 1995).

The coffee forests under consideration (*Geba-Dogi* and *Berhan-Kontir*) are such resources the increased utilization/consumption of resource units (forest and non-timber forest products) either by local communities, private entrepreneurs, the government and/or non-governmental organizations for various purposes leaves decreasing amount available to harvest for others. The FCUs, as has been discussed extensively before, have continuously been subjected to other forms of use i.e. conversion into agricultural land, forest utilization for forest and non-timber forest products by communities; resettlement avenues and commercial coffee and tea production schemes by successive governments and timber production by private entrepreneurs and the government. The process has substantially reduced the amount of coffee forests available (decline in forested area), goods (decline in timber, fuel wood, constriction material production) and services (variations in climate regulation, biodiversity and soil loss) generated from their utilization. For example, the amount of timber harvest in the southwest in general has dropped by half from 2,670 m^3 in 1995/96 to 1,340 m^3 in 1996/97 (JICA 1997). The same study also showed that forest utilization by local communities in the southwest where this research has been undertaken has led to a smaller amount of collected firewood and construction materials from more remote areas. Members of the local community also confirmed this. An elderly in *Yayu* (age ca over 60) who came to the area during the 1974 government initiated resettlement program had the following to say:

"*When we (he was referring to re-settlers) first came to this place, the forest cover was incredibly dense. It was common for our family members to get lost in the forest while colleting fire wood, fodder and grass. Once family members got lost, it was very difficult for us to find them so what we often did in such situations was fire guns so that we could easily locate where they were. I also remember how quickly our women got back loaded with fire wood, grass and fodder. Today, the situation has changed a lot. No body gets lost in the forest like it used to be in the old days. Besides, it often takes our women longer than it did to get back home with firewood, grass and fodder, and when they get back; they often come with relatively small amount compared to the past. It never looked, and*

we never thought, the forest would go away just like that in such a short period of time. [.....] I just can't believe what I am seeing now and I really do not know how long we can sustain on the remaining forest if it continues like this" (18/11/2003, *Wutate* Peasant *Kebele* Administration)

It is obvious from both available data and the quotation above that the area under coffee forests has declined significantly over the years and the amount of forest and non-timber forest products produced diminished thereby portraying the high subtractability attribute of coffee forests. When resources are highly subtractive, like the FCUs in this case, some individuals or groups end up grabbing considerably more of the subtractive services than others (OSTROM 2005). The process eventually creates inequalities in access to and benefits derived from the utilization of resources (e.g. for the inequalities in landholdings that emanated from differential access to land resources see section 5.2.3. below). Besides, when resources exhibit high subtractability, the providers often lack the incentive to invest in the maintenance of the resource systems mainly because they only receive their disproportionate share (OSTROM 1996). The situation ultimately forces the resources to assume an open access scenario, even though they are not, and it ultimately exposes them to overexploitation and hence degradation, just like it did to FCUs.

The high subtractability of coffee forests has led to their degradation and this has been exacerbated particularly because it was accompanied with lack of effective institutions (policies, laws, organizations, strategies and programs) that guide their utilization (see chapter 5 and 6). In the absence of effective rules and regulations, for instance, farmers located at coffee forest fringes did have little motivation to contribute to the maintenance of the system because those that live far a distance could always receive their share of the resource. Similarly, farmers located at far a distance from coffee forests did not have the motivation to provide maintenance services voluntarily because they did receive disproportionate shares of the coffee forest whether or not the system was well maintained since others and particularly those that live at forest fringes could access it without any hindrance. This has exposed the coffee forests eventually to the "free rider" problem and ultimately to degradation.

4.2.3 Size

Size refers to the physical quantity (area in case of forests and grazing lands and volume (cubic meter) in the case of water resources) of the resource. It (how large or small the size of a resource system is) affects the flow or supply of the resource system, which can be described by the extent of predictability in quantity, over time and space and therefore the management of the resource system. The larger the size of the resource system, the more difficult it is to get sufficient information about the resource system, the less the predictability of the resource flow and the more difficult it is to effectively manage the resource and vice versa although this relationship may not necessarily and always hold true (BROMLEY and CERNEA 1989; OSTROM 1990; TANG 1992). And without proper management programs put in place, in situations where we have large sized resources, the temptation to free-ride and over-invest in harvesting and under-invest in reproducing and maintaining the resource system may well become irresistible once demand exceeds supply and this in turn reduces size significantly ultimately leading to degradation (THOMPSON 1997).

The total area of *Geba-Dogi* is 19,244 hectares, out of which 9,000 hectare is buffer zone and the remaining 10,244 core zone whereas the total area of *Berhan-Kontir* is 20,000 hectare out of which 10,020 hectare is buffer zone and the remaining 9,980 core zone. The size of the FCUs is relatively small and particularly the management jurisdiction (core zone) is small enough to have sufficient, if not complete, information. Given this, the management of the resource system should have been relatively effective and efficient (GIBSON et al. 2000). However, the reality on the ground proves otherwise i.e. the management of the resources was not as effective as it should be and collective solutions have not been sustained thereby subjecting the resource systems to severe degradation. Below is what a development agent had to say regarding the size of the FCUs:

"*The size of the FCUs in comparison to that of the NFPAs that we are held responsible to manage is small. You can literally walk around the entire border of the FCUs by foot. What is surprising is however we could not effectively manage the FCUs. There are a number of reasons for that: the most important is the problem associated with the demarcation and the lack of financial, material and knowledge resources. When the FCUs were demarcated, the process claimed significantly large part of farmers' holdings. Farmers were not happy about this. This has made the implementation of management rules very difficult since some practices by farmers (e.g. planting of coffee seedlings in the FCUs) were in contradiction with farmers' traditional practices and farmers did not want to observe them. Besides, the Woreda Office of Agriculture did not and still do not have the financial, material and knowledge resource required to effectively mange the resources*" (11/21/03; *Bondo-Geche* Peasant *Kebele* Administration, *Yayu Woreda*)

No matter how big or small the size of the resource systems is, when local communities do not have the sense of security over the ownership and management of resources (see chapter 6), and when they are not happy with the rules and regulations designed by the resource providers (the government in this case), it is highly likely that the management of the resource system will be ineffective (GIBSON 2001). The same situation seems to have prevailed in the case of coffee forests since they continued to suffer from degradation despite being relatively small in size. This may have arisen because in such a situation the problems of free riding, under-investment in the maintenance of the resource and overexploitation are more likely to happen. Divergence in management preferences and rules and regulations between communities and the government (see chapter 6) also become critically important in influencing local communities' decisions about the value of the resources and the way they should be managed. They increase the transaction cost of implementing government designed management measures, which often come in the form of imposition and this seems to have been the case in this particular case. It is therefore important that efforts be made to reduce transaction costs by ensuring resource security and by engaging local communities in constructive dialogues and continuous negotiations while designing rules and regulations since size alone can not enhance effective management of the resources.

4.2.4 Natural boundaries

The concept of boundaries refers to the degree to which the areas of resource systems are clearly defined or are less conspicuous (OSTROM et al. 1994). It affects resource users' management decisions and their resulting incentives and behaviour. It also determines the

rules to be designed to manage resources since it defines the predictability of the resource flow and the acquisition of common knowledge about the resource (GIBSON et al. 2005; OSTROM 2005). Well-defined boundaries reduce uncertainty as to who will benefit and who will pay the costs whereas poorly defined boundaries increase uncertainty and retard efforts to find or sustain a collective solution (DIETZ et al. 2003). The management of resource systems with well defined boundaries is relatively effective since significant parts of the resource can be controlled or are easy to monitor and supervise (THOMPSON 1999).

The boundaries of the FCUs are formed by live fences (planting indigenous tree species as a fence) and by natural boundaries like rivers and mountains in situations it is difficult to make live fences. The FCUs have two clearly defined boundaries: the first for the buffer zone and the second for the core zone. Anything outside the buffer zone is a transitional zone. Walking in and through the forest, I could notice where the boundary marks were located since they were live fenced in some occasions and were fenced by natural phenomena in others. Even members of the local community seem to realize this. Below is what a farmer who took part in one of the focus group discussions held in *Sheko* had to say:

"*They (he was referring to government officials) came and live fenced the boarders of the coffee forest. He reluctantly said "we can take you there and show you the boundaries if you like". These demarcations are for real (he was comparing them with the demarcations of the NFPAs) and are very clear; no one would miss them. They (government officials) then told us that we could not go into the demarcations and we were not allowed to do things the way we used to. But you know what [with huge disappointment on his face], we have holdings in there (the jurisdiction of the demarcated forest) and we grow coffee, hung beehives and collect grass and fodder for our livestock. We have tried to tell them what they were doing was not fair. We even went to the Woreda Administration and made an appeal but our appeals were rejected outright*" (13/09/2003, *Bedessa* Peasant *Kebele* Administration).

In spite of the fact that the boundaries of coffee forests were well defined, the conservation and management of the FCUs seems to have not escaped the danger of free-riding. The head of *Woreda* Office of Agriculture that I talked to hesitantly disclosed the fact that the FCUs are still being encroached and some "illegal activities" such as cutting trees with out having the permit are still underway within the boundaries of the FCUs. Once, while walking through the FCUs, I suddenly heard a tree being cut down. Being curious about the incidence, I asked the guard who was charged with the responsibility to monitor such activities for explanation. He reluctantly said "*Oh that is only a dried up tree that they are allowed to cut down*". I could really sense that he was not telling me the truth but I did not want to embarrass him more than I already did by asking him for explanation. It is therefore obvious that although the boundaries have been defined well, the "exclusionary rules" employed by the government have alienated the local communities from benefits that they used to reap from the utilization of the resources. This has in turn forced some members of the local community not to resist the temptation to grab considerably more of the subtractive services than others, thereby forcing the situation to experience non-economic uses of the flow and to a conflicting interest between local users and the government and the process ultimately subjected coffee forests to rampant exploitation and therefore degradation.

4.2.5 Mobility and storage in the system

Mobility is the ease with which resource units are utilized from a storage system e.g. the ease with which a quantity (cubic meter) of water is withdrawn from a reservoir or the quantity of wood (cubic meter of logs) is harvested from a forest unit (OSTROM 1990). Storage in the system refers to the stock of the resource unit available in the system e.g. the quantity (volume) of water stored in a reservoir, the number and diversity of fish species in a water body (pond) or the number and species diversity of trees and shrubs in a forest unit (Ibid). Resource systems with high mobility and limited storage in the system are more liable for overexploitation and hence degradation (KISER and OSTROM 1982) and public ownership of such resources often leads to their ineffective management and hence degradation (THOMPSON et al. 1992).

The mobility of resource units such as coffee, spices, honey, medicinal plants, construction materials etc. from coffee forests (FCUs) is relatively high. No sophisticated technologies are required to mobilize resource units since communities use traditional technologies to utilize forest products e.g. communities use traditionally made axe to cut trees down for various purposes (fuel, construction material), and to clear forests in order to get access to agricultural land; they construct beehives in the most traditionally way and collect honey by cutting the trees down and/or by smoking the bees out from the beehives; and use family or hired labour to collect non-timber forest products such as coffee, honey, spices, grass, fodder, mats and grasses. Private or government companies (loggers) also use simple technologies to produce timber and coffee (see participants forest resources utilization strategies under section 5.5. below). These show the ease at which resource units (agricultural land, timber, construction material, coffee, spices, etc.) can be withdrawn from the coffee forests and without sophisticated technologies indeed and thus the high mobility of the resource systems.

Mobility affects the storage in the system i.e. negatively (degradation) particularly when the resources are not replenished. The situation even gets worse (degradation) if the resource exhibits such attributes as low excludability, high subtractability and when the institutions guiding utilization are not effective. Coffee forests exploitation for timber production claims some thing like 150,000 - 200,000 ha per year of the forest in Ethiopia (EFAP 1994). When this is accompanied by under-investment in the maintenance of the coffee forests (poor reforestation programs) and poorly functioning institutions (poor policies, legislations and strategies), the storage in the system is more likely to be affected negatively. Such a scenario, well depicted by the situation under consideration, has led to the deterioration of the coffee forests. When resources have high mobility, low storage system and are owned publicly, like in this case, they are more likely to be subjected to the free-rider problem, to overexploitation and ultimately to degradation (DIETZ et al. 2003).

In general, the attributes resource systems exhibit define what type of resource they are and therefore dictate the property right systems that best ensure their sustainable management. Resources that exhibit the attributes of common pool resources would most probably be managed better if put under common property right systems and the same is true with private goods and public goods (UPHOFF 1986; OAKERSON 1986; TANG 1992). Given this, the fact that coffee forests remained public properties in spite of the fact that they exhibited the attributes of common pool resources in general, and the failure of the

government to devise effective and efficient institutions that ensure their sustainable management in particular has contributed a great deal to their mismanagement. This therefore necessitates the need to revisit the existing property right arrangements and calls for the design and implementation of effective and efficient institutions. In so far as there is an identifiable outcome to the public ownership of the coffee forest over the last two to three decades (degradation), it lies in a preferential shift away from the standardized central state provision toward recognition of, and sympathy for, diversity, experimentation and multi/actor arrangement. Such a paradigm shift of the prevailing situation should, however, be essentially eclectic over the issue of appropriate institutional (policy, legislation, strategies and programs) and organizational measures, and needs to focus, constructively, on the political context of coffee forests management (decentralization and local level participation) as well as the establishment of democratic institutions that ensure the proper implementation of management programs.

4.3 Participants: Coffee forest users

The second set of variables that affects the structure and outcomes of the action arena is participants (resource users) and their attributes. Participants are those that affect, and/or are affected by, directly or indirectly, their own management decisions and actions and by the decisions and actions of others in the system (CHEVALIER 2001). They are decision making entities assigned to a position and capable of selecting actions from a set of alternatives made available at nodes in the decision process (MCKEAN and OSTROM 1995). The number, status and attributes of participants are therefore significantly important in affecting the structure, functioning and outcomes of the action arena.

A variety of participants was identified as taking active part in the management (conservation and use) of coffee forests. They range from individuals in households, traders, and different socio-economic groups, to governmental and non-governmental organizations. However, coffee forest users in each category share certain common characteristics that make the prediction of the aggregate behaviours from the knowledge acquired about key attributes of sample individuals simple. For example, farm households (e.g. female-headed, male-headed etc.) who are involved in the management of coffee forests shared common characteristics viz. subsistence smallholders, reliance on family labour, method of coffee production. Similarly, traders (rich, small or medium) involved either in the production and/or marketing of coffee share similar characteristics like level of education, size of business etc. Hence, participants of the action arena can be considered as "composite" participants, although they exhibit some differences in some attributes. Based on this understanding, four groups of composite actors (resource users) have been identified as participants of the action arena viz. local communities, governments, private entrepreneurs, and non-governmental organizations (definitions for each are given later under each section).

4.3.1 Communities

While definitions for "communities" vary, approaches commonly focus on the people of a local administrative unit, of a cultural or ethnic group or of a local urban or rural area. Communities are often assumed to be relatively homogeneous, with members' shared

characteristics distinguishing them from 'outsiders'. However, as discussed in detail in chapter three, this understanding has been challenged increasingly in the development literature in general and in NRM literature in particular (BERKES 1989; BROMLEY 1992; CAMPBELL et al. 2001). Communities have therefore come to encompass a great variety of individuals, groups and sub groups with distinct historical, social, economic, and cultural characteristics that continuously interact and impact on social cohesion, trust and reciprocity and ultimately define the way they pursue livelihood strategies and use resources (AGRAWAL and GIBSON 2001).

Communities, in the framework of this research, are defined to include groups and subgroups of farm households that reside in the localities and that depend, directly or indirectly, on goods and services generated from the utilization of coffee forests in the pursuit of their livelihood. This definition acknowledges the variations that exist among communities in terms of socio-cultural factors such as age, ethnic origin, religion, education, asset ownership, and settlement and the diversity of livelihood strategies that they peruse. The variations and diversities are described under the section that deals with attributes of participants (section 4.4) below. Despite variations in some of the attributes they exhibited, they also share similarities in others. The common denominator to all the groups and sub-groups in the communities and that this study considered in taking the community as a unit of analysis is that they are dependent, directly or indirectly, on the coffee forests and the goods and services derived from them for various purposes.

4.3.2 The government

The constitution of the federal democratic republic of Ethiopia (FDRE) establishes a federal and regional state structures, the later being structured on the basis of settlement patterns, language identity and consent of the people (FDRE 1995). There are, therefore, two governments: the federal government and regional governments. Regional governments in turn are structured along Zone, *Woreda* and *Kebele* Administrations, each of the hierarchical government structures being made up of the judicial, the executive and the legislative (for the detail see chapter 5).

As this is a local level institutional study, particular emphasis is given to the local government defined as the politico-administrative structure including and below the *Woreda* level. It consists of the *Woreda* Administration, which is made up of the *Woreda* Council, represented by elected members from *Woreda* residents, the *Woreda* Executive Council, represented by heads of various sector offices in the *Woreda*, and the *Woreda* Court (for the detail see chapter 5). The local government is involved in the management (conservation and use) of coffee forests. Its involvement is both direct i.e. coffee forests utilization for various purposes and indirect i.e. issuing policies, legislations and strategies and programs. Although the focus is on the local level, the impacts of both federal and regional government arrangements on the performance of the local level government will also be considered since institutions designed at higher levels influence the functioning of institutions at the local level.

4.3.3 Private entrepreneurs

The present study identified various types of private entrepreneurs who were involved in the conservation and use (management) of coffee forests. They essentially include private entrepreneurs with licenses who are involved in such activities like timber production, commercial tea or coffee production, and coffee trading. Individuals without licences have also been identified as taking active part in the utilization of coffee forests for various purposes and therefore in affecting their conservation and use (management). They too are therefore considered as participants of the action arena. Some of the private entrepreneurs are local residents while others live in near by towns and operate through hired labourers.

4.3.4 Non-governmental organizations

Non-governmental organizations (NGOs) include local and international organizations that have been involved in assisting communities and the local government in the conservation and utilization (management) of coffee forests. Their involvement is often indirect and takes the form of giving technical, managerial and financial assistance so that coffee forests are managed sustainably. They also assist farmers in the marketing of wild/forest coffee by supporting the establishment/strengthening of coffee growing cooperatives; and the local government by providing the necessary knowledge and skill upgrading training and by helping them to establish the required infrastructure.

4.4 Attributes of coffee forest users

The literature on common pool resources management identifies several attributes of participants (resource user) as important in affecting the structure, functioning and outcomes of the action arena. They include (1) the number of participants, (2) their status as individuals or as a team of composite actors, and (3) and their individual attribute (OSTROM 2005). Both the number of participants (four) and their status as individual or corporate groups (composite actors) have been discussed in detail in the preceding section. In the section that follows, individual attributes of participants will be discussed.

Individual attributes of participants that affect the action arena include dependence on the resource, the values of accepted behaviour, shared understanding of the physical condition of the resource, the degree of homogeneity in preference, degree of trust among themselves, autonomy to devise institutions, the size of the community, the distribution of resources among members, and past experience with governance institutions (POTEETE and OSTROM 2002; OSTROM 2005). Just like resource attributes, however, the theory is developing and hence not all of these are incorporated into a body of coherent theory in the conduct of institutional analysis (OSTROM 2005). The following section describes the most important individual attributes of coffee forest users that affect the conservation and use of coffee forests.

4.4.1 Dependence on coffee forests

Users' dependence on natural resources is one of the attributes that affect their actions, their involvement in collective actions leading to the design of institutions and therefore

the management of the resources. If users are highly dependent on the resource system, they would most likely place grater value on the long term sustainability of the resource and therefore invest in collective actions geared towards developing institutions that ensure sustained management of the resources (GIBSON et al. 2005). If, on the other hand, they do not depend on forest resources (do not value them highly) or depend on other investment ventures, it is less likely that they will attempt to act collectively and protect resources even if other conditions suggest that they should and are able to do so (GIBSON 2001; GIBSON and BECKER 2000).

The coffee forests under investigation are one of the most important natural resources that communities, individuals, government and non-governmental organizations depend on for various purposes. Local communities depend on them for food, tubers, leaves, fruits, nuts, honey, and spices has a long history. They also provide local communities with such items as medicines, fuel wood, and construction materials such as bamboo, reeds, leaves, and grasses. They are great water providers by serving as rain catchments, which allow a balanced water storage and distribution. Communities gather in and around coffee forests for social and cultural celebrations such as conflict resolution and they also use them as public burial places. They therefore assert a deep moral and spiritual interconnection through which they see themselves as part of the coffee forest. The following excerpt from one of the discussions held with a key informant (an elderly with an estimated age of 70) describes how important coffee forests are to the local communities and how much dependent they are on them:

"*For us, coffee forests are a means of existence. Can you live without breathing [asks me the interviewee with a gentle smile on the face]? No, I responded to his question. You see, forests are as important to us as the air that you breathe is to you. I remember what I saw when they took us (he was referring to a travelling workshop organized by an NGO that he took part in) to one place (I discovered later that he, along with other farmers, was taken to a particular place in the central highlands called Ankober); a barren land, and do you want to know what I said to myself, I said "how could one live in such a barren land with out a forest?". I tell you, it is hard to find trees that serve as shade leave alone for timber and other uses. It really pierces me to death when I see coffee forests disappear just like that and I can't believe what I am seeing*" (8/12/2003, *Bondo-Geche* Peasant *Kebele* Administration, *Yayu Woreda*)

The wild Arabica coffee populations in the coffee forests are also of particular importance to local communities. Even though communities practice diversified livelihood strategies (crop production, livestock production, non-farm activities), none of these enterprises compares to coffee in terms of resource allocation (land, labour and capital) and in terms of contributing to household income. Households in the communities allocate more than half of their holdings to coffee production (see below) and spend almost three fourth of their labour time in coffee production (planting, weeding, pruning, and harvesting). The income they generate from coffee production surmounts every other income and it is through this income that they get access to the basic amenities and services such as education and health. According to estimates by the *Woreda* office of agriculture in *Yayu* for example, the income generated from coffee production accounts for more than 60% of the household income (discussion with head *Woreda* Office of Agriculture).

Given the importance and therefore high dependence of communities on the various goods and services derived from the utilization of coffee forests, one would expect local communities to invest on collective actions that lead to the design of effective institutions which guide their management (GIBSON et al. 2005). This, however, does not seem to be the case as coffee forests continued to suffer from unregulated utilization and therefore degradation. The problem of free-riding prevailed through out as communities continued to relentlessly encroach coffee forests and engaged in reckless deforestation. One of the factors that may have contributed to such a practice could perhaps be the policy measures issued by the government over the years and the type of coffee forest ownership that has prevailed in the localities for long.

Long before the ownership right of land and forest resources came under the control of absentee landlords during the time of the monarchy and subsequently under the control of the central government during the time of socialist and the current government, communities have had their own customary rights through which they utilized land and forest resources (see the *Kobo* system in chapter 6). With time, however, they were ripped off their traditional rights through government initiated policies and legislations that officially decoded customary rights. This has led to farmers' developing a sense of insecurity and losing control over the resources that they once cared for and protected. The practice has also forced communities to care less about conservation but rather to maximize the gains from the immediate utilization of the coffee forests. The observation i.e. the insecurity of land/forest tenure as contributing to forest resources degradation has been documented by other scholars as well (DESSALEGN 2003; ALEMNEH 2003; EEA/EERI 2002; GEBRE-MARKLOS and DERIBE 2001).

The disempowerment of communities and their alienation from the resources that they once owned and managed and which form part of their lives through government initiated policies and legislations have also led to the breeding of predatory patterns of behaviour, and changed benign relationships into conflict-ridden ones. This has been compounded by an erosion of the state's capabilities to effectively manage forest resources thereby resulting in severe degradation. Demographic pressures that have led to a growing and impoverished population, whose dependence on coffee forests has increased in inverse proportion to the supply of goods and services; and the establishment of incentives which are inimical to coffee forest conservation, have also added fuel to the on going crisis. Communities living inside or at the fringes of the coffee forests and/or in close proximity to them were the most affected by this absence of accountability. Besides, tensions between government officials and communities have been intensified by the intransigent attitudes of the former, as well as by the growing gap between the dwindling resources and the expanding needs or increasing dependence of communities on the resources. The process ultimately resulted in degradation of coffee resources in particular and the forest resources in general.

4.4.2 Shared understanding of the state of coffee forests

Communities' shared understanding of the state of resource systems or resource users' perception of the physical condition of the resource is one of the factors that determine their actions and thereby influence the structure and functioning of the action arena. It derives from a variety of sources viz. from direct personal experiences, past experiences par-

ticularly of extreme events such as drought, floods, massive immigrants flowing in to the locality, and from indirect external influences such as government policies and strategies (AGRAWAL and GIBSON 2001). If and when communities perceive the existing physical condition of resource systems to be in a relatively better condition or that resources are perceived to be relatively abundant, they will be more likely to push aside the need for conservation and therefore tend to invest less in collective actions aimed at designing institutions that enhance their management (POTEETE and OSTROM 2002). But if otherwise, it is highly likely that they will organize themselves and invest in the development of rules and regulations (institutions) that govern the utilization of the resources and that ensure their sustainable management (OSTROM 1990).

The evidence derived from the study showed that the large majority of farmers (60%), in both *Yayu* and *Sheko*, perceived that the existing condition of the coffee forests to be in a relatively "good" condition. The proportion of farm households who have perceived the existing forest resource condition as "relatively degraded" and "very much degraded" was 32 % and 6 %, respectively. Very few (2%) of the respondents perceived the existing forest recourse condition to be in an "excellent" condition (Table 4.1). The fact that the great majority of farmers have perceived the existing coffee forest situation as "good" is quite contrary to the evidence available. Existing evidence (TADESSE et al, 2002; EFAP 1994) and personal observation indicate that much of the remaining coffee forests are highly disturbed, particularly in *Yayu*. In fact, the distinction into excellent, good, relatively degraded, and highly degraded condition of coffee forests is subjective. However, it can be used to measure the perception difference among farmers as regards the existing forest resource condition.

Table 4.1: The physical condition of forest resources as perceived by sample farmers interviewed in *Yayu* and *Sheko Woredas* (%)

Forest condition	*Sheko* (N = 100)	*Yayu* (N = 140)	Combined (N = 240)
Excellent condition	2	1	2
Good condition	55	65	60
Relatively degraded	39	25	32
Very much degraded	3	8	6
Total	100	100	100

The difference in perception regarding the existing coffee forest condition owes a great deal to the existing socio-cultural differentiation. There is sufficient differentiation in the socio-cultural make up of the localities and in the traditional forest management practices because of large and increasing number of immigrants. Immigrants form significantly large proportion of the sample farmers, as high as 60% of sample farm households interviewed in *Yayu* for instance, and of the local residents as well. Households that have lived for more than 20 years in the locality and older household heads (50 years and above) perceived the physical condition of the resource as very much degraded while younger farmers and those that have immigrated to the locality relatively recently (in the last 20 years) perceived otherwise i.e. the forest resource condition as it is now appears to be in a very good condition. This is possible given the experience young members of the locality

and those that have immigrated into the area relatively recently have. For these groups, the forest as it appears now is in good condition since they did not have enough information regarding the forest cover situation in the past. The same analogy also holds true with settlers as most of them have come from the northern part of the country where environmental and natural resources are highly degraded. The following excerpts (the first from an original settler and the second from an immigrant that has immigrated to the area during the 1974 government initiated resettlement scheme) support this observation:

"I really wonder when some people say the forest condition we have today is good. What forest is there to boast about? If only they had seen what it was like in the old days, they would have realized how much of it has already been gone and that they could have even wept. As far as I am concerned, what we have today is not a forest but a leftover with no trace of what it was like before. I wish those that say the forest condition is good could see what it was like before" (9/10/03, Wutete Peasant Kebele Administration, Yayu Woreda)

"I just can not understand when they (was referring to the other category) say the forest resources are degraded. I do not think these people have a clue what it is like in the area I have come from (I discovered that he came from north Gondar). Look, in here the forest cover is simply immense. You can cut as much number of trees as possible, but next time you come around, you still see a lot of them. I do not think it (cutting trees down) will be a problem since it is like taking a spoonful of water from an ocean" (9/10/03 Wutete Peasant Kebele Administration, Yayu Woreda)

It is not only farmers' understanding of the present condition of coffee forests that matters but also the dynamics of coffee forests cover over time. If farmers perceive that there is a change in forest resource dynamics over time and if particularly that change gives rice to a decline in the supply of gods and services, they will be more tempted to engage in activities that lead to the design of institutions that enhance the proper utilization of the resources and top their implementation (POTEETE and OSTROM 2002). The analysis of farmers' perception of the coffee forests dynamics revealed that the majority (68%) indicated that it has been degraded compared to some thirty years ago. Out of those that have reported the degradation, 37% perceived it as relatively degraded where as 31% perceived as very much degraded. The proportion of farmers that have reported the coffee forests condition to be the same compared to that of some thirty years ago was 32%. Large proportion of respondents in *Sheko*, as compared to *Yayu*, perceived the current forest resource condition to be relatively degraded compared to that of thirty years ago. On the other hand, large proportion of respondents in *Sheko*, compared of *Yayu*, perceived the current forest resource condition to be the same with that of thirty years ago (Table 4.2)

Table 4.2: Farmers' perception of the coffee forests dynamics over time as indicated by sample farmers interviewed in *Yayu* and *Sheko Woredas* (%)

Forest	*Sheko* (N = 100)	*Yayu* (N = 140)	Combined (N = 240)
The same	28	36	32
Relatively degraded	48	22	37
Very much degraded	24	42	31
Total	100.0	100	100

Variations in farmers' perceptions of the dynamics of the coffee forests condition were influenced by some social factors viz. ethnic origin and length of stay in the locality. For ethnic origins that have resided in the locality since long time ago (the *Oromo* in *Yayu* and the *Mejenger*, *Bench* and *Meenit* in *Sheko*), the forest resource condition has been severely degraded over the years while for others who have migrated to the area relatively recently (the *Amhara*, *Tigre*, and *Gurage*), the degradation has not been that serious. This could perhaps have arisen from previous experience of most settlers with forest resources. For instance, as stated earlier on, most of the *Amharas* arrived from the northern part of the country where the environment has been relatively degraded (DESSALEGN 2003). Besides, they do not have proper information of what the forest situation was like some thirty years ago. Therefore, whatever comparison they make is based on the knowledge they have about forest resource conditions in their origin.

Households that reported decreasing coffee forest situation over the years supported their observation by referring to indicators like wild life and rainfall. They said they used to experience a lot of encounters with wild life like elephants, lions and others. However, they indicated that it has almost been more than a decade since they last saw an elephant in the locality (Focus Group Discussion). The invasion of crop fields by baboons, the incidence of which has been intensified recently, has also been one indicator that farmers have cited to support their observation. According to farmers, in no other time have baboons bothered them like they are doing now and this, they underline, has a lot to do with disturbing their habitat through environmental degradation. An elderly woman I had interviewed had the following to say:

"The coffee forest used to be too dense that we often did not dare to go in alone to collect fire wood mainly for fear of wild life. I still remember an encounter with a wild animal I have never seen in my life before that scared me to death; and you know what? It was not that far from where we are living now. But now a day, going in to the forest is just like going to the back yard. Yes, it was too dense a forest but sadly it seemed to have been gone somewhere and so quickly but God only knows where (she covered her mouth, which is a gesture that they do when astonished by circumstances, which is a form of disbelief" (28/10/2003, Achbo Peasant Kebele Administration, Yayu Woreda).

Farmers indicated a number of factors as causes to coffee forests degradation. The great majority indicated reckless (indiscriminate) deforestation to be the number one factor. Expansion of agricultural land, resettlement and the existing forest resource tenure (public

ownership) have also been indicated by farmers as causes of coffee forests degradation, in that order of descending importance (Table 4.3).

Table 4.3: Farmers' perception of causes of coffee forests degradation as indicated by sample farmers interviewed in *Yayu* and *Sheko Woredas* (%)

Reason for forest degradation	*Yayu* (N=140)	*Sheko* (N=100)	Total (N=240)
Indiscriminate deforestation	74	82	78
Existing forest tenure	4	2	3
Resettlement (government or self initiated)	8	10	9
Expansion of agricultural land	14	6	10
Total	100	100	100

The main reason for communities, be they locals or immigrants, to be engaged in indiscriminate deforestation is to get access to agricultural land. The demand for fuel, construction material, non-timber forest products such as medicinal plants, honey and spices have also been among the factors that have led to the indiscriminate deforestation. Such demands have in turn been translated versions of population increase. The impacts of indiscriminate deforestation are more pronounced because of the lack of efficient institutional arrangements that guide coffee forest management decisions (see chapter 6).

Farmers' recognition of their own actions (indiscriminate deforestation) as a factor leading to coffee forests degradation raises the question "why do they do it knowing how much important coffee forests are to their livelihood". This question can be addressed from different perspectives. The most important consideration comes from the institutional (policies, legislations, strategies and programs) perspectives. The institutions increasingly in the past and even today have not been effective and efficient in guiding the production and management of coffee forests. They were designed and implemented in a purely top down fashion and were based predominantly on the "exclusionary" rule. Furthermore, they legalized government control of coffee forests while alienating the communities from the goods and services they used to generate. They have also been instrumental in officially ousting customary practices and property right arrangements that have been in use by the communities since time immemorial.

When institutions (policies, legislations, strategies and programs) are designed and implemented in a top down fashion and in a too much centralized fashion, and when communities do not have the security over resource ownership, it is more likely that the institutions will work against the interest of local communities, and that communities will be tempted to maximize the gain from resource utilization instead of making efforts to conserve them, no matter how damaging their actions might appear. This is because, they feel threatened as the institutional measures treat them as outsiders and rip them off the benefits that they are bound to enjoy had the resource ownership been theirs. Institutions designed following such a process often fail to reflect the felt need of ultimate resource users and expose the resources to the "free-rider" problem and ultimately to degradation. Such a situation thus calls for a paradigm shift in the design and implementation of insti-

tutions that ensure joint production of the resources and their sustainable conservation and use.

Farmers have also reported that their actions combined with other factors have led to the change in the population of the wild coffee in the coffee forests (population dynamics). Ageing of mother coffee trees, deforestation, agricultural expansion, and disease were cited as factors that have led to the decrease; whereas natural regeneration, and planting by individual farmers were cited as factors that have led to the increase in the population. The proportion of farmers who have indicated ageing and deforestation as factors that have led to decrease in the population is significantly higher in *Sheko* than in *Yayu* while the proportion of farmers who have indicated deforestation as a factor that has led to decrease in the population is higher in *Yayu* than in *Sheko*. Planting new coffee seedlings in the forest as a factor that has contributed to increase in the population of the wild coffee in the forest in *Sheko* also goes in line with the observation i.e. most farmers in *Sheko* have their holdings outside the wild coffee conservation site, compared to *Yayu*, and were therefore free to plant as much number of seedlings as they wanted (Table 4.4).

Table 4.4: Farmers' perception of the factors that have led to changes in the wild coffee population as reported by sample farmers in *Yayu* and *Sheko Woredas* (%)

Factor	*Yayu* (N=140)		*Sheko* (N=100)		Total (N=240)	
	Decrease	Increase	Decrease	Increase	Increase	Decrease
Ageing	16	-	22	-	23	-
Deforestation	47	-	34	-	40.5	-
Agric. Exp.	17	-	36	-	26.5	-
Disease	10	-	8	-	10	-
Regeneration	-	76	-	68	-	72
Planting	-	24	-	32	-	28
Total	100	100	100	100	100	100

The fact that farmers have recognised and reported the change in the population of the wild coffee in the coffee forest is a good point to start from when designing conservation measures. For instance, the fact that they have indicated deforestation as a factor reducing the population of the wild coffee could be a very good entry point to educate them regarding the disadvantages of cutting trees down and the fact that they have indicated natural regeneration as a factor that has led to the increase in population is important in the conservation of the wild coffee population. These perceptions of farmers contribute significantly to the design and implementation of conservation measures if taken into account. Thus, any conservation strategy aiming at the conservation of coffee forests and therefore the wild coffee population in the forests needs to take these observations into account since it is one of the ways through which we solicit farmers' interest and their participation.

4.4.3 Homogeneity

Communities are often assumed to be groups of similarly endowed (in terms of assets and incomes) and homogeneous (in terms of socio-cultural factors) households. Such conceptualization of homogeneity in turn is assumed to further enhance cooperative solutions, reduce hierarchical and conflicting interactions, and promote better resource management. However, BALLAND and PLATTEAU (1994) and OSTROM (1986) question the validity of this relationship claiming that heterogeneity in asset structure can actually favour the possibility of organization, particularly where there is a need for leadership and entrepreneurship. Regardless of the debate surrounding the heterogeneity among communities and its impact on organization, communities must be analysed for the degree of homogeneity/heterogeneity that exists among them since doing so helps to understand the diversity that exists among them and to design and implement effective institutions, strategies and programs.

Livelihood strategies: One of the characteristics that help to differentiate communities and their interaction with natural resources management is the livelihood strategies they pursue. The patterns of factor (land, labour, and capital) endowments and their use influence the utilization of natural resources and therefore the livelihood strategies employed by communities. In the study areas, the main livelihood strategy pursued by communities is agriculture. It is carried out essentially in two forms: crop production and livestock production. Nearly every body in the study areas was involved in agricultural activities, either directly or indirectly. In addition, communities have also been engaged in apiculture (honey and bee colony production) and in non-agricultural activities that supplement their income (for the detail see section 4.4 below). In terms of livelihoods strategies that communities pursue, therefore, they are generally similar as agriculture forms the basis of their strategy and as they all are subsistence smallholders.

Resource endowment: Land, labour and capital are the most important factors of production. The average land holding per farm household in both *Yayu* and *Sheko* was significantly larger compared to the national average (0.5 hectare) (EEA/EEPRI 2002). However, it was smaller in *Yayu* (2.5 hectares) compared to that in *Sheko* (3.4 hectare). The area allocated to the various enterprises did not vary significantly, except for coffee which was allocated a little less than 50% of the average holding) (Table 4.5).

Table 4.5: Mean landholding and cropping pattern of sample farm households interviewed in *Yayu* and *Sheko Woredas (ha)*

Factor	*Sheko* (N = 100)		*Yayu* (N = 140)		Combined (N = 240)	
	Mean	SD	Mean	SD	Mean	SD
Total holding	2.5	1.6	3.4	2.4	3.0	2.1
Area under annuals	1.1	0.8	1.1	0.7	1.1	0.8
Area under perennials	0.3	0.4	0.4	0.3	0.3	0.4
Area under forest	0.5	0.4	0.6	0.3	0.5	0.4
Area under coffee	1.2	1.0	2.2	2.0	1.7	1.6
Grazing area	0.5	0.5	0.5	0.2	0.5	0.4

Labour is the other important and critical factor of production in the study area. The main source of labour supply is household reproduction as communities draw most of the labour they require from household members and communities in this regard (in terms of source of labour supply) are homogenous. However the seasonal nature of some of the farm activities makes household labour supply periodically insufficient. Thus, communities depend on seasonal (casual) labour and reciprocal labour relationships (see chapter 5) during peak seasons to get some of their agricultural activities done. The average household size was 6.6 in *Yayu* and 7.4 in *Sheko*, and the difference was not significant. In terms of age structure, children under the age of 14 make up for more than half the household size i.e. 54.5 % in *Sheko* and 59.4% in *Yayu*. This clearly shows the fact that the household age structure is skewed towards children thereby indicating the labour shortage that households often suffer from although children have their own activities like bird watching and weeding (Table 4.6). It is this labour constraints of households that had forced them to engage in labour exchange mechanisms mentioned in chapter 5.

Table 4.6: Mean household size and family members of sample households interviewed in *Yayu* and *Sheko Woredas*

Factors	*Sheko* (N = 100)		*Yayu* (N = 140)		Combined (N = 240)	
	Mean	SD	Mean	SD	Mean	SD
Household size (N)	6.6	2.7	7.4	3.0	7.1	2.9
№ of adults (age over 18)	4.0	1.5	3.0	1.3	3.0	1.4
№ of boys (age below 18)	2.0	1.3	2.2	1.5	2.1	1.4
№ of girls (age below 18)	1.6	1.3	2.2	1.7	1.9	1.5

Livestock ownership is also important in affecting the agricultural production process in the study areas as it provides farmers with the source of draught power. In particular, the availability of oxen is critical as oxen are the only source of traction in the localities. Communities were found to have been different when it comes to oxen ownership. The great majority (73%) has only one ox and those that have a pair of oxen were very few (20%). Farmers without any ox at all constitute 7%. The average holding of livestock in general and oxen in particular in both *Yayu* and *Sheko* was low. The low number of livestock per farm household is attributable to the prevalence of the livestock disease known as *Trypanosomiyasis* (Table 4.7).

An incidence worth noting is livestock ownership. The average number of oxen owned by a farm household is less than 2. This is worrisome since land preparation in the area is done by oxen. The fact that the majority of respondents did not have a pair of oxen forces one to raise the legitimate question "how do farmers manage to get their lands ploughed?" Farmers addressed this problem by devising various institutions (oxen sharing arrangements) (for details see chapter 5). The institutions were instrumental in ensuring farmers' access to oxen.

Table 4.7: Average number of livestock owned by sample farm households interviewed in *Yayu* and *Sheko Woredas*

Livestock class	*Sheko* (N = 100)	*Yayu* (N = 140)	Combined (N = 240)
Oxen	1.2	0.8	1.0
Cows	1.4	1.2	1.3
Heifers	1.4	0.8	1.1
Pack animals	0.2	0.2	0.2
Goats	0.4	0.4	0.4
Sheep	0.9	0.4	1.3
Poultry	3.3	2.6	2.3

Ethnicity: The ethnic origin of respondents was significantly different between the two *Woredas*. *Sheko* is more ethnically diverse as compared to *Yayu* and it is the *Amhara* ethnic group that dominates the others. Other ethnic groups identified in the locality include *Bench*, *Kaffa*, *Shako*, *Mejenger*, *Oromo*, *Gurage*, *Dawuro* and *Agew*, in that order of descending proportion. In *Yayu*, on the contrary the predominant ethnic group is *Oromo* followed by *Amhara*, *Tigre*, and *Kambata*, in that order of descending proportion (Table 4.8).

Table 4. 8: Ethnic composition of respondents as reported by sample farm households interviewed in *Yayu* and *Sheko Woredas (in %)*

Ethnic origin	*Sheko* (N = 100)	*Yayu* (N = 140)
Oromo	8	71
Amhara	45	25
Tigre	-	3
Kambata	-	1
Bench	11	-
Kaffa	11	-
Mejenger	9	-
Meenit	3	-
Shako	10	-
Gurage	1	-
Dawuro	1	-
Agew	1	-
Total	100.0	100.0

The presence in varying proportions of ethnic groups whose origins are not in the areas owes a great deal to in-migration during the last one hundred years (DESSALEGN 1989; WOOD 1983). The large proportion of the Amhara ethnic group in *Sheko*, where Bench, Kaffa, Shako and others were indigenous and hence supposed to be dominant, and in

Yayu, where it dominates all the others but Oromo, for instance, is a result, to a great extent of immigration. It coincides with the massive resettlement program the government undertook in the 1970s that relocated people from the northern parts of the country, where the Amhara and Tigre ethnic groups dominate. Government initiated resettlement programs have also been accompanied by self initiated spontaneous resettlement schemes where people migrated to the areas under the pretext "visiting relatives" and/or in search of casual jobs. Much of the ethnic diversity, variation in ethnic proportion, and ethnic dynamics is therefore owed to both government and self initiated spontaneous settlement schemes.

The ethnic diversity in the areas has its own potential impact on natural resources management. The different ethnic groups in the area have different perception regarding the existing resource condition and therefore practice different natural resources management decisions as has been indicated earlier on. The decisions are some times contradictory thereby serving as sources of conflict, some times complementary and some times one dominating the other. For example, the practice of the traditional semi-forest coffee production practice and the fallow system that were typical among the indigenous ethnic groups such as the Oromo in *Yayu* and Kaffa and Bench in *Sheko* dominated settlers decision through out. However, some of these (fallow for example) were very much threatened to the extent of being abandoned owing to the arrival of new settlers on one hand and to the increasing population on the other. The practice of growing cereals (e.g. maize, sorghum etc) by some of the indigenous ethnic groups such as the Mejenger and Meenit, has been a practice associated with the arrival of some ethnic groups like the Amhara, Tigre and Gurage. This practice has increased significantly over the years thereby threatening forest and semi-forest coffee production system and the traditional fallow system (personal communication with the bureau head).

The ethnic diversity of the area also creates a potential for conflict as the various ethnic groups draw on their experiences and socio-cultural makeup in utilizing coffee forests and since they differ in their interests and in their skills with which to use the resources, and claim rights over different resources and areas. The conflicts, both potential and actual, in turn impact on the management (conservation and use) of coffee forests and influence then design of institutions that ensure their sustainable management. However, ethnic identity may also be an asset in developing improved natural resource management where people face a competitive situation and consequently take pride in their resource base and want to ensure it is used well. This attitude may be enhanced by restoring to local communities rights to natural resources and control over their management. Thus, reconciling these different interests and therefore resolving conflicts makes the achievement of sustainable resource management possible.

Education: In the present study, the level of education is measured as the level of formal schooling (school years) respondents' attained. Four levels of education were identified viz. illiterate, adult education, elementary education, and high school education. Illiterates are those who have never been to any kind of formal schooling or those who have never attended any kind of formal education. Adult education, as the name indicates, is a form of formal education, which is designed primarily for adults with the objective of equipping them with the basic skills of how to read and write. Elementary level of education

consists of the first cycle of formal education i.e. grades 1 to 6 where as high school consists of the second cycle of formal education i.e. grades 7 to 12.

The overall picture as far as education is concerned shows that the great majority of respondents fall in the category of those who have attended elementary education, followed by those that have attended adult education, illiterate, and high school. A relatively large proportion of respondents in *Yayu* (33%) and the large majority in *Sheko* (53%) reported to have attended elementary education, followed by adult education in *Sheko* (32 %) and illiterate people in *Yayu* (32 %). The proportion of respondents who have attended high school in general was low in both *Woredas*, although *Yayu* was relatively better off compared to *Sheko* in this regard. Nonetheless, it is encouraging to witness that put together, large proportion of the households interviewed did fall in the category of educated (Table 4.9).

Table 4.9: Level of Education attained by sample farm households interviewed in *Yayu* and *Sheko Woredas* (in %)

Education status	*Sheko* (N = 100)	*Yayu* (N = 140)	Combined (N = 240)
Illiterate	12	32	23
Adult education	32	28	30
Elementary (grades 1-6)	53	33	42
High school (grades 7-12)	3	7	5
Total	100	100	100

Religion: The majority of respondents are Orthodox Christians followed by Muslims and Protestant Christians. However, there is significant difference between the two *Woredas* in terms of the proportion of farmers who follow this or the other religion. There are more orthodox Christians in *Yayu* than in *Sheko* whereas the proportion of Protestant Christians in *Sheko* was higher than that of *Yayu*. The proportion of Muslims in *Yayu* and *Sheko* was almost the same. There were no reported followers of traditional belief in *Yayu*, at least among the sample farmers interviewed, while very few (2%) of the respondents reported to have been followers of traditional belief in *Sheko* (Table 4.10).

Table 4.10: Religious composition of sample farm households interviewed in *Yayu* and *Sheko Woredas* (in %)

Religion	*Sheko* (N = 100)	*Yayu* (N = 140)	Combined (N = 240)
Orthodox Christian	46	61	54
Protestant Christian	20	3	12
Muslim	32	36	34
Traditional belief	2	-	-
Total	100.0	100.0	100.0

4.4.4 Communities' perception of the impact of their own actions

The theoretical consideration suggests that if communities' perceive their own actions on natural resources as not damaging/degrading, the likelihood of adopting conservation measures of their own or those recommended by outsiders is low. On the contrary, if they perceive their own actions as having considerable impact on the resource condition (damaging), the likelihood of designing or adopting conservation measures or institutions is high (GIBSON 2001; GIBSON and BECKER 2000).

The great majority (67%) of respondents perceived that the actions they have been taking have contributed to forest resource degradation where as the remaining 33% perceived otherwise. Farmers' perceptions did vary between *Woredas* and accordingly, a great majority (89%) of respondents in *Sheko* perceived that their actions led to degradation whereas the proportion who have perceived likewise in *Yayu* was 45%. The proportion of respondents that perceived their actions as having not led to degradation was higher in *Yayu* (55%) than in *Sheko* (11%) (Table 4.11).

Table 4.11: Farmers' perception of their own action on the forest condition as reported by sample farmers interviewed in *Yayu* and *Sheko Woredas* (in %)

Do the actions result in forest degradation?	*Sheko* (N = 100)	*Yayu* (N = 140)	Combined (N = 240)
Yes	45	89	67
No	55	11	33
Total	100	100	100

Perception differences are highly influenced by the length of stay households resided in the locality (settlement). The proportion of settlers (immigrants) was as high as 63% in *Sheko* and 28% in *Yayu*. Accordingly, farm households that had lived in the locality for long perceived that the impacts of their own actions are negative and hence degradation. The fact that large proportions of farmers in *Sheko* and less proportion of respondents in *Yayu* have perceived that way seems in conformity with the settlement pattern. Such differences in perception are important determinants of the investment in collective action aimed at designing and implementing institutions that guide forest resources utilization. They also lead to conflicts in forest resource use rights and management responsibilities.

4.4.5 Autonomy to devise institutions and past experience of self-organization

Communities' autonomy to devise their own institutions, and past experiences of self organization significantly affect the incentive for collective action and therefore the management of natural resources. If communities have autonomy to devise their own institutions (rules and regulations) and if they have past experience of self organization, it is more likely that they will engage in setting up rules and regulations that enhance collective action and therefore the sustainable management of natural resources (MCKEAN 1995). This is because the transaction costs involved in running self-designed institutions

and in monitoring the implementation of the rules and regulations enshrined in such cases are low and the institutions are more likely to be effective, efficient and long lasting.

This study revealed that communities at least used to have autonomies to devise their own institutions and have past experiences of self-organization. There are various types of indigenous institutions/organizations that have been operational in the localities quite for long now (for details see chapter 5). Some of these traditional institutions typically reflect social norms of solidarity and reciprocity, constituting a social safety net that ensures survival and relative harmony of the communities in villages. Others are reciprocal relationships that assist communities with meagre livelihoods and inequalities in resource ownership. The performances of some of these institutions were regulated by written rules while that of others were guided by norms and a set of expectations about other people's behaviour. These expectations in turn derived from a common understanding of the rules of the game and the penalties for deviations. They were based on shared identities of network members. Since they are self-enforced based on mutually agreed upon rules and regulations, the transaction costs are often low and the enforcement mechanisms very strong.

In general, coffee forest dependent communities' shared some attributes and differed in others. They differed in such attributes as resource endowment, ethnicity, education, and religion; and in the perception of their own actions on the physical condition of coffee forests. On the other hand, they shared similarities in such attributes as livelihood strategies, dependence on the coffee forests, and in the autonomy to design institutions and past experience in self-organization. When communities who share some key attributes also differ in the strength of some other key variables, aggregate resource management behaviour is often characterised by frequently dependent behaviour with strong threshold effects. This is because the various groups and sub-groups in the community bring a diversity of ascribed or acquired characteristics to the action arena. Some times the characteristics sharply influence the actions of communities and therefore the corresponding outcomes while in other situations they do not. The variations in some and similarities in others shape their resource utilization strategies. The design and implementation of any institutional measure aimed at improving the management of coffee forests should therefore take these differences and similarities in attributes into account. Failure to do so may lead to the design and implementation of institutional measures that enhance conflict among communities and between communities and outsiders rather than ensuring the sustainable management of coffee forests.

4.5 Participants' coffee forest utilization strategies

Once the resource systems and participants are characterized, the next step is to analyse the interactions between the two. The interface between the resource system (coffee forests) and participants are often expressed through the resource utilization strategies employed by resource users. It is through the strategies they employ that participants manage (control, access, conserve, utilize, appropriate, monitor) the resource systems. Understanding the resource utilization strategies of participants is therefore of paramount importance in understanding the structure and functioning of the action arena (resource systems-participants interaction) as well as the outcomes of those interactions.

4.5.1 Communities' coffee forest utilization strategies

Communities draw on their current perception, knowledge and understanding to cognitively frame a specific resource utilization strategy. Their strategies are in turn directly connected to their livelihoods. Agriculture is the main source of livelihood. It is undertaken in four different but interrelated forms: coffee production, crop production (annual crops and perennial crops otherwise than coffee), livestock production, and apiculture. Communities are also involved in non-farm income generating activities that support their livelihoods viz. blacksmith, tannery, woodwork, timber production, charcoal making, and basket and mat making.

4.5.1.1 Coffee production

Coffee is an important enterprise for the community. It is the main source of cash income. It is produced in various forms i.e. forest, semi-forest and garden coffee production. The semi-forest coffee production system dominates the others followed by forest coffee and garden coffee. A detailed description of the forest, semi-forest and garden coffee production systems is provided in chapter 1.

The traditional semi-forest coffee production, as the name indicates, is very much dependent on forests. The presence of forests is therefore a precondition for the existence of the system. Two aspects of the system are of particular importance as they affect the floristic diversity of the forest and the genetic diversity of the wild coffee population: the practice of cutting down trees and the planting of coffee seedlings. The study showed that the great majority (83%) have never planted trees in the forest. On the other hand, significantly large proportion of interviewed farmers (73%) indicated that they have been practicing planting coffee seedlings in the forest (Table 4.12).

Table 4.12: The practice of planting trees and coffee seedlings in the forest by sample farmers interviewed in *Yayu* and *Sheko Woredas* (in %).

Farmers' practice	*Sheko* (N = 100)	*Yayu* (N = 140)	Combined (N = 240)
Have you ever planted coffee seedlings in the forest?			
Yes	52	95	73
No	48	5	27
Total	100	100	100
Have you ever planted tree seedlings in the forest?			
Yes	14	20	17
No	86	80	83
Total	100	100	100

According to research findings (TADESSE 2003), the traditional semi-forest coffee production system affects the floristic diversity of the forest and it even results in reduction of the diversity of woody plant species by 50%. It does so by simplifying the structure of the forest from continuous, multi- strata to two strata of canopy trees and by creating imbalance in species composition. The practice also entails clearing of several species of small

trees, shrubs and climbers thereby once again threatening the floristic diversity. Farmers, however, do not seem to agree with this. For them, it is rather a practice that ensures the continued existence of the wild coffee. They claim that the condition of the forest and the status of the wild coffee population, as it appears today, have a lot to do with the semi-forest coffee production system they have been practicing for ages. Below is what a key informant (an elderly) had to say asked if the traditional semi-forest coffee production system is a threat to the floristic diversity of the forest and to the genetic diversity of the wild coffee population:

"Part of the reason we see coffee forests today is because of the traditional semi-forest coffee production system that we have been practicing for aegis. We can not grow coffee in the absence of forests for the simple reason that it does not do well in such circumstances. So, we really need the forest for our coffee. So, I do not understand when they tell us that what we are doing threatens the forest condition and the wild coffee population. I would rather see it the other way round i.e. the forest is in the shape that it is today because of the way we have been growing coffee. If it were not for the way we have been growing coffee, it would have been gone long before we know it. Look at what happens to it when some of us start growing maize and other cereals. It is funny when they say what we do is a threat to the forest and the wild coffee population in the forest" (11/23/03, Sombo Peasant Kebele Administration, Yayu Woreda)

The above narrative indicates the disparity that exists between farmers' and outsiders' perception regarding the practice of the semi-forest coffee production: outsiders looking at it as a threat to floristic diversity of the forest and to the genetic diversity of the wild coffee population and farmers the vice-versa. For farmers, the number one threat is price reduction as reported by the great majority of farmers in both *Woredas*. Indiscriminate deforestation, population increase and disease were also reported as important threats in that order of importance, with a little difference in the ranking between the two *Woredas*, but none considered the traditional semi-forest coffee production to be a threat (Table 4.13).

Table 4.13: Threats to the population of the wild coffee in the forest as reported by interviewed farmers in *Yayu* and *Sheko Woredas* (in %)

Threats to the wild coffee Population	*Yayu* (N=140)	*Sheko* (N=100)	Total (N=240)
Indiscriminate deforestation	23	19	21
Population increase	16	24	20
Agricultural Expansion	10	13	11
Price reduction	30	25	28
Disease	21	19	20
Total	100	100	100

With declining coffee price, farmers are incapacitated in terms of cash and financial means since coffee is the main cash crop in the area. This meant that it was very difficult for them to send their kids to school, to get access to some medication and even to purchase household amenities. Therefore, they had to look for other alternatives like growing cereals and selling them in the market. This in turn meant increasing the production of ce-

reals since they did not fetch as high price as coffee as a result of which they were engaged in clearing more and more forests in search of agricultural land. For researchers, on the other hand, apart from the traditional-semi forest coffee production system, the progressive encroachment of forests to meet the growing demand for agricultural land, fuel and construction material were important factors threatening the wild coffee populations (DEMEL 1999; ZERIHUN 1999; TADESSE et al. 2002). They have also reported diseases and pests (CBD, coffee leaf rust, and pathogens as well as pests) as factors threatening the wild coffee population in the forest.

4.5.1.2 Crop production

Crop production is the other source of livelihood that farmers are engaged in. They grow both annuals (large and small cereals, pulses, oil crops) and perennials (coffee, *enset*, fruits). However, it is coffee production that constitutes the major part of crop production followed by annual crops. One of the most important factors that influence crop production is the endowment (availability) of and the access to land (see Table 4.3 above). Coffee occupies almost half of the holding indicating the significance importance it has for the household. Annual crops follow it, while area under forestland, grazing land, and perennial crops, make up for the rest (see Table 4.3 above).

The availability and the method of land acquisition is the crucial link between crop production and coffee forests. Farmers reported various methods of land acquisition. Large proportion of farmers reported to have acquired land through government allocation, whereas some reported to have acquired land through inheritance, occupation (forest clearance) and purchase, although the proportions were small. The methods of land acquisition were the same in both *Yayu* and *Sheko* it is only the proportion of farmers who have acquired land this or the other way that varied (Table 4.14).

Table 4.14: Methods of land acquisition employed by farmers as reported by sample households interviewed in *Yayu* and *Sheko Woredas* (in %)

Method	*Yayu* (N=140)	*Sheko* (N=100)	Total (N=240)
Inheritance	12	12	12
Forest clearance (Occupation)	2	2	2
Allocation by government	84	82	83
Purchase	2	4	3
Total	100.0	100.0	100.0

The source of agricultural land in the area, whether it is acquired through government allocation or other methods, is basically the forest i.e. it is by clearing the natural forest that farmers get access to agricultural land. The forest clearance is very much pronounced particularly when it comes to the demand for land for the cultivation of annual crops. While pursuing annual crop production, farmers exercise relatively indiscriminate deforestation because none of the annual crops they grow (cereals, pulses, or oil crops) requires shade. For the production of perennials such as coffee and fruit trees, on the contrary, farmers need a certain degree of shade and hence they do not clear the forest completely. What is

often done in growing perennials is selective felling by way of thinning selected tree species with an aim to enhance the productivity of crops.

Over the years, the area allocated for the production of annual crops, particularly cereals, has been on the increase. The increase is attributable, among other factors, to reduction in coffee price, population increase and failure of the government administrated land allocation (land tenure policy), reduction in coffee price making up for the lion share. The following is what a farmer had to say regarding this:

"In the old but good days, coffee used to fetch much higher price than it does today. We used to solely depend on the cash income that we generate from the sale of coffee for the purchase of household consumables, for paying the school of our children and even to bus food. But the decline of coffee price over the years has been so sharp that it affected us very much. I some times wonder whether and how long we would be able to continue growing coffee if the situation continues like this. It is in response to this that we started to grow more and more of annual crops. These (annual crops like maize) were not produced in the amount they are being produced today. What you now see is more associated to the decline in the price of coffee and a phenomenon that started to take place very recently" (13/12/03, Gez-Meret Peasant Kebele Administration, Sheko Woreda)

Population increase is the other factor that has led to expansion in annual crop production. It has come about as a result of people migrating in to the area either spontaneously or through government initiated resettlement schemes or population growth from within (reproduction). Whichever way it came about, it impacted on the forest since the forest served as a sink to absorb the incremental demand for agricultural land in general and crop land in particular. The overall implication of crop production and its expansion over the years, and the introduction of new methods of farming by the immigrants is that more and more forestland has been converted to agricultural land but often at the expense of the natural high forest. These in turn has resulted in land use conflicts, increased deforestation and lose of biodiversity.

4.5.1.3 Livestock production

Small-scale livestock production is one of the livelihood strategies that farmers have been undertaking as an integral part of crop and coffee production. Farmers keep livestock for various purposes viz. land preparation, transporting agricultural produce, income generation through the sale of livestock products and by-products and for household consumption. Livestock owners tend to keep relatively similar groups of livestock (cattle, small ruminants, pack animals and birds), and employ the same livestock husbandry practices like grazing in the forest and collecting fodder from the forest etc. The only difference among the livestock owners is the endowment i.e. the average number of oxen a household owns for example.

The evidence derived from the study showed that the average number of livestock in general and oxen in particular in both *Yayu* and *Sheko* in general is low (see Table 4.5 above). This is largely attributable to the prevalence of livestock disease in the area. The low number of oxen deserves particular attention because of the critical role oxen play in the agricultural production process. In order to deal with this problem, farmers have devised their own institutional arrangements that ensured their access to oxen (see the section that deals with oxen sharing arrangements in chapter 5).

Livestock production is conducted in the most traditional way and the main source of animal feed is open grazing, collection of grass, fodder and fallen leaves from the forest. Open grazing is the most commonly practiced form of animal feeding. But it is restricted to dry season of the year. The reason is that most agricultural practices take place in the wet season and therefore fields are occupied with crops. If livestock are left to open graze, they would cause a severe damage to crops. In order to ensure that open grazing is controlled and undertaken in an orderly manner, farmers have developed an indigenous institution called *Ule* (for the detail see chapter 5). This institution ensures that grazing livestock in the forest particularly during the wet season of the year is controlled.

4.5.1.4 Beekeeping

Bee keeping is the other sources of livelihoods. It is practiced in the most traditional way such that communities produce honey by placing locally made bee-hives on different trees within the natural forest. Up to 15 bee-hives are often placed on a single tree and a farmer may own as many as 45 bee-hives on the average. Over 80% of the honey production form these bee-hives is meant for sale while the remaining is domestically consumed. It is estimated that 5 kg of honey is harvested from one bee-hive three times a year and a kilogram of honey costs somewhere between 7-12 Birr (ca 0.7- 1.2 Euro). Bee keeping is the major occupation of the Mejenger and Meenit in *Sheko* although other ethnic groups have also been involved in it. In *Yayu*, relatively small proportions of farmers are engaged in apiculture.

Farmers have preferences when it comes to selecting tree species out of which they produce bee-hives. They make traditional beehives from the bark of *Olea welwitschii* and curved from logs of *Croton macrostachyus*, *Aningeria adolfi-friederichi*, *Polyscias fulva*, *Ficus sur*, *Euphorbia ampliphylla*, *Hallea rubrostipulosa*, *Alangium chinense* and *Ilex mitis*. Once they made beehives, they hang them on selected tree species. Honey harvesting is done either by smoking out the bees from the bee-hives or by felling the entire tree, the earlier being the most common method. Bee-hives preparation and honey collection (smoking and felling trees) have their own impact on the floristic diversity of the forest in particular and on biodiversity in general. These, accompanied with the poor practice of tree planting therefore became threats to the forest resource since they entail forest resource degradation.

4.5.1.5 Non-farm activities

Although not in significant proportion, farmers have also been involved in such activities as pottery, blacksmith, tannery, wood curving, timber production, charcoal making, and basket and mat making, all of which have direct links with the coffee forest. The major objective of their involvement in such activities is to supplement their livelihood and augment their cash income.

Charcoal and fuel wood are the dominant sources of energy in the area. It is a common sight to observe a pile of stacked fuel wood and charcoal along main highways that are awaiting for sale and a gesture made by boys and girls signalling the presence of the same. This has led to forest resources degradation and therefore increasing scarcity of fuel wood and charcoal. The increasing scarcity and cost of household fuels, threatened the ability of the local people to maintain the already low incomes and quality of life. To

compensate for the worsening fuel wood scarcity, dung and crop residues are being diverted to household fireplaces, reducing crop yields. There is therefore a continued need to explore other alternative sources of energy in order to solve the fuel wood supply problem and forest degradation. Establishing woodlots and practicing agro-forestry on a massive scale could perhaps be among the alternative strategies to allow a sustainable energy supply to meet demand. Besides, the introduction of efficient cooking stoves for improved use of fuel wood, efficient charcoal making technology, and an appropriate fuel wood marketing and pricing practices may improve the energy problem, thereby relieving the pressure on the few remaining coffee forests.

4.5.2 Government coffee forest utilization strategies

The government, as a provider of the resource systems (coffee forests), is also involved in their utilization. The coffee forest utilization strategies employed by the government include timber production, forest conservation, wild coffee conservation, commercial coffee production and resettlement.

4.5.2.1 Timber production

The broadleaf evergreen forests of the study areas furnish timber that is used in construction and in the production of plywood. Timber is produced using sawmills that are either owned by the government (state parastatals) or private companies with licences. During the Emperor regime, there were a total of 46 sawmills operational in the country, most of these being located in the southwest where this research was conducted (FAO 1990). However, the 1975 land reform nationalized all of them and they became government properties. Today, the responsibility of controlling timber harvesting is that of the government.

However, the fact that the government has been put in charge of the responsibility did not save the coffee forests from, but rather contributed to, degradation since it encouraged illegal logging. Besides, the saw mills have not been equipped to handle logs from plantations. The capacity of the sawmills is very small and annually decreasing, partly due to the depleting raw material base (deforestation) and partly due to old and poorly maintained machinery with frequent breakdowns. As a result, efficiency in processing of logs is very much limited and wastage in resource utilization became common. This in turn has led to decreasing supply of large sized logs the process ultimately forcing the government to shift to soft wood logs. The process eventually led to forest degradation and ultimately to deforestation.

4.5.2.2 Forest conservation

Forest resources conservation has been undertaken through the establishment of what are called National Forest Priority Areas (NFPAs). The government demarcated 58 high forest areas and designated them as NFPAs, amongst which we find *Yayu* and Gura-Ferda NFPAs, in *Yayu* and *Sheko*, respectively. Another 13 important forest areas were identified after 1992 by the regional agricultural bureaus to be conserved and managed as Regional Forest Priority Areas (RFPAs). This brings the total number of forest priority areas to 71.The size of the NFPAs ranged from the minimum 10,000 to the maximum 300,000 ha. While controlling resource use to combat genetic erosion, a management plan was to

guide the development and subsequent utilization of the resources (KIDANE 2002). However, management plans were prepared only for seven of the NFPAs.

The boundaries of 42 NFPAs with a total size of about 2.2 millions hectare were demarcated on the ground with concrete pillars, during 1980-1992. However none of these has been gazetted. The demarcation (establishment of the boundary) was claimed to have been carried out in "cooperation (agreements)" with the representatives of communities living adjacent to the NFPAs. However, from the discussion held with farmers, this seems to have not been the case (see chapter 6). Following the change in government in 1990, the management responsibility of the NFPAs was transferred to regional governments who have neither the technical expertise nor the financial and physical resources required (YONAS 2001). This has therefore contributed much to the creation of an open access scenario thereby accelerating the degradation of forest resources.

4.5.2.3 Coffee production

Government involvement in coffee production is often direct or indirect. The direct involvement takes the form of establishing and running state owned large scale commercial coffee farms whereas the indirect involvement includes the delivery of extension (advisory and input) service to small scale coffee producers. Since there are no government owned large scale commercial coffee farms in the study areas, government involvement is mainly indirect by assisting small farmers through the extension service that employed a package approach.

The package of information extended to farmers through the extension service included improved (high yielding and disease resistant) coffee cultivars and improved management practices such as seedling establishment, management of mother trees, and pruning. Since its launch, the government extension service expanded exponentially as a result of which the number of farmers participating in the program increased by more than ten folds; a number of large coffee nurseries have been established; seedlings of improved coffee cultivars have been distributed to farmers in large numbers and advices are being given to farmers regarding improved management aspects. The extension system has its own impact on the production of coffee as well as on the conservation of wild coffee and the forest (see chapter 5).

4.5.2.4 Wild coffee conservation

The other way through which the government is involved in coffee forest utilization is wild coffee conservation. In the past, different government institutions have made various efforts to conserve the wild coffee population, viz. the plant genetic resource centre of Ethiopia (PGRC/E), the Ministry of Coffee and Tea Development (MCTD), the Institute of Agricultural Research (IAR). In connection to this, a small unit of live (ex situ) conservation activity has been initiated about 15 years ago, and is operational at *Chochie* Biodiversity Unit in Jimma Zone, where some 4,000 collections/accessions are being maintained. In addition, over 2000 coffee accessions collected for various purposes from different parts of the country are being maintained at the National Coffee Research Center at Jimma.

Currently (as of 2002), a project called Coffee Improvement Program IV (CIP IV) is under implementation in both *Yayu Woreda* of Ormiya and *Shako Woreda* of SNNPRS on a

total delineated area of close to 20,000 hectare (10,244 hectares in *Yayu* and 9, 899 hectares in *Shako*). The project was a consortium between the then Coffee and Tea Development Authority (CTDA) (which is no more in existence); the then Institute of Biodiversity Conservation and Research (IBCR) (which has now become the Institute of Biodiversity (IBC)); the then Ethiopian Agricultural Research Organization (EARO) (which has now become Ethiopian Institute of Agricultural Research (EIAR)); and the Regional Governments which are represented by Agricultural and Rural Development Coordination Offices at Regional, *Zonal* and *Woreda* levels.

The aim of the project is to improve the standard of living of farmers that live in the coffee growing areas thus reducing the widespread poverty, while the purpose of the project is to realize the earning potential of smallholder coffee growers. The project envisages to attain these by conducting various activities in the following project components viz. coffee extension (the emphasis is provision of effective coffee extension system), coffee research (the emphasis is improving the delivery of coffee research results), coffee nurseries (the emphasis is providing sustained increase in the supply of CBD resistant coffee seedlings with local land race characteristics), conservation of coffee containing forests (the emphasis is conserving Ethiopia's and the world's coffee genetic resource base by conserving the natural habitat) and coffee marketing services (the emphasis is promoting Ethiopia's coffee in the market place) (EUROPEAN UNION, 2001).

Various activities have been taking place since the project launch in the principal activity areas mentioned above. For example, with regard to the conservation activity, the project so far had demarcated three forest coffee sites, namely *Geba-Dogi*, *Berhan-Kontir* and *Boginda-Yerba* and conducted various activities such as natural fencing, species inventory and socio-economic survey. As regards the nursery on the other hand, the project has assisted in the revitalization of eighteen nurseries that were established during the Coffee Improvement Program III (CIP III) and is in the process of establishing and supporting 59 others in *Yayu* but no activity seems to have been commenced in *Sheko*. The research component has been strengthened especially in the areas of paying enough attention to local land race development, while the project management component has been busy with recruitment and deployment of project staff and guards. The recruitment of guards in particular is made in such a way that guards were identified and hired form the local inhabitants.

The demarcation of the Forest Coffee Units (FCUs) has created a great deal of dissatisfaction among the farming community. This is happening in spite of the claim by the office of agriculture and the *Kebele* Administration that farmers were represented in the team that undertook the demarcation. The office and the *Kebele* Administration as well did not deny that part of farmers' holdings fell in the demarcation zone. However, the argument they did put forward was that most of the farmers' holdings that fell in the demarcated zone have been illegally occupied because of the power vacuum created during government change (1991). An evidence they provide to justify this is that the demarcations are undertaken within the former demarcation (NFPAs) and the fact that farmers have holdings in these forest areas by itself is illegal and hence a proof. On the contrary, farmers claim that the holdings belong to them and that they claim to have the evidence to prove that i.e. they have receipts of the tax they have been paying as evidence to show that they are owners of the land.

The other source of dissatisfaction for farmers comes from the exclusionary rules enshrined in the strategy followed in the management of the FCUs. Farmers are allowed to do very few things i.e. collection of ripe coffee cherries, collection of fallen leaves as animal feed and collection of dead wood but only if they have permission from the concerned officials. They are not allowed to plant coffee trees, cut down old mother coffee trees, cut down trees. This, farmers claim, has ripped them off the forest coffee "ownership" rights they used to enjoy. Farmers strongly argue that the traditional coffee production system that they have been following for centuries using is not in contradiction with the objectives of the FCU management. They even go to the extent of saying that the existence of the wild coffee population in the forest is due in large part to the age old forest coffee production techniques that they have employed (see above). This conflicting views of farmers and that of outsiders need to be resolved if the wild coffee population is to be conserved effectively. One possible strategy to do so will probably be building plat forms that enhance negotiations between the parties and ensuring active participation of the local community.

4.5.2.5 Resettlement schemes

Government initiated resettlement programs have always been one of the policy instruments subsequent Ethiopian governments used to place spontaneous as well as organized resettlement schemes into a wider perspective of historic population movement, and especially of peasants. The first organized resettlement program was initiated in 1984 by the socialist oriented military government. It involved a translocation of a huge chunk of the population form the northern part of the country where the resource base is depleted to the south and south-western part, which is characterized by abundance of natural and forest resources. The resettlement activities generally were undertaken without prior environmental impact assessment and they therefore ended up being more of political instruments to subdue the population rather than to pursue development programs (SHIFERAW 1988; WOOD 1983; DESSALEGN 1988). The programs had therefore pronounced impact on the environment (negative) than on development for which they were intended (WOLDEE-SELASSIE 2000).

Nearly two decades after the controversial massive resettlement program carried out in 1984, faced yet again by another major food crisis in 2002/3, the leaders of the current government have now initiated a massive resettlement program as part of the Food Security Program. The resettlement program is seen not only as a necessary but also a pivotal element of the food security program. The promise was that, contrary to the previous experience, the program will be done with properly worked out plans, on strictly voluntary basis and within existing regional states. But once again, there are indications that the resettlement programs are being undertaken without prior environmental impact assessment. Moreover, the new socio-political set up (ethnic based federalism) has added a new dimension and challenge to the programs, despite the claim that they are being conducted within the same region. Many have speculated that the resettlement programs underway would end up having the same impact on the environment like that of the Derg, if not more (WOLDE-SELASSIE 2004).

4.5.3 Private entrepreneurs' coffee forest utilisation strategies

Coffee forests have also been utilized by private individuals for various purposes. Private individuals include those with licences and those that are without. They are involved in the utilization of coffee forests mainly in the form of timber and household furniture production and in coffee production and marketing.

4.5.3.1 Timber and household furniture production

The government licenses investments to be undertaken in the demarcated forests and hence a number of private investors have been involved in production activities that are either directly or indirectly related to the forest. One such activity licensed by the government to private entrepreneurs is timber and household furniture production. The production process has depended on the forest since the raw materials required for the purpose are obtained from the forest. Charcoal production has also been one of the activities fostered by private entrepreneurs, under the auspices of the government. The rule of the game is such that individuals or private limited companies should have the licence to do so and during monitoring they should be able to produce evidence that certifies that they are legal.

Quite a sizeable proportion of illegal occupants are also reported to have been involved in such activities as timber production, household furniture production, and charcoal making (personal communication with the bureau head). I could personally see a truck load of timber caught when being moved illegally in the compound of the *Woreda* Office of Agriculture. Besides, it is often a common scene for one to witness young boys signalling the presence of charcoal and household furniture awaiting sale along side main roads and to quickly disappear in to the bush if they suspect passing by cars belong to government. In fact, the incidence of capturing illegal occupants involved in such activities has been on the increase, especially in recent years (personal communication with the Head of *Woreda* Office of Agriculture). It is in the effort to curb this that initiatives such as the re-establishment of check points and the organization of environmental protection committees have been started.

4.5.3.2 Coffee production and marketing

The involvement of private entrepreneurs in the utilization of the wild coffee population takes the form of trading. There are a number (I could not provide the exact number) of private traders who made profits purely by trading coffee. What they do is that they establish coffee processing plants and then purchase the coffee from producers, process it and bring it either directly to the central auction market in Addis or to wholesalers. There were also some who did not have any processing plants but act like brokers. With very poor rural infrastructure and very low rural incomes, this meant that traders in some places became the dominant local economic actors. Right after the fall of the military government (1991), when the new government liberalized the coffee market, the number of private traders' skyrocketed. This coupled with the crumpling of producer cooperatives created ample opportunity for traders to make the best out of the marketing system.

This situation started to take a different picture lately (since 2004) because of new developments particularly in the area of farmers' cooperatives. Although one still finds private traders in the study area, their role is diminishing. This is due, in particular, to the renais-

sance of producer cooperatives and their active involvement in the marketing of coffee. A number of primary producer cooperatives that were either closed down or weakened by the change in government have now been rehabilitated and managed to establish unions. The unions have managed to control the coffee marketing right from the farm gate to the point of export. They have designed strategies that ensure increased profit margins for producers as a result of which farmers opted to deliver their coffee to cooperatives. They have managed to cut the long marketing channel short by circumventing private traders. This has left private traders with no other option than to gradually pull themselves out of the system. Currently, it is difficult, if not impossible, to find private traders who operate in the area at a large scale and in a profitable manner.

4.5.4 NGOs coffee forest utilization strategies

Non governmental organizations' (NGOs') involvement in the utilization of coffee forests is not direct. They are involved in empowering the local communities so that they acquire the knowledge and expertise required to ensure sustainable management of coffee forests. They have also been involved in enabling the community engage in the production and marketing of environmentally sound coffee.

4.5.4.1 Empowering the local community

NGOs take part in the utilization of forest resources indirectly. The Mension-for-Mension in *Yayu* is one such NGO involved in the process. The NGO was actively involved in empowering the local community in the areas of participatory resource management and thereby bridging the gap between traditional local institutions and policies or programs promoted by government and international donors. Another important role of the NGO was the provision of training to local institutions that impart the knowledge and skills needed to take on new roles and responsibilities. This particularly took the form of training development agents and farmers in the modern tools of resource mapping, planning and sustainable management, for understanding how to identify and market both traditional commodities and environmental services, and in financial management, among other skills. The NGO was also involved in resource management through establishing nurseries and distributing tree seedlings.

4.5.4.2 The production and marketing of environmentally sound coffee

The role of international NGOs has also become more important than ever before in the study areas in assisting farmers to ensure environmentally sound coffee production and marketing. Their involvement is not direct, as they do not take part directly in the production activity. They act as facilitators of the utilization process by providing farmers with technical and financial backstopping. The technical backstopping comes in the form of assisting farmers to establish nurseries and in the distribution of coffee seedlings, where as the financial assistance comes in the form of funding nursery activities. Very recently, some NGOs have started to assist farmers in the marketing of wild coffee. This assistance, in particular, was directed to farmer cooperatives. The assistance is such that farmers are paid a premium price on top of the market price that the coffee fetches during selling, provided the coffee they bring to the selling point is "wild". Some NGOs have also been engaged in certifying the wild coffee for its organic nature. This is being done in close

collaboration with the primary coffee producer cooperatives, the Woreda Cooperatives Desk and the regional coffee producers' cooperative union.

The duty of coffee producers' cooperatives is to monitor that the coffee brought by members is wild while that of NGOS is to backstop this initiative technically and financially. They have established procedures through which they monitor this. Once certified, members get an extra price on top of the market price for the quantity of "organic" coffee they brought. This has resulted in creating two scenarios; first farmers have become very interested to become members of coffee producer cooperatives; and second it has acted as an incentive to enhance the production of wild coffee and therefore its utilization by farmers. However, it also has a problem as some members of the cooperatives continued to bring less quality materials and could manage to go away with better prices since the monitoring mechanism has not been that effective. If corrective measures are not taken (unless stringent monitoring mechanism is put in place), this might create disincentive among those who incur extra cost to maintain the quality but only to realize, at the end of the day, that others who did not do so get paid the same price.

In general, participants' resource utilization strategies varied significantly. Communities' utilized coffee forests in connection to their livelihood strategies i.e. coffee production, crop production, livestock production, beekeeping and non-farm activities whereas the government utilized coffee forests for timber and coffee production, and forest and wild coffee conservation. Non-governmental organizations involved in indirect utilization of coffee forests where they empowered the local community so that they are engaged in the production and marketing of environmentally sound coffee. The resource utilisation strategies employed by the various participants have some times been contradictory and sometimes complementary. For example, governments' strategies of forest resources utilization (conservation e.g. NFPAs) and wild coffee conservation (FCUs) clashed with farmers' immediate objectives of forest resources utilization (agricultural land, fuel wood, construction material) and coffee production. In situations where we have multiple participants, like the case described in this study, the likelihood of occurrence of conflicting resource utilization strategies is high and almost eminent.

However, such differences in perception, knowledge, understanding, preconceptions, and therefore resource utilization strategies were often obscured in conventional policy dialogue despite the fact that they may provide a deeper explanation of conflict and therefore resource degradation. For that matter, much of the natural resource management policies and strategies in the past have either disregarded altogether or given peripheral attention to such differences and therefore to conflict issues arising thereof. It is when different stakeholders reveal different interpretations of key natural resource management and conservation issues that the policy debate can be most productive. A deeper understanding of the difference of stakeholders´ perception and the plurality of views in natural resources management does not guarantee that policy negotiations will always result in a win-win scenario. However, it may smoothen the path towards consensus building and in resolving conflict situations in instances where there are incompatibilities in stakeholders' perceptions in general and interests, values, or priorities and resource utilization strategies in particular. The design and implementation of effective institutions must therefore be preceded by efforts geared towards understanding the variations that exist among communities and therefore the plurality of views that prevail as regards the physical condition,

population dynamics, and factors of degradation, the need for conservation and the responsibility and strategy of conserving the coffee forests.

4.6 Conflicts in coffee forest management

Conflicts in natural resource management are inevitable since those that depend on them often have differently defined conservation and management priorities, interests, perceptions and goals (GIMBLE 1998; AGRAWAL et al. 2001). They are often likely to arise as resource users draw on their current perception, knowledge and understanding to cognitively frame a specific natural resource utilization strategy. However, they should not be seen as detrimental to resource management. A growing body of literature argues the constructiveness of conflict as a normal and common part of social and political life, and that the true need is for collaborative approaches that maintain a healthy respect for the different and often conflicting values and interests of multiple groups. Conflicts can also serve as a catalytic force by pointing towards inequality, potential loss, potential obstacles to progress and the need or desire of communities to assert rights (UPRETTI 2001). Conflicts in NRM in general are defined as observable differences in opinion; misunderstandings; clashes of interest; disagreements; complaints; protests by argument; antipathy, and filing cases against one another of resource users (UPRETTI 2000, 2001).

The discussion above (section 4.5) clearly indicated that participants of the action arena (local communities, NGOs, governments, and private entrepreneurs) differed in their opinion of how coffee forests should be managed; that they have disagreements and complaints like the ones made by communities; and that there were clashes of interest between the government (setting aside forests for conservation) and communities (wanting to undertake coffee production). These differences of opinion and clashes of interest as well as disagreements as to how best the coffee forests can be managed have led to each of the participants employing different but often competing coffee forest utilization strategies. The outcome of these competing strategies is a reduction in the amount of goods and services produced from the utilization of coffee forests (e.g. fuel wood, construction material, demising forest cover etc.) and therefore degradation. This in turn shows (is an evidence of) the presence of conflict, conflict being defined as the difference in opinion, clashes of interest and disagreements among participants of the action arena as regards how coffee forests should be utilized managed (conserved and used). Based on this definition, the study has identified four different types of conflicts viz. indigenous communities'-government conflict; indigenous communities'-settlers' conflict, intra-community conflicts and conflicts among various government institutions (intra-governmental institutions conflict).

4.6.1 Indigenous communities'-government conflicts

The conflict between indigenous communities and the government has a long history. It dates back to the time when the monarchy started to target the southwest as an important area of economic activity and thus started to intervene. Government intervention of the area took the form of resettlement schemes, forest utilization for commercial purposes, and conservation. Resettlement schemes involved the dislocation of significantly large proportion of communities from the central and northern highlands of the country to the

south and south western parts of the country (WOOD 1982, 1986). They were conducted with the objective of achieving food self sufficiency by relieving the population pressure in the over-crowded and resource degraded areas of the north, and by moving people to relatively resource-better areas of the south and southwest (ALEMNEH 2003; DESSALEGN 1989).

Resettlement schemes have led to increased population and therefore increased pressures upon land, forest and water resources, competition and rivalry, disruption in the traditional land tenure system, change in the farming system and therefore in the strategies used to utilize coffee forests. The population increase occurred so suddenly that indigenous communities found it difficult to adjust their resource use practices to both meet increased demands and to changing farming systems. This in turn has led to a serious dissatisfaction among indigenous communities and to conflicts (differences of opinions and disagreements) with the government. Initially, the conflict was concealed because of the suppressive actions taken by the government. Gradually, however, it became so evident particularly when government change took place as so often indigenous communities started to engage in destructive activities such as escalated deforestation and destruction of soil and water conservation structures. Besides, the resettlement activities were driven more by political agenda and therefore functioned mostly as mechanisms of social and economic control of the peasant thereby once again serving as sources of conflict between the indigenous people and the government (AFRICA WATCH 1991).

The government has also been involved in intensified coffee forests utilization for commercial purposes particularly timber production. These have always been carried out under the constitutional cover of public ownership of forest resources. The processes involved the acquisition, by both private companies and government parastatals, of licences and their engagement in intensified timber production. However, licenses were issued without adequate assessment of the plans for one thing, and the process of timber production was poorly administered as it lacked the necessary monitoring and evaluation for the other. This has often led to wasteful utilization of forest resources and was not accompanied by replanting or control of subsequent land use to ensure re-growth. These measures significantly reduced the benefits that the indigenous communities used to derive form the utilization of forest resources and to make matters worse the practices effectively transferred benefits exclusively to those that are involved in the process. This has therefore discouraged indigenous communities to a great extent as a result of which they started to engage in "illegal" coffee forest resources utilization since they did not want to be passive observers.

Forest and wild coffee conservation activities are the other sources conflict between the government and indigenous communities. The establishment of NFPAs and FCUs involved demarcations which were based on the "exclusionary" rule. However, the demarcations, although claimed by the government to have been measures aimed at conservation, were not considered to be so by local communities. The later rather saw them as measures taken to illegalize their traditional rights and thereby to disassociate them from the resources to which their livelihoods are very much connected. Communities established that the demarcations claimed significant proportion of coffee forest lands owned initially by local inhabitants thereby denying them the access to forest products and agricultural land. This has led to the development of resentment and therefore served as a

source of conflict. Triggered by the existing situation (dissatisfaction) and out of frustration, and in the absence of effective institutional measures that are aimed at reconciling such differences, local communities started to engage in forest resources utilization practices which were but characterized as "destructive".

4.6.2 Indigenous communities'-settlers' conflicts

Formal resettlement programs led to the largest influx of people with diverse sociocultural make ups from the northern part of the country, where resources were believed to have been degraded or scarce, to the south and south west part where resources were believed to have been relatively abundant. Viewed from a national resource allocation perspective, the resettlement program could be justified as a measure to improve the matching of population to agricultural resources. However, when seen from the perspective of the indigenous population, it appeared as an imposition from the top and as an increased pressure on the limited land and forest resources available and hence a source of conflict between the locals and new arrivals (ALEMNEH 1990).

Spontaneous settlements of people from other localities have also been found to be the other cause of conflict between indigenous communities and settlers. BOURN (2002) reported spontaneous resettlement as a continuous practice even today and as a cause of mounting social and political discontent. Spontaneous resettlements have been common and were spurred by the growing land shortage and the strong perception of the existence of vast fertile "unoccupied" tracts of land underpinned by the conviction that making use of these lands was their natural right and their best chance at a better life. As a result many farmers continued to settle in the localities some coming to the areas in the name of visiting relatives while others as daily labourers. Through whatever initiation they come to the localities, they eventually end up establishing holdings by clearing the forest. This has often led to a disagreement between the indigenous communities and settlers regarding the management of land forest resources.

The arrival in vast number of settlers (through planned resettlement sachems or spontaneous settlements) to the areas which traditionally formed part of the land claimed by the indigenous communities as their ancestral homeland had tremendous negative impacts upon the indigenous communities. DESSALEGN (1988) asserts that the resettlement had negative impact on the locals as the appropriation of land by the settlement would deny the indigenous people's access to forest and other resources traditionally available to them. The land allocated to settlers was claimed to have been owned by the locals since time immemorial and when it was allocated to new settlers, the locals started to develop resentment against the settlers. In some occasions, the locals expressed their grievances by directly attacking settlers. Neither the local, regional or national authorities showed any interest to develop nor did they have the mechanisms through which they could support the locals in situations they were adversely affected by the resettlement.

The conflict between the locals and the new arrivals continued to take another shape with the change in government in 1991. With the removal of coercive measures imposed by the socialist government, the seemingly suppressed conflicts of interest between the locals and the new arrivals rapidly flared up and evolved into escalated conflicts and into serious confrontations. For many locals who have perceived "privileged" position of the settlers

to whom the government had granted land, services and protection, the position of the new government was political affirmation of their resentment. They therefore felt justified to take measures targeted to resettles and damaged properties, burnt houses and claimed ownership over their resources (ERLICHMAN 2003). According to WOLDE SELASSIE (2000), the conflict between the locals and the new settlers is the major push factor for the massive flight of settlers from areas of resettlement back to their original home after government change. These incidents, coupled with the physiological, psychological, social, economic, and environmental sufferings they had been through since the commencement of the scheme forced parts of the resettles to evacuate the area spontaneously to return to the original home land and acted as incentives for the locals to engage in activities that are damaging to the forest.

4.6.3 Intra-community conflicts

These are conflicts that occur among community members regardless of their ethnic origin or settlement status. They include disputes over land boundaries, latent family and relationship disputes, and break up of operational, collective choice or constitutional choice rules, the most common of all being the dispute over land boundaries. There have been increasing reports of households quarrelling about land boundaries. This has a lot to do with the absence of clearly worked out land use policy and land registering and titling. In many occasions, households did not have clearly demarcated land boundaries and this has created a space for conflict. Besides, some communities, in the quest for getting access to increased agricultural land, have been involved in forest clearing in the process of which they, knowingly or unknowingly, interfered with "private" holdings of others the process ultimately leading to conflict. This has been fuelled by the swelling proportion of landless farmers and by the increasing inequality of agricultural land. Whatever is the case of such a conflict, the coffee forests are the target and therefore impacted tremendously since they are often the ones subjected to and suffer from the pressure.

The recent extra ordinary move by the government to measure, register and issue certificate of land ownership or "green card" as it is now called, has been a noble exercise and could contribute a lot in terms of reducing the incidence of conflict arising from boundary problems. But it did not escape critiques since it also served as a source of another conflict among community members. As thoroughly discussed in chapter 5, the process has triggered as much as 20 conflicts in a day (personal communication with the office head) among the community, mostly emanating from claims over land ownership. Some how, communities were found to have been involved in "illegal" buying and selling of land and in illegal occupation though forest clearance and it is this practice that has been found to be the root cause of the conflict (for the detail see chapter 5). The land registration and titling process was not accompanied with institutions that help those who are involved in the process to deal with conflict issue arising thereof. As a result, the committee set up to undertake the task had to simply stagger to resolve these conflicts with out the help of institutions. When it is not in a position to resolve the conflicts, it simply differed the case to higher level authorities.

4.6.4 Inter-governmental institutions conflicts

Just like the indigenous communities-government conflict, inter-governmental institutions conflicts have a long history. The fact that the country did not have a comprehensively worked out environmental and natural resources management policies and legislations has contributed a great deal to competitive and uncoordinated use of forest resources by the different government institutions concerned, with each supporting conflicting development initiatives and giving different advice to farmers. For instance, there was a serious conflict between Department of State Forest Development of the then Ministry of Natural Resources Development and Environmental Protection and the then so called Water Resources Commission on the one hand, which both favoured the long term existence of the forests, and the then Ministry of Tea and Coffee Development and the Main Department of Peasant Production within the Ministry of Agriculture on the other hand, which both wanted to encourage agricultural development (WOOD 1983).

Even today, the actions of government institutions, both intra and inter, as far as environmental and natural resources are concerned and between production and conservation activities are not coordinated (EPA 1997). For example, the natural resources conservation and development team of the *Woreda* Office of Agriculture aims to conserve natural resources and is therefore engaged in activities that are geared towards achieving that. On the contrary, the extension team of the office pursues activities that do not take conservation as an integral part of the process. This shows the presence of uncoordinated planning and therefore competitive use of coffee forests. This was accompanied by a continuous restructuring that worsened the scenario. While the reorganization of institutions that the government is making may help address this problem (see chapter 5) the solution would still depend very much on effective coordination.

The launching of the EPE and CSE and the need to exercise joint planning among the various government institutions are some of the mechanism aimed at resolving inter-governmental institutions conflicts. The EPE and CSE provide the long term solution to the problem where as the joint planning provides the short to immediate-term solution. The joint planning, although it should continue to exist, needs to be supplemented with properly worked out policies, legislations, conservation strategies, and programs. For example, the presence of properly worked out land use planning helps to utilize land resources in particular and coffee forests in general properly and effectively. This is because it helps to designate agricultural land, forest land, establish biodiversity reserves to maintain genetic resources, establish anthropological reserves to protect communities with particular local knowledge skills, as well as providing guidelines for concerned government institutions the most appropriate land use. The very recent attempt by the government to have a comprehensive land use policy in place is a noble and indeed a move in the right direction (see chapter 6). However, it has to be accompanied by appropriate policies, legislations and strategies that facilitate its smooth implementation.

In general, conflicts in coffee forests management, in their various forms, are in fact inevitable, unavoidable and they will continue to exist. The efforts should there be not to eradicate them but to deal with them (manage/resolve) them in the most constructive way. However, the solutions to these conflicts (conflict resolution mechanisms) are not to be found in any single action. Rather, diversified interventions are needed at a range of levels i.e. from the federal all the way down to the local level, which address the various ways in

which the problems have been caused. While a range of actions are needed, there must be an overall process which will direct attention to these conflicts, analyze their causes and identify solutions. One way through which this can be achieved is through the proper implementation of the EPE and the CSE. These policy instruments seek to integrate ecological considerations into the country's economic planning and call for coordinated effort and joint planning. They both call for multi-sectoral analysis of natural resource problems in the country and recognize the interaction of resource management with socio-economic, administrative, technical, and policy factors, as well as environmental considerations. They also recognize the crucial role indigenous institutions play in conflict resolution and in the management of natural resources and therefore the need to forge effective linkages between them and formal institutions.

5 Local organizations of coffee forest management

In the preceding chapter (Chapter4) we have seen how the two components (clusters of variables) i.e. coffee forests and their attributes and coffee forest users and their attributes affect the structure, function and outcome of the action arena, which is defied as the decisions made and the actions taken by participants in the conservation and use of coffee forests. The third component that affects the action arena is institutions. Institutions are humanly devised constraints that shape the human-environment interaction. They are also designated as organizations that hold people together in the pursuit of a certain objective. In this chapter, institutions are used in their organization sense and efforts are made to analyse their influence on the management of coffee forests (RASMUSSEN and MEINZEN-DICK 1995). Particular emphasis is given to the local level organizations as this is a local level institutional study. The local level organizations assessed for their influence on the conservation and use of coffee forests include politico-administrative structures, organizational structures (offices, desks, departments, sections, divisions, and teams), and community based organizations.

5.1 Politico-administrative structures

Politico-administrative structures are organizational structures that simultaneously play political and administrative roles. They are decision-making structures set up to ensure efficient implementation of political and administrative roles aimed at increasing legitimacy (and survival) in the eyes of main sponsors: public at large, coalition partners, and main interests groups. They are also meant to ensure effective and efficient policymaking, planning and implementation of decisions and smooth administrative co-ordination of development and the whole administrative machine. Officials within such structures can be politically appointed or could be career officials who cooperate to achieve expected results in political as well as administrative coordination. Core tasks within such structures are therefore simultaneously political and administrative. Often, however, the actual differentiation between political and administrative tasks is frequently difficult if not impossible. The way politico-administrative structures are set up (organized) and the way they function influences development endeavours in general and decision making as regards planning and reporting in particular as well as the conservation and use (management) of natural resources in particular.

Ethiopia is an ethnically federated country that follows a parliamentarian form of government. The country is made up of nine ethnically divided regional governments called States, which are established following population settlement patterns, language and consent of the people. The Federal Government (FG) has a legislator formed by the bicameral parliament consisting of the House of Federation (Federation Council (FC)) or upper chamber (108 seats) and the House of People's Representatives (Parliament (HPR)) or lower chamber (548 seats). The judiciary comprises of the federal Supreme Court and the court systems whereas the executive branch is constituted by the Office of the President, the Office of the Prime Minster and the Council of Ministers (FDRE 1995). The HPR is the highest authority of state and is made up of representatives elected directly from all nations, nationalities and people. The FC is the body in charge of interpreting the Federal Constitution and other laws, and is made up of representatives of regional councils.

Regional/State governments are vested with the power and authority to establish regional politico-administrative structures aimed at self-administration, democratic institutions that ensure governance, the rule of law, and development in general. Accordingly, they are structured into four hierarchical levels i.e. Regions, Zones, *Woredas* and *Kebeles*. Like the case with the Federal Government, all (Regional, *Zonal*, *Woreda* and *Kebele*) politico-administrative structures have legislatives, executives and the judiciary. The councils are the legislators and the highest authorities of state at the respective levels of government. They are represented by members directly elected through popular vote representing the various nations, nationalities and peoples of the Region, *Zone*, *Woreda* or *Kebele*. The executives, which are often called Executive Councils (ECs), are constituted by the cabinets consisting of heads of the various sector offices whereas the judiciary is represented by the court systems at the various levels. The legislative, the executive and the judiciary altogether form what are called administrations, at the respective levels. In this research, local level politico-administrative structures (organizations) are defined as those including and below the *Woreda* level.

5.1.1 The Woreda Administration

The *Woreda* Administration (WA), the lowest constitutionally recognized government apparatus, is composed of the legislator (*Woreda* Council (WC)), the executive (*Woreda* Executive Council (WEC)) and the judiciary (*Woreda* Court). It, being directly accountable to the regional council, is charged with the power and authority to design *Woreda* specific legislations, policies and strategies and to monitor and evaluate their implementation. In doing so, however, it takes precautionary measures such that the policies, legislations, strategies and programs it designs fall within the framework of the regional government in particular and the overarching umbrella framework of the federal government at large (FDRE 1995).

The WEC is organized in such a way that it consists of the Chief Administrator, Deputy Administrator, and cabinet members comprising heads of the various sectoral offices at that level. Sectoral offices that constitute the WEC vary among regions and among *Woredas* thereby reflecting the differences in the socio-economic make up and farming systems practiced. In the *Woredas* under investigation (*Yayu* and *Sheko*), members of the WEC consist of heads of offices of Agricultural and Rural Development Coordination Office, Capacity Building (health, education, and infrastructure), Finance and Economy, Public Organization, Administration and Justice, Public Relations, Public Appeal and Kebele Coordination, and House of Speakers. The Chief Administrator, who is an elected member of the *Woreda* Council, chairs the WEC and the council is accountable to the Regional Council, in addition to being accountable directly to the WC.

The WEC provides politico-administrative mechanisms through which *Woreda* specific development and natural resource management decisions are made. It is a platform providing cabinet members with the opportunity to debate on policy, legislative and strategic issues of specific importance to the *Woreda*, and to get acquainted with those that emanate from higher levels i.e. regional and federal governments. It is also responsible to approve the work (activity) plans (annual, bi-annual and quarterly), budgets and human and physical resources requirements of the various sectoral offices. While doing so, it checks and counterchecks if the plans are of relevance to the *Woreda* and are congruent with the

legal, policy and strategy directives set by the regional council. Once the plans are approved, the councils follow on their implementation and conduct periodic monitoring and evaluation.

5.1.2 The Kebele Administration

Kebele Administrations (KAs) are the next in the hierarchy of the politico-administrative structure following the *Woreda* Administration, as we move down the ladder. They are essentially of two types depending on where the *Kebeles* are located i.e. Urban *Kebele* Administrations when the *Kebeles* are located in towns and Peasant *Kebele* Administrations when the *Kebeles* are located in rural settings. They are constituted by legislators (*Kebele* Councils (KCs)), executives (*Kebele* Executive Councils (KECs)) and systems of social courts (*Kebele* Courts). They issue operational guidelines regarding social, economic and political development of interest to the inhabitants of the Kebele.

The KCs are made up of a minimum of 60 and a maximum of 120 directly elected representatives of *Kebele* residents. The councils are chaired by a chief speaker who has a deputy. Both the chief and his deputy are elected directly from members of the council. Issues as regards political, social and economic development of relevance to the *Kebele* in general and natural resource management issues in particular are decided by the KC. The council is directly accountable to the WC and has an executive wing called *Kebele* Executive Council (KEC). The KEC is organized in such a way that it has a chairperson, deputy chair person and cabinet members comprising representatives for Capacity Building, Economy Sector, Public Organization, and Administration and Justice. The chair person, deputy chair person, public organization and administration and justice representatives are elected members of the KC where as the capacity building and economy sector are represented by employees of service rendering government institutions in the *Kebele*. Accordingly, Principals/Directors of Elementary Schools in the *Kebele* hold the Capacity Building position where as Development Agents (DAs) of the Woreda Office of Agriculture and Rural Development occupy the position of the Economy Sector. The KEC is scheduled to meet twice (Wednesday and Friday) a week and the main agenda during meetings are Kebele peace and stability, briefing on new rules and regulations trickled down from higher level government structures i.e. the KC and WC, and hearing reports of political, social and economic development activities undertaken by the responsible institutions as well as discussion on future plans.

5.1.3 Development Teams

Development teams (DTs) are sub-*Kebele* structures that link inhabitants with the *Kebeles*. Their establishment reflects government effort at creating decentralized community based institutions. They are called by different names in different regions. Accordingly, they are known as *Gare Mesoma* in *Yayu* and *Lemat Gibre Hail* in *Sheko*. The organization of DTs is in such a way that 20-25 households that reside in a close proximity form one DT. Every member of households with age ranging between 18 and 59 is obliged by rule to be a member of the DT. It is only if household members are outside the age range indicated or disabled that they can be exempted from being a member of the DT. The management team of the DTs is comprised of a chairperson, deputy, secretary and two ordinary members. Members of the management team (leadership) are elected members

from the inhabitants of the KA. Election of the DTs leadership takes place once every two years and is commensurate to the schedule for the general election of the Kebele Administration.

DTs are grass-roots institutional bases for planning and implementing political, social and economic development activities in general and agricultural and rural development and natural resources management activities in particular. The amount of natural resource management work to be undertaken (e.g. tee seedlings to be planted, terraces to be constructed, grazing lands to be developed, water points to be developed, etc.) is prepared by DTs and is then forwarded to the *Kebeles* where the over all *Kebele* plan is discussed, summarized, integrated and approved. The DTs are bestowed with the power and authority to take measures against those who fail to abide by the rules of the game. The power and authority goes as far as penalizing those members of the DTs who fail to show up during development activities. The penalty is often in kind where a member who failed to appear on set schedules works more number of days together with other DTs. However, in some instances financial penalty is also exercised. Enshrined in the operational rules of the DTs are also incentive packages. Accordingly, members who participated actively in development activities are rewarded, and often in kind. The awards, in the main, include farm implements like sickle and spade and they are handed out often at the end of each cropping season during demonstration days organized by the Woreda office of agriculture.

5.2 Policy decision, planning and reporting mechanisms

The politico-administrative structures described above define the process of policy decision, planning and the reporting structure. Despite the present federal nature of the Ethiopian state, the power of the Office of the Prime Minister is paramount in policy decisions, planning and reporting. Policies and plans emanate from this office and are transferred down to the local level passing through the various hierarchies for implementation and reporting is made back to the same office following the same structure. The agricultural extension service which is implemented as the National Extension Intervention Program (NEIP) and which is considered by both policy makers and development parishioners as playing a critical role in enhancing agricultural and rural development in general and natural resource management in particular provides an excellent example in this regard.

Soon after the change of government in 1991, the Prime Minister's Office engaged in a policy of attaining food self sufficiency and improved natural resources management. In order to implement this policy, the office gave a special order to the then Ministry of Agriculture (MoA) (now Ministry of Agriculture and Rural Development) to devise a program upon which the MoA provided the Prime Minister's Office with a proposal (National Extension Intervention Program (NEIP)). The proposal was later approved by the PM office, developed into a national policy of agricultural extension and was eventually handed down to all regional states for implementation. The process through which the program was developed is highly centralized the Prime Minister Office playing the central role and making decisive decisions. Participation remained rhetoric as a result of which the process alienated those who have a stake in it like professionals, development practitioners and most of all the ultimate beneficiaries i.e. the farming community.

The NEIP followed a package approach and consisted of improved agricultural technologies in crops (improved varieties, improved management practices (land preparation, planting, weeding and harvesting), and the use of chemical fertilizers and herbicides), livestock (animal feed and nutrition and health), post-harvest (improved processing and storage), and natural resource management (soil and water conservation and agroforestry) as a means to achieve the policy goal. These packages were formulated at the centre by the various experts in the MoA and were later handed down to regions for implementation. Not only the packages but also the number of farmers that should participate in the program has also been decided at the centre in the form of quota. The implementation of the NEIP was accompanied by a credit program that facilitated the delivery of inputs, particularly seed and chemical fertilisers.

Regional governments (Regional Administrations) adopted this program, set quota (number of farmers to be addressed through the program) and gave directives to their respective Bureaus of Agriculture (BoA). The BoAs then developed a proposal and submitted it to the Regional Administration which approved it and oversaw its implementation while at the same time instructing *Zonal* Administrations to closely monitor the implementation. The regional BoAs in turn ordered *Zonal* Departments of Agriculture to cover the set target i.e. the number of farmers to be included in the package and the area to be covered with the package program while the *Zonal* Administration monitored and evaluated the progress and the attainment of the targets set by the Regional Government. The *Zonal* Departments of Agriculture in turn gave directives to the *Woreda* Offices of Agriculture, while the Zonal Administration ordered the *Woreda* Administration to monitor and evaluate the implementation. The *Woreda* Offices of Agriculture then implemented the programs through their extension teams and development agents based at *Kebele* level. The development agents were "supported" by the political cadres and by the *Kebele* Administration in implementing the program.

The way the NEIP was formulated and implemented depicts the narrow technocratic features of policy formulation and implementation that the politico-administrative structures are engaged in. Such approaches to policy formulation are usually sectoral in nature, with short-term economic and production considerations dominating long-term natural resources conservation objectives. The state frequently saw one product, food production in this case, as dominant and policies were accepted without consideration of the wider natural resources situation and the long-term perspective within which agricultural and rural development efforts should be seen. The policy formulation and implementation process ignored the full range of benefits which people could obtain from natural resources and how particular resources fit within both household economic systems and environmental systems. It also ignored the prevailing diverse situation (e.g. farms/households) and prescribed a uniform recommendation for all. Beneficiaries were often forced to adopt the "improved" methods of production. By forced adoption of the "packages" and forced credit (seed and fertilizer) with solidarity group responsibility, most farmers were damaged by financial losses. And this in turn made local level authorities and populations to be opponents, and to be disgusted with government rules, regulations and so called "services" to the local population.

The planning and reporting process followed almost a similar pattern involving the prestated politico-administrative structure and it ended at the Federal Prime Minster's Office.

The Federal Ministry of Agriculture reports to the Prime Minister's Office as does each regional state government. Regional state governments receive reports from regional Bureaux of Agriculture, but the Bureaux of Agriculture also report to the Federal Ministry of Agriculture. The *Zonal* Departments of Agriculture report to both the Regional Bureaux of Agriculture and to the *Zonal* Administration while the *Zonal* Administration reports to the Regional Administration. At the *Woreda* level, the *Woreda* Office of Agriculture reports to both the *Woreda* Administration and the *Zonal* Department of Agriculture where as the *Woreda* Administration reports to the *Zonal* Administration. The development agents at the *Kebele* level report to the supervisors at the *Woreda* level and through them to the *Woreda* Office of Agriculture. On the administrative side, the *Kebele* Administration reports to the *Woreda* Administration.

The top-down target oriented policy formulation, planning and reporting structure reported above following the politico-administrative set up was a problem not only for communities but also for implementing agencies and institutions at the local level. In most cases, local level government agencies have been caught in the middle between decisions made by politico-administrative structures at higher levels and farmers' suggestions of more locally relevant and realistic measures from below. They are often pulled apart in the struggle to fulfil government objectives on the one hand and meeting the expectations of the local communities they are supposed to serve on the other. They therefore fail to practically implement either government policies as stipulated because of severe resistance from local communities or communities' objectives because of the push factor from above.

In general, a number of characteristics of the politico-administrative structures and the way policy decisions are made and planning and reporting mechanisms implemented have remained remarkably consistent over the years. These include a tendency towards authoritarianism, hierarchy, centralized decision making and lack of participations and transparency. These traits have, arguably, translated into bureaucratic cultures that are antithetical to bottom-up or decentralized practices and to reflexivity learning. Furthermore, there has been little experience, if any, of local forms of governance and democratization of development activities in general and natural resources management in particular based on participation and 'bottom-up' processes. Instead, exactly the opposite has occurred and is still happening. The study by KEELY and SCOONES (2003) also documented a similar observation viz. the presence of excessively centralized decision making and lack of genuine participation. For development to be effective and for natural resources to be managed effectively and sustainably, local level politico-administrative structures must have sufficient autonomy; greater accountability of civil servants towards decision-making bodies, and of these towards citizens (YOUNG 1998). In tandem with these, local communities should be prompted to play an important and indeed in many cases a leading role in the planning and implementation of development interventions in general and NRM programmes in particular.

5.3 Organizational structures

In the present study, organizational structures are defined to include government institutions vested with the mandate and responsibility of managing rural and agricultural development in general and coffee forests in particular. It is provided in the constitution (FDRE

1995), environmental policy (EPA 1997) and the conservation strategy of Ethiopia (CSE 1989) that organizational structure responsible for development in general and for the management of natural resources in particular should be established from the federal down to the local level. These include such organizations as ministries, authorities, commissions, agencies, offices, bureaus and various ad hoc and permanent committees. There are many such organizations at the federal level. However, organizational structures of particular relevance to natural resource management include the Natural Resources and Environmental Protection Standing Committee of the House of People's Representatives (HPR), the Environmental Protection Council (EPC) of the Prime Minster's Office, the Environmental Protection Authority (EPA) (re-established through Proclamation 295/2002), the Ministry of Agriculture and Rural Development (MoARD), the Institute of Biodiversity Conservation (IBC), the Ethiopian Wild life Conservation and Development Authority (EWCDA), the Ethiopian Agricultural Research Organization (EARO), the Ethiopian Science and Technology Commission (ESTC) and other environment related sectoral ministries, commissions, agencies, and authorities.

At the federal level, the authority to legislate on the protection of the environment and natural resources is vested in the House of People's Representatives (HPR) (parliament). In the HPR, there are 12 standing committee dealing with various political, economic and social aspects. One of the committees is the Environmental and Natural Resources Protection Standing Committee and it is this committee that is vested with the mandates and responsibility of handling environmental and natural resource management issues. The committee critically reviews environmental and natural resources management policies and legislations before they are approved by house. It also evaluates the performance of various institutions involved in the sector by organising a public hearing session where the institutions present their quarterly, bi-annual and annual reports to the house. It also makes a visit to the various institutions involved in the sector and holds talks and discussions with heads of the institutions and relevant staff.

Given the multi-sectoral nature of the federal policy on natural resources and the environment and due to the fact that its implementation involves and necessarily requires a coordinated effort among number of government agencies, overall coordination and policy direction is provided by the Environmental Protection Council (EPC), established by decree/proclamation (FDRE 2002). An official delegated by the Government chairs the EPC and membership is at a minister or commissioner level. Accordingly, members of the council are the Minister of Agriculture and Rural Development, Minister of Trade and Industry, Minister of Mines and Energy, Minister of Water Resources, Commissioner of Science and Technology and General Manager of the EPA. Besides being a member, the EPA acts as a secretariat of the EPC. The proclamation that established the EPC indicates that a number of smaller sub-committees and *ad hoc* working groups/task forces are to be established which would involve representatives of most of the sector ministries. However, it will also be possible to co-opt other relevant individuals and institutions. These working groups and task forces would work on subjects such as environmental legislation, environmental education curriculum development, and strategic land use planning etc. that will help the EPC in making decisions (Ibid).

The responsibility of regional governments is administering natural resources. In order to fulfil this objective, they have established various organizational structures of their own

pursuant to the provisions in both the federal and regional constitutions, the EPE and CSE. The Southern Nations, Nationalities and People's Regional State (SNNPRS) has established the Environmental Protection, Land Administration and Use Authority (EPLAUA) (EPLAUA 2005) and the Oromiya Regional State established the Oromiya Environmental Protection Office (OEPO) (Regulation No. 28/2002) (OEPO 2003) to administer environmental and natural resources. Both the Authority (SNNPRS) and the Office (Oromiya) have a charter of mission and objectives in line with the development mission and objectives of the regional government and the EPE and CSE. The mission of the Authority (SNNPRS) is to contribute to the regional economic and social development by devising a just and equitable land administration and scientific utilization of resources where as that of the Office (Oromiya) is to bring paradigm shift to the current environment by devising mechanisms, which harmonize environment and development.

However, there is no legally recognized administrative link between these organs i.e. the EPLAUA and OEPO and that of the federal level EPA. Neither do these regional organs have bureaucratic structures established directly under their control at the governance structures below the region i.e. *Zones* and *Woredas*. The upward linkage is simply voluntary and is based entirely on good will where as downwardly they operate through the various departments, sections and teams organized under the Agricultural and Rural Development Coordination Offices of the *Woredas*. The execution of their plans has therefore been very much dependent on the capacity (human, financial and physical) of the various departments and teams of the sector offices, which has always been precarious and worrisome. In the following section, organizational structures including and below the *Woreda* level are critically evaluated and thoroughly analysed.

5.3.1 Agricultural and Rural Development Coordination Offices

At *Woreda* level, although in close coordination and collaboration with other sectoral offices, issues of rural and agricultural development in general and environmental and natural resources management in particular are organized under the Agricultural and Rural Development Coordination Offices. There are slight differences in the way the offices have been organized among the various regions and some times among the various *Zones* and *Woredas* in the regions.

5.3.1.1 Yayu Woreda

In *Yayu*, the office in charge of rural and agricultural development in general and natural resources management in particular, when I initially visited the *Woreda* in October 2002, was the Rural Development Coordination Office (RDCO). The office consisted of sectoral offices viz. Agricultural Development Office, Rural Land Administration and Natural Resources Development Office, and Desks viz. Rural Road Desk, Rural Water Development Desk, Rural Mines and Energy Desk, Disaster Prevention and Preparedness Desk, Irrigation Development Desk, and Credit and Agricultural Input Coordination Desk. However, the restructuring that had occurred in 2004 at the federal level, which had led to the creation of the Ministry of Agriculture and Rural Development (MoARD), through the merger of the former Ministry of Rural Development (MoRD) and Ministry of Agriculture (MoA), resulted in restructuring of the RDCOs at Regional, *Zonal* and *Woreda* levels. As a result, a new office under the name Agricultural and Rural Development Office

(ARDO), which is a mirror reflection of the federal MoARD, was established. Not only did restructurings take place simultaneously and following a top down approach but also organogarms were also prepared at higher levels and then handed down for implementation. This process shows how much influence decisions made at the higher levels have on local level decisions and the lack of autonomy and the top down nature of decision making and planning.

Organization of the office

The newly established Agricultural and Rural Development Office (ARDO) is organized in such a way that it consists of a Planning Unit, Women's Affairs Desk, Animal Production and Health Team, Coffee and Horticultural Crops Team, Rural Land Use Planning and Administration Team, Natural Resources Development and Rural Energy Promotion Team, Irrigation Development Team, Agricultural Products Marketing Team, Agricultural Inputs and Credit Team, and Crop Production and Protection Team. The planning unit serves across the board while the rest are working sort of independently. As discussed above, the new structure was prepared at regional level and brought down to the *Woreda* for implementation in 2004.

Within the office, the mandate of managing environmental and natural resources is that of the Land Use Planning and Administration Team (the land management aspect), and Natural Resources Development and Rural Energy Promotion Team (the management of natural resources otherwise than land). The objectives of the first team were to administer rural land and its use; and to make sure that development endeavours and thus land use policies and strategies are prepared and implemented in accordance with the available land and human resources. The objectives of the second team were to make sure that the environment and natural resources are managed properly and utilized effectively to foster sustainable economic, social, political and cultural development; to meet the current energy needs of the population without jeopardizing the interest of future generation; and to make sure that any development activity is undertaken by taking into account the need to maintain proper environmental and natural resources balance (ARDO 2005).

Over the last five years (2000-2005), the office has been re-structured/re-organized three times. Two of the re-structuring/re-organizations took place following suit with the restructuring at the federal level and the third one took place when the Regional Government decided to dissolve the former Oromiya Irrigation Development Authority and to put the responsibilities of natural resource management back under the former Bureau of Rural Development (now Bureau of Agricultural and Rural Development). Each time the restructurings occurred, they resulted either in the merger or split of teams and sections and in the assignment/appointment of new heads and reassigning of staff to various sections or teams and positions. I was surprised to meet two heads in a time span of one year in *Yayu*, and each time I talked to the heads, they seemed to have been getting prepared to start working from zero, and as if nothing has been done before. This has therefore seriously affected the undertakings of activities planned before and it also led to the disruption of activities that have already been started. In a constantly changing organisational environment, ensuring the implementation of effective and sustainable natural resources management programs is difficult.

Human resource condition of the office

In 2003/4, the available man power situation of the office (formerly known as Rural Land Administration and Natural Resources Development Office) was 7 experts, including the team leaders (discussion with Head of the Office). The requirement, according to what was indicated on the organizational chart, was 10, including team heads, in each of the two teams. The recruitment policy states that team leaders should have first degree from a known university with four years of college education in Agriculture, Forestry or Agronomy, and all others (team members) are expected to be diploma graduates with two years of college education. However, out of the total available human resource, only three were diploma holders (graduates from agricultural colleges with two years of education, one of them being a leader of the first team) and the remaining four were only high school graduates with general certificate (Ethiopian School Leaving Certificate Examination (ESLCE)). Two of the technical staff in the first team got transferred from other divisions very recently; one from the division of Home Economics and the other from archives division. This shows the acute human resource problem that the office is suffering from. What is worse, in spite of a repeated request to the *Woreda* Council for new recruits, because it is the one responsible for that, the office could not do away with the problem since requests were repeatedly turned down by the council.

When I made the second field visit (January 2005), which coincided with the most recent reorganization, it was not possible to identify the exact number of experts and support staff in the various teams and sections mainly because of the on-going restructuring and re-allocation of staff to various positions and since the staff did not know which positions they were going to assume and which teams they were going to be members of. There was one apparent condition obvious though, i.e. the human resource condition did change (personal communication with the bureau head) to be worse off than before. Besides, the office head indicated that no recruitments have been made since I last visited them despite the repeated requests they made to the *Woreda* Administration. This has therefore made the human resource condition of the office to be in a precarious condition.

Not only the quantity but also the quality of the available human resource is critically important in ensuring sustainable natural resource management. Upgrading the technical knowledge and skill of the available human resource is one of the strategies used to improve the quality of human resource and to meet the objectives and achieve the missions of an organization. On-the-job training, both long-term and short-term, is the most frequently used in this regard. Overall, in the last three to five years, in the *Woreda* a total of 27 Development Agents (DAs), with either nine or six months of training on general agriculture before, have been trained at various Junior Colleges and are now upgraded to a diploma level. Most of these were appointed as DAs and are working at *Kebele* level. Besides, tailor made short term trainings on extension packages were given to DAs and they often lasted the maximum two weeks. Apart from these, no short term trainings, aimed either at improving the technical knowledge or skill of staff posted at *Woreda* level, have been organized. This has been a disincentive and therefore acted as one of the critical constraints in retaining staff and in bridging the knowledge gap required to effectively manage resources and execute development programs.

Financial resource condition of the office

There are two sources of finance for the office: government and aid. Statistics is very difficult to provide the exact figure but from the discussions I have had with Office Heads, I have come to realize that the budget allocated from government source is extremely low. Besides, much (over 80%) of it is spent on overhead. For instance, the budget allocated for recurrent costs during the physical year 2002/3 was 11,000 Birr (ca Euro 1, 100). Recurrent costs include expenditures related to operational activities such as per diem; fuel, and stationary. It is through this budget that the office is expected to protect the estimated 120,000 hectare of demarcated natural forest; to establish and run nurseries and to reforest degraded and bare lands. The budget that comes in the form of aid is often project based e.g. the coffee project (CIP) that accounted for the aid part of the budget in the *Woreda* in this case.

The utilization of the budget allocated from government source high (over 80%). This is because the majority of it is recurrent budget, the highest share being salary payment for the employees. In addition, the possibility of transferring the allocated budget from one budget line (code) to another, whenever needed, was possible and this has made the utilization percentage high. The utilization of the aid budget was very low; usually less than 40% (discussion with the project manager). This is mainly because of the long process involved in the budget disbursement by the Institute of Biodiversity Conservation (IBC). The project manager indicated that there has always been a significant delay in the disbursement process and this has affected the budget utilization to a great extent. Recently, the responsibility of managing the Coffee Improvement Project (CIP) has been handed over to the regional government and hence this problem (under utilization of budget) is hoped to be solved. The transfer of the responsibility took place recently (2005) so it is a bit early to make assessment of the situation and to see if any positive developments have occurred in the budget disbursement procedure and in the management of the coffee forests.

It is not only the amount of budget allocated to the office from government treasury, which is often significantly low that is of concern but also the budget approval process and the time of disbursement. The budget approval process is such that it follows iterative steps. First, the regional government, based on the budget ceiling it gets from the federal government, makes a call. The call often includes budget ceiling to *Woredas*. The *Woreda* Council then prepares the budget and submits it to the regional council. The regional council then approves the budget plan after making a rigorous evaluation. Once the budget is approved, it will be sent to the *Woreda* Council. The *Woreda* Council follows almost the same procedure in approving the budget for the various sectoral offices operational in its jurisdiction. The whole process takes a while thereby delaying the time of budget approval and disbursement.

The most important thing to note here is the process followed in approving the budget vis-à-vis the principles enshrined in the constitution (financial decentralization). The process is completely top down and contradictory to what was provided in the constitution. It starts to set in motion when the regional government makes the first call by fixing the ceiling. In fact, nothing is wrong with fixing the ceiling and making the call had the process been two-way and iterative giving chance for the *Woredas* to raise their concern and to exercise their decision making power. However, decisions as regards the budget alloca-

tion, as it happens now, are concentrated at the centre i.e. regional/federal and this is against the principles of financial decentralisation that the government claims to have been implementing. *Woredas* have to simply rely on the generosity of regional governments and ultimately on the federal government when it comes to financial resources. Their role is very much limited and is restricted mainly to implementation of decisions made at higher levels. Such kind of financial decentralisation is meaningless to start with and does not have significant impact in terms of enhancing development and the management of environmental and natural resources.

Physical resources condition of the office

Physical resources (transportation facilities, office space, communication facilities (telephone, fax and internet), and field equipments) are equally, if not less, important as financial and human resources are in terms of assisting organizations meet their objectives and achieve their goals. Given this, the availability of physical resources is one of frightening. Office spaces are very much crowded (e.g. 5-7 people in a 5 by 4m room), communication facilities (telephone, fax and e-mail) are entirely lacking, transportation facilities (vehicles, motor cycles, bicycles) are severely constraining travel and the lack, in most cases, and the presence in limited amounts, in some cases, of field equipments (spade, shovel etc.) have been a serious bottleneck. For example, the two teams that deal with environment and natural resources development and protection have literally no vehicle except for one motorcycle that has been in use for over twenty years now. And the only old motorcycle the teams have is being used by the team head. The absence of transportation facilities has made movement very much restricted not to mention the shortage of public transportation, the absence of all weather roads and the difficult terrain that had made transportation very difficult, if not impossible.

5.3.1.2 Sheko Woreda

In *Sheko*, like in *Yayu*, before the restructuring, the office in charge of agricultural development and natural resources management was the Rural Development Coordination Office (RDCO). But after the restructuring in 2004, its name was changed to Agricultural and Rural Development Coordination Main Office (ARDMO). Various organizational structures established under it include Agriculture and Natural Resource Development Office (ANRDO), Agricultural Cooperatives Desk, Agricultural Inputs Desk, Community Road Desk, Water, Minerals and Energy Desk, and Rural Land Administration and Use Desk. It is the Agricultural and Natural Resources Development Office that is in charge of agricultural development in general and natural resource management in particular.

Organization of the office

The Agricultural and Natural Resource Development Office was organized at three levels viz. *Woreda* level, Main Development Centre level, and Development Centre level. At the *Woreda* level, the office consists of five teams i.e. Coffee Production and Quality Desk, Crop Production Desk, Livestock and Apiculture Desk, Natural Resources Development and Conservation Desk, and Rural Women Desk. The responsibility of managing natural resources is that of the Natural Resource Development and Conservation Desk. In the past five years (2000-2005), the office had been restructured three times and four heads had been appointed all along. Each time a restructuring took place, decisions were made at the federal level and passed down to the *Woreda* through the regional government. The re-

sponsibility of assigning heads is that of the *Woreda* Council and often heads are political appointees.

The *Woreda* is divided in to three main Development Centres (DCs) namely: *Mehal Sheko*, Gez-Meret and Ayebera-Sanka. Each Main Development Centre consists of six experts i.e. a head, a coffee quality expert, livestock feed and husbandry expert, forestry expert, rural women expert and livestock disease expert. Each Main Development Centre in turn is divided in to eight Development Centres making the total number of Development Centres in the Woreda 24. A Development Centre is usually staffed with one DA or rarely two (and when so one is a woman in charge of rural women), although the provision in the organizational structure is three DAs; one for agriculture, natural resource and rural women issues each.

Human resource condition of the office

The total human resource available in the various teams in the office is 21, while the requirement according to the provision in the organizational structure is 75. The human resource available in the three Main Development Centres is 10, while the requirement is 39. In Development Centres, there are only 15 DAs while the requirement is 79. At all the three levels i.e. *Woreda*, Main Development Centre (MDC) and Development Centre (DC), the available human resource are critically low and to be precise it is less than one third of what is required. This therefore clearly shows the immense human resource problem that the *Woreda* is suffering from, not to mention the presence in very few numbers of adequately trained staff (quality).

Only a handful of experts (not more than five in number) are college graduates with diploma and almost all the DAs are high school graduates with only six to nine months of training in General Agriculture. The first batch of graduates with two years of college training from the recently established Agricultural and Vocational Education and Training Colleges (ATVETs) just arrived (October 2003) and were awaiting to be posted/assigned to various positions as either experts, supervisors, and/or Development Agents at either *Woreda*, Main Development Centres, and/or Development Centre, although they were very few in numbers (5). This is believed to contribute significantly towards improving the human resource situation of the office both quantity and quality wise, given the severe constraint that the office is subjected to.

Data were difficult to obtain regarding on the job training. However, from the discussion held with the office head, it was found that except for the tailor made short term training on the extension packages, in the last five years no training, either short term or long term, has been offered to experts at *Woreda* level. This has been coupled with increasing number of staff leaving the *Woreda*. For example, the Development Agent that had assisted me while doing my field work during my first field visit (2003) was not there when I went there for my second field visit (2004/5). The office head in charge was also gone when I went there for the second time. This shows how fast the human resource turn over condition of the office is and the need to take swift action if the resources are to be managed effectively and efficiently.

Physical resource condition of the office

The physical resource condition of the office was very poor. Office space, communication facilities, transportation facilities and field equipments have been significantly constraining the activity of the office. For instance, the office has literally no vehicle but only a relatively old motorbike that the head uses; no telephone system and it has only 8 rooms to accommodate all the staff. In order to follow up field activities, experts from the *Woreda*, Main Development Centres and Development Agents from Development Centres had to walk on foot or use public transport as and when available, some times paying the cost from their own pocket and some times asking for a ride. When they use public transport paying from their own pocket, it is reported that getting the expense re-imbrued is very difficult as budget shortage is very much pronounced. The problem is severe with development agents since they literally had no other option than to walk to the various spots, not to mention the tough and undulating terrain that makes travel on foot often tiresome and difficult, if not impossible.

Financial resource condition of the office

The financial resource situation of the office is meagre like the human and physical resource condition. Although it was not easy to know the budget breakdown, the office head indicated that the total recurrent budget for the year 2002/3 was 23, 000 Birr (ca 2, 300 Euro) and the great majority (more than 80%) of this went to salary. Besides, the very little budget approved often reaches the *Woreda* very late in the season when the critical time for agricultural and natural resources management activities is over. This has led to underutilization of the very little budget approved and the unutilized part has to be brought back to the regional government once the physical year elapses, because that is the rule of the game when it comes to budget utilization. The other source of budget is aid and the coffee project (CIP) is the only project run by the office. It is through the budget of the project that the office collaborated in the demarcation of the *Berhan-Kontir* Forest Coffee Unit (FCU). The office also makes use this meagre finance to cover costs that arise from such activities as trainings, farmers' days and demonstrations.

5.3.2 Agricultural Cooperatives

Cooperatives are important institutions that enhance agricultural development in general and natural resources management in particular. However, the disappointing legacy that the socialist government left behind regarding farmer cooperatives has still been a stigma and a nuisance to their rapid development. Much progress has not been made yet in terms of putting in place vibrant and diversified farmer cooperatives. Nonetheless, efforts are underway to establish new cooperatives and reinstate and revitalize those that were weekend but somehow withstood the aftermath, particularly after the establishment of the Cooperatives Commissions at both federal (Proclamation No. 147/1998) and regional levels, and the Cooperative Promotion Desks under the Agricultural and Rural Development Coordination Offices at *Zonal* and *Woreda* levels. The aim or purpose of establishing and strengthening cooperatives is to assist the economic development of the country in general and the food security program in particular as well as to empower local communities so that they take active part in the development process. It should, however, be noted form the outset that the degree of cooperatives development is variable as we move from

one region to the other and within regions form one *Zone* to the other and from one *Woreda* to the other.

5.3.2.1 Yayu Woreda

In *Yayu*, there are a total of 19 multipurpose cooperatives, with memberships totalling 10, 522 (9, 789 male and 724 female). However most, if not all, of these cooperatives were in the process of being strengthened. As a result, often times one finds many of the executive committee positions vacant and the operations of the cooperatives somehow week. The *Woreda* Cooperatives Promotion Desk has been trying its level best to assist strengthen the cooperatives by helping them fill up the vacant positions and by giving the necessary technical backstopping and administrative guidance and support through organizing trainings. NGOs have also been active partners in giving support to strengthen the cooperatives.

The cooperatives have been involved in various activities; the three most important being provision of households with consumables (kerosene, salt, sugar, and textile products), coffee marketing, and input delivery (fertilizer, improved seeds and herbicides). Very few have been involved in production activities such as dairy and coffee production. The delivery of coffee marketing service is conducted in such a way that the cooperatives get credit from government banks located in *Woreda* towns and then buy coffee from members during harvest and store it. They also buy coffee from non-members as well. The coffee is then sold later when market prices get high. It is after selling the coffee later in the season that cooperatives settle their credit with the bank. This is a special arrangement made by the government to provide incentive for the production and marketing of coffee. The marketing process has helped members achieve two objectives: the advantage obtained as a result of cutting the long chain of marketing short thereby leaving farmers with better profit margin, and the advantage of speculative price that producers enjoyed by providing a storage function.

The cooperatives have also been involved in service delivery i.e. in the purchase of salt, edible oil, soap, and kerosene from the near by towns and selling them to residents in the small shops they build for such purposes in the cooperative office yard. A number of the cooperatives that withstood the after math of the *Derg* managed to survive the aftermath and thus far by providing such services. However, their services have been very much week all along mainly because they have been staggering with the problem especially of lack of human resources (executive positions) and financial resource required to run their business smoothly.

The input delivery service that cooperatives have been rendering is carried out in close collaboration with the Agricultural and Rural Development Coordination Office (ARDCO). The ARDCO makes an assessment of the need for inputs particularly fertiliser and chemicals such as herbicides and insecticides and documents the quantity required. The cooperative office then purchases the inputs required based on the demand report that it receives from the ARDCO and distributes the inputs to members on credit basis. Members then settle their credit later in the year once they have harvested and sold their produce. There is a very good and coordinated action between the ARDCO and cooperative office in facilitating this.

There is a recent development in the area of cooperatives development i.e. the establishment of the Oromiya Coffee Farmers Cooperative Union. The union, founded in 1999, is privately owned and managed farmers' cooperative comprising 34 member cooperatives representing over 22,700 small-holders. Cooperatives under the union grow eco-friendly coffee, coffee grown under rich canopies of forest shade at altitudes between 1600-2000 meters. The coffee trees are hand-weeded, pruned and stumped to respect the ecological integrity of the land. Organic mulching and composting, along with pre-harvest planting of leguminous shade trees further demonstrate their support for the conservation of the forest coffee ecosystem. The union provides technical training and financial assistance to member cooperatives, as well as efficient processing, marketing and export services. The union operates under an Auction Market Waiver, allowing coffee producers to sell directly and quickly to clients in Europe, Africa and the United States. The union has helped growers earn more profit by breaking the long marketing channel (intermediaries) short and thereby ensuring increased price. It has also assisted coffee producing cooperatives in certifying their coffee so that their coffee will have organic labelling. This effort is being assisted by an international company.

The fact that the union is assisting coffee growers in terms of having increased income from growing eco-friendly coffee is encouraging. Nonetheless, it needs to be integrated to the overall environmental and natural resources management endeavours of the country. In this regard, the objectives of the union viz. improving farmers' income to maintain the quality of coffee production; improving and maintaining the sustainability of coffee industry to improve quality and productivity of Ethiopia's coffee; and regulating and stabilizing local market to provide farmers with the best services and reliability to clients need to be harmonized with conservation policies, strategies and programs. Besides, the status of the so called "cooperative forests" that once belonged to cooperatives but have already been nationalized and become government properties during government change need to be revisited. Currently, there are no forests owned and managed by cooperatives even though the current forest resources development and conservation proclamation makes provisions for such institutional arrangements. Under such a condition, the operation of the union can even be very much constrained in terms of contributing to biodiversity conservation. Thus, efforts also need to be exerted to integrate coffee production to environmental and natural resources management.

5.3.2.2 Sheko Woreda

Just like the case in *Yayu* and other *Woredas* in the country, the experience with cooperatives during the socialist government has been an impediment for the rapid development of cooperatives. Currently, there are a total of 6 cooperatives. Out of these, one is involved in hides and skin marketing, two in flour mill service delivery and two in wet coffee processing and marketing. It is the coffee processing and marketing cooperatives that are very strong. The cooperatives provide processing, marketing and credit service to members. They have their own coffee processing plants run by hired technicians and daily labourers.

The cooperatives facilitate the coffee marketing service through a credit arrangement that they establish with the government bank. Like the experience in *Yayu* and elsewhere, the cooperatives borrow money from the bank in advance and buy the coffee from members and from non-members as well during harvest. They then process it using the processing

plant under their ownership (using wet method of processing) and then bring the coffee directly to the central market in Addis for auction. Members benefited from the practice since it had enabled the cooperatives to cut the long marketing chain/channel short and increase the profit margin thereby. The process has pushed intermediaries who used to reap a lot of profit out of the game and nowadays the number of private traders has declined dramatically.

While assisting the marketing of coffee, cooperatives also make sure that quality is maintained as it is one of the significant determinants of price. Cooperatives have a coffee quality expert that they have hired. The expert monitors the quality of the coffee provided by both members and non-members. Besides, they work hand in hand with the relevant experts in the *Woreda* agricultural and natural resources development office in terms of ensuring quality. However, the cooperatives have been facing problems, the most serious problems being week management committees and low level of trust among members, because of the previous bad experience with cooperatives. Besides, most of the executive positions of the cooperatives are yet to be filled, which in turn has slowed down the performance of the cooperatives. Although a regional union for coffee producer cooperatives has not been established in the SNNPRS, a Zonal union has been established in Sidama by organizing 39 primary coffee producing farmers' cooperatives. Like the case in Oromiya, the union has been assisting member cooperatives in the marketing (export) of their coffee. International (British and Swiss) companies have been assisting the union in facilitating this function. It is only two years since established and therefore too early to make an assessment of the performance of these unions. Nonetheless, it has been possible to witness the tremendous potential that could be utilized in terms of increased profit margins that would have been reaped by intermediaries otherwise.

5.3.3 Civil society groups

The Public Organization Office, which is a member of the *Woreda* Council, is the office in charge of facilitating the organization of civil society groups or public organizations. Organizations that have begun to appear and flourish, which are worth mentioning in this regard, are Youth Associations and Women's Associations. These are civil society groups (public organizations) that are organized voluntarily, unlike the experience there was during the Derg regime.

Although at a very infant stage, and established at both *Yayu* and *Sheko*, they have started to take part in natural resource management endeavours. For example, elected members of the associations have already become members of the *Kebele* Environmental Protection Committees. Besides, in some instances (in *Yayu* for instance), the associations have started to initiate and undertake their own nursery and tree planting activities. They have also been actively involved in reforestation programs by planting tree seedlings that they raised in the nurseries. Although it is too early to comment on their successes and failures, it can be said that establishing the associations themselves is a move in the right direction and a very good start since they may have a potential role to play in terms of enhancing natural resource management endeavours.

5.3.4 Special purpose committees

In the effort to assist the implementation of sustainable environmental and natural resources management activities, the government has been taking various measures one of which is the establishment of special purpose committees. Two such committees of worth considering are Environmental Protection Committees and the Rural Land Registration and Certification Committees established at Region, *Zone*, *Woreda* and *Kebele* levels.

5.3.4.1 Environmental Protection Committees

These are special purpose committees established to specifically assist the environmental management endeavours of the government. Their establishment was in line with the recommendation made in the Conservation Strategy of Ethiopia (CSE) (EPA 1997) and the proclamation issued to establish environmental protection organs (Proclamation No. 9/1995), which was later amended and issued as a revised proclamation (Proclamation No. 295/2002)

Woreda Environmental Protection Committees (WEPCs)

The establishment of the *Woreda* Environmental Protection Committees (WEPCs) is facilitated by both the *Woreda* Council (administratively) and the *Zonal* Environmental Protection Committee (technically). The committees are therefore accountable administratively to the *Woreda* Council and technically to the *Zonal* Environmental Protection Committee (ZEPC), submitting activity reports to both in the process however.

Membership: When initially established in 1995, the membership of the WEPC followed suit with the then existing organizational structures at the *Woreda* level drawing members from the legislative, executive and judiciary as well as from local communities. Accordingly, members of the WEPC did include:

Administrator	Chairperson
Police Head	Member
Militia Commander	Member
Economic Sector Head	Member
District Attorney	Member
Finance Head	Member
Urban Administrator	Member
Agricultural Development Office Head	Member
Forestry Expert	Secretary

However, with the re-structuring at the federal level which led to restructuring at the local level and the subsequent issuance of the revised proclamation that had vested the Environmental Protection Authority (EPA) with new powers and authorities (Proclamation No. 295/2002), some changes have occurred in the membership. Accordingly, the Head of Rural Development Coordination Office of the *Woreda* became a member of the commit-

tee while the head of the newly established Natural Resources Development and Rural Energy Promotion Team in *Yayu* and the Head of the Agricultural and Natural Resources Development Office in *Sheko* became secretaries thereby replacing the forestry expert. The new restructuring also led to the merger of the Economic and Finance Sector at the local level thereby creating a new sector called Finance and Economy Sector, and the head became a new member of the committee.

Duties and Responsibilities: The terms of reference (duties and responsibilities) of the WEPC was drafted by the Environmental Protection Authority (EPA) at the federal level and it was later endorsed, after being thoroughly discussed and deliberated upon, by the Environmental Protection Council (EPC). This was then handed down to the Regional Governments to be implemented through Environmental Protection Committees at Regional, *Zonal*, *Woreda* and *Kebele* levels. According to the approved terms of reference (ToR), the duties and responsibilities of the WEPC are to:

- Keep an eye on forest and forest product smugglers (illegal people) and bring them to court when they are caught doing so
- Facilitate the election of militia members, together with the community, who will take the responsibility of guarding demarcated state forest
- Make sure that confiscated forest and forest products are sold following the right bidding procedure and that the proceedings are distributed according to the established rules
- Follow up and make sure that all illegal deforestation activities in the *Woreda* are curtailed and that all concerned parties responsible for forest protection take the necessary actions that they are required to
- Follow up and evaluate the activities of, and give directions to, Peasant *Kebele* Environmental Protection Committees (PKEPC)
- Facilitate meetings of the WEPC and PKEPCs, evaluate the activities of all, identify problems encountered and hold discussions on them, and
- Submit work schedules (plans) and activity reports to the *Zonal* Environmental Protection Committee (ZEPC) periodically

Periodic meeting: According to what is provided in the ToR, the WEPC is required to meet once per month. However, this was materialized only in very few instances since its establishment. Besides, as time went by and with the advent of the new restructuring, the activities of the WEPC got weakened and meetings were often held only when illegal movements were detected, and smugglings of forest and forest products reported. In all reported cases, it was the Natural Resource Development and Rural Energy Promotion Team in *Yayu* and the Agricultural and Natural Resource Development Office in *Sheko* that proactively followed on reported cases and pushed for the meetings to be held. This could perhaps be because of the specific responsibility assigned to the team (see below).

Mode of operation: There is an established rule regarding the mode of operation in terms of allocation of revenues generated from the sale of smuggled and/or illegal forest and forest products, once they are confiscated and sold following the right bidding procedure by the WEPC. The allocation is as follows:

For people who have provided information	10%
For Regional Government	40%
For Environmental Development of the Woreda	50%

The WEPC establishes a three-man committee that consists of a Chairperson, Treasurer and Accountant by drawing from the already existing members of the WEPC. It is the responsibility of this committee to follow on and make sure that resolutions passed and recommendations made during the WEPC meetings regarding the allocation of revenues generated from the sale of smuggled forest products are put into effect according to the established procedures. With regards to the utilization of the revenue, it is the Natural Resource Development and Rural Energy Promotion Team in *Yayu* and Agricultural and Natural Resources Development Office in *Sheko* that is vested with the mandate to come up with a plan and submit it to the WEPC for final approval. In this regard, what the team/office does is prepare a proposal that includes activities that should be undertaken in the area of natural resources management (e.g. establishment of nurseries, seedling distribution etc.) and the financial resource required to accomplish it. This is then presented to the WEPC for final approval and if and when approved, the responsibility of implementing it rests with the office/team.

However, the experience so far indicates that the team/office has not been successful in putting this in to effect. The WEPC never decided in favour of any of the proposals presented to it. Rather, the *Woreda* Council diverted the money generated from the sale of confiscated forest and forest products to financing some other activities of political interest to the *Woreda* Administrations such as putting up a meeting hall for the town, and financing political gatherings. For example, I was told that in several occasions, the proposals prepared by the office/team to utilize the revenues generated were simply turned down and the finance was diverted to funding political activities of interest to the *Woreda* Council (unanimous).

The rules issued by the federal EPC in establishing the environmental protection committees, at *Woreda* level, make particular provisions regarding the duties of four important WEPC members viz. the *Woreda* Police, *Woreda* District Attorney, *Woreda* Finance and Economy and the Natural Resource Development and Rural Energy Promotion Unit in *Yayu* and Agricultural and Natural Resources Development Office in *Sheko*.

***Woreda* Police Office:** Whenever there is a report by any one indicating that forest and forest products are being smuggled, it makes the necessary follow up and ensures that the persons or organizations involved in such acts have the pass permit from the team/office in charge. If and when they fail to produce a document certifying that they are legal, it confiscates the product and makes sure that the alleged personalities or institutions are brought to the attention of the WEPC. It is also mandated to make sure that the investigation process is finalized and brought to the attention of the District Attorney in not more than seven days.

***Woreda* District Attorney Office:** Once a case (illegal movement of forest and forest products) is brought to the attention of the District Attorney, it scrutinizes the case in depth and makes sure that appropriate legal decisions, whether positive or negative, are made as quickly as possible. Failure to do so and to follow the procedures will make it ac-

countable for any delay in its decisions. It also advices and gives directives to the WEPC regarding legal issues as related to forest and forest product smugglers.

***Woreda* Finance and Economy Office:** The major responsibility of this institution is to handle financial matters. Thus, it makes sure that the revenues generated from the sale are allocated according to the established rules and regulations. It is also responsible to put the cash money generated through the sale of forest products in its treasury temporarily until payments are effected to the various institutions according to the mode of operation. It is not allowed to make use of the money, as its role is only to serve as a temporary repository, though.

NRDREPT/ANRDO: These are institutions vested with numerous responsibilities that emanate from the fact that they are officially established at that level to be held accountable primarily for natural resource management and environmental protection. They are mandated to give a pass permit to those who are involved in the movement of forest and forest products, and to those who want to be engaged in commercial activities like timber production and household furniture production. Together with others, they follow up the proper allocation of the revenue generated from the sale of confiscated forest and forest products. The responsibility of preparing proposals that show how the money generated through the sale o forest products is going to be put in use is that of theirs.

***Kebele* Environmental Protection Committees**

Following suit with *Woreda* Environmental Protection Committees, *Kebele* Environmental Protection Committees (KEPCs) have also been established. The responsibility of establishing the committees is that of the *Kebele* Council (administratively) and the *Woreda* Environmental Protection Committee (technically).

Membership: The organization of KEPC is as follows:

Administrator	Chairperson
Cabinet members (2)	Member
Militia Commander	Member
Community Elders (2)	Member
Representatives, Development Teams (2)	Member
Representative, Youth Association	Member
Representative, Women's Association	Member
Development Agent	Secretary

Representatives from elders, youth association, women's association and development trams (DTs) are appointed as members through election, while the others are simply designated as members of the KEPC by virtue of the fact that they already are members of official government structures. It is indeed encouraging to see various sectors of the local community represented in the committee. If proper consultation and dialogue is made, this will enhance genuine participation and enhanced natural resource management.

Duties and responsibilities: The duties and responsibilities of the KEPC are to:

- Identify individuals who are involved in illegal activities (e.g. deforestation, lumber production, charcoal making etc.) and confiscate forest products and bring them to the attention of the WEPC
- Liaison between the WEPC and the community in facilitating the licensing of individuals who can be engaged in legal forest and forest products utilization
- Monitor the outbreak of forest fire and facilitate the mobilization of the local community and others responsible to control it.
- Organize a forum and facilitate discussion among the local community periodically regarding problems of forest resources conservation and management and engages them in forestry development activities
- Follow up the implementation of rules and regulations as well as directives issued by the WEPC and submit an activity report to the WEPC once per month

In general, witnessing the establishment of environmental protection committees at the various levels is encouraging. The way they were organised and the duties and responsibilities assigned to them indicate the tremendous potential they may have in enhancing the management of natural resources. However, in the majority of cases the committees did not function well because of repeated restructurings and therefore failed to contribute to the fulfilment of the purposes they were established for. Thus, increased emphasis needs to be given to their revitalization so that they may contribute their share in enhancing and improving the management of natural resources.

5.3.4.2 Rural Land Registration and Certification Committees

The country is in the process of undertaking a nation wide land registration and certification program. Although not all regions have started to undertake the process, major regions viz. Amhara, Oromiya, Tigray and SNNPRS have been very much into the process. In order to enhance the smooth implementation of the process and to make it participatory, a committee has been set up at four levels viz. Region, *Zone*, *Woreda* and *Kebele*. The committees are known as Rural Land Registration and Certification Committees (RLRCs).

Woreda Rural Land Registration and Certification Committee

The committee is chaired by the *Woreda* Administrator and members include heads of the various sectoral offices viz. Agricultural and Rural Development Coordination Office, Finance and Economy Development Office, Administration and Justice Office, Public Affairs Office, Women's Affairs Office, Cooperatives Promotion Office, Agricultural Development Office, Irrigation Development Desk, and Rural Land and Natural Resources Team (secretary). The main responsibility of the committee is assessing if individual farmers/households are eligible to get the title deeds (certificate of ownership) or green card, as it is called, and to present its decision to the *Woreda* Council for final approval. It is also responsible for settling disputes that arise in the process since conflicts have become a day-to-day phenomenon since the process has been started.

Kebele Rural Land Registration and Certification Committee

At the *Kebele* level, two committees collaboratively handle the land measurement and registration activity. The first is a committee of five elected farmers. This committee is known as Rural Land Administration and Use Committee (RLAUC). It has a chair person and is responsible for following up the implementation of the measurement and registration process (playing the role of a watch dog). The other is the *Kebele* Rural Land Registration and Certification Committee (KRLRCC). This committee is made up of the *Kebele* Administrator, elders (2), militia commander, chairman of the RLAUC, and Development Agent. The administrator is the chair person of the committee where as the chairperson of the RLAUC is the secretary.

The KRLRCC is the one responsible for the actual conduct of the measurement and registration activity. What the committee does is it measure every plot owned by private farmers and register it. Once this is done, it forwards the data to the *Woreda* level committee, which in turn makes a thorough assessment of the data presented to it before presenting it to the *Woreda* Council for final decision and approval. The whole process is based on a plan that the *Woreda* Council sets forth. According to the plan, each *Kebele* level committee is required to measure and register certain amount of land in a given time period and the performance of the committee is measured against the set plan.

During my second field visit (November 2004 to January 2005), the activity (measurement and registration) was underway in *Yayu* whereas it was the preparatory work that was underway in *Sheko*. In *Yayu*, the plan set forth by the *Woreda* Council was to measure and register 25, 698 hectares of land in the 2003/4 physical year. Out of this, 81 % (20, 815 hectare) of the planned land area and 94% of the households have already been measured and registered. This, according to the office head, is a huge achievement. However, the measurement and registration process did have some problems as conflicts occurred here and there. Some farmers were reported to have holdings that they have occupied illegally while others have holdings in government demarcated forest areas. According to officials, these farmers are illegal and hence are not entitled to have title deeds for those holdings they occupied illegally. On the other hand, farmers claim that they have been paying taxes for those holdings and therefore should get title deeds. This has been the main source of conflict all along. According to conservative estimates by officials, something like 20 conflict cases of such type were being brought to the attention of the committee on a daily basis.

Another source of conflict was the selling of land and it occurred among farmers themselves. Some farmers were reported to have sold their holdings, which is but against the constitution, and moved to near by small towns. According to the rules of the land measurement and registration, title deeds are to be given only to the original owner under whose name the holdings were registered before. This has made it clear that those who bought the land would not have the right to get the title deed. Many, who have bought land form others, came forward to get title deeds. But since the committee insisted tat title deeds would be given only to original owners, this has led to conflict situations between those who bought the land and those that have already sold but wanted to take advantage of the situation.

When conflicts of such nature occurred, be they in the first form or the second, they were often handled by the *Kebele* committee with strong support from the *Kebele* social court. But if and when conflict issues were beyond the capacity of the *Kebele* committee, they were forwarded to the *Woreda* Council. The *Woreda* Council then made the final verdict assisted indeed by the *Woreda* court as far as legislative measures were concerned and the committee as far as technical information is concerned. The decisions reached at, in either of the cases, were not to give title deeds if the land has been occupied illegally.

5.4 Community based local organizations

Community based organizations, often known as informal/traditional organizations, of many forms are common in rural Ethiopia (YIGREMEW 1998; DEJENE 1999b). Some of these organizations typically reflect social norms of solidarity and reciprocity, constituting a social safety net that ensures survival and relative harmony in villages with meagre livelihoods and sharp inequalities (DEJENE 1999a; GETACHEW 1999). Others are acting as substitutes when formal organizations are not functioning well are inaccessible by the majority because of capacity problems or they are totally absent. Such organizations were observed in the study areas and they ranged form religious organizations, territorial based administrative organizations to traditional self-help organizations, conflict management organizations, rotating credit and saving associations and resource exchange organizations. The distinction among them is only arbitrary since the boundaries for each of these are not clearly demarcated and since some times they serve other purposes than the ones they were established for and since households are members in more than one at any given time.

5.4.1 Religious organizations

Religion is one of the social factors around which local residents establish organizations. Basically, there are two types of religious organizations viz. customary religious organizations and traditional belief organizations. Apart from serving as avenues for social gathering of the followers of that religion, the organizations assist in addressing resource (labour and financial) problems. They form part of the networks and reciprocal relationships through which community members interact with and help each other. The two most important customary religious organizations found in the study areas were *Maheber/Tsewa* and *Senbete*.

5.4.1.1 Maheber/Tsewa

Maheber/Tsewa is a community based religious organization established by followers of the Orthodox Christianity. The number of *Mahebers* in a given locality can vary with the number of different churches available in the locality (e.g. St. Gabriel, St. Georges, St. Michael or St. Marry). Membership in these organizations is open for followers of the religion and the number of those who want to be members does not have a limit. Besides, a member of one *Maheber*, for example St. Gabriel, can also be a member of another Maheber, for e.g. St. Michael. There is a financial contribution by members in the form of monthly membership fees and the amount is always decided by members.

Maheber is essentially a voluntary organization established to bring a segment of the followers of that religion together and to enjoy the social gathering by eating, drinking and discussing on social matters in the form of festivity. Members get together once every month and eat and drink. They, based on agreed schedule, bring food and drink on a rotation basis for the occasion. Besides the eating and drinking, they usually get labour and financial assistance when they are faced with such shortages as labour and oxen and ask the *Maheber* to do so. The financial assistance comes from contributions that members agree to pay as monthly membership fees. The organization has a leader called *Muse* (Moses).

5.4.1.2 Senbete

Senbete is also a community based religious organization established by followers of the Orthodox Christianity. The number of members a given *Senbete* has varies according to the members of that church and it in some instances can go up to 300. Every Sunday, three households bring food and drink to the church and every member of the *Senbete* is expected to do so when it is his or her turn. In addition to the food and drink, members have to pay an annual fee of 12 Birr (ca 1.2 Euro) i.e. a membership fee of 1 Birr per month.

Senbete is run by what is called *Sebeka Gubae*, which in turn has a chairperson (usually the priest of the church), vice chairperson, treasurer, secretary and six members. Since most churches have coffee and forest lands under their ownership, the *Sebeka Gubae* organizes a program and calls for members to come and harvest the coffee when ready for harvest. The church then sells the coffee and the proceeds go to its treasury. Besides, the Sebeka Gubae calls up on members to undertake various social activities such as assisting destitute members in undertaking some agricultural activities such as land preparation and harvesting. It is also charged with the power and authority to fine any member who fails to show up when calls are made. The money that is collected in the form of membership fee and fines goes in the main to church activities but sometimes goes to destitute members in the form of assistance in incidences like the death of relatives.

The religious organizations described above are not directly involved in natural resource management as such. However, they are powerful in shaping human behaviour and action. There is a high tendency for members to adhere to the rules and regulations enshrined in such organizations. Membership in such organizations also enhances social relations and self-help initiatives by ensuring resource flow among members in the form of financial assistances arising form membership fees or penalties and labour contributions through rotating self-help schemes. The social cohesion, mutual respect and trust as well as reciprocity that exists in such organizations serves as an important source of social capital which utilized properly can enhance collective action and therefore the design and implementation of institutions. Thus, there is a huge potential that these organizations can play in enhancing natural resource management if efforts are made to officially recognize them and take them as entry points for launching say for example community based approaches.

5.4.2 Territorial based administrative organizations

Communities have organizations that assist them handle administrative and governance issues. Most of these organizations are embedded in the culture of the community. Communities depend on them for various issues ranging from governance, conflict issues to social problems that affect the day-to-day life of their members. The following are the most commonly used ones in the study areas.

5.4.2.1 Tula

Tula is a community based organization established to take care of administrative issues. It is organized in such a way that it consists of two or more *Shenes* (see below) depending on the size, population and area coverage of the PKA. Its members are all those who live in the PKA under consideration. Thus, the total number of members of a given *Tula* depends on the size of the PKA and is equal, in most cases, to the total number of residents in a given PKA. Membership is free of charge and on voluntary basis. No one is obliged to be a member but if one fails to be a member, he or she will certainly be left out of all social activities or remains to be an outcast. Thus, it is a kind of organization that one joins voluntarily but it also has obligatory elements, implicitly though.

There is no defined schedule as meetings are often held as and when matters that require collective decision and action are required and as deemed necessary by the community. *Tula* is led by an executive committee that consists of a leader, vice leader, secretary, treasurer and ordinary member, all of whom are elected members. The leader of the institution is called *Tula* and the institution derived its name from the leader. The criteria that they usually use in electing the *Tula* are elderliness, trustworthiness, ability and skill to administer community issues. The organization has written rules or by-laws (institutions) that members are obliged to comply with and adhere to.

The role of *Tula* has changed over time. According to farmers who took part in the focus group discussion (FGD), during the time of Menelik II, it used to have a lot of power and it was responsible for handling all issues related to land resources management. This power included the allocation of land to its constituencies and its administration. With time, however, it lost its power. The feudal ownership of land during the monarchy (Emperor Haile Selassie) and the imposition of Peasant Associations during the socialist government reduced the power it has over land significantly. Today, the *Tula* has become a social organization and is responsible for such issues as organizing funerals, investigating and ruling on social misdemeanours (such as theft and adultery), pass resolutions between constituencies in matters such as border disputes, assisting in organizing *Debo* activities, arranging for care of sick people, including organizing transporting people for medical attention, and executing penalties (e.g. removal of reciprocal labour, killing and sharing a goat or ox etc.) for minor offences. It is also responsible in giving guidance and directions to *Shenes* organized under it and facilitating their activities. In order to discharge its responsibilities effectively, the *Tula* works very closely and hand in hand with the *Shenes* organized under it.

There is only weak linkage between the *Tula* and the *Kebele* Administration, although their jurisdictions in most cases overlap. Linkages occur if and only when problems that could not be solved at *Tula* level were referred to the *Kebele* Administration. The *Kebele*

Administration does not interfere in the election of *Tula* leadership and in the day-to-day activities of the *Tula* leaders. However, the *Kebele* Administration some times uses the *Tulas* to mobilize the community for development activities such as construction of schools and roads that link villages. *Tulas* are involved with community consultations regarding natural resources management such as grazing land management, but if and only when the community refers such issues to be addressed by *Tula* (for the detail see chapter 6). Nevertheless, *Tula* is a very important social, political, cultural and economic organization that local communities have relied quite for long now. If recognition is given to it and if policy measures aimed at the management of natural resources take into account its role, it will have significant impact in enhancing the conservation and use of resources.

5.4.2.2 Shene

A *Shene* is a long lasting socio-administrative organization organized under *Tula* whose members are married persons in the household. Members of a given *Shene* in most cases range from 20-30 households. But they some times can have as high as 50 members and even more depending on the size of the *Tula*. Membership is purely based on voluntary basis and social factors such as gender, wealth, ethnic origin, occupation, language or religion have nothing to do with membership. Thus, every one that lives in that section of the *Tula* and that qualifies the criterion (a married person) has the right, and therefore is bound, to be a member of the *Shene*.

The organization of a *Shene* is such that every Shene has a leader called *Tute* and a secretary. The *Tute*, who is an elected member of the community, is responsible for making sure that the *Shene*, under its leadership, accomplishes the tasks that the *Tula* instructs it both timely and according to the recommendation. It is also the responsibility of the *Tute* to report to the *Tula* when members fail to comply with and adhere to the rules. For example, if a member of a *Shene* fails to show up during burial ceremonies or fails to shoulder the responsibility of comforting mourning family members, the *Tute* reports the case to the *Tula*. The *Tula* then forwards the case to the *Mucho* (See detail bellow) that provides the *Tula* with options of appropriate administrative measures to be taken. The fines could be in kind, for example working extra hours in one of the work activities the *Tula* organizes or it could also be payment in cash.

The main purposes of *Shenes* are helping members during incidents like death or temporary incapacitation by accident or disaster and on occasions such as wedding. Besides, they have also been instrumental in mobilizing labour through reciprocal labour relationships and financial resources that they are able to generate in the form of contributions and fines (when members fail to adhere to and comply with set rules and regulations). *Shenes* mobilize labour to plough their land, harvest their produce, and weed their farm etc. for members during accidents like death of either a family member or a close relative, constructing houses. They also organize the contribution of raw materials when fire accidents destroy houses, transporting members or their family members to health centres when they get sick and other social activities that the *Tula* deems necessary to be undertaken by the community.

Just like the case with the *Tulas*, there is only weak linkage between *Shenes* and the *Kebele* Administration. The *Kebele* Administration does not involve in the day-to-day activities of the *Shenes* and neither does it have a say in the election of *Shene* executives. How-

ever, there is much stronger linkage between *Shenes* and *Tulas*. The line of command between *Shenes* and *Tulas* is such that *Shenes* receive work directives and instructions from *Tulas* to perform certain tasks for members in their organization. It is also the *Tulas* that oversee the election of *Shene* executives and that monitor their activities. However, recently, *Kebele* Administrations have started to make use of *Shenes* when they want to accomplish certain tasks say for example the repayment of credit that farmers got for the extension activities. The practice of using the *Shenes* for organization and mobilization of labour force and for political purposes (e.g. tax collection) has also been on the increase lately. However, it is the political interest that dictates the linkage more than the development interest. In fact, it is encouraging to see such a linkages being forged between the two but care must be taken to strike a proper balance between political interest and economic interest. Paying much more attention to facilitating only political interest, just like the Peasant Association of the socialist government, may be counterproductive and may lead to farmers regarding the linkage as unfair and as something working against their interests.

5.4.3 Conflict prevention/resolution organizations

Multiple demands on coffee forests often result in creating opposing and competing interests amongst forest dependent communities. Besides, communities, in their day-to-day life encounters, often end up exercising conflicts and disagreements. In the effort to deal with such conflict issues, they have established various indigenous organizations that rely on, be they social, resource based or otherwise. In fact, they are extremely important in resolving conflicts and in brining relative peace and harmony among the community. In some occasions, formal legal institutions such as the *Kebele* courts refer some conflict cases to be resolved by these organizations, thereby reflecting the growing linkage between the two. The most common conflict management organizations found in the study areas include *Elders* and *Mucho*.

5.4.3.1 Elders

Elders are those local residents whom the community regards as having wisdom because of old age and accumulated life experience. The primary responsibility of *Elders* is to mediate between contending parties and resolve local conflicts. Often, there are localized minor as well as major conflicts/disputes involving members of the community such as farm land boarder disputes. When such disputes occur, contending parties bring the cases to the attention of *Elders* and then *Elders* in turn deliberate on the issues. A decision will then be forwarded after considering evidences presented, and the conflicts will be resolved accordingly. But if and when any of the parties in contention is not satisfied with the decisions made by the *Elders*, the case is often forwarded to the *Mucho*. However, the parties in contention are also free to take the case to the *Kebele* social court. If still the conflict can not be resolved at *Mucho* level, then the case will be forwarded to the *Kebele* court and the process can go further and to a higher level i.e. *Woreda* Court and even beyond.

5.4.3.2 Mucho

Mucho is a local organization established to maintain law and order in the community. It is made up of a committee of 7 elected members from the community and consists of a

chairman, vice chairman, secretary, and treasurer. It is responsible to scrutinize and examine legal issues that the *Tula* and some times the *Tute* forward to it. After careful scrutiny of the case, it provides the *Tula* with legal measures that need to be taken. The *Tula* then endorses the legal measures that the *Mucho* presents and approves for final action. Members of the executive committee of the *Mucho* do not have defined terms and it is therefore if and when the society sees necessary that there will be election of new members to replace old ones.

The local government structure (*Kebele* Administration) does not have any influence over the functioning of *Mucho*. Both the leadership election and the day-to-day activities of the organization are run by communities. There is strong linkage between *Mucho*, *Elders*, *Tula* and *Shene* but the linkage with that of the *Kebele* Administration is not strong as such. The later occurs when issues of conflict that were not solved through traditional organizations are forwarded to the *Kebele* court via the *Tula* or when the *Kebele* Administration forwards some conflict cases to be resolved by these institutions. The fact that the *Kebele* Administration does not interfere in the affairs of the traditional organizations ensures the freedom and authority in decision making. Nonetheless, the fact that there is weak linkage between the two needs to be addressed since forging effective link ages ensures efficiency in the performance of each and in enhancing the management of natural resources.

5.4.4 Rotating credit and saving organizations

In the rural setting of Ethiopia in general and the study areas in particular, formal financial organizations are not well developed. In such a situation, the alternative farmers have is to rely on informal financial organizations that ensure their access to credit and finance. Farmers in the study area were found to have been heavily relying on such local organizations. The following are the most commonly used credit and saving organizations in the study areas.

5.4.4.1 Iqqub

Iqqub is a rotating saving and credit institution where members regularly and periodically contribute some amount of money (depending on their agreement). Once the money is collected, members draw a lot in order to decide who gets the money collected either in that round and/or in the subsequent rounds. The process continues until everyone in the organization gets the money collected in his or her turn. There are men's and women's *Iqqub* and the amount of money collected can vary depending on the financial capacity of members. In some instances, for example, some relatively well to do households can decide to contribute 100 Birr (ca 10 Euro) per month while in some others poor families can decide to collect five to ten Birr (ca 0.5 to 1 Euro) per week in every round.

5.4.4.2 Iddir

Iddir is a self-help organization that members establish voluntarily and has a written bylaw. Its organization is not based on religion, gender or any other social factor and the total number of members can go well beyond 100 and actually it depends on the size of the locality, community or *Kebele* jurisdiction for that matter. An executive committee composed of a chairperson, vice chairperson, secretary, treasurer, accountant, monitor and a

member, runs it. Members contribute an agreed amount of money per month and the periodic meeting is usually once every month. The activities that the institution is involved in include supporting members who lost their relatives through death, supporting members who lost their property through natural accident like fire, clearing of grazing fields and etc. There is some sort of feeling among the local people that Iddir is a modified and/or new version of *Tula*. Nevertheless, it is one of the most important local organizations and basically every one in the *Kebele* is or has to be a member although membership is on voluntary basis.

Rotating credit and saving organizations (*Iddir* and *Iqqub*) are joint liability groups based on social relations of trust, reciprocity, and obligation. Repayment by the borrower is tied to reputation and social standing i.e. one's "social collateral" for future loans. Flexibility to borrow small amounts, quickly, with minimal transaction costs, in adverse environmental conditions are characteristic features of the organizations. They therefore avoid the need for "disaster selling" of prized savings for every cash need. The organizations form part of the complex livelihood strategies of local communities. Because savings are mostly embodied in multi-use assets - with relatively small amounts kept in cash - villagers on occasion seek credit in cash from fellow villagers of greater means. These types of "contracts" are informal, without recourse to the law, so village lenders may provide credit only to persons who have a good reputation in the community.

The role of informal credit and saving organizations can be enhanced a lot and their efficiencies improved significantly if they are backed by formal government legislations or if effective linkages are forged between them and formal organizations. As it stands now, at least in the rural setting, however, they seem to have not been getting the legal recognition they deserve. This has constrained the performance of such organizations in its own ways and contributed to their limited impact. The social relationship, trust, mutual respect and reciprocity inherent in such organizations can be an important source of collective action the successful utilization of which may help in ensuring the design and implementation of rules and regulations that enhance the management of natural resources. In order for this to happen, the organizations need to be backed by policy and legislative measures.

5.4.5 Labour-based work organizations

Households draw most of the labour they require from their members (reproduction). They also depend on seasonal labour employment (casual labour). However, these arrangements could not balance the demand for and supply of labour as households often encounter labour shortage, particularly during peak farm operations like ploughing, weeding and harvesting. The problem in turn has been aggravated by the absence of a well functioning formal labour market. It has therefore forced farmers to rely on reciprocal labour relationships or labour-based work organizations. Following are the most commonly used labour-based work organizations that communities have been using over the years to ensure their access to labour.

5.4.5.1. Kukube

Kukube is a labour-based work organization established by a group of people who are very close to each other (e.g. friends) or by a group of people who know each other very closely (e.g. relatives). Members of a given *Kukube* usually range from 5-10. The main

function of *Kukube* is undertaking agricultural or related activities for members of the group upon request. It is often of three types viz. full day *Kukube* (*Guya Gutu*), Morning *Kukube* (*Ganame*), (before 9 O'clock) and Afternoon *Kukube* (*Galgale*) (after 3 O'clock). The person who is in need of the assistance decides which one to go for and members then accomplish the activity that he/she wants the group to undertake. This organization used to operate in the area actively and was very strong but lately its practice has decreased significantly.

5.4.5.2. Dado/Wonfel

Dado/Wonfel is a labour-based work organization where farmers cooperate to work for members on rotational basis. It is one of the commonest forms of labour arrangements whose members are usually 5 to 10 and are often led by a chairperson. It has its own by-laws prepared by members that everybody strictly adheres to. It is usually established voluntarily and based on mutual understanding to help each other accomplish such agricultural activities as ploughing, harvesting, weeding and house construction on a rotational basis. Gender is an important element in the constitution of the institution. Thus women have their own *Dado* and men have their own *Dado*. Therefore in no way can women be members of Men's *Dado* and likewise men cannot be members of Women's *Dado*.

5.4.5.3. Debo

Debo is a labour based work organization that takes place during difficulties and when seasonal activities coincide and therefore demand for more labour. It is often conducted with the view of assisting the organizer or the person who calls for it by way of contributing labour. *Debo* is used for various purposes such as reconstructing houses damaged by fire, ploughing, harvesting, and other labour demanding duties. It is mainly used by households lacking able-bodied workers or those who faced some critical problem such as death of family members, and sometimes by rich households as well. Its role is declining as compared to *Dado* because of diminishing trust among the faming community on one hand and because of access to cash by some members of the farming community on the other. There is a tremendous influx of migrant casual labourers from other areas of the country in search of jobs and in most cases they are the ones who get employed at a very low wage rate and this has in turn contributed to the declining importance of the institution.

It is basically of two types: the common *Debo*, and *Debo Soda*. In both types of *Debo*, food and some drinks are served for those who have taken part in the operation, and there is no rotation among different individuals. *Debo Soda* is a type of *Debo* usually established by close relatives. It is some times called son-in-law *Debo*. Its main function is mobilizing labour during harvesting, land clearing, fire wood preparation, and things of that sort. The person who organizes it calls up on usually close relatives but some times non-relatives are called up on as well to come around and help him accomplish activities mentioned above. It is however, the full responsibility of the person who organizes it whom to call and whom not to particularly when it comes to non-relatives. Thus there certainly are some members of the community who do not take part in the event even if they want to. A huge feast in the form of pay back accompanies the accomplishment of the activities to those who did participate in the event at the end of the day.

5.4.5.4. Ule

Ule is a labour-based organization established around livestock herding and has a written by-law. Membership is free of charge and is open for whoever is interested to be a member. However, an *Ule* usually has members ranging from 5-15 depending on the size of the population in the area. A leader (always a male) called *Aba Ule* chairs the institution and is often in charge of the institution. Members elect the *Aba Ule* and his term is only one year. The main responsibility of the *Aba Ule* is preparing a comprehensive schedule or program of a round of turns to look after livestock and making it known to all members and follow up that members adhere to the schedule prepared.

According to the by-law, members are expected to bring their livestock to an agreed place at an agreed time (usually 9 O'clock in the morning) and collect them back from the agreed place at the agreed time (usually 5 O'clock in the afternoon). Failure to do so results in fines and it is the responsibility of the person who fails to do so to bear the costs arising thereof. Once all members bring their livestock to the agreed place at the agreed time, the person whose turn it is to keep the livestock then takes all to the grazing field. If and when any thing happens to the livestock (eaten by wild life, lost etc.), it is the task of the *Aba Ule* to closely examine how it all happened and what it thus yields in terms of penalty. Accordingly, if the person whose turn it is to keep the livestock delays, he will be fined 1 Birr and if any livestock unit is lost or eaten by wild life, the value of the livestock will be estimated by the *Aba Ule* and he or she will bear all the cost.

Membership to labour-based work organizations has many advantages. One of the benefits is the access they provide to the labour of kinfolk. Work with kinfolk has been used by the community as a way of redistributing labour and resources. The withdrawal of reciprocal labour benefits, applied as a form of punishment for someone, effectively cuts them out from their society. Nowadays, however, the functioning of most of the aforementioned labour-based work organizations (reciprocal labour arrangements) is losing out for cash economy: more people are expecting cash for their work or would prefer to work as labourers in one of the urban centres. This is in effect part of the gradual disintegration of the traditional communal society, with the nuclear household becoming ever more prominent. Some households even cited the breakdown of the closer-knit reciprocal relationships such as Dado, stating that family members would prefer to earn cash through daily labouring than assist in communal labour activities. This is particularly the case for young members of the household; many of whom do not have access to land and so cannot benefit from reciprocal labouring.

Labour-based work organizations have their own influence on the management of coffee forests, although their main objective is to assist labour constrained households to get access to labour. By so doing, they assist the households to increase their production and household incomes and therefore reduce the pressure households might otherwise have created on coffee forests and the wild coffee population. Participation in such organizations also strengthens the social bond and therefore enables members to adhere to the rules and regulations set in other traditional organizations such as territorial based administrative organizations, credit and saving organizations or traditional religious organizations. It also provides the basis for maintaining common understanding, trust and mutual support, and the enforcement of social bonds among the local community. Furthermore, it enables the exchange of indigenous knowledge among the local communities as regards

agricultural production practices in general and natural resources management in particular. Information regarding specific plant species e.g. ecological requirement, agricultural activities, analysis of problem issues to make decisions, belief systems and rituals conducted, procedures followed in customary conflict resolution form part of traditional knowledge and participation in such organizations in turn enable community members to exchange these knowledge.

5.4.6 Oxen sharing organizations

In the study area in particular and Ethiopia in general, oxen are of significance importance. They are the source of traction and drought power. However, no every one in the study areas has oxen and the average number of oxen owned by farm household is variable. In general, the proportion of farmers without oxen at all and with only one ox is significantly high. For agricultural operation to take place (e.g. land preparation), however, one needs a pair of oxen. The fact that the great majority are either with out oxen or with only one ox necessitated the need for farmers to look for arrangements that ensure their access to oxen. Accordingly, farmers have developed several oxen-sharing organizations that enabled those members of the local community who either do not have access to oxen at all, or those who only have oxen to have access to oxen. Prominent among them are the following.

5.4.6.1 Qaaro

Qaaro is a mutual oxen-sharing arrangement whereby two households with able-bodied workers but each owning only one ox bring them together to plough their fields. The two households who are engaged in the exchange process have land to be tilled and hence it is the oxen shortage that forces them to be involved in such an arrangement. They exchange the oxen every two or three days and prepare their land so that they can perform planting in time. The pattern of rotation is such that one of the farm households borrows the oxen for two or three days and the other does the same following his turn. Once the land preparation is over, there will be no more oxen exchange.

Qaaro is a kind of oxen sharing arrangement that takes place often between two households that are closely related i.e. close friends or relatives. This is because, oxen are the most delicate assets for farmers and they do not want anything to happen to their oxen. This institutional arrangement therefore calls for the presence of a high level of trust among and between those who enter in to this kind arrangement.

5.4.6.2 Qaaro arasi

This is an oxen-sharing arrangement between two households, one with both an ox and able-bodied person where as the other household is with an ox but does not have any able-bodied person. The arrangement takes the form that both households share their oxen and the household with both an ox and able-bodied person's ploughs his/her land for four days first and then ploughs the other household's farm for two days. In this arrangement, the responsibility of preparing the land for both households is entirely that of the household with one ox and able-bodied persons. The way the land preparation alternates between the two households is in favour, at least in terms of number of days, of the household who is responsible for the operation as it relatively gives ample time to prepare his land.

5.4.6.3 Arasi qotu

This is an oxen-sharing arrangement made between a household without oxen at all and a household with oxen but without able-bodied person. It is thus an arrangement where the household without oxen at all works for others with oxen in return to the use of oxen to prepare his land. In such an oxen sharing arrangement, the oxen deficient but able-bodied household works two days on the farm of the oxen owner i.e. prepares the land and then works one day on his farm or prepares his land. This ensures the optimum utilization of the labour in the household with out oxen and the oxen in the household with out able-bodied persons.

5.4.6.4 Borrowing (*Guddiffanna*)

This is an oxen-sharing arrangement where a farm household with out oxen obtains a male calf from other volunteers and assumes full responsibility of rearing the calf and uses the full grown ox later on for certain seasons (usually 1-3 years) depending on the initial agreement and age of the calf at the time of adoption. In such an arrangement, it may be that the household that engages in the borrowing practice has even more than a pair of oxen and that the household that borrows out the ox may also have a pair of oxen at the time of borrowing. They often get into this kind of arrangement when the household that borrows the male calf out may have a space problem to keep it and also because of different reasons and the household that borrows in the male calf has relatively good space to keep livestock. But ultimately, both households end up benefiting from the arrangement.

5.4.6.5 Oxen rental (*Kirayi sanga*)

This is an oxen-sharing arrangement where households with surplus oxen hire out for an agreed number of seasons to pay in kind. The concept of surplus does not necessarily indicate a large number of oxen. It rather reflects a situation where the farm household has at least more than a pair of oxen. The household that rents out the ox does that because of the need to generate cash income while the household that rents in does that because of the need to have access to oxen. However, some times the agreement can be to pay in kind (produce). The price for renting an ox is not determined by market forces but rather by the agreement that the households than engage in such a practice made.

In general, the evidence derived from this study showed that community based informal organizations have been instrumental in shaping local level decision making. They have been active in resolving disputes, enforcing widely agreed standards of behaviour, and in uniting people within bonds of community solidarity and mutual assistance. As such, they embody important forms of social capital, representing fora wherein local communities can unite together and act collectively. They have also affected the way resources are valued and allocated and, as such, are the most immediate mechanisms through which people mediate their relationship with the environment. However, they have been rarely included in development plans initiated by the government. Planners have mostly disregarded the collective action potential inherent in these organizations. The incursion of modern activities and forms of governance has also challenged the prerogatives of these organizations. It is therefore unusual to see such organizations working closely in co-operation with technical personnel of government agencies. It should, however, be noted that they may also have the danger of excluding a segment of the society thereby favouring some and

disfavouring others. Therefore, the design and implementation of policy and legislative measures that improves the performance of informal organizations and that ensures the forging of strong and effective linkage between them and formal organizations is more likely to improve their efficiency and effectiveness to enhance development endeavours in general and natural resource management activities in particular.

6 Institutions influencing coffee forest management

In chapter four, we have discussed two important components of the action arena that affect its functioning and outcomes i.e. resource systems and their attributes, and participants and their attributes. Chapter 5 discussed the third component of the action arena i.e. institutions that affect the conservation and use of coffee forests but when they are used in their organizational sense. This chapter is devoted to the analysis of institutional factors that influence local level coffee forest management decisions, institutions this time used in the "rules of the game" sense. The institutions analysed include policies, laws (constitution, proclamations, rules and regulations), strategies, programs and projects. The management of coffee forests is a complex process involving a number of institutions operating at various levels, interacting with and influencing each other in multifarious ways. It is the plurality and frequent interactions between and among these institutions at the various levels that leads either to conflict over coffee forests use, or to competing bases for claims. Institutions and the information on them thus facilitate individual and collective decision making as well as coordination and cooperation between different actors or resource users. The chapter addresses the research question "what are the local level institutional arrangements that affect the management of coffee forests?" It sets out by first identifying the levels at which coffee forest management decisions are made at the local level, and then proceeds with the analysis of the various institutions that influence the management decisions.

6.1 Levels of coffee forest management decision

Coffee forest management decisions refer to decisions that coffee forest dependent entities make in the process of producing, conserving, utilizing and developing coffee forests. They, at the local level, occur at four independent but interacting levels: the household; the community; the *Kebele*, and the *Woreda*. The decisions are some times operational since they involve the day-to-day activities e.g. collecting fuel wood, construction wood, fodder and grass; sometimes collective choice e.g. communities' involvement in setting up rules that guide grazing; and some times constitutional for e.g. designing rules and regulations that guide the utilization of coffee forests by the *Woreda* Council. The management decisions made at various levels, be they operational, collective choice or constitutional, are linked to one another and influence each other. The relationships between and among them are some times contradictory and therefore lead to the degradation of the resources some times complementary and therefore lead to their sustainable management. The following section describes the various coffee forest management decisions made at the local level.

6.1.1 Household coffee forest management decisions

The basic decision-making unit/entity considered in this study is the farm household. Although individuals within the household (household members) are involved in different household activities (household division of labour), it is at the level of the household as a unit that the real impact of those activities are seen or felt most clearly. Households, the resources (natural, physical, social, and financial) they use to undertake production activities combined with external factors such as policies, legislations, strategies and programs

form what are called livelihoods. It is in pursuit of the livelihoods that households organize the resources at their disposal (human, financial, social and physical) and make production and consumption decisions that improve the welfare of the household and that enhance, when sound and effective, or retard, when naive and negative, the sustainable management of natural resources.

As discussed in depth in chapter 4, households in both *Yayu* and *Sheko* derive their livelihoods mainly from agriculture (crop production, livestock production, coffee production, and beekeeping), forestry and non-farm activities (for the detail see chapter 4). Land, labour and oxen are the most important productive resources that they organize in the pursuit of production activities. The households are essentially subsistence undertaking agriculture in the most traditional way but they are also engaged in market production of both inputs (labour, land, oxen) and out puts (coffee, charcoal, and other cereals and forest and non-timber forest products). The markets they take part in, for products and factors, are however incomplete and/or imperfect thereby forcing households to depend on informal markets (e.g. labour-based work organizations, etc.). They are also involved in non-farm, non-market production activities such as collection of fire wood, construction material, grass and fodder and fetching of water as well as in social activities such as weddings, burial ceremonies and reciprocal relationships.

The households, arguably the basic decision making institutions, make various coffee forest management decisions. The decisions are driven by the objective of meeting the food supply and to fulfil the cash requirement of households and are dependent on their resource endowments (land, labour, cash and oxen) and external factors. The decisions they made impact on coffee forests, some times positively and some times negatively, and the decisions they make include forest clearance for the purposes of getting access to agricultural land (the decision to get access to agricultural land); forest manipulation to enhance coffee production (the decision to engage in coffee production); and forest utilization for the purposes of getting access to various forest and non-timber forest products (the decision to produce forest products and non-timber forest products). The management decisions are intertwined and influence each other thereby impacting on coffee forests and their livelihoods.

6.1.2 Community coffee forest management decisions

Households are linked together by ties of social relationships and sometimes obligations. Some of these ties of social relations ensure households' access to basic productive resources such as land, labour and capital. Others define rules of social behaviour and norms that households have to adhere to so that they live in relative peace and harmony with other members of the community. The social relations that tie groups of households together are communal in their nature and are based on the concept of the corporate group known as 'communities'. As corporate groups, 'communities' make joint decisions on communal matters that directly affect the livelihoods of their members (households) and indirectly the management of coffee forests.

However, as clearly discussed in the theoretical chapter (chapter3), the communities are not homogenous entities. They constitute various groups and subgroups with various socio-economic backgrounds. They can be categorized based on ethnicity (e.g. the *Amhara*,

Oromo, *Gurage*, *Mejenger* etc.), religion (e.g. Muslim, Orthodox Christian, Protestant), or resource endowment (e.g. oxen less, land less, etc.). They, however, share certain similarities that make their aggregation relatively simple and acceptable (see chapter 4). For example, they are predominantly subsistence and agriculture makes the core of their livelihood. The most common denominator to all the groups and subgroups within communities, and that this study makes use of to define communities, is the fact that they all are dependent on coffee forests in pursuit of their livelihoods one way or another.

Communities' coffee forest management decisions are made in various settings. Sometimes, decisions are made based on proximity (e.g. catchments or neighbourhoods) while in others they are made based on membership to a given social networks and reciprocal relationships. Management decisions as in proximity occur when a group of households residing in the same catchments or neighbourhoods decide to utilize parts of the forest resources in order to achieve jointly set purposes and objectives (e.g. grazing land). Community decisions as in reciprocal relationships occur when households belonging to a certain network or reciprocal relationship make decisions in devising rules (rewards/punishments) that guide interactions in the various community based institutions (e.g. *Shene*).

Coffee forest management decisions that communities' are engaged in include establishing/maintaining communal grazing fields (forest conversion to grazing filed), developing infrastructure (water points, burial places), controlling wild life menace, and handling social and administrative issues. Community decisions aimed at ensuring peace and stability by addressing social and administrative issues have indirect bearing on coffee forest management. Nonetheless, they play crucial role in enhancing the sustainable conservation and use of coffee forests.

6.1.3 Kebele coffee forest management decisions

The *Kebele* is the other level at which coffee forest management decisions are made at the local level. At this level, it is the Peasant *Kebele* Administration (PKA) that makes the decisions, assisted by its executive and judiciary wings. The PKA, being the lowest politico-administrative structure through which government laws, policies, strategies, programs and projects are implemented, links the inhabitants of the *Kebele* with the *Woreda* and thereby monitors and evaluates the proper implementation of development and natural resource management policies, legislations and strategies.

The main coffee forest management decisions made at the *Kebele* involve the enforcement of conservation and use policies, rules, regulations and strategies and programs of the demarcated forests (NFPAs) and FCUs; setting aside forest lands for community purposes upon request and for various other purposes. Conflicts that arise among and between households, communities and various groups and subgroups in the utilization of coffee forests are also issues that require *Kebele* level decisions, although they are sometimes managed by community institutions.

6.1.4 Woreda coffee forest management decisions

The *Woreda* is the other local-level at which coffee forest management decisions are made. As discussed in chapter 5, *Woredas* are constitutionally recognized entities to which the central government devolves/decentralizes (administratively and financially) decision making power and authority. Decisions made at *Woreda* level are mainly constitutional and they are handled by the *Woreda* Administration, which includes the legislative wing (the *Woreda* Council), the executives wing (various sector offices) and the judiciary (*Woreda* Courts) (for the detail see chapter 5).

Forest coffee management decisions made at the *Woreda* level involve adopting/adapting/devising policies, legislatives, strategies and programs of relevance to subject under consideration. However, often because of the prevailing highly centralized decision making process, most of the time the *Woreda* is busy with adopting and adapting institutional measures forwarded to it by higher level government structures. It is also involved in decisions aimed at providing mechanisms that ensure the implementation of policies, legislations, strategies and programs e.g. establishing organizational structures and providing them with the necessary resources (human, financial and physical resources). The establishment of special purpose *ad hoc* committees and task forces that assist resource management and expedite the implementation of development in general and natural resource are also management decisions that the *Woreda* makes.

The presence of interconnected coffee forest management decision making levels and entities at the local level (household, community, *Kebele* and *Woreda*) shows the nestedness of the decisions. While in some cases management decisions made at one level and actor dominate decisions made at another level and actor e.g. decisions made by households regarding what and how much coffee to produce; in others management decisions made at another level and actor dominate e.g. decisions made by the *Kebele* as regards how many hectare of the forest to set aside as communal grazing land for the community. Such higher level decisions at times over-ride decisions made at lower levels e.g. decisions made by communities' to expand the area of grazing land without any permission, and decisions made by households' to graze in areas that have not been designated as grazing fields during the wet season. The key consideration or the issue that requires attention is, however, not how much dominant a decision made by an actor at one level is over a decision made by another actor at another level but whether or not the decision made ensures sustainable management of the resources and if and when it does, does it do it in isolation or jointly. Thus we need to look into how much interaction (harmony or disagreement) there is among the various coffee forest management decisions and the institutions that influence the decisions.

6.2 Coffee forest management institutions

Having identified the levels at which coffee forest management decisions are made at the local level, the next step is to look into the institutions that influence the management decisions at each level, the interaction among them and the possible outcomes i.e. the impact they have on the conservation and use of coffee forests. In spite of the fact that there could be many institutions, this study has given particular attention to those that have di-

rect and particular relevance in influencing coffee forest management decisions and the ones at the local level.

6.2.1 Institutions influencing household management decisions

Households' resource management decision involve how, how much, when and with what technology to withdraw resource units (e.g. hectare of land, kilogram of fuel wood) from coffee forests in the process of food production be it for domestic consumption or for the market and cash generation. The decisions households made and that impact on the management of coffee forests are describes in section 6.1.1 above. These decisions are sometimes influenced by formal institutions and sometimes by informal institutions. Formal institutions are the ones that are issued and enforced by the government (local, regional or national) where as informal institutions are the ones provided and enforced by the local communities themselves.

6.2.1.1 The decision to get access to agricultural land

One of the decisions households make and that has direct bearings on the management of coffee forests is the decision to get access to agricultural land. In the study area, agriculture is the main livelihood and households get access to land through various ways i.e. they acquire land through government allocation (formal institution) or through contractual agreements (informal institutions) and through purchase and occupation. The last two are considered illegal because the land tenure law of the country and the constitution prohibits them.

As indicated in Table 4.12, the great majority of households in the study areas reported to have acquired land through government allocation (formal institution) i.e. distribution or redistribution. This is in accordance to the land tenure law of the country. The law guarantees that any one interested in farming as an occupation is entitled to get access to land and to use right with a transferable and inheritable life-long lease conferred upon him/her by the land law. However, he/she can not sale their holdings. The land law of the country (institutional arrangement) could not balance the demand for and supply of land and therefore to solve the problem associated to land. It particularly failed to address the two important and inherent problems associated with land tenure in the country at large and the study areas in particular i.e. increasing landlessness and growing inequalities in holdings (Discussion with the Head Office of Agriculture). Empirical evidence available also supports this case not only in the study areas but also in the country at large. For example, TESFAYE (2000) estimates the proportion of landless households in some parts of Oromiya to be as high as 50% where as TESFAYE and ADUGNA (2004) documented the growing inequality in holdings among farm households in the Southern Nations, Nationalities and Peoples' Regional State (SNNPRS). DESSALEGN (2003) also describes landlessness and growing inequalities in holdings as the two inherent problems of the land tenure law of the country.

In response to the problems associated with the existing government administered land administration (institution), households' started to devise mechanisms that ensure their access to land. The mechanisms they used did vary between the landless and those that have relatively small holdings. The majority of the landless, constituted by both young members of local residents and those that have immigrated to the areas from other places

(settlers), the later constituting the majority, were engaged in clearing forests to get access to agricultural land (indiscriminate deforestation), and in some instances, in the purchase of land, which is but against the constitution of the country. On the other hand, the majority of farmers with relatively limited agricultural land (holdings) were engaged in informal land contractual arrangements (informal institutions). However, in some instances the later were also engaged in clearing forests (indiscriminate deforestation) and in the purchase of land in order to get access to more (quantity) and better (quality) land. Those that have opted for informal land contractual arrangements ended up practicing either share cropping, land rental, and/or *Irbo*. And whatever method of land acquisition employed by farmers significantly affected the management of coffee forest.

Sharecropping is the most commonly practiced informal way of getting access to agricultural land of all (Table 6.1). It is often undertaken in two forms. The first form took place between a household with relatively large farmland but without oxen and a household with oxen but with limited farmland. The household with oxen but limited land is responsible for providing labour to work on the farm whereas both households are equally responsible in the contribution of all other inputs (seed, fertilizer, etc.). After harvest, both households claim equal share of the produce. The second form of sharecropping is usually made between a household with relatively sufficient farmland and oxen but runs short of seed and a household with relatively enough seed but runs short of farmland. Both households perform the farm work i.e. land preparation, planting, weeding, harvesting, and threshing and share the produce equally. In both forms of sharecropping, land is the most important and central factor of production that derives the contractual arrangement, although in the process households end up getting access to other inputs such as seed and oxen.

Table 6.1: The practice of sharecropping as reported by sample households interviewed in *Yayu* and *Sheko Woredas* (in %)

Did you practice sharecropping in the last five years?	*Sheko* (N=100)	*Yayu* (N=140)
Yes	72	65
No	28	35
Total	100	100

Sharecropping is predominantly practiced among farmers living in close proximity or with strong social ties. As a result, it reduces the incidence of labour shrinking and breaching contracts or defaults. Farmers indicated that the social control mechanisms involved in the arrangement ensured a high level of trust, less likelihood of default and low transaction costs associated with selection, monitoring and self-enforcement. Through this arrangement (institution), households were able to get access to agricultural land. Nonetheless, the institutional arrangement has its own limitations. The first and most important limitation is the entry/exclusion problem i.e. it literally leaves out landless farmers. Thus, the very mechanism that promotes lower transaction costs and ensures access to the resource discriminates against those denied access to the institution and particularly the landless. The other limitation is the restrictions on the choice of crops. Sharecroppers are often allowed to grow only short-cycle crops (annuals) but not perennials. The fact that they are not allowed to plant perennials does have its own impact the management of cof-

fee forests. For instance, farmers who exercise sharecropping will not have the incentive to plant trees on the holdings since they know that they will not reap the benefits even if they do so. What they would most likely do is to maximize the gains from then increased utilization of the land resource by making the utmost effort. Therefore, sharecropping failed to attend to the problem associated to land tenure and therefore to the increasing deforestation since it does not address the problem of landlessness sufficiently.

Land renting is the other informal land contractual arrangement (informal institution) exercised by households. It involves renting-out/in a segment of land by a household with a cash sum paid in advance with a clearly set duration (usually for one to three cropping seasons). The renter-tenant pays all the input costs, undertakes all farm activities and takes all the harvest of the agreed period. This contractual arrangement usually occurs when the person renting-out the land is either at financial distress and is in need of immediate cash to pay his obligations, lacks the necessary capital (oxen in this case) or the managerial capacity like in the case of female-headed households where male adults are missing. Although not as many as those practicing sharecropping, relatively good number of farmers were reported to have been practicing this land contractual arrangement (Table 6.2).

Table 6.2: The practice of land renting as reported by sample households interviewed in *Yayu* and *Sheko Woredas* (in %)

Did you rent in/out land in the last five years?	*Sheko* (N=100)	*Yayu* (N=140)
Yes	25	18
No	75	82
Total	100	100

This contractual arrangement is often interlinked largely to non-traded factors; particularly to oxen, labour and credit. Because formal arrangements are missing for such factors (the existing land tenure does not solve the problem) or because the markets are incomplete, farmers use land rentals as a substitute. For example, because farmers run short of oxen or seed, they lease out/rent land in exchange. Similarly, farmers who are constrained to get access to credit lease out/rent land as part of the contractual agreement to get access to cash. The ability to rent-in is contingent on socio-economic status such as wealth and resource availability i.e. households need to be relatively better off in terms of oxen and labour availability or cash to be involved in such arrangements. Besides, farmers' rights in rental lands are nested within the rights allowed in government allocated land and therefore holders of rental land have specific rights and obligations. As a result, rental contracts are often for a short fixed period of time; they rarely exceed more than two crop seasons. Besides, since the condition for holding government-allocated land is on the basis that farmers are tilling their land continuously (FDRE 1995), renting out land for an extended period of time risks farmers' loosing their land. Farmers are also less secured about their holdings in the long run. So they opt to rent out their land on short term contract.

The other informal land contractual arrangement (institution) practiced by households is *Irbo*. It is a traditional institution that takes place between a household that owns land but

runs short of seed and labour, and a household that owns at least a pair of oxen and has enough seed but does not have access to sufficient farmland. Just like the case in share-cropping, *Irbo* takes place between and among members of the community with strong social ties viz. kinship, friendship, and neighbourhood. It is the responsibility of the household with relatively insufficient land to undertake the entire farm operation by providing the necessary farm inputs. Eventually in the process, the landowner claims one-third of the harvest (by the way the name Irbo is an Amharic word which means one third), while the household with limited land but relatively sufficient seed and the responsibility to perform all farm operations goes home with the remaining (two-third) of the produce. This informal land contractual arrangement is the least frequently practiced of all (Table 6.3)

Table 6.3: The practice of Irbo as reported by sample households interviewed in *Yayu* and *Sheko Woredas* (%)

Did you practice ***Irbo*** in the last five years?	*Sheko* (N=100)	*Yayu* (N=140)
Yes	12	14
No	88	86
Total	100	100

In spite of the significant role informal land contractual land arrangements (institutions) played in equalizing factor proportions at the farm level and in contributing towards addressing the problems associated with the land law of the country, they too did not solve the problem associated with land tenure sustainably. This has forced households to solicit for alternative strategies of acquiring land as a result of which households engaged in forest clearance (conversion of forest lands to agricultural lands) and in the purchase of land, the first being a dominant practice among the landless and the second among households with smaller holdings.

The process of acquiring land through forest clearing (indiscriminate deforestation or conversion of forest land into agricultural land) took the form where households/individuals gradually occupied parts of the forest and eventually ended up establishing holdings. Both the locals and immigrants were equally involved in the process but the situation is much more pronounced with immigrants. It is not a one go event but is rather a process as it often takes two to three years or even more before they finally establish themselves in the forest and start agriculture. Once they establish holdings, they approach local government officials and negotiate with them and start paying land taxes in the final analysis of which they claim ownership. In the process, the forest becomes the target of the exercise and a subject of degradation. Still there are some members of the communities (households) who got access to land through purchase of land although the proportion once again was low. Since the land law of the country clearly bans the buying/selling of land, it is a phenomenon exercised very much in disguise. Thus, it is very difficult to understand what rules are involved in the process. Besides, one can not clearly indicate the statistics and therefore indicate what proportions of farmers have acquired land through such a method.

6.2.1.2 The decision to engage in coffee production

Households are involved in various forms of coffee production that have their won influence on the management of coffee forests. The decisions to engage in coffee production are influenced by both formal and informal institutions. The traditional semi-forest production system is the dominant system practiced by farmers and does have its own rules (informal institution) whereas the agricultural extension service rendered by the government assisted coffee production involves and does have its own rules (formal institution).

The semi-forest coffee production system

As thoroughly discussed in chapter 1, the dominant coffee production system in the study areas is the traditional age old semi-forest coffee production system. Almost every household that took part in the interview reported that it was involved in the semi-forest coffee production system in the last five years (Table 6.4).

Table 6.4: The practice of coffee production as reported by sample households interviewed in *Sheko* and *Yayu Woredas* (in %)

Did you grow coffee in the last five years?	Sheko (N=100)	Yayu (N=140)
Yes	97	100
No	3	-

The semi-forest coffee production system has its own established rules. The system involves clearing of the small trees, undergrowths such as shrubs and climbers, and thinning out of some big canopy trees to promote vegetative growth of the coffee bushes. Farmers cut broad-leaved deciduous tree species because they have dense shade in their leafy stage which suppresses the growth of the coffee tree and they also shed their leaves, which make coffee harvesting difficult. They also cut such tree species as *Bisana* (*Croton microstachsu*) since they consider such tree species to be "poisonous" to their coffee trees. However, they leave behind some tree species that they think are good for shade. The major shade tree species that farmers prefer in their semi-forest coffee farms include *Albizia grandibracteata*, *Allophylus abyssinicus*, *Cordia africana*, *Millettia ferruginea*, *Mimusops kummel* and *Sapium ellipticum*. These tree species, according to farmers, are important in both fulfilling the shade requirement of the coffee trees and in enhancing productivity.

The semi-forest coffee production system also involves weeding and enrichment planting. Thus, farmers are engaged in regular weeding of their coffee farms: twice in some cases (May and September) and thrice in others (December/January, May, and September) and in enrichment planting of coffee seedlings, the source of which is the forest in the majority of cases and outside sources (agricultural extension service) in very few occasions, in areas where the density of coffee plants is low. According to estimates by the *Woreda* Office of Agriculture, 85% of the planting materials (seedlings) in the semi-forest coffee production system come from the wild coffee population in the forest. The office also indicated that farmers prefer seedlings obtained from the forest over the ones distributed to them through the agricultural extension service mainly because of high adaptation to the agro-ecological condition and high yield.

The traditional semi-forest coffee production system, practiced by farmers for centuries, has certainly played and is still playing a significant role in affecting the management of coffee forests and in the distribution, population dynamics and conservation of the wild coffee. For example, according to DEMEL (1999), the traditional semi-forest coffee production system is believed to have impacted the management of coffee forests both positively and negatively. The removal of competing undergrowth i.e. climbers and shrubs and the cutting down of selected big trees by way of fulfilling the "optimum" shade requirement of the coffee tree has led to stimulation of the productivity of the coffee plants and therefore to its continued existence. On the other hand, the pressure on selected trees species and the enrichment planting has contributed to the change in the ecosystem and life supporting system of the ecology and therefore led to biodiversity loss. Put together, the traditional semi-forest coffee production system has given rise in two far-reaching consequences:

1. A change in the structure of the natural forest (the natural home of the wild coffee) which subsequently resulted in the formation of what are similar to secondary forests,
2. A spatial dynamics of the coffee populations (local disappearance and emergence of new coffee stands in other places), which in turn influenced the occurrence and structure of the coffee stands.

TADESSE (2003) also reported that the traditional semi-forest production system decreases forest biodiversity by 50%. But as discussed in chapter 4, farmers do not see the system as a threat neither to the wild coffee population nor to the forest biodiversity. For them, the wild coffee in the forest as it appears today is attributed very much to their practices and the system, they claim, has rather led to increase in the population of the wild coffee. The following is what a farmer had to say as regards this:

"How is it possible that they say what we do (was referring to the semi-forest coffee production practices) is harmful to our coffee. Look, if we did not do what we had done, the coffee would not have survived this long. Yes, it is true that we cut big trees but we do cut only those that are harmful to our coffee. Besides, since you can not possibly cut them all; you cut them this year, they appear in the second or third year. To tell you frankly, we have always been cutting them down but they keep coming back and posing threat to our coffee. Talking about planting coffee seedlings in the forest, how else do you expect to get increased yield? I do not think any wise farmer would leave patches in his/her holding to stay like that. If he/she does that he/she must have some problems say for example labour shortage" (23/11/2003, Wutate Peasant Kebele Administration, Yayu Woreda)

Households' practice/decision of coffee production has also been influenced by the agricultural extension service of the government (formal institution). The service, which has come to be popularly known as National Extension Intervention Program (NEIP), basically follows a "package approach". The extension package in coffee production consists of improved (high yielding and disease resistant) coffee varieties and improved management practices (land preparation, planting dates, sowing methods, weeding, use of chemicals (fertilizers, herbicides and insecticides) and time and methods of harvesting), and improved post harvest technologies, particularly processing and storage.

Farmers are strictly advised to follow the rules. As discussed in chapter 5, neither farmers nor professionals at lower hierarchies of the administrative structure took active part in

the formulation of the extension programs. Rather, their contributions are limited to the forced implementation of the programs. This has put both households and extension agents under immense pressure of implementing improved coffee production activities and at times served as causing conflicts. Extension workers and development agents were not only overstretched and unable to fulfil their obligations but also were not always welcome by farmers whom they were supposed to serve. Farmers were not often comfortable with the rather aggressive and coercive implementation style of the program. For example, farmers are not happy with some of the improved coffee cultivars. The following is what a farmer had to say regarding improved coffee cultivars:

"I am not comfortable with the improved coffee cultivars that are provided to us through the extension service. They are like a spoiled child in that they simply require too much care and attention. If you face a labour shortage in any particular year and are unable to weed them, it is very difficult to harvest any thing from them and that is only if you are fortunate enough not to lose them since they often die. This has never been the case with the traditional varieties in the coffee forests. We can leave them for two or three years and we can still harvest something from them at the end of the day". (15/12/03, Achbo Peasant Kebele Administration, Yayu Woreda)

The fact that farmers were being introduced to "improved coffee production" through the extension program implies exogenous decision making as opposed to endogenous and has important implications to resource management. For example, in both *Yayu* and *Sheko*, during the socialist government, farmers were forced to cultivate wetlands, afforest degraded lands and construct physical soil and water conservation measures. When government change occurred in 1990, however, many households were engaged in destroying the very same physical structures that they themselves have constructed and in cutting trees down that they themselves have planted. Therefore, coercing people to do things, as is currently being done through the extension program, will not be successful since as soon as that force is removed it is likely that farmers would re-evaluate their practices and return to equilibrium or the old practices.

6.2.1.3 The decision to manage (conserve and utilize) forest resources

Households have also been involved in decisions aimed at the management (conservation and use) of coffee forests. The decisions are influenced by both formal institution i.e. the forest conservation, development and utilization proclamation of the government (formal institution); and by the traditional forest management practices (informal institutions). The formal institution is discussed at great length under the *Woreda* management institutions (section 6.2.4.) thus the informal institution will be discussed under this section.

Households who took part in the focus group discussion (FGD) in *Sheko* indicated that long before the central government took control over forest resources, they used to have a traditional forest management practice called *Kobo* block. The *Kobo* block is a system of forest management where an individual or household owns a forest block within the high forest. The owner of the block has two exclusive use rights: beekeeping and hunting. The owner was thus entitled to use any tree he wishes within the block for beekeeping and to hunt any species of wild life he likes. The utilization of all other forms of forest and forest products like cardamom, climber, tree fern, Rahames (*Gesho*) etc. and collection of construction material and fuel wood were open for residents of the *Kebele* or the neighbour-

ing *Kebeles* but only for household consumption and not for sale. The system allows households that do not own *Kobo* block to have access particularly to beekeeping. This occurs in a particular arrangement that takes place between the block owner and individuals who have particular skills in climbing trees and in making beehives. Individuals with the skills thus arrange with the block owner and eventually end up going home with a share of the honey produced.

Gradually, the *Kobo* block system got weakened and was subsequently replaced by what was called *Kobo* tree system. The *Kobo* tree system is a modification of *Kobo* block system and it is a situation where *Kobo* owners claim ownership but this time only over individual trees instead of the whole block. As a result, every household interested in beekeeping was free to enter the forest and hang beehives on trees it chose. Thus, the whole forest block remained "open access" and was therefore free for use by households for other activities but commercial timber production, which was regulated by the local government. The number of trees an individual could own, in the form of hanging beehives, depended on the skill and capacity of the individual since there was no restriction for beehive hanging as far as individuals were capable and have the skill to make beehives and to climb trees. The *Kobo* tree can be inherited by family members or relatives when the owner gets old to climb the tree. Because the forest is a public property, *Kobo* tree owners can not sell or cut down the trees. The system was so strong that even when the Peasant Association allocated/distributed land to households, the ownership of the *Kobo* tree remained with the beehive owner although the land belonged to the allocated person. But in most cases people negotiated and the land owner ended up owning both the land and trees on it.

With the change in government in 1974, land in general and forests in particular got nationalized. This has led to the gradual disappearance of the traditional forest management practice mentioned above. Instead, the government launched a new forest resources management program and established what have come to be known as National Forestry Priority Areas (NFPAs). Both *Geba-Dogi* in *Yayu* and Gura-Ferda in *Sheko* are among the 58 NFPAs that the previous government demarcated. However, neither the demarcations, except for the delineation of the boundaries, were gazetted nor were management plans developed for them. This, coupled with the low attention given to forest resources management by the government (see chapter 6), has left the forest resources to assume an "open access" scenario as a result of which they became targets of uncontrolled and unregulated utilization. The existence of some institutions such as the EPCs at both *Woreda* (WEPC) and *Kebele* (KEPC) level and the establishment of organizations with the mission and purpose of conserving and protecting (managing) the resources seems to have not played a significant role in mediating the households-forest interaction and thereby in protecting the resource from degradation. It is also possible to deduce that the ousting of the traditional forest management practices has contributed its share to the present situation i.e. the degradation of forest resources.

6.2.2 Community coffee forest management Institutions

Communities' as independent entities making decisions have also been involved in activities that affect the management of coffee forests. The decisions they make are influenced and shaped by both formal and informal institutions. The following are the most impor-

tant communities' decisions that impact on coffee forests and the institutions that influence them.

6.2.2.1 The decision to establish/maintain communal grazing fields

Communities' decision of establishing/maintaining communal grazing fields is guided by two institutions: the forest conservation, development and utilization proclamation (formal institution) and community institutions (informal institution). The formal institution is discussed under *Woreda* management institutions below. In the section that follows, the informal institutions are discussed.

Apart from collection of grass and fodder from the forest as sources of animal feed, households depend on communal grazing fields. Communities are responsible to make decisions as regards the establishment and maintenance of communal grazing fields. The process of establishing communal grazing fields is such that households that are residing close to each other (neighbours) or belonging to one of the social institutions such as Shene organize themselves and make a request to the *Kebele* Administration. The *Kebele* Administration, after carefully evaluating the request for its concurrence with the forest resources "management plan" and the rules that guide its utilization (formal law) sets aside a portion of the forest as communal grazing filed. Once a grazing field is set aside, it assumes "community ownership" (community grazing land) although the right the communities have is limited only to use (usufructuary). The community is responsible for the proper management and rational utilization of the communal grazing field.

The management of communal grazing lands includes controlling overstocking, cutting/clearing bushes, planting important grass and legume species, and removal of some noxious and problematic weeds. In order to enhance the management of communal grazing fields, communities rely on community institutions such as *Tula*, *Shene*, and *Iddir*. The leaders of these community institutions prepare the work plan and assign the responsibility of managing the communal grazing fields to the various community organizations on a rotation basis. The responsible community organizations undertake the activities in a specified date that is decided by community leaders. However, in addition to community institutions, Development Teams organized by the *Kebele* Administration, under the auspices of the *Woreda*, have also been influencing the decision to manage communal grazing fields. This occurs when DTs develop their fortnightly work plan, as decided by the *Kebele* Council, which include managing communal grazing fields as one of the very important activities.

In the dry season of the year where there are no crops on the fields and where feed resources are relatively abundant, households can simply let their animals roam around and graze on whatever is left on the field. Grazing on private holdings is also free and allowed. Since no controlled grazing is exercised during dry seasons, the forest suffers to a considerable extent as some seedlings that emerge are often tramped by livestock and some livestock class such as goats browse on the tips of some tree species and trim back their growth. However, once the cropping season starts (in the wet season), community members are expected to refrain from open grazing and stick to controlled grazing by taking their livestock to communal grazing fields set aside for the purpose. The decision to undertake such a practice is guided by a community institution called *Ule*. *Ule*, a traditional institution with a written by laws (see chapter 5), assists communities in making

decisions as far as controlled grazing, particularly in the wet season, is concerned. Although *Ule* has assisted farmers' decisions as regards grazing, it could not effectively prevent coffee forests from degradation. Livestock is and continues to be an integral part of the rural economy. However, the fact that it is being practiced in the most traditional way impacted on coffee forests negatively. In order to alleviate forest degradation caused by livestock (over grazing), it is important to consider the different options available to improve the livestock production system and to determine the implications in terms of fodder supply and herd management. One aspect which is clear in the study area and that would probably solve the problem is better management of the resource base, with the appropriate innovations for fodder production and controlled grazing.

6.2.2.2 The decision to control wild life menace

Wild life, particularly baboons, monkeys and porcupines are considered as pests by the local community since they damage crops to a great extent. Some other wild life species like lions and hyenas were also reported to have been creating problem as they eat livestock. When these species of wild life multiply in great numbers and exceed a certain threshold, they become threats to both humans and livestock and are therefore regarded by communities as pests. They therefore want to kill/eliminate them since they are counterproductive to their production efforts. However, the hunting/killing of these wild animals to reduce the numbers to a certain "acceptable level" is highly regulated by government wild life conservation and development rules. When communities face menaces by the increasing number of these wild life species or technically speaking when the population of wild life exceeds the threshold and becomes a threat, they organize themselves and make a request to the *Kebele* Administration to allow them to go out and reduce the population by killing in certain proportions. However, the *Kebele* Administration forwards the request to the *Woreda* council for approval before it finally approves the killing.

In making decisions against/for the request, the *Woreda* Council solicits technical help from experts at the *Woreda* Office of Agriculture and Rural Development and particularly from Environmental and Natural Resources Management experts. The experts make a thorough assessment of the situation on the ground and provide the WC with information that enables it to make informed decisions. Based on the technical backstopping given to it, the WC makes a constitutional choice decision either for or against. If the decision is in favour of the request, communities would then be allowed to go out and kill wild life and some times they are provided with rifles by the *Woreda* to facilitate the killing. Communities then organize the killing through their social organizations such as *Tula* and Shene. However, the killings are always monitored by the *Woreda* experts, with strong assistance from the *Kebele* Administration, to see to it that the numbers killed do not pose threat to the wild life population. Once a wild life species is killed, the *Woreda* Administration assumes the ownership of the skin where as community members claim ownership over the meat of the wild life, if at all it is edible. The fact that wild life management is guided jointly by community institutions and *Kebele* as well as *Woreda* level institutions once again shows the interaction between the institutions, and of how operational action situations (killing wild life) at community level are guided by both collective choice rules (Shenes) and constitutional choice rules (WC) when *Woreda* experts are involved in monitoring the activity.

However, experts in the *Woreda* Office of Agriculture and Rural Development indicated that there are reported cases of poaching. They indicated that the incidence of illegal poaching has been on the increase lately and it had contributed significantly to the decline in wild life population, besides habitat damage as a result of rampant deforestation. Farmers seem to agree with the perception of the government that wild life population has decreased over the years and that one of the reasons is habitat destruction. In the focus group discussions held with farmers, participants reported that it has almost been over fifteen years now since they last saw an elephant in the locality. Asked what the possible reasons were, they exclusively associated it to deteriorating forest condition. They did not try to hide the fact that they were unhappy with the government rule of wild life management. They also did agree with the government since they do not see wild life killing as one of the factors that have led to a decrease in wild life population. They, therefore, showed resentment towards government rules of wild life management. For example, in one of focus group discussions held, a farmer said:

"We and our crops have been bothered by baboons like no other time before. The incidence of lions eating our cattle has also increased. However, from what goes around, it looks the government is more concerned about the baboons and other forms of wild life than us since they simply deny us the right to get rid of these pests. We just can not get rid of the baboons and even if we wanted to we need to get permission from the authorities which normally takes longer time in the process of which we often lose our crops" (12/15/05, Sombo Peasant Kebele Administration, Yayu Woreda)

The fact that farmers and the government agree on deforestation as one of the causes for the decline in wild life population is encouraging. It could serve as a fertile ground to build negotiations as regards the design and implementation of conservation measures. On the other hand, the divergence between the two in terms of wild life killing as a cause for the decline in population requires careful consideration of the issue while designing conservation measures.

6.2.2.4 The decisions to handle social and administrative issues

Communities are involved in decisions that ensure peace, order and stability among their members in their jurisdiction. Conflict issues, social problems and natural as well as human made disasters such as fire and flood that affect members of the community have been common in the study area and often require community decisions. Such decisions are guided by both community institutions and government institutions. Community institutions that guide decisions in such occasions include administrative institutions (*Tula* and *Shene*), conflict resolution institutions (*Elders* and *Mucho*) and traditional self help institutions (*Iddir*, *Iqqub*, *Kukube*, *Dado* etc.) (For the details see chapter 5). These social and administrative institutions ensure the maintenance of peace and stability among the community, with out which development and sustainable natural resources management is difficult to ensure.

For instance, when conflicts between two households occur as a result of a boundary problem, be it during the cultivation or harvesting of coffee, they are often directed, at first instance, to *Elders*. *Elders*, a group of respected and thought to have wisdom by the community, address the issue and try to resolve the conflict issues. When this is not possible, they forward the issue to community institutions called *Mucho*. The *Mucho* then in-

vestigates the issue and passes a verdict. If and when one of the contending parties is not satisfied with the verdict, he/she brings the issue to the attention of the *Kebele* court. The process goes on and on until the parties in contention are satisfied. Similarly, if the *Mucho* finds the conflict issue a bit complicated (which is however a rare case), it forwards it to the Kebele court for further investigation and the process follows from thereon.

Some times, the *Kebele* Administration refers conflict cases to community institutions (*Mucho* or *Elders*) thereby showing the solidarity and recognition that exists between the two institutions. But if and when conflict issues are not solved by community institutions, then they bring the issue back to the attention of the *Kebele* Administration. For example, when boarder conflicts, which are often common in the localities, are brought to the attention of the *Kebele* court, it brings them to the attention of the community institutions to resolve the issue. But if the community institutions find it difficult to resolve, they bring it to the attention of the *Kebele* court. If still, the case is complicated for the *Kebele* court, it forwards the case to the *Woreda* court and the process goes on and on. The process can even go to a higher level such as *Zone* or Region. An important point of consideration and an issue that deserves a special attention is the linkage that is forged between the formal and formal institutions. Strengthening this linkage will contribute significantly to the peace and stability situation of the localities and therefore to the sustainable management of coffee forests.

6.2.3 Kebele coffee forest management institutions

The *Kebele* Administrations and the work units organized under them called Development Teams (DTs) are grass-root government institutions providing the basis for decision making as far as the planning and implementing of social, cultural, political and economic development activities of relevance to the *Kebele* are concerned. They also provide platforms through which environmental and natural resource management policies, legislations and strategies designed at higher levels e.g. *Woreda*, regional and federal levels are routinely implemented.

6.2.3.1 The decision to manage (conserve and utilize) coffee forests

The *Kebele* decision to undertake coffee forests management is undertaken by the *Kebele* Council and the actions are implemented through an important institution called Development Teams. Planning issues as regards the amount of natural resource management work required for each year, and where the plan is to be implemented, are first discussed and agreed upon at Development Team level. The plans are then sent to the *Kebele* where the over all *Kebele* plan is discussed, integrated and approved by the *Kebele* Councils. Based on the decision of the over all plan prepared, the *Kebele* undertakes the implementation of the activities through the DTs. There are often agreed upon standards of performance to be attained by each member of a DT (e.g. number of tree seedlings to be raised, meters of terraces to be built and number of gullies to be stabilized in a year etc.) based on which the performance of the DTs is evaluated later at the end of the year.

The DTs undertake natural resources management activities by relying on basic rules such as the size of work units, the number of days to be spent (schedule) and male female representation and exemption from duty (e.g. old people, school children) (see the detail in chapter 5). In principle, it is the responsibility of the DTs to plan natural resource man-

agement activities that they aim to undertake. In reality, however, the practice is such that the *Kebele* Administration prepares the work plan, sets quota and then hands the plan down to the various DTs for final implementation thereby giving no chance of participation for DTs. This is a clear indication of the top down nature of planning in general and the counterproductive decentralization scheme that is being exercised in the country in general and the study areas in particular as discussed in chapter 5 in particular.

6.2.3.2 The decision to protect the environment

The decisions of the *Kebele* Administration to protect the environment is undertaken, apart from being influenced by policies, laws and strategies, by an institution called the *Kebele* Environmental Protection Committee (KEPC) (for the detail see chapter 6). It provides a mechanism through which communities' participation in environmental protection is solicited. As very much useful in facilitating environmental protection decisions as it appears, however, the committee has not been functioning that well. The frequent restructurings of the various offices that have occurred at higher levels (see chapter 5) have seriously constrained its activities. Besides, the fact that the committee lacked the resources (financial and physical) required in discharging its duties and responsibilities indicated in the terms of reference as deemed necessary. Last but not least, the nominal decentralization has hampered its activities significantly as the committee has to depend on directives that are often given from above.

6.2.3.3 The decision to administer land resources

The *Kebele* decision to administer land resources, apart from the land law, is guided by the *Kebele* Rural Land Registration and Certification Committee (KRLRCC) (for the details see chapter 5). The land measurement and registration exercise is fundamental and is aimed at providing the basis for the development of proper land use system and therefore proper land resources management programs in the future. However, the entire process, as reported by the concerned *Woreda* officials, is one full of difficulties and conflicts. Much of the conflict issues arise from land occupied "illegally" by settlers and "purchased' by individuals. Both methods of land acquisition are illegal as the constitution bans them. Nonetheless, a contingent of households was reported to have acquired land through these methods and have therefore remained to be sources of conflict. Conflict and disagreement issues that arise in the process of measuring and registering the land were brought to the attention of the *Kebele* Administration and if and when they are not settled there, they were brought to the attention of the *Woreda* Council thereby once again showing how rules/institutions at different levels are nested and interact with each other.

The role of PKAs in managing land resources is very much reduced compared to that of Peasant Associations (PAs) of the socialist government. When first established during the socialist government, Peasant Associations (PAs), as they were called by then, had greater decision making power and authority over natural resources management in general and land resources management in particular. PAs were involved in the re-demarcation of individual and community land, such as grazing land, agricultural land and forest land. They also had powers to give directives as to how the land has to be managed and they monitor whether farmers are managing their land properly and according to the directives. When and if this is not the case, they had the power to confiscate the land and give it to a farmer whom they think would manage the land properly. Currently, however, the peasant

Kebele Administration has no right and power to interfere in the land use decision of individuals, even if they are degrading it through their actions. In fact, the *Kebele* can receive complaints made by residents and through this it can order the offender to change practices, but it can not punish them if they do not comply, particularly in the form of withdrawing land.

Kebele coffee forest management institutions were found to have been having a significant impact on their management. The overall outcome of the impact of the institutions was however not encouraging since they did not safeguard coffee forests from degradation. The outcome of their malfunctioning is a loss in the quantity and quality of coffee forests. Farmers seem to agree with this observation. For instance, according to participants of the group discussion, the *Kebele* Administration and its institutions are too weak to maintain or control the boundaries of communal grazing lands and to protect the natural forests from being encroached by immigrants and illegal settlers. They also reported that representation in the various institutions i.e. PKEPC, RLAUC is often based on political loyalty and participation is very minimal. A farmer who is a representative member of the PKEP had the following to say:

"I was elected to be a member of the PKEP by residents some time ago. They told me that the committee is set up to conserve and protect the environment in general and to monitor illegal movement of forest and non-timber forest products. Except for the first two meetings, one is the general assembly where I got elected and the other following that, we did not meet. I am sorry to say this but the committee has not been operating as it should. Besides, we often witness some illegal activities in the forest, and especially by some people who do not belong to our community" (13/10/2003, Bedessa Peasant Kebele Administration, Yayu Woreda)

As far as land resource management institutions are concerned, the linkages between community institutions and that of *Kebele* institutions are weak. This not only served as a source of conflict but also had significant impact on the management of coffee forests. The week linkages should therefore be strengthened in order to form sound and meaningful partnership between communities and the *Kebele* Administration in the effort to effectively and sustainably administer land resources and to conserve and manage coffee forests. If as much strong *Kebele*-communities' institutional linkages are forged as that of the *Kebele-Woreda* institutional linkages, then it is highly likely that resource management decisions will be improved. This requires, among other things, the recognition of existing community institutions of land administration and their incorporation in the design and implementation of natural resources conservation and use policies, legislations, strategies and programs.

6.2.4 Woreda coffee forest management institutions

The *Woreda* is the other level at which coffee forest management decisions are made at the local level. Management decisions at this level are often constitutional choice in their nature since they involve the prescription, invoking, monitoring, applying and/or enforcing and evaluating institutions, institutions in this regard used in their rules, regulations, policies, strategies and programs sense.

6.2.4.1 The policy framework of coffee forest management

There are two aspects that one needs to take in to account when doing policy analysis: the individual policies that are consulted when making decisions, and their sources or where they come from (the policy formulation process). The source of literally every policy, as discussed earlier on, is the central government, and particularly the Office of the Prime Minister, since policy making in Ethiopia is highly centralized. The nature of policy formulation and development has already been discussed in greater detail in chapter 5. As far as individual policies of coffee forests management are concerned, in the study area, there are a number of them but in the section that follows reference is made only to those that are of particular and direct relevance to the management of coffee forests.

Rural development policies, strategies and instruments

This policy, issued in 2001, provides a general policy framework that guides rural and agricultural development in general and environmental and natural resources management in particular. The policy is the first of its kind addressing diverse aspects of agricultural and rural development in a comprehensive and holistic approach. The policy document is divided in to three major parts: part one deals with guiding principles; part two with rural and agricultural development policies and strategies, and part three with the management aspect of rural development (FDRE 2001). Although all the provisions in the policy document are important, provisions of direct relevance to environmental and natural resources management decisions are the ones that we find in parts two and three. These include the policy provisions that deal with proper use of land resources (Land tenure policy, and Land Use Policy) in section 3 of part 2 and the sub-sections under it (sub-sections 3.1 and 3.2); democratization and people's participation in section 1 of part 3 and the sub sections under it (sub-sections 1.1. and 1.2); and decentralization in section 3 of part 3 (Ibid).

The land tenure policy: The proper use of land resources provision of the policy (section 3 of part 2), which can be denoted as land tenure policy, emphasizes the need to implement the land tenure law of the country as enshrined in the constitution (sub-section 3.1). A considerable part of the policy discussion in this sub-section is devoted to justifying the proposed land tenure (public ownership) as the most viable and to addressing concerns and queries that have often been raised by critiques of the long lasted land tenure debate of the country. The policy states that land is a public property and the fact that it is a public property ensures the efficiency of its use; enhances citizens' access right to agricultural land; increases the motivation of individual farmers to use their labour productively; and enhances the economic development of the country and improves the livelihood of the farmers (EPRDF 2001:67). So long as confidence is ensured in the future access (security), the policy argues, usufructuary or management rights are more important than ownership rights and security (Ibid).

However, as sufficiently demonstrated in section 6.3.1 above, the policy has serious bottlenecks. It failed to solve the two major problems associated with land i.e. landlessness and growing disparities in holdings. The policy rather enhanced the central government control over land resources thereby illegalizing the traditional tenure agreements which may have had some beneficial results if considered. It also contributed to growing insecurity among the farming community since the ultimate power and control over land resources remained with the central government. The lack of security associated with land

ownership has led to reduced investment in land productivity enhancing measures by the tillers. In fact, the policy has been cited by many as one of the major impediments to the growth of the economy in general and to the declining growth of the agricultural sector in particular as well as to the lack of sustainable and long term management of natural resources (EEA/EEPRI 2002). The debate has attracted a wide range of actors outside the policy makers circle and included development practitioners, researchers as well as NGOs as well as the donor community (Ibid).

A growing body of empirical evidence shows the very strong relationship that exists between land tenure security and effective NRM i.e. secure land tenure implying more efficient and sustainable use of natural resources, although the relationship is not always linear and necessarily straightforward (PLATTEAU 1996). Ensuring tenure security to individuals or groups may not always and necessarily suggest efficient use of the resource as some times individuals or groups may lack the means and knowledge to manage the resources and to defend counterproductive management. However, putting land and natural resources under the full control of the central government, as sufficiently demonstrated in this study, does not lead to their sustainable management and it also does not prevent the resources from degradation.

The coffee forests in particular and natural resources in general did suffer a great deal from the existing tenure arrangement i.e. government ownership. Land tenure reforms undertaken by the various successive governments equivocally over looked the age old customary land tenure systems that have withstood the test of time. The transfer of land that was once owned communally to the private sector during the monarchy and to the state in both the socialist and the current government through land reforms has left farmers in disarray since it did not assure the security they need to invest on land improvement. Neither have there been sufficient empirical evidences that prove the presence of strong market forces to guide the development of private ownership of land nor to show the productivity differentials of lands owned privately. The alternative in such a situation seems communal property right system. But the implementation and proper functioning of communal land tenure requires the presence of new policy directives, organizational, legislative and institutional frameworks. Besides, rather than a fixed set of rules and tenure arrangements, a more flexible and diversified approach to rights to land and natural resources (institutional pluralism) needs to be defined on a more productive way, and through a process of continuous negotiation as ecological, social, institutional and economic conditions change.

Land Use Policy: The other important policy provision that guides *Woreda* coffee forest management decisions is the land use policy (sub-section 3.2). This is a very important policy provision as the country has never been privileged to have a comprehensively worked out land use policy from which different legislations governing different aspects of land and natural resources use and management could emanate. The absence of such a policy has led to the fragmentation of land use and administration having negative consequences on sustainable land and natural resources use and management. Besides, the legacy of not designating an authoritative focal point for land use policy formulation and implementation has led to poor coordination and collaboration between and among the various government institutions the ultimate outcome of which is escalated degradation of the resources.

Despite the policy provision, an exclusive land use system has not been developed yet (or is in the process of being developed). Towards this end, currently various measures are being undertaken by the local government spurred and financed indeed by the central government. They include undertaking survey (measurement) and registration of farmers' holdings and issuing land-holding certificates (title deeds), green certificates as they are called, thereafter. At *Woreda* level, this process is being undertaken by what are called *Woreda* Rural Land Registration and Certification Coordination Committee (see the detail in chapter 5). The intention, at the end of the day, is to provide title deeds to the tillers and to develop a sound and comprehensive land use system that would enhance the management of land and natural resources by enabling the government to define which plots of land can be designated for which purpose. The fact that the government is committed to put a sound land use system in place is encouraging and is a move in the right direction. But as discussed earlier on (see chapter 5), the process has been seriously challenged as it involved some problems.

Farmers were very sceptical about the whole thing and indicated, during the group discussions, that they are not sure what the intentions of the government are. A farmer that took part in one of the key informant interviews in *Sheko* said:

"Whenever there are actions taken by the government to measure our holdings like they are doing now, they end up either in levying more land taxes on us or in land redistribution. Given the experiences we have had in the past, I am sceptical about it and I am telling you nobody can tell you for sure what these measures are going to yield in. They (he was referring to the local authorities) say that they are going to give us certificates but we are not sure. But since we do not have any power, what can we do except to adhere to their orders. Besides, we will have to wait and see what will happen but my heart tells me otherwise" (11/12/2005, Gez-Meret Peasant Kebele Administration, Sheko Woreda)

The above statement clearly shows the concern farmers have regarding the program. It also shows how remote the level of farmer participation is in the whole process. It is one thing to issue a policy and to embark on its implementation but entirely another to make sure that those who are going to be affected by the policy and its implementation outcomes take active part in the process. Almost a similar approach (top-down) was followed during the socialist government to design and implement collectivization policy and natural resource management policies, which were implemented in the form of soil and water conservation schemes. However, during government change (when the regime was ousted), a large scale destruction of the physical structures that were established to ensure environmental conservation followed it. Many of the resettles got embarked in what seemed to have been an exodus and marched back to their origins, although the situations awaited them at the other end were not pleasant. If the objectives and intentions of policy interventions are not clearly and properly communicated to the ultimate beneficiaries' right from the very start and if they are not made partners through sufficient dialogues and discussions of the whole process, the policy implementation will most certainly face a serious problem and therefore a challenge. This is what seemed to have been happening in the study areas.

Policies, for their effective implementation, require the support of legislative measures. In the absence of rules and regulations, policy implementation will be a futile exercise. The implementation of the land use policy seems to have been heavily constrained by the lack

of adequately developed guidelines. The absence of rules and regulations that address issue of conflict compensation has been detrimental to the implementation of the policy. Local authorities did not hesitate to disclose the difficulty they encountered when faced with such circumstances. Some times they grappled to alleviate the problems of conflict through the use of traditional institutions but in most cases they had to put forward the cases to the *Woreda* Administration, cases they could have solved had rules and regulations that guide the implementation been there. It is not only the absence of rules and regulations but also the lack of resources (financial, human and physical) that had constrained the implementation of the policy. For the whole exercise to be more effective and efficient, therefore, it is important that farmers' take active in the process, rules and regulations that guide its implementation and the necessary resources be made available.

Participation Policy: According to what is provided in the policy, given appropriate policies and strategies, peoples' participation is decisive to ensure enhanced rural and agricultural development in general and environmental and natural resources management in particular (FDRE 2001:243). People's participation is therefore considered crucial. It envisions participation first and foremost in the form of undertaking development activities on their own holdings and based on their own free wills (FDRE 2001:245). The agricultural extension service implemented through the NEIP discussed earlier on is congruent to this policy provision. The argument is that solutions must be based on a detailed understanding of local contexts, drawing on indigenous knowledge and technical practices. Integrated solutions are thus favoured, including a focus on linking agricultural production with conservation and encouraging the management of natural resources through community involvement. Top-down solutions and large campaign-style approaches are, therefore, rejected, in principle, in favour of more participatory solutions, involving local consultation and village-level planning. However, the process through which the extension packages, as thoroughly discussed earlier on, were formulated and implemented is quite in contradiction to this and provides a convincing evidence of the lack of genuine participation (for the details see the discussion under section 6.2.1. above).

The policy also underscores the putting in place and proper use of platforms that ensure genuine participation (FDRE 2001:271). Among the platforms envisioned to enhance peoples' participation in development and natural resources were civil societies, in particular are youth associations, women's association, and professional associations. These, particularly youth and women's associations, are beginning to emerge and take shape at the local level (see chapter 5). In fact, they are just being established hence it would take a while until they have become fully operational and contribute to the purposes that they are being established for. However, from the discussions I have had with officials at the *Woreda* level, the way they are being organized and functioning is not different from the experience during the socialist government. They are committed more at achieving a political agenda than development issues.

Local governance institutions such as *Woreda* Council and *Kebele* Councils (see the details in chapter 5) have also been suggested as platforms that enhance participation. Indeed, the councils reflect representation of farmers but since decision making is still concentrated at the centre (see the discussion above) and since the leadership in these structures is filled up with loyalists, it seems participation is only nominal and a lip service for that matter. Besides, these institutions are devoted more to achieving political objectives

than development agenda. Just like the Peasant Associations of the socialist government, the government is using these institutions as a means of strengthening its control over the people and natural resources. The fact that these institutions can not even decide on development agenda of their own and in designing policies and strategies of how natural resources that fall in their jurisdiction should be managed is an indication of the lack of genuine participation and the absence of decision making power.

The lack of genuine participation can also be demonstrated by the way the FCUs have been demarcated. According to *Woreda* authorities, the demarcation of the FCUs was carried out by a task force drawing members form *Woreda* Office of Agriculture (experts), Woreda Police, *Woreda* Administration and farmers' representatives. However, farmers strongly argued that whoever represented them was more a party loyal to the government than their true representative (group discussion with farmers). Asked about his opinion regarding the participation in the demarcation, an elderly farmer who took part in one of the Focus Group Discussions (FGDs) said:

"They [he was referring to representatives from the Woreda Office of Agriculture] say they have done it in consultation with us. But let me tell you, I very well remember members of our community who took part in the demarcation exercise, together with the Kebele representatives and people from the Woreda. Weren't they the loyalists that have benefited from the Kebele? In the first place, we should have been asked through whom we would like to be represented but that did not happen. In the second place, we have repeatedly told them that the demarcations have problems i.e. they have taken away our holdings, but they would not listen. I tell you what; through this so called demarcation, we did not gain anything but we have lost significant part of our holdings. It is simply not fair" (23/12/2003, Bondo Geche Peasant Kebele Administration, Yayu Woreda)

Ensuring genuine participation in development in general and in natural resources management in particular is challenging. It requires a number of issues among which one finds educating the local people in civic matters. Education enlightens people on matters regarding their rights as citizens, including their obligations to natural resources and the recourses they have in case of grievances. Civic education is now included in the curricula of the formal education system of Ethiopia and the government and NGOs are making efforts to educate local people on the concepts and principles of participatory democracy, human rights, gender issues etc. Besides, the government is making a significant stride to establish what are called Farmer Training Centres (FTCs). The FTCs are aimed at equipping local people with basic knowledge and skills in natural resource management, including the planning and implementation of activities related thereto and the owning of development initiatives. The establishment of the training centres is however at a very early stage and many are under construction in both *Yayu* and *Sheko*. However, it is yet to be seen how much contribution these would make in making participation a reality or how much they might be politically driven.

Decentralization Policy: The policy makes a clear provision as regards the decentralization of decision making power both administratively and financially (FDRE 2001: 273). It gives particular emphasis to devolving power to the lowest government structure i.e. *Kebele* Administration. However, it did not pass without mentioning the inherent capacity problem existing at the level of the *Kebele* level and therefore called for urgent measures that need to be taken to improve it. The policy also states that at the local level, the re-

sponsibility of managing rural development is that of the *Woreda* Administration. This is a constitutionally recognized government entity with clear power, authority and mandate to manage rural development in general and environmental and natural resource management in particular.

The goals of decentralization include increased administrative efficiency, increased local level participation in development planning and management, and the allocation of resources so that they reflect more closely the development priorities of the local population. This being the case, the whole process of decentralization and the establishment of democratic institutions that are meant to ensure downward accountability, although encouraging, does not seem to be making head way. To start with, the decentralization was nominal in most of the cases since power is still concentrated in the centre and half way in cases where efforts were made to transfer it and thus it has rather led to the revival of centrifugal powers. Local governments did not and still do not have the ultimate decision-making power and financial autonomy of true federal states and they are therefore dependent heavily on directives of the central government. The studies conducted by ABBINK (1995), YOUNG (1998), PAUSEWANG (1994), PAUSEWANG et al (2002) and AALEN (2002) are also in conformity with this finding as all state that effective decentralization and the establishment of democratic institutions in Ethiopia is far from being a reality. The entire process of the decentralization process is congruent to what is referred to in the literature as deconcentration, which is defined as the transfer of decision making power and authority from the central government to government institutions (departments) at lower level of the hierarchy (OSTROM et al. 1993).

Even though the fact that the government decided to embark on decentralization reforms is encouraging, the results associated with it have been ambivalent. In fact sufficient time needs to be given for decentralization reforms to be fully legislated and implemented. However, they should not be isolated, but approached in combination with a commitment that accompanying measures be identified to assure environmental protection, justice and freedom from conflict. It is also imperative to achieve accountability and ensure it. The overarching question in examining accountability is: do selected institutions represent, and are they accountable to, the populations for whom they are making decisions? It is therefore considered essential, in ensuring authentic local management of resources, to choose and build upon representative and accountable local institutions since decentralization has the potential to empower groups other than local communities e.g. central government, line ministries, non-governmental organisations (NGOs) and customary authorities. And this seems to have been what is happening in the study areas as the practice of decentralization as it happens now in its less constructive form lacks true local accountability.

The lack of genuine decentralization and true local level representation has also been witnessed by local authorities. The following is what an official in the *Woreda* had to say:

"Yes, we have always been hearing that the government is following decentralization and that we, at Woreda level, have the right to make decisions that pertain to the development needs of our Woreda. Let me tell you my own experience. As far as my memory goes, there has not been a single incidence where we have decided on our own budget leave alone other things. All I had to do ever since I have assumed this position is simply abide by the decisions made by the Woreda Administration, which in turn is expected to pass

over decisions made at higher levels i.e. Regional Council. If this is what is called decentralization, then I don't see any difference from what we used to do in the old days" (23/10/2003, Anonymous)

Natural resource management is one of the sectors in which effective decentralization and genuine participation play active role. There is strong relationship between effective decentralization, genuine local level participation and sustainable natural resource management. In a situation where there is no effective decentralization, genuine local level participation will remain a lip service and this may not contribute to sustainable natural resource management. On the other hand for decentralization to be effective and thereby contribute to sustainable natural resources management, the presence of genuine local level participation is a necessary condition. However, both effective decentralization and genuine local level participation constitute a number of challenges that may be more complex and multifaceted than those in other sectors. Thus, their potential benefits in ensuring sustainable NRM generally warrant their careful consideration. This is because, the perceived trajectory from 'governed' to 'active participants' requires facilitating not only the advance of decentralization and genuine participation but also the establishment of democratic institutions and good governance as well as the presence of effective policies and legislations that back them. Besides, if they are not implemented properly and effectively, they both may end up favouring a certain group at the local level say for example the local level administrative wing of the government or the local elites.

The Rural Development Policies, Strategies and Tools document, despite the some inherent problems, makes important and decisive provisions of relevance to environmental and natural resources management. It, as agriculture and rural centred development policies, strategies and tools, and as the first of its kind, provides the framework within which local level development and natural resources management decisions can be made. It is one of the most regularly consulted policies by various government establishments at all levels. It is a common site for one who visits the various sector offices, starting from the federal Ministry of Agriculture and Rural Development (MoARD) in Addis all the way down to the *Woreda* Council office, to see this policy document within few meters of reach on their shelves, if not on their desks. However, the ills associated with it that emanate from the way it is formulated (excessively top down) and is being implemented (in a highly bureaucratic and technocratic manner) have been playing a counterproductive role. If measures are taken to rectify the ills and shortcomings, it may perhaps have a more pronounced impact in terms of ensuring sustainable development in general and in enhancing the management of environmental and natural resources.

The Environmental Policy of Ethiopia

The environmental policy of Ethiopia (EPE) is the first comprehensively prepared environmental and natural resource management policy ever. It consists of five major volumes: volume one establishes the setting by evaluating the state of the natural resource, the environment and development in Ethiopia, and examines the interconnected causes and effects of the existing situation; volume two presents the policy and strategy framework aimed at ensuring a sustainable use and management of natural resources, rehabilitating those whose bases have already suffered degradation, and maintaining life support systems to function well; volume three deals with institutional issues (policies, legislations and organizations) which are required to implement the strategies defined in volume

two and actions defined in volume four; volume four identifies mainly short-term (2 years) and medium-term (5 years) actions that should be taken to implement the strategies and the last volume (volume five) gives a listing of projects, some funded and being implemented, and others only proposed with estimated costs (EPA 1997).

The focus of attention in here is the policy framework that includes the sectoral and cross-sectoral provisions. All the provisions in the sectoral policies are of relevance to the subject under consideration. However, particular emphasis will be given to those that have direct relevance viz. forest, woodland and tree resources management policy; and genetic, species and ecosystem diversity management policy, since they directly impact on coffee forest management decisions at the local level.

Forest, woodland and tree resources management policy: This policy states the need to recognize and encourage the complementary roles (partnership) of individuals, communities', private entrepreneurs and the government; integrate land, water, energy, ecosystem, and genetic resources conservation and management in the development of forestry strategies; and ensure effective forest resources management programs by adhering to the principles of sustainable forest management. For these to become a reality, the policy advocates, among others, for community participation; tenure and access rights to land and natural resources; and the development of appropriate land use plan (EPA 1997:8).

It is now nearly a decade since such a policy has been issued. But nothing commensurate to what has been provided in it seems to have been taking place on the ground. For instance, the progress made in terms of brining the private sector, the government and communities together (partnership development) in forest resources conservation and management has been far from reality. The government has recognized the fact that it alone could not manage forest resources effectively and efficiently and has therefore called for joint actions indeed (MENGISTU 2001). Nonetheless, it failed to take practical steps that lead towards the attainment of this. As a result, forest policy objectives remained scattered in numerous institutional mandates, action plans, national action programs, and bodies of legislation on the one hand and the efforts made to bring on board the private sector and ensuring the participation of communities was very much weak on the other. This has led to a kind of situation where decisions by numerous public and private forests related institutions tend to be uncoordinated, are on *ad hoc* basis, and are difficult to predict showing the gap that contributed the most to the existing state of affairs in the sector.

The recognition given to the importance of people's participation in the development and implementation of management programs based on the principle of sustainable forest resources management is encouraging indeed. However, as has been discussed in greater detail above, participation has only remained a rhetoric and therefore local communities which are instrumental in ensuring sustainable forest resources management were left out from the exercise. The agricultural extension service that was discussed before provides sufficient evidence of the purely top down approach followed in development planning in general and the lack of people's participation in natural resources management in particular. Besides, the service has often been too much production biased and therefore failed to integrate land, water, ecosystem and genetic resources conservation and management into the preparation and implementation of the program in spite of the provisions made in the policy that underscore the importance of integrating conservation to development endeav-

ours. Management programs, which are based on the principles of sustainable management, have not been developed for forest resources. On the contrary, forest resources continued to assume the "open access" scenario and have therefore been subjected to unregulated utilization and hence degradation.

Biodiversity (genetic, species and ecosystem) conservation policy: Government concern about the increasingly serious erosion of biodiversity, the encroachment by invasive alien species and, generally the lack of effective protection and conservation of biodiversity has led to the development of this policy. The policy underlines, among others, the need to promote *in situ* conservation as the primary target for conservation of both wild and domesticated biological diversity, and *ex situ* conservation as supplementary to in situ conservation (EPA 1997). It also emphasizes the need to promote the involvement of local communities inside and outside protected areas; and the need to recognize local knowledge and the need to ensure the benefits deriving from conservation of biological diversity are channelled to local communities (Ibid).

In the effort to implement this policy, the then Institute of Biodiversity Conservation and Research (IBCR) and now Institute of Biodiversity Conservation has developed various programs amongst which we find forest plant genetic resources conservation and research program. This program has been coordinating a project entitled "Forest Genetic Resources Conservation" since 1998. The major objectives of the project are developing a strategy/concept for the conservation of the Ethiopian forest genetic resources; creating awareness among the public and the government; building institutional capacity; establishing and maintaining a gene -bank and ex-situ stand for the conservation of threatened indigenous trees and shrubs, and establishing and managing suitable in-situ conservation sites. The project, since its establishment, has conducted biological and socio-economic surveys of 14 NFPAs. The establishment of the FCUs under consideration is also an outcome of the project.

The fact that forest genetic resources conservation activities are under way is encouraging. However, the exercise needs to be participatory. As has been elaborated earlier on, the demarcation of the NFPAs and the FCUs, at least according to farmers, have not been participatory and therefore involved a lot of controversial issues despite the claim by local authorities that they were undertaken in participatory manner. Besides, conservation activities need to be backed by effective policy and legislative provisions as well as organizational frameworks. The evidence derived from this study showed that such effective and efficient forest management policies and legislations are yet to be issued and organizational structures suffer a great deal from malfunctioning mainly continuous restructuring and critical shortage of resources. This has therefore forced forest resources to suffer a great deal from degradation and the conservation activities to have a limited impact.

Sustainable forest conservation requires, among others, knowledge on genetic variation, reproductive biology and seed physiology of indigenous tree species, and proper understanding of traditional conservation practices employed by farmers'. Unfortunately, there is a huge gap as far as this is concerned and the effort being made to make use of such invaluable resource is very much limited. The top-down nature of policy formulation and implementation has also been a nuisance to existing traditional knowledge and practices of conservation. Such a policy formulation exercise also pays a very little attention to benefit sharing. If forest biodiversity conservation efforts are to be productive, sustainable

utilization and fair and equitable distribution of benefits from biodiversity services needs to be ensured for all stakeholders involved in the process. But this, although mentioned time and again in the various institutional provisions, has remained rhetoric.

6.2.4.2 The legislative framework of coffee forest management

The Ethiopian government has issued various laws with an aim to enhance the conservation and management of natural resources and the environment in general and forest resources in particular. However, the majority of the laws have found their way only into the shelf while those that have managed to get to the local level faced with strong resistance. At present, comprehensive legislation is lacking in many areas of environmental management and protection and, in cases where there is such legislation, there is duplication or it is out of date. Legislative measures of significance importance to coffee forests management include the constitution; the land tenure law; the forest conservation, development and utilization proclamation of 1994; regional forest conservation, development and utilization proclamations; and rural land administration use proclamations. The land tenure law has been sufficiently discussed under section 6.2.1 above. Therefore, in the sections that follow efforts will be made to discuss the others.

The constitution of the FDRE

The constitution of the federal democratic republic of Ethiopia (FDRE), which was adopted on 8 December 1994, is the apex legal framework that binds all Nations and Nationalities in a mutual commitment to fulfil the social, political, economic, and cultural development objectives and principles of the country (FDRE 1995). Among others, the constitution maintains land under the ownership of the Ethiopian people and government but protects security of usufructuary tenure; reinforces the devolution of power and local participation in planning, development and decision-making (decentralization); and ensures the appropriate management as well as the protection of the well being of the environment (Article 52). The specific provision in the constitution that relates to environmental and natural resources management is Article 92 (FDRE 1995). The article is specifically designated in the constitution as *environmental objectives* and states that:

- The Government shall endeavour to ensure that all Ethiopians live in a clean and healthy environment.
- The design and implementation of development programs and projects shall not damage or destroy the environment
- People have the right to full consultation and to the expression of views in planning and implementation of environmental policies and projects that affect them directly.
- Government and citizens shall have the duty to protect the environment.

The constitution in general and the part that deals with environmental and natural resource management concerns in particular forms the foundation and the umbrella framework up on which all other institutions are established. It is indeed encouraging to see that environmental and natural resource management issues are being addressed constitutionally. It is in accordance with these provisions that various measures have been taken by both the federal as well as regional governments such as the establishment of the EPA and the EPC and the subsequent issuance of the EPE and CSE at the federal level; the establishment of various regional environmental and natural resource management organs such as the En-

vironmental Protection Office in Oromiya and Environmental Protection, Land Administration and Use Authority in the SNNPRS, and the subsequent issuance of various policies, strategies and programs or regional importance.

However, just like the case with many policies and legislations, many of the provisions in the constitution remained rhetoric and short of being implemented. For example the failure to properly exercise the decentralization process and the lack of genuine participation that were discussed in greater detail and the controversies and therefore long lasted debates surrounding the land tenure law of the country owe a great deal to failure from the government side to translate what are provided in the constitution to action. If such concerns that arise from the constitution are addressed properly and amended through productive dialogues and are implemented properly; and if they are accompanied with effective and efficient policies, legislations, and strategies that ensure their effective implementation, the management of environmental and natural resources could perhaps be improved a great deal. While devolution of powers, which has been indicated in the constitution, EPE and CSE, and responsibilities, will facilitate effective implementation of legislation, inter-sectoral coordination will all the more continue to be vital at all levels.

The forest conservation, development and utilization proclamation

The federal forestry conservation, development and utilization proclamation (Proclamation No. 94/1994), issued during the transitional government of Ethiopia (TGE), is the only effective forestry legislation guiding decisions as regards the conservation, development and utilization of forest resources. It repeals all proclamations that precede it namely: Wildlife Conservation and Development Proclamation No. 192/1980; Protection of State Forest Regulations No. 344/1968; Exploitation of State Forest Regulations No. 345/1968; Management of Protective Forest Regulations No. 347/1968; Powers of Rangers Regulations No. 349/1968; and Powers of Forest Guards Regulations No. 350/1968. It, however, considers Trade of Saw Logs and Veneer Logs Regulations No. 351/1968 as deemed to have been issued under it (TGE 1994).

The proclamation addresses important issues viz. forest ownership, and forest management (conservation, development and utilization). As far as ownership is concerned, it provides for state ownership (federal forest and regional forest) and private ownership (private forest) (TGE 1994). There is no provision, whatsoever, regarding communal ownership of forest resources. Therefore, one can confidently say that the types of forest resources ownership that exist in Ethiopia are of two types namely: state/public and private ownership. Despite the provision in the proclamation, no private forest ownership type has been reported to be in existence in the study areas. Forest resources that exist in the study area are therefore owned by the state (federal/regional government).

The provisions in the proclamation make it explicitly clear that the demarcation, designation, registration, conservation, utilization, and development of state and regional forest resources are the responsibility of the federal and regional states, respectively. Another important provision in the proclamation is the one that deals with the process of eviction and the process to be followed when the need arises to do so. When the government deems it necessary to evict peasants from their "privately owned" lands because of the need to set aside part of the land as state, regional or protected forest for conservation or protection purpose, the proclamation states, it can be effected only after in consultation

with and consent of the peasantry and subject to the assurance of their benefits (TGE 1994). However, according to farmers, such undertaking has not been reported in the localities even its remotest sense. For example, they reported that the demarcation of the NFPAs and subsequently the FCUs claimed much of their holdings, if not evicted them and there have not been any instances where they have been assured of the benefits.

The provisions in the proclamation are simply overwhelming as they literally touch upon lots of important issues required to ensure sustainable management of forest resources. They range from the conservation, development and management plans to be developed for state, regional and protected forests to benefit sharing by forest inhabitants and to the need for collaboration and compensation. The question how much of these provisions have been put into effect however only meets a discursive end. Literally, apart from the demarcation activities that were undertaken long time ago, and most of them in top-down fashion, no significantly effort has been made. Practically, rendering technical assistance has been remote in most cases and absent in some; forest development plans have got the remotest of attentions; infrastructure development within forests is nowhere to be seen; pests, disease, and forest fire have been rampant and a constant threat. In a nutshell, there is little, if any, commensurate action to the provisions in the proclamation leaving the forest resources to be subjected to unregulated utilization and therefore deforestation.

It is one thing to have a proclamation issued but entirely another to properly and effectively enforce it. The proper and effective enforcement of government rules and regulations depends, among other factors, on the level of awareness among the ultimate beneficiaries, their perception towards them and their participation in the formulation. The evidence derived from the study indicates that quite a significant proportion of respondents (94%) reported that they are aware of existing government rules and regulations. However, what is striking is the fact that significantly large proportion of the respondents (95%) indicated that the rules and regulations do not match their circumstances and choices (Table 6.5).

Table 6.5: Farmers' awareness and perceptions of existing rules and regulations as reported by interviewed farmers in *Yayu* and *Sheko Woredas* (%)

Are you aware of existing government rules and regulations (%)?	*Yayu* (N=140)	*Sheko* (N=100)	Total (N=240)
Yes	90	99	95
No	10	1	5
Total	100	100	100
Do the rules and regulations match your circumstances and choices (%)?			
Yes	7	3	5
No	93	97	95
Total	100	100	100

Farmers reported that they came to know about the rules and regulations only when they were enforced. This shows the lack of participation in the formulation of the rules and regulations. Besides, the very nature of the rules and regulations i.e. exclusion has not

been well come by communities. The following is what an elderly I talked to in *Sheko* had to say regarding this:

"Of course we want the forests to be conserved. What we are not happy with is when they come and tell us what to do and what not to do. We are particularly not happy with the way they come and demarcate and tell us we can not cross the boundaries. We have lived with the forest long enough to know its use. So, why is it that they consider us as if we care less and therefore destroy the forest? That is one thing I do not understand" (24/12/2004, Ousika Peasant Kebele Administration, Sheko Woreda)

In spite of the huge disappointment they have of existing rules and regulations, surprisingly, some farmers interviewed indicated that the government has to be responsible for the management of forest resources although the great majority indicated the responsibility to be that of the community. By government, they meant both local and federal governments (Table 6.6).

Table 6.6: The responsibility of conserving coffee forests as reported by sample households interviewed in *Yayu* and *Sheko Woredas* (%)

Suggested responsible actor (%)	*Yayu* (N=140)	*Sheko* (N=100)	Total (N=240)
Government (local and federal)	16	18	47
Communities	51	43	19
Local institutions	16	18	17
Joint responsibility	17	21	17
Total	100	100	100

Two interesting responses deserve attention in the table above i.e. "community" and "joint responsibility" of managing natural/forest resources. This is because both show the opportunity that exists in terms of fostering joint or participatory forest management schemes. This is in line with the recent 'paradigm shift' in conservation and natural resource management away from state-centred towards community-based and joint forest management approaches in which local people play a much more active and central role. Farmers made it clear that it is only when the responsibility is divided among the various actors that forest resources will be conserved and managed effectively. By saying so, they acknowledged their role and that of the government, despite the existing forest resource tenure and the existing disappointment.

The proclamation is also used in guiding forest resources utilization for the production of timber through the harvesting license issued by the regional government as discussed earlier on. The licence provides a cutting permit that indicates the logging site, types of logs to be harvested, the volume of logs estimated to be harvested, the charges that should be paid, and the date of removal and if and when possible the plate number of the truck that will be used for transporting the logs. The responsibility of issuing the licence is that of the regional government, through the office it established for the same purpose. The licence holder involved in timber production should provide a report that includes the information mentioned above to the concerned office. This information will be included in a summary report and then will be sent to the *Woreda* Office of Agriculture and Rural De-

velopment. The *Woreda* Office of Agriculture and Rural Development checks the report and then after aggregating the information sends it to the *Zonal* Office of Agriculture and Rural Development. The *Zonal* Office of Agriculture and Rural Development then do the same and send a report to the Regional Bureau of Agriculture and Rural Development.

However, this procedure did little to prevent loggers from cutting trees otherwise than the ones mentioned on the permit. Often, the saw millers/concessionaires (licence holders) selected only the best stems from a relatively large area, and utilized only the best parts of those stems. Besides, usually, only very few species with high market value are utilized, while the remaining are wasted. According to KIDANE (2002), from a standing volume (commercial) of between 50 - 80 m3 per ha, only 8 - 12 m3 per ha is properly felled, while the rest is inappropriately utilized. Besides, there are also those that are involved in illegal timber production. The heads that I had discussed with reported that such incidences have been on the increase. Through the Environmental Protection Committees (EPCs) established at both *Woreda* and *Kebele*, they have tried track down illegal individuals and companies and to capture truckload of timber being shipped out of the localities. However, the committees have not been productive in effectively monitoring and supervising such illegal timber production activities. Frequent restructuring of organizational structures, financial, human and physical resource constraints as well as the rent seeking behaviour exhibited by some technical staff have all contributed to the week monitoring and supervision of such undertakings.

Regional Forest Management, Development and Utilization Proclamations

Both Oromiya and the SNNPRS have issued what have come to be known as Regional Forest Conservation, Development and Utilization Proclamations (Proclamation No.72/2003 in Oromiya and Proclamation No.77/2004 in the SNNPRS). The content of the proclamations is essentially similar to the Federal Forestry Conservation, Development and Utilization Proclamation (Proclamation No. 94/1994) since they have borrowed a lot from it. They could rather be called regionalized versions of the federal proclamation, as it is often the case with other policies; legislations; and strategies as well. It is too early for both the Oromiya and SNNPRS Agricultural and Rural Coordination Bureaus to claim that they have started to implement the proclamations since they are only one year old. *Woreda* experts in *Sheko* indicated that they are still using the federal proclamation because of the fact that the regional proclamation did not make its way to the local level whereas *Woreda* experts in *Yayu* mentioned that they are aware of its existence but have not been provided with it.

Rural Land Administration and Use Proclamations

It has been long since the impact of the absence of land administration and use (management) legislations on the management of land resources in particular and natural resources I general has been appreciated by the government. In a stylized move towards addressing this problem and in an effort to culminate the long lasted debate, the government, both at federal and regional levels, has issued a proclamation called Rural Land Administration and Use. Quite uncharacteristically, regional governments were the first to issue such a proclamation and the proclamation at the federal level only came into effect afterwards. Accordingly, the Oromiya regional government issued its proclamation as Proclamation No.56/2002 and this was followed by the issuance of a regulation meant to enhance its

implementation (Regulation No.72/2003) (OEPO 2003). The SNNPRS followed suit and issued the same proclamation (Proclamation No.53/2003) and an implementation rule (Rule No.16/2004) and regulation (Regulation No.1/2005) (EPLAUA 2005).

Not only did the regions issue the proclamation, rules and regulations but also they have been involved in the actual implementation of the proclamation. In order to expedite the implementation of the rules and regulations, both regional governments have established what are called Rural Land Registration and Certification Committees at both *Woreda* and *Kebele* level with defined terms of reference (see chapter 5). The committees have been actively involved in the day to day activities of measuring and registration of holdings and in solving conflicts that often arose in the process. By the time I made my second field visit (January, 2005), the committee in *Yayu* has almost finalized 85% of the measurement and registration (personal communication with the team head) while in *Sheko*, a preparatory workshop was being handled. I wanted to participate in the workshop that was being held in the capital *Mizan Teferi* but was told it was only meant for internal staff. I was told that it was planned to start the actual work as soon as the orientation of the workshop is over.

Very recently (as late as March 2006), an interesting issue has evolved in the implementation of the proclamation. Regional governments reported some critical problems that they have encountered in the process of undertaking the task. The analysis of the causes of the problem revealed that there are some major disparities and contradictions between the federal and regional proclamations in terms of the provisions made. One of the reasons why this has happened could perhaps be the way the proclamations have been issued. Traditionally, proclamations often emanate from the top (federal government) and were later on transferred down to regional governments for implementation in a technocratic manner. As far as this proclamation is concerned, however, the tradition seems to have not been followed since regional proclamations preceded the federal one. The fact that disparities and contradictions appeared is a clear evidence of the absence of proper consultation of the regional proclamations by the central government thereby once again showing the lack of transparency. A workshop has been called to deliberate on the issue and to alleviate the problem. The proceedings in the workshop led to the establishment of a task force charged with the mandate to look into the provisions made in each of the proclamations and to suggest ways and means of how to reconcile the disparities and contradictions. Hopefully, therefore, the problem will be addressed properly and solved therein.

6.2.4.3 The strategic framework of coffee forests management

When used to denote an instruction, institutions (rules) are closer in meaning to an effective strategy for how to solve a problem (OSTROM 2005). Thus, strategies are institutions and they are also important in solving natural resource management problems and thereby enhancing their sustainable management. As far as the strategic framework is concerned, the country has developed a federal strategy known as the Conservation Strategy of Ethiopia (CSE). It is this strategy that had given rise to the subsequent issuance of the EPE and the development of regional conservation strategies.

The Conservation Strategy of Ethiopia (CSE)

The preparation of the Conservation Strategy of Ethiopia was started in 1989 but it came into effect only in 1997. The strategy, the first comprehensively prepared of its kind, aims at studying the natural resource base, environmental imperatives and development demands of the country and to harmonize them. The harmonization process is expected to be activated through the Environmental Policy of Ethiopia, which is some times referred to as the federal policy on natural resources and the environment, and translated into action through environmental laws, the Environmental Impact Assessment (EIA) for example, on the one hand, and through the development of action plans and environmental education and awareness-raising on the other (EPA 1997).

The strategy takes a holistic view of natural, human-made and cultural resources, and tries to integrate them into coherent framework plans, policies and investments related to environmental sustainability. It seeks to integrate into a coherent whole existing and future planning in all sectors that impinge on the environment, including agriculture, forestry, wildlife, fisheries, soils, water, minerals, energy, urban planning and cultural heritage conservation (Ibid). In order to ensure this, it also addresses cross-sectoral issues viz. population; participation; land and natural resource tenure and access rights; socio-cultural and gender issues; environmental economics; environmental information system; environmental research; science and technology; environmental impact assessment; and environmental education and awareness. The implementation of this strategy is envisioned through the development and implementation of regional conservation strategies.

Regional Conservation Strategies: Soon after the launching of the Conservation Strategy of Ethiopia (CSE) in 1997, both regional governments (Oromiya and SNNPRS) got seriously engaged in developing conservation strategies of their own, within the frameworks of the CSE. The Ormoiya regional state has finalized the preparation of the regional conservation strategy (BERHANU et al., 1998a, 1998b) while the SNNPRS is yet to finalize the preparation. However, the strategy has not been implemented mainly because of lack of sufficient awareness creation and operational guidelines that are required for the implementation. The lack of operational guidelines has also been accompanied with the continuous organizational restructuring and the lack of resources in the various organizations leaving the *Woreda* administration in a difficult situation to implement the strategies and therefore the action plans. Even when I last visited the research sites in January 2005, the *Woreda* administrations and the responsible organizations did mention about the presence of conservation strategies but they were not confident in telling me all about them.

It might look a little bit early to critically comment on the implementation status of the strategies since they were issued only recently. However, given the urgency of the matter i.e. the speed with which the country is loosing its highly valued natural resources in general and forest resources and the associated biodiversity in particular, it might have been too late already. It could also be that the whole situation might get to a point of no return in due course. The prevailing situation is particularly worrisome since the government, as always, is not seriously committed but rather keeps on postponing the issue for later. In situations where the government seemed to have been concerned about the current situation of natural resources, the concerns did not manage to go beyond conference and workshop resolutions since they simply failed to be translated into practical actions on the ground. The lack of government commitment that has been reflected in the failure to take

practical actions that are geared towards implementing the policy, legislative and organisational delinquencies, despite their delinquencies, can be convincing evidences that support this observation.

The sustainable management of natural resources and the environment is the basis of economic growth and development in Ethiopia. Fostering economic growth and development through policies and strategies that do not give priority attention to the sustainable management of natural resources is like building a house on shifting sand. Already, the county has lost significant part of its natural resources and the majority of its population it's live in an environment that is seriously damaged. Pursuing a policy and a strategy of environmentally unsustainable economic growth and development would thus only exacerbate the living conditions of today's poor and bequeath to future generations an impaired natural resource base and an environment in which it would be impossible to live.

6.2.4.4 The management framework

Despite the fact that the history of government's involvement in the management of natural resources dates back to the 1880's, organized efforts to conserve these resources (management programs) were not started until the beginning of the 1970s, where the first reconnaissance forest inventory was carried out to identify the then existing natural forests in the country (MoA 1982). Following the reconnaissance inventory, different environmental and natural resource management programs have been implemented by subsequent governments. However, the outcomes of all were poor as they literally failed to reverse the on going natural resource degradation process and to ensure their sustainable management (MEKETE 1993; MESFIN 2003).

The delinquencies of past government endeavours and the emergence of new international developments such as participatory approaches and decentralization schemes have led to a shift in approach regarding environmental and natural resources management. The government recognized the importance of the involvement of local people in the conservation and management of natural resources. This has in turn led to the recognition of traditional knowledge and values; empowerment of communities and encouraging alternative sources of income has been accepted widely by the government (EPA 1997). It was in recognition of these facts that the government developed the Ethiopian Forestry Action Program (EFAP) in 1994. The EFAP is a comprehensive program addressing various issues related to forest resources conservation and management.

Regional Forestry Action Programs (RFPAPs): Soon after the development of the Ethiopian Forestry Action Program (EFAP) in 1994 that coincided with the issuance of the Forestry Conservation, Development and Utilization Proclamation (Proclamation 94/1994), both regional governments started to prepare their own programs. The Ormoiya regional state has finalized the preparation of the forestry action program where as the SNNPRS is yet to finalize the preparation. The action programs are supposed to guide forest resources management i.e. the conservation, development and utilization. But neither the Ethiopian Forestry Action Program (EFAP) nor regional programs have been translated into action.

Even though the EFAP provided a broad framework for the development of RFAPs and the ideology for forest resources management, it did not clearly establish guidelines for forest resources management. For example, although the boundaries of the 42 out of 58

demands of users which were often opposing and competing, the ultimate out come of which turned out to be coffee forests degradation and biodiversity loss as well as conflict of interest among the various parties involved in the utilization of the resources.

7 Conclusions and policy recommendations

The sustainable management of natural resources, to which coffee forests and the related biodiversity obviously belong, has become an important point of debate in the development discourse and conservation policy dialogue of Ethiopia. Who is able to manage natural resources optimally and how could possible institutional reforms for the protection and sustainable management of the resources be implemented are the two central questions that form the nucleus of the debate. Institutional analysis has become central to the debate since institutional delinquencies were found to have been one of the factors contributing to the deteriorating natural resource base of the country. This study explored the influence of local level institutional arrangements that were important in affecting the management of coffee forests in southwest Ethiopia. The institutional arrangements investigated include policies, legislations (rules and regulations), organizational structures (formal and informal), strategies, program and projects. The study employed both qualitative and quantitative methods and used the Institutional Analysis and Development (IAD) conceptual framework developed by KISER and OSTROM (1982), which takes the action arena, which I this case is the conservation and use (management) of coffee forests, as the central element whose structure and function are influenced by the nature of coffee forests and the attributes they exhibit, participants (resource users) and their attributes and the institutions (policies, legislations, strategies, programs and projects) that mediate the coffee forest-participants interactions.

7.1 Coffee forests and their attributes

Geba-Dogi and *Berhan-Kontir* Forest Coffee Units (FCUs) are the two resource systems that participants of the action acted upon i.e. produced, utilized, conserved and developed. They provide participants (communities, governments, private entrepreneurs) with various important goods and services i.e. sources of agricultural land, forest products, non-timber forest products such as spices, honey and medicinal plants as environmental services. The coffee forests exhibited such attributes as low excludability (high cost of exclusion), high subtractability, high mobility, low storage in the system, and they were relatively small in size and naturally bounded. These are attributes exhibited by common pool resources. Although they exhibited such attributes, they were put under the direct control of the central government and hence remained public property. However, the government could not devise effective and efficient institutions that guided management in particular and the decisions of resource users. The institutions could not ensure the production of coffee forests in amounts sufficient to meet the ever increasing demand. When resource systems that exhibit the attributes of common pool resources are put under public ownership (public property system) and when the government, as a provider of the resources, fails to provide effective institutions, resources will most likely be subjected gradually to the "free-rider" problem and ultimately to degradation. The fact that coffee forests are subjected to such an institutional arrangement, and because of government failure to devise effective institutions, it was not possible to ensure their production in amounts sufficient. Rather, coffee forests were subjected to unregulated utilization over the years and hence degradation.

7.2 Participants, their attributes and resource utilization strategies

Four groups of participants (composite actors) have been identified as taking active part in making management decisions that affect the conservation and use of coffee forests viz. local communities; the government; private entrepreneurs; and non-governmental organizations. They shared similarities in some of the attributes they exhibited and differences in others. These similarities and differences in the attributes they exhibited have led to resource utilization strategies which were some times complementary and some times competitive.

Communities were found to have been similar in the livelihood strategies they pursued which is agrarian and predominantly subsistence; in their dependence on coffee forests and the goods and services generated by them; and in their past experiences of self-organization (community-based institutions). However, they exhibited differences in such factors as shared understandings of the physical conditions of the coffee forests, in the impact of their own actions on the physical condition of the resources, and in their resource endowment (land, labour and livestock) and in some socio-economic factors such as ethnicity, religion, and education. The differences in some of the socio-economic variables such as age, status (recently settled or original settler), and duration of stay in the localities have led to differences in farmers' perception of how coffee forests should be managed, the need for and responsibilities of conserving coffee forests.

Participants of the action arena employed various strategies in the utilization of coffee forests. The strategies employed by communities in utilizing coffee forests were directly connected to the sources of livelihoods. They utilized coffee forests in the form of crop production (the access to agricultural land); coffee production (forest and semi-forest coffee production); livestock production (the access to grazing field, fodder and grass); forest product production (fuel wood, construction material, and charcoal). They also utilized coffee forest in order to get access to non-timber forest products i.e. honey, spices and medicinal plants. Governments utilized coffee forests for the purposes of conservation (forest and wild coffee), expansion of large scale commercial tea/coffee farms, timber production, agro-industry investment schemes and resettlement arenas where as private entrepreneurs utilized forest resources in the form of timber production and marketing of non-timber forest products, particularly coffee. Non-governmental organizations utilized coffee forests indirectly by empowering the local community and enhancing their livelihoods concomitantly helping them conserve the resources.

The various coffee forest utilization strategies employed by participants interacted with and influenced each other impacting on coffee forests in the process. Although the outcomes of the strategies employed varied from time to time and from one circumstance to the other, the aggregate outcome was degradation of the coffee forests. This in turn has emanated from the differences of opinion and perception as regards the need for and strategies of conservation and utilization of coffee forests among resource users. It is, therefore, important that efforts be made to properly understand participants' resource utilization strategies and to analyse the differences in opinion and perceptions of how the resources should be conserved and managed and by successively managing the differences.

7.3 Coffee forest management institutions

Participants' coffee forest management decisions have been influenced by a number of interacting institutions. The decisions were influenced by both formal institutions i.e. policies, legislations, organizational structures, strategies, programs and projects and informal institutions i.e. traditional resource management practices and community-based institutions. However, neither formal nor informal institutions were effective and efficient enough in guiding management decisions at the local level so that they could be produced in sufficient amounts and in safeguarding the resources from eventual overexploitation and ultimate degradation. Most of the formal institutions were designed predominantly in a top down fashion, were not participatory and failed to reflect the interest and preferences of the local communities. Some of them, when implemented, suffered a great deal of resistance from local communities. The role of informal institutions, although significant in the past, in guiding management decisions was found to have been minimal. Their roles kept declining with time because they were "illegalized" through formal institutions. Most of them changed roles and became more and more involved in addressing social issues.

7.3.1 The policy framework

A number of policies were found to have been operational and in influencing coffee forest management decisions at the local level. The most important of them include Rural Development Policies, Strategies and Instruments, which encompassed land tenure policy, land use policy, participation policy and decentralization policy; and Environmental Policy of Ethiopia, which included, among others, forestry policy and biodiversity conservation policy. The provisions in the policies are comprehensive and overwhelming as they literally touched upon issues that are important in ensuring sustainable natural resource management. However, they suffered a great deal from the way they were formulated and from the inherent implementation problems.

The policies have been formulated in a unilateral mechanism through a narrow technocratic perspective. They often emanated from the centre, from the Office of the Prime Minster to be specific, and then were transferred down to the local level through Regional Governments for implementation. There has been little chance, if any, of participation for the various actors along the spectrum. Besides, they were often sectoral in nature, with sort-term economic and production considerations dominating long-term natural resources management objectives. The state frequently saw one product i.e. food production and poverty alleviation as dominant, and policy measures were accepted without consideration of the wider natural resources situation. Such policy formulation and implementation processes usually ignore the full range of benefits which local people could obtain from natural resource management, and how particular resources fit within both household economic systems and environmental systems. They also circumvent the felt needs of the people they were meant to serve and therefore often face stiff resistance during implementation if and when they made their ways to the local level.

The policy implementation procedures followed almost the same trend i.e. top down in spite of the provisions in the policies i.e. participation and decentralization. The whole process of policy implementation sidelined decentralization and oversaw the need for the

establishment of democratic institutions that are meant to ensure participation. Power is still concentrated in the centre and the decentralization exercise is half way and thus it has rather led to the revival of centrifugal powers. Regional and therefore local governments did not and still do not have the ultimate decision-making power and financial autonomy of true federal states. This is contrary to what was provided in the constitution which clearly establishes the need for both and their importance in enhancing agricultural and rural development in general and natural resource management in particular. The entire process of decentralization is congruent to what is referred to in the literature as deconcentration and the participation is only passive.

7.3.2 The legislative framework

The legislative measures that influenced coffee forest management decisions at the local level include the land tenure law, federal and regional forest conservation, development and utilization laws, federal and regional rural land administration and use proclamations, and wild life conservation and development law. Most of the legislations were poorly designed, inefficiently organized, and were planned and implemented in a top down fashion. Some of the legislative measures were very young such as the rural land administration and use proclamations and others that were operational for relatively longer period could not be implemented effectively because of the fact that appropriate policies are not in place and because organizational arrangements were going through repeated restructuring. They also did not have the rules that enhance their implementation. They rather restricted ways of accessing natural resources; emphasized administrative-based resource allocation; were weak in provision of resources and protection of resource rights; restricted the development of markets and mobility of resources, and limited informal institutions from being fully operational and thereby economize on scarce resources. They essentially legitimatized the central governments control over natural resources (public property right systems).

7.3.3 The organizational framework

Two types of organizational structures were found to have been important in influencing coffee forest management decisions at the local level viz. government organizations and community-based organizations. Government organizations in turn were grouped in to politico-administrative structures and organizational structures (institutionalized organizations).

Politico-administrative structures i.e. *Woreda* and *Kebele* Administrations and Development Teams have been established and were operational at the local level. However, the structures were remarkably dominated by the concentration of decision making power and authority at the centre. The system of governance remained characteristically authoritarian and hierarchical with centralized rule making and lack of transparency. These traits of the politico-administrative structures have made the whole process of development and natural resource management to have the culture of bureaucratic decision making that has become antithetical to bottom-up or decentralized practices and to reflexivity learning. There has been little, if ever, evidence and experience of local forms of governance based on participation and 'bottom-up' processes. The formulation and implementation of policy and legislative measures as well as planning of programs and reporting structures, as

concluded above, clearly depict this since most of the time they were based on the sock-it-to-them model.

Organizational structures (institutionalized organizations) were established at all levels starting from the federal all the way down to local level. It is indeed encouraging to have them established at all levels. However, a common problem to all has been that they were poorly organized i.e. lacked the necessary human, financial and physical resources, as well as the decision making power and authority and the freedom to plan (because planning is highly centralized and top down). The resource situation of organizational structures is one of precarious and it is particularly severe at the local level the picture assuming an inverted pyramid. Besides, the organizational structures were subjected to repeated and frequent restructuring. They often operated through a quota system that has forced them to stretch beyond their capacity and as a result their endeavours were thinly spread making insignificant impact in the process. These all have put the overall organizational effort of natural resources management in limbo and the impact very much limited.

Community-based organizations (CBOs) were operational in the study areas. They included religious, territorial based administrative, rotating credit-and saving, labour-based work organizations as well as informal land contractual and oxen sharing arrangements. Some of the CBOs have acted as reciprocal relationships and social safety net mechanisms while others acted as substitutes for missing or ill-functioning formal organizations. They have assisted communities in enhancing their social relationships, in fulfilling their economic requirements and in getting access to the basic factors of productions i.e. land, labour and oxen. However, their roles in natural resource management were found to have been decreasing over the years mainly because of external factors. Subsequent governments have issued policies and legislations that officially ousted them and enhanced the demise of the organizations. Because of their own evolution and owing to the pressure from external forces, some have changed their roles over the years becoming more and more social and self-help organizations. Besides, they did not have direct relationships and linkages with formal organizations; not to mention the very limited effort made by the government to make use of such organizations. With proper understanding of the way they function and with efforts to forge effective linkages, therefore they could perhaps be reinvigorated and who knows we might be able to witness a renaissance.

7.3.4 Strategic frameworks and programs

Environmental and natural resources conservation strategies and forest resource management programs, although issued at all levels, have not been yet fully operational. The Oromiya regional state has already finalized the preparation of the regional conservation strategy whereas the SNNPRS is in the process of finalizing it. However, both regional governments did not prepare management plans for coffee forests. It may be a bit early to comment on the situation. However, for the conservation and sustainable utilization of coffee forests, appropriate strategies with clearly defined objectives and goals and programs developed in detailed actions is important. Failure to do so will result in conflicting recourse utilization strategies, which in turn impacts negatively on the management of coffee forests. Efforts must also be made to ensure people's participation in the formulation, implementation and monitoring of strategies and program.

7.4 Policy recommendations

The forest resources of Ethiopia have dwindled, and are still continuing to decline, at an alarming rate. Just over a period of a little over half a decade, the forest cover has declined from the 35% to 2.7% level. Even these last remnant forests are under continuous pressure as a result, among many other factors, of land use (forestry-agriculture) conflict. Various institutional measures ranging from policies, legislations, organizational structures to strategies, programs and projects have been issued to reverse the situation but the impacts have been very much limited. In order to enhance the functioning of the institutions and thereby enhance the sustainable management of forest resources by safeguarding the resources from further degradation, the following policy recommendations are in order.

- The ownership and management of natural resources has remained under the responsibility of the central government (public property right system) by law despite the fact that the resources exhibited the attributes of common pool resources. Evidences available (continuous degradation) show that the existing property right system has not been effective and efficient in producing the resources in sufficient amount to meet the demand and in a sustainable manner. It is therefore recommended that the existing property right system be critically evaluated and alternative and yet flexible property right systems be implemented.
- Forest dependent communities, the government and private entrepreneurs have employed different but often competing resource utilization strategies i.e. the conservation versus production nexus. The process ultimately led to misuse of the resources and hence to degradation. This calls for a quick action in the development of appropriate land use system and to the launching of effective incentive mechanisms that reconcile the competing needs and strategies and thereby enhance the management (conservation and utilization) of the resources.
- Policies, legislations, strategies and programs are formulated and are being implemented in a too much centralized manner and have therefore failed to translate the collective preferences of communities in to actions. They have often been faced with strong resistance and discontentment by the local communities. Therefore, efforts need to be exerted to improve the process of designing institutions and their implementation by enhancing the decentralization process and the establishment of democratic institutions that enhance local level participation.
- Local level institutionalized organizations are suffering from acute shortage of resource (financial, human and physical), repeated restructuring and from the lack of decision making power and authority, and the role of community based organizations are on the decline. Institutionalized organizations need to be equipped with the necessary human, financial and physical resources, and they should have sufficient decision making power and authority. Increased attention needs to be paid and efforts need to be made to reinvigorate community based organizations and to reinstate their important role in resource management, and to forge effective linkages between them and formal organizational structures. Rural institutions like Pleasant Kebele Administrations and farmer's cooperatives also need more attention and encouragement to play a pivotal role in the current rural transformation program of the country.

- There is divergence or alienation between environmental and natural resource management institutions and such major policies and institutions as food security, resettlement, and poverty alleviation. Since the country is very much dependent on natural resources, there is a need to integrate environmental protection and sustainable natural resources management policies with poverty alleviation, resettlement and food security measures, in order to achieve sustainable economic and social development and to enhance the management of environmental and natural resources.
- The whole process of decentralization is weak. Thus more effective decentralization and therefore the transfer of decision making power by avoiding confusion and giving clear demarcation of duties responsibilities between federal and regional executive organs, and by avoiding overlapping responsibilities is highly in order. This needs to be coupled with the establishment of appropriate democratic institutions, the putting in place of the required trained manpower and furnishing local entities with financial and physical resources, to maximize the potential advantages of decentralization.
- Planning and reporting is too much centralized. It is important that policy measures that encourage bottom up planning and that create the capacity required in doing so at grass root level are issued. Besides, policies aimed at establishing meaningful relationship between federal and regional governments in policy implementation, planning of development activities and in encouraging joint monitoring and evaluation based on transparency and mutual respect greatly contribute to the success of natural resources management.

7.5 Future areas of research

Political culture has considerable impact on natural resources management in particular and agricultural and rural development in general. This study showed that political culture in Ethiopia has an impact on the effectiveness of local level institutional arrangements and the management of natural resources. Therefore, the study of the political culture and its impact on natural resource management in particular and agricultural and rural development in general is of high importance.

This is a local level study that has focused on local level institutional arrangements. However, the sustainable management of natural resources is influenced by a number of interacting institutions at various levels viz. local, national, regional and international. Institutions at higher level interact with and shape management decisions and therefore actions at the local level. A study of higher level institutional arrangements of relevance to the subject under consideration and their interaction with each other and with lower level institutions and their impact on the performance of local level institutions is therefore highly important.

This study focused on the study of local level institutions and their impact on natural resource management. However, natural resources form only part of the rural livelihood which often encompasses many other aspects which are influenced by an array of institutions. Therefore the study of local level institutions and their role and influence on rural livelihoods with a view of assisting policy makers and development practitioners in identifying more appropriate entry points for contributing to poverty reduction and enhancing

rural development in general and the management of natural resources in particular is critically important.

Institutions are humanly devised constraints. As humanly devised constraints, they vary from one condition to the other and from one socio-economic set up to the other. This study was conducted in selected areas (two *Woredas*). However, Ethiopia is such a large country with large number of people with diverse socio-cultural backgrounds and differences in experiences of natural resource management. The agro-ecologies and therefore farming systems are also diverse. Institutional arrangements are variable. It would be difficult and inappropriate to generalize the findings and to recommend the results emanating from such a highly localized research undertakings to other areas. Therefore, it would be important to replicate such kind of research in other areas as well.

The existing and potential conflicts in the management of coffee forests have a range of causes which must be fully understood before identifying possible solutions. In addressing such conflicts, however, there is often a tendency to focus upon the immediate causal circumstances and look for technical or administrative solutions. This is inadequate as it addresses only the symptoms and not the deep-seated causes, which include social, economic, institutional and political influences upon both the management of coffee forests and the demands which are placed upon them. Consequently, it is important that an organized study is carried out to identify and analyse the root causes of the conflicts and to suggest ways and means to resolve or manage them. This requires considering the total circumstances which impinge upon the various users of natural resources.

Decentralizing the management responsibility of natural resources, as it is being done in Ethiopia, nominally though, from the state to users have become increasingly widespread in response to the performance deficiencies of government agencies, the fiscal crisis of the state, and broader policies of democratization and local level participation. The successes of decentralization these policies depend upon the local capacity for collective action. However, the factors that encourage or inhibit the collective action are insufficiently understood. It is therefore essential that studies be conducted to identify factors, which condition local organization for resource management.

8 Summaries

8.1. English summary

Historical accounts available indicate that 35% of Ethiopia's landmass was once covered by high natural forests. However, over the last century, deforestation has reduced Ethiopia's forest cover significantly and the area under forest today is 2.6 %. Much of the remaining high natural forests are concentrated in the south and southwest part of the country. The forest formations in the south are Afromontane, rich in biodiversity and are believed to be the centres of origin and diversity of *Coffea arabica*. The coffee (*Coffea arabica* L.) plant grows wild as an under storey plant and is an important part of the vegetation. It, together with other flora and fauna forms a typical ecosystem called Forest Coffee Ecosystem.

The deforestation that has claimed significant part of the natural forest in Ethiopia has been a threat not only to the forest resource base of the country but also to the biodiversity. The forest ecosystem in general and the wild coffee (*Coffea arabica* L.) populations in particular has also been the targets of the increasing deforestation. The deforestation is caused by direct factors viz. population growth and increased livestock population, and indirect – viz. institutional – factors, i.e. the absence of effective and efficient policies, legislations, organizations, strategies, programs and projects that ensure the sustainable utilization of the resources. The increase in the population of both people and livestock is translated into increased demand for agricultural land, fuel wood and construction material and grating land and feed and fodder, respectively. The increased demand eventually leads to land use (forest versus agriculture) and ultimately to forest resources degradation.

The objectives of this study were to analyze local level institutional arrangements, both formal and informal, that influence the conservation and use of coffee forests, and to contribute to the development of a sustainable conservation and use concept. The study was conducted in the southwest part of the country and in particular in *Yayu Woreda* of the Oromiya Regional State and *Sheko Woreda* of the Southern Nations, Nationalities and People's Regional State. Both *Yayu* and *Sheko Woreda* are known for the occurrence of wild coffee. The study utilized both primary and secondary and qualitative and quantitative data. The data were collected using qualitative viz. focus group discussions, key informant interviews, participant observation and quantitative methods viz. household survey. The study employed the Institutional Analysis and Development (IAD) conceptual framework.

The coffee forests, designated as resource systems of the action arena, exhibited such attributes as low excludability, high subtractability, high mobility, low storage in the system, they were small in size and naturally bounded, which are attributes of common pool resources. However, they remained public properties, but the government, as a provider of the resources, could not devise institutions that ensured their effective management. Institutional measures undertaken could not ensure the production, in sufficient amount, of the resources (goods and services) and therefore failed to match demand and supply. The fact that the resource systems exhibited the attributes of common pool resources but remained a public property, and that the government failed to devise effective institutions subjected the resources to the "free-rider" problem thereby rendering them to degradation.

Die Studie ergab, dass die existierenden öffentlichen Eigentumsrechte sich weder effektiv auf die Managemententscheidungen ausgewirkt haben, noch zu einer ausreichenden Produktion der Ressource führten, die der steigenden Nachfrage gerecht wurde. Folglich müssen die Eigentumsrechte überdacht und robuste, aber dennoch flexible Rechte eingeführt werden. Ebenso wichtig für die Sicherung eines nachhaltigen Managements der Kaffeewälder ist es, dass existierende institutionelle Arrangements ausgewertet, ihre Schwächen und Nachteile nachgebessert und neue Arrangements ins Leben gerufen werden. Des weiteren sollten informelle Institutionen in bestehende formale integriert und effektive Verbindungen zwischen ihnen und formellen Institutionen geschaffen werden.

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MARGRAF PUBLISHERS

Band 19, Hong Yu
Chinas bäuerliches Wissenssystem im Wandel
Fallstudie in vier Dörfern der Hebei-Provinz
1997, 185 S., ISBN 3-8236-1284-0, EUR 25.60
Erkenntnisse über die veränderten Verhaltensweisen und Handlungsmöglichkeiten der Zielgruppe werden auf die Betrachtung des „bäuerlichen Wissenssystems im Wandel" verengt. Die vier explorativen Fallstudien in vier unterschiedlichen Dörfern der Provinz Hebei in China zeigen, daß Entwicklungsinitiativen, sowohl im landwirtschaftlichen als auch im außerlandwirtschaftlichen Bereich ihren Anstoß und ihre Energie im wesentlichen von der Basis her, also durch die ländliche Bevölkerung selbst, erhalten.

Band 20, Ulrich Klischat
Beratung von Agrargenossenschaften in den neuen Bundesländern
Eine qualitative Studie über Beratungsbedürfnisse und Methoden aus der Sicht von Beratern und Beraterinnen
1998, 202 S., ISBN 3-8236-1285-9, EUR 25.60
Der Schwerpunkt liegt in der Beschreibung von Beratungserfahrungen, wie sie Berater bei der Zusammenarbeit mit Menschen in Agrargenossenschaften gesammelt haben. Dazu wurden in den fünf Bundesländern Ostdeutschlands 35 Berater mittels qualitativer Interviews jeweils zur Zusammenarbeit mit einer konkreten Agrargenossenschaft befragt.

Band 21, Sabine Gündel
Participatory innovation development and diffusion
Adoption and adaptation of introduced legumes in the traditional slash-and-burn peasant farming system in Yucatan, Mexico
1998, 133 S., ISBN 3-8236-1292-1, EUR 15.30
An innovative legume-based green manure system has been sucessfully introduced in several regions of Central America. However this innovation has only been adopted by very few rural Mayan communities in Yucatan although they are facing a severe socio-economical and ecological crisis.

Band 22, Michael Waithaka
Integration of a user perspective in research priority setting
The case of dairy technology in Meru, Kenya
1998, 153 S., ISBN 3-8236-1295-6, EUR 25.60
In this book the author recollects the problem of priority setting for dairy research at programme level at the Kenya Agricultural Research Institute (KARI).

Band 23, Reto Ingold
Zur Wirksamkeit umweltbezogener Beratung
Drei Fallstudien aus der kantonalen landwirtschaftlichen Beratung in der Schweiz
1998, 217 S., ISBN 3-8236-1297-2, EUR 25.60
Erstmals wird in der Schweiz die Rolle der kantonalen landwirtschaftlichen Beratungsdienste im Bereich der Umweltberatung wissenschaftlich beleuchtet. Am Beispiel von drei Fallstudien werden die Grundlagen für eine Qualitätssicherung in der umweltbezogenen Beratung erarbeitet.

Band 24, Mohan Dhamotharan
Tradition und Umbruch eines lokalen Wissenssytems
Fallstudie zur Struktur und sozialen Organisation lokalen Wissens am Beispiel des Niembaumes in Tamil Nadu, Indien
1999, 99 S., Tabellen und Grafiken, ISBN 3.8236-1299-9, EUR 15.30
Die Entwicklungszusammenarbeit entdeckt zunehmend das lokale Wissen als Quelle für eine nachhaltige Entwicklung. Doch wird dabei Wissen vorwiegend als etwas wahrgenommen, das gesammelt und systematisiert wird. Die vorliegende Arbeit stellt anhand einer empirischen Fallstudie am Beispiel des Niembaums in Indien dar, daß eine solche Sichtweise wesentliche Aspekte des lokalen Wissenssystems übersieht, das aus dem dynamischen Wechselspiel von kognitiven Gebilden und einer eng damit vebundenen sozialen Organisation besteht.

Band 25, Alexander Gerber
Umweltgerechte Landbewirtschaftung in der landwirtschaftlichen Berufsbildung
Situationsanalyse und Perspektivenentwicklung am Beispiel Baden-Württembergs
1999, 386 S., ISBN 3-8236-1310-3, EUR 25.60
Da die landwirtschaftliche Berufsbildung für die Umsetzung einer umweltgerechten Landbewirtschaftung eine zentrale Rolle spielt, wurde von der Agrar- und Bildungspolitik das umweltbezogene Bildungsangebot reformiert und erweitert. Das vorliegende Buch beschreibt Art, Umfang, Qualität und Erfolg dieser Maßnahmen.

Band 26, Nicola Supke
Planen, handeln, bewerten: Lernen durch Leittexte
Eine explorative Studie zu ihrem Einsatz in der landwirtschaftlichen Ausbildung in Baden-Württemberg und Niedersachsen
1999, 126 S., ISBN 3-8236-1311-1, EUR 15.30
Die Ausbildung in der deutschen Landwirtschaft kann den heutigen Anforderungen an ein modernes Bildungssystem nur mit einer Veränderung der Methoden anstelle ständiger Ausweitung der Bildungsinhalte standhalten. Die Einführung der in den siebziger Jahren für die Automobilindustrie entwickelten Leittextmethode in die betriebliche landwirtschaftliche Ausbildung ist auf diesem Weg eine vielversprechende Neuerung geworden. Der vorliegende Beitrag untersucht fördernde und hemmende Faktoren in Bezug auf Einführungsmaßnahmen und praktische Anwendung, sowie den Erwerb von Schlüsselqualifikationen und die Qualität der angewandten Leittexte.

Band 27, Patrick A. Fischer
Action Research in Extension Material and Message Developement:
The *Striga* Problem of Northern Ghana revisited
1999, 253 S., ISBN 3-8236-1312-X, EUR 25.60
Documentation of an action research approach to the development of extension messages and material in regard to the *Striga* problem of Northern Ghana. The book provides methodological tools on how to tackle complex issues with a clientele mostly embedded in their oral culture. The result of the action research is approved by both extension workers and farmers.

Band 28, Eva Sodeik
Ungleiche Partner
Handlungsoptionen von lokalen Selbsthilfeorganisationen und Forstprojekten im Norden Benins
1999, 316 S., ISBN 3-8236-1313-8, EUR 25.60
Die Beteiligung der Bevölkerung an technischer Zusammenarbeit wird als Grundlage erfolgreicher Entwicklung betrachtet. Mit Hilfe des akteursorientierten Paradigmas der «sozialen Schnittstelle» werden zwei Fallstudien herangezogen, um zentrale Elemente der Zusammenarbeit zu bestimmen.

Band 29, Jürgen Hagmann
Learning Together for Change
Facilitating Innovation In Natural Resource Management Through Learning Process Approaches in Rural Livelihoods in Zimbabwe
1999, 330 S., ISBN 3-8236-1314-6, EUR 25.60
Documentation of an intensive joint learning process in research and extension with small farmers for sustainable natural-resource management in Zimbabwe from 1990-1995. Description of the action research programm in concept development and of the operationalisations of the learning process approaches.

Band 30, Meike Peschke
Aktivieren für den Umweltschutz
Aktionsforschung mit sechs Stuttgarter Kirchengemeinden im Projekt „Mitdenken & Handeln – Ökologie in die Kirche"
1999, 184 S., ISBN 3-8236-1316-2, EUR 25.60
Aus der Analyse des Projektes werden Empfehlungen für kirchliche Ökologie-Projekte und für die die Kommunikation und Arbeitsorganisation in Kirchengemeinden, -Bezirken und der Landeskirche abgeleitet.

Band 31, Maria Gerster-Bentaya
Biotop oder Psychotop?
Untersuchungen zum Konzept des Naturgartens und zu seiner Akzeptanz im Stadtbereich Stuttgart
1999, 266 S., ISBN 3-8236-1319-7, EUR 25.60
Es wird beschrieben, welche Bedeutung Gärten im Laufe der Geschichte hatten, wie sich dieses Bild mit der veränderten Einstellung der Menschen zur Natur wandelte und wie mit zunehmenden Umweltproblemen das Konzept der naturnahen Gartenbewirtschaftung entstand und verbreitet wurde. Faktoren für das Gelingen wie das Scheitern von Verbreitungsprogrammen werden in der empirischen Analyse aufgezeigt.

Band 32, Andrea Gruber, Sabine Fersterer
Beratungsstrukturen für die biologische Landwirtschaft
Österreich im Vergleich mit ausgewählten europäischen Ländern
2000, 136 S., ISBN 3-8236-1321-9, EUR 15.30
Für die Zeit zwischen 1997 und 98 wird die Beratungssituation im österreichischen Biolandbau dargestellt. Gute Lösungsansätze für Problembereiche in Österreich bieten die im Vergleich untersuchten Beratungsleistungen und -methoden und Organisationsmodelle des europäischen Auslandes.

Band 33, Marianne Kusemann
Sozioökonomische Beratung landwirtschaftlicher Familienbetriebe
Eine Untersuchung der Situation in Westfalen-Lippe und Brandenburg
2000, 98 S., ISBN 3-8236-1322-7, EUR 15.30
Seit über 30 Jahren gibt es Bemühungen um sozio-ökonomische Beratung in Europa, um die Auswirkungen des Strukturwandels in der Landwirtschaft für die Betroffenen zu lindern. Am Beispiel sehr unterschiedlicher Lösungsansätze in den beiden Bundesländern werden Empfehlungen für die Verbesserung der sozio-ökonomischen Beratung insbesondere in Brandenburg abgeleitet.

Band 34, Stefan Vogel
Umweltbewußtsein und Landwirtschaft
Theoretische Überlegungen und empirische Befunde
2000, 142 S., ISBN 3-8236-1323-5, EUR 15.30
Ein Modell von Umweltverhalten und -bewußtsein in der Landwirtschaft wird anhand von ca. 2000 Interviews von Bäuerinnen und Bauern aus dem Jahre 1991 geprüft. Die in den empirischen Ergebnissen erkennbaren Muster werden mit sozialwissenschaftlichen Erklärungsansätzen interpretiert.

Band 35, Mohamed Salem Saleh Almagdi
Sozialer Wandel und Agrarentwicklung im Delta Abyan im Südjemen
Eine empirisch-historische Analyse der bäuerlichen Lebenswelt
2000, 217 S., ISBN 3-8236-1324-3, EUR 25.60
Beschreibt den sozialen Wandel und die Agrarentwicklung im Delta Abyan im Laufe der letzten fünfzig Jahre aus der Sicht der Bauern und Delta-Einwohner. Durch die empirisch-historische Analyse der bäuerlichen Lebenswelt wird die gegenwärtige Situation der Bauern im Delta Abyan deutlich, und lassen sich Ansätze der Entwicklungsförderung bestimmen.

Band 36, Barbara Adolph
People's Participation in Natural Resource Management
Experiences from watershed management projects in India
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During two years of fieldwork, farmers' perception of project approach and project impact was analysed in a range of watershed management projects, using both qualitative and quantitative methods. In collaboration with both governmental and non-governmental agencies, strategies associated with project success were identified and recommendations for implementing these strategies were elaborated.

Band 37, Katrin Haußer
Energieberatung durch deutsche Energieversorgungsunternehmen
Ein Überblick und eine Fallstudie zur Neckarwerke Stuttgart A.G. (NWS)
2000, 108 S., ISBN 3-8236-1333-2, EUR 15.30
Energieberatung in Deutschland wird charakterisiert, und in einer Fallstudie wird die Qualität der Energieberatung der Neckarwerke exemplarisch durch Klienten beurteilt.

Band 38, Volker Hoffmann, Bettina Moritz (Hrsg.)
Marktplatz Internet
Empirische Studien zu seinen Potentialen und Problemen
2000, 187 S., ISBN 3-8236-1334-0, EUR 25.60
Nach einer problemorientierten Einführung werden drei Fallstudien beschrieben: Gestaltung von Internetseiten, Einkaufen am Beispiel von Büchern, Reisen und Medikamenten und Großhandel mit Zierpflanzen.

Band 39, Gitta Röth
Lokales Wissen im Beratungskontext
Vernetzung von lokalem bäuerlichem Wissen mit dem landwirtschaftlichen Beratungsangebot in der Dominikanischen Republik
2001, 255 S., ISBN 3-8236-1335-9, EUR 25.60
Verschiedene Aspekte des bäuerlichen Wissens zum traditionellen Pflanzenschutz- und Bodenfruchtbarkeitsmanagement werden auf ihre Einbettung in die landwirtschaftliche Beratungsarbeit von NGOs und von staatlichen Institutionen in der Dominikanischen Republik hin untersucht.

Band 40, Andreas Kress
Die Rahmenbedingungen für partizipative Beratungsprozesse
Eine Analyse des Einflusses externer Faktoren auf die nachhaltige Wirkung forstlicher Programme in Bolivien
2001, 227 S., ISBN 3-8236-1345-6, EUR 25.60
Diese Arbeit beruht auf Untersuchungen im Arbeitsbereich von forstlichen Beratungsprogrammen in Bolivien. Als Ansatzpunkte zur Erfassung der Veränderungsprozesse dienen dabei die Betrachtung des traditionellen kleinbäuerlichen Partizipationsverhaltens und der historischen Entwicklung der forstlichen Beratung in Bolivien.

Band 41, Patricia Fry
Bodenfruchtbarkeit: Bauernsicht und Forscherblick
2001, 180 S., ISBN 3-8236-1346-4, EUR 25.60
Die qualitative Untersuchung zeigt wesentliche Unterschiede auf: Bauern denken an die Wirkung, an den Ertrag und sehen Bodenfruchtbarkeit als nachhaltige Ertragsfähigkeit. Wissenschaftler suchen Ursachen und betrachten Bodenfruchtbarkeit analytisch als Faktorengefüge. Konsequenzen für den amtlichen Bodenschutz werden abgeleitet.

Band 42, Kai Stahr
Dörfliche Kommunikationsnetzwerke
2001, 187 S., ISBN 3-8236-1348-0, EUR 25.,60
Im Mittelpunkt des Buches steht eine empirische Untersuchung über die Struktur von sozialen Netzwerken in acht Dörfern und deren Abhängigkeit von der lokalen Infrastruktur. Zusätzlich werden eine Reihe Erklärungen über die Wechselwirkungen zwisch der Struktur der Kommunikation in Dörfern, der Infrastruktur und der Ausbildung von Vertrauen durch Kommunikation gegeben.

Band 43, Stefan Rist
Wenn wir guten Herzens sind, gibt's auch Produktion
Entwicklungsverständnis und Lebensgeschichten bolivianischer Amyrabauern: Wege bei der Erneuerung traditioneller Lebens- und Produktionsformen und deren Bedeutung für eine Nachhaltige Entwicklung
2001, 335 S., ISBN 3-8236-1338-3, EUR 25.60
Die qualitativ-strukturelle Auswertung von fünf autobiographischen narrativen Interviews mit Aymarabauern aus Bolivien ergab, dass Pachamama ("Weltenmutter") ein zentrales Deutungsmuster ist. Es steht im Zentrum eines seelisch-geistigen Bewusstwerdungsprozesses (Individuation) der sowohl eine persönlich-individuelle, als auch gemeinschaftlich-gesellschaftliche Dimension aufweist.

Band 44, Lorenz Bachmann
Review of the Agricultural Knowledge System in Fiji
Opportunities and Limitations of Participatory Methods and Platforms to Promote Innovation Developement
2001, 209 p., ISBN 3-8236-1350-2, EUR 25.60
The author describes the articulated agricultural knowledge system of the Small Island country Fiji with all its major actors. Local farmers, the agricultural research and extension departments of the Ministry of Agriculture are in the centre of analysis. The study examines the potentials of participatory methods and platforms to improve the process of agricultural innovation development.

Band 45, Andrea Knierim
Konflikte erkennen und bearbeiten
Aktionsorientierte Forschung zwischen Landwirtschaft und Naturschutz in Brandenburg
2001, 170 S., ISBN 3-8236-1352-9, EUR 25.60
Naturschutz und Landwirtschaft beanspruchen oft die gleichen Ressourcen mit unterschiedlichen Zielvorstellungen. So kommt es zu Konflikten über den Schutz oder die Nutzung von Acker- und Grünlandflächen. Am Beispiel eines Großschutzgebietes im Nordwesten Brandenburgs wird in der vorliegenden Arbeit untersucht, wie mit Methoden der kooperativen Konfliktbearbeitung Vertreter des Naturschutzes und Landwirtschaftliche Landnutzer bei der Entwicklung einvernehmlicher Lösungen unterstützt werden können.

Band 46, Hubert Hügle
Mensch und Pflanze
Intuitionen über Wechselwirkungen von menschlichem Bewusstsein und Problemen im Kulturpflanzenbau
2001, 80 S., ISBN 3-8236-1353-7, / EUR 15.40
Wichtige Beiträge zum Thema Kommunikation zwischen Mensch und Pflanze, zu Intuition und zur Erschließung des Unbewussten werden zusammengefasst, und aus dieser Perspektive wird eine Selbsterfahrung des Autors geschildert und interpretiert. Eine Pflanzenenergie wahrzunehmen, intuitiv ein Rezept für die Herstellung einer Pflanzenessenz zu finden, sind Fähigkeiten, die man im herkömmlichen Sinn nicht erlernen kann. Als Funktionen des Unbewussten sind diese schon im Menschen angelegt und müssen nur wieder erschlossen werden. Mit diesem Buch wird beschrieben, wie der Autor versucht, in diese Bereiche vorzudringen und erste Erfahrungen im praktischen Kulturpflanzenanbau zu machen.

Band 47, Anja Christinck
"This seed is like ourselves"
A case study from Rajasthan, India, on the social aspects of biodiversity and farmers' management of pearl millet seed
2002, 198pp., ISBN 3-8236-1381-2, EUR 25.60
This book is based on fifteen months of intensive field studies carried out in the semi-arid state of Rajasthan, India. This work contributes to the actual debate on the conservation of genetic resources, seed systems and participatory plant breeding, and, more generally, the re-orientation of international agricultural research.

Band 48, Katrin Prager
Akzeptanz von Maßnahmen zur Umsetzung einer umweltschonenden Landbewirtschaftung bei Landwirten und Beratern in Brandenburg
2002, 172pp., ISBN 3-8236-1382-0, EUR 25.60
Diese Studie beschäftigt sich mit der Akzeptanz von Maßnahmen, die einen Beitrag zu einer dauerhaft-umweltgerechten Landnutzung leisten sollen. Die Autorin untersucht mit Hilfe qualitativer Methoden die Einstellung von Landwirten und Beratern gegenüber den verschiedenen Maßnahmen sowie den Beratungsansätzen.

Band 49, Kirsten Probst
Participatory Monitoring and Evaluation: A Promising Concept in Participatory Research?
Lessons from two case studies in Honduras
2002, 230pp., ISBN 3-8236-1386-3, EUR 25.60
Based on action research undertaken in two case study projects in Honduras, the book assesses the potential benefits and limitation of using Participatory Monitoring and Evaluation (PM&E) in participatory research and elucidates key conditions for its sucess in its implementation. It contributes to the actual debate on participatory research, and adds new aspects to the age-old topic monitoring and evaluation.

Band 50, Petra Jacobi
Supporting Urban Agriculture.
The Case of Dar es Salaam, Tansania
ISBN 3-8236-1387-1, EUR 25.60 (noch nicht erschienen))

Band 51, Angelika Thomas
Landwirtschaftliche Bildung und Beratung zum Gewässerschutz in Deutschland
Eine Analyse der Erfahrungen in den Bundesländern
2003, 270 pp, ISBN 3-8236-1392-8, EUR 25.60
Das Buch fasst die Erfahrungen, die seit dem Ende der 80er Jahre in der Gewässerschutzberatung, aber auch innerhalb der allgemeinen landwirtschaftlichen Beratung und in der landwirtschaftlichen Aus- und Fortbildung gewonnen wurden, zusammen. Grundlage für die im Buch diskutierten Probleme und Potenziale, durch landwirtschaftliche Bildung und Beratung zur Umsetzung einer gewässerschonenden landwirtschaftlichen Praxis beizutragen, bilden Gespräche mit über 100 Experten aus den verschiedenen Bundesländern. Durch die in Deutschland anstehende Umsetzung der Wasserrahmenrichtlinie erhalten die dargestellten Erfahrungen zum Gewässerschutz in der Landwirtschaft besondere Bedeutung und Aktualität.

Band 52, Uta Bracken
Wie die Leute so reden
Eine Untersuchung von öffentlicher Kommunikation und gesellschaftlichem Wandel
bei den Lobi in Bukina Faso.
2003, ISBN 3-8236-1393-6, EUR 25.60

In diesem Buch geht es darum, wie Kommunikation dazu beitragen kann, dass die Ideen und Wahrnehmungen oder Problemlösungen eines Einzelnen in der Öffentlichkeit Verbreitung finden und schließlich die Wahrnehmung und das Handeln einer ganzen Gruppe beeinflussen.

Band 53, Marion Adams, Brigitte Kaufmann
Tierhalter und lokales Wissen
Indigene Charakterisierung lokaler Kamelpopulationen und Zuchtmaßnahmen von Nomaden in Nordkenia
2003, ISBN 3-8236-1394-4, 100 pp, 10 Farbseiten, EUR 25.60
In der vorliegenden Studie wurde mit Hilfe einer semistrukturierten Methode das indigene Wissen nomadischer Tierhalter in Nordkenia zur Charakterisierung ihrer Kamel-Lokalrassen, sowie das damit im Zusammenhang stehende nomadische Zuchtkonzept ermittelt. Dabei wurden Merkmale und Merkmalsausprägungen separat berücksichtigt um die von den Tierhaltern verwendeten Unterscheidungskriterien systematisch zu identifizieren.

Band 54, Walter von Danwitz
Berufsfeldanalyse: Meister und Techniker im Gartenbau
2003, ISBN 3-8236-1395-2, EUR 25.60
Mit den vorliegenden Ergebnissen einer Berufsfeldanalyse der Absolventen/-innen von Gartenbaufachschulen der Fachschuljahrgänge 1985 bis 2000 erfolgt eine Standortbestimmung der beruflichen Fachschulfortbildung im Gartenbau. Die Untersuchung liefert Ansatzpunkte zur Evaluation des Lehrangebotes sowie für bedarfs- und zukunftsorientierte Reformen der Fachschule. Sie führt damit letztlich zu einer Abstimmung des Weiterbildungsangebotes auf die Anforderungen des Arbeitsmarktes.

Band 55, Simone Helmle
Identitätsfindung und Wohlbefinden
Über die Symbolik der Handlung «Einkaufen im Bioladen» auf der Grundlage lebensgeschichtlicher Erzählungen
2004, ISBN 3-8236-1412-6, EUR 25.60
Im vorliegenden Buch werden lebensgeschichtliche Erzählungen von Menschen, die in einem Bioladen einkaufen, dargestellt und analysiert. Es zeigt sich, dass die Handlung „Einkaufen im Bioladen" mit Wohlbefinden, aber auch mit Unbehagen verbunden wird. In Bioläden werden eben nicht bloß Produkte verkauft, sondern es werden auch „Geschichten" erzählt, die von Bäuerlichkeit, Verantwortung, experimentellen Lebensweisen und Pioniererfahrungen handeln.

Band 56, Khin Mar Cho
Guidelines for the Implementation of a Participatory Extension Approach
An Empirical Study of the Training Needs of Agricultural Extension Agents in Myanmar
2004, ISBN 3-8236-1416-9, EUR 25.60
This book attempts to assess the training needs of extension agents for the improvement of the quality of their knowledge and skills as well as their major duties and responsibilities. Other points of assessment were factors affecting the performance of extension activities, the agents' understanding of the existing extension approaches, their awareness of and attitudes towards the participatory extension approach, and to point out guidelines for the future development of the participatory extension approach in Myanmar.

Band 57, Marianne Kusemann
Bewältigung von Existenzgefährdung in landwirtschaftlichen Familienbetrieben
2004, ISBN 3-8236-1421-5, EUR 25.60
Die Existenz landwirtschaftlicher Betriebe wird seit vielen Jahren durch den hohen Anpassungsdruck beeinflusst, dem der Agrarsektor ausgesetzt ist. Auf der Grundlage von Fallbeispielen aus Westfalen-Lippe wird eine Theorie des Bewältigungsprozesses entwickelt. Das Erklärungsmodell beleuchtet häufig auftretende Probleme der Beratung, wie die späte Inanspruchnahme, das folgenlose Aufzeigen von Bewältigungsmöglichkeiten oder das Verlieren von Klienten im laufenden Beratungsprozess.

Band 68, Bettina Dengler
Approaching Vulnerability
Rural Livelihoods in the West Bank, Palestine
While Palestine and respective pictures of violence are almost daily on the agenda of news magazines, this book approaches the West Bank, the people and their realities from an illuminating and different perspective. Departing from three rural villages in the West Bank, the priorities, resources and strategies of households and individuals are profoundly described and analysed.
2005, XIV + 246 pp.; ISBN 3-8236-1475-4, EUR 25.60

Band 69, Halle Ekane Ignatius
The Rationality of African Cultural Dynamism
A Case Study in Bakossiland, South-West Province of Cameroon
To change the culture of a people is not an easy undertaking. But changes and adaptations are necessary to ameliorate the welfare and wellbeing of the people in a changing world. This study about institutions in Africa provides necessary insights to discuss appropriate changes.
2005, XVIII + 258 pp.; ISBN 3-8236-1474-6, EUR 25.60

Band 70, Jutta Werner
Nomades entre marginalisation, entreprenariat et conflits
Stratégies des éleveurs mobiles du sud du Maroc face aux bouleversements du contexte pastoral et aux impératifs d'un développement durable
Ce livre met en lumière le comportement économique des ménages nomades à travers leurs stratégies personnelles. Il se base sur des études de cas des nomades marocains. En reflétant le contexte et les conditions socio-économiques complexes de la pratique pasto-rale ce livre comble une lacune scientifique en adaptant des approches méthodologiques existantes aux spécificités de l'élevage mobile.
2006, XVI + 224 pp.; ISBN 3-8236-1477-0, EUR 25.60

Band 71, Carmen Kuczera
Der Einfluss des sozialen Umfeldes auf betriebliche Entscheidungen von Landwirten.
Agrarpolitische Neuerungen stellen Landwirte immer wieder vor geänderte Situationen, die Betriebsanpassungen verlangen. Solche betrieblichen Entscheidungen waren bereits häufig Gegenstand wissenschaftlicher Untersuchungen, jedoch meist aus ökonomischer Perspektive. Im Kern dieser empirischen Studie steht dagegen das soziale Umfeld der Landwirte als Entscheidungsfaktor, der mittels verschiedener methodischer Ansätze umfassend untersucht wird. Das Buch geht einerseits der Frage nach, auf welche Weise das soziale Umfeld der Landwirte Einfluss auf ihre individuellen Entscheidungen nimmt. Andererseits werden soziale Prozesse und Strukturen identifiziert, die die Einflussnahme des sozialen Umfelds erleichtern bzw. erschweren.
2006, XII + 198 pp.; ISBN 3-8236-1481-9, EUR 25.60

Band 72, Teklu Tesfaye Toli
Coffee Forest Conservation:
Local-level Institutions Influencing the Conservation and Use of Coffee Forests in Southwest Ethiopia
In this book, Teklu Tesfaye argues that a number of interacting local-level institutions, both formal and informal, influence the conservation and use (management) of coffee forests in South West Ethiopia. Formal institutions were found to have been acting in a unilateral mechanism through top-down and narrow technocratic processes. They offer little chance, if any, for the participation of the ultimate resource users and thus failed to respond to their felt needs. They therefore were not in a position to safeguard coffee forests from the rampant deforestation...
2006, XVI + 188 pp.; ISBN 3-8236-1485-1; 978-3-8236-1485-2, EUR 25.60

Also published by Margraf Publishers:

Volker Hoffmann (Hrsg.)
Beratung von Familien mit existenzgefährdeten Betrieben in der Landwirtschaft
Dieses Buch gibt einen breiten Überblick über die Probleme, die Aufgaben, die Methoden und die Organisationsformen der Unterstützungsangebote. Es geht auf die Geschichte der letzten 30 Jahre ein, und gibt einen Einblick in das Geschehen quer durch Deutschland mit einem Ausblick auch auf die Nachbarländer.
2001, 304 S., ISBN 3-8236-1357-X, EUR 32.60

Hoffmann, Volker
Bildgestützte Kommunikation in Afrika
Grundlagen, Beispiele und Empfehlungen zu Angepassten Kommunikationsverfahren in Ländlichen Entwicklungsprogrammen südlich der Sahara.
2001; 350pp.; numerous b&w and cloured ills.; 21 x 15 cm; paper; ISBN 3-8236-1343-X; EUR 35.80

Hoffmann, Volker
Communication sous-tendue par l'image en Afrique
Principes, examples et recommandations concernant les méthodes de communication adaptées dans le cadre des programmes de développement rural conduits en Afrique subsaharienne.
2001; 340p; numerous b&w and cloured ills.; 21 x 15 cm; paper; ISBN 3-8236-1344-8; EUR 35.80

Hoffmann, Volker
Picture Supported Communication in Africa
Fundamentals, Examples and Recommendations for Appropriate Communication Processes in Rural Development Programmes in Sub-Saharan Africa.
2000; 352 pp.; numerous b&w and cloured ills.; 21 x 15 cm; paper; ISBN 3-8236-1342-1; EUR 35.80

Gunda Matschonat, Alexander Gerber
Wissenschaftstheoretische Perspektiven für die Umweltwissenschaften
In diesem Buch analysieren führende Wissenschaftstheoretiker den Stand der epistemiologischen Diskussion in den Umweltwissenschaften und zeigen Perspektiven für deren Weiterentwicklung auf.
2003, 222 S., ISBN 3-8236-1402-9, EUR 24.50

Anja Christinck, Eva Weltzien, Volker Hoffmann (Editors)
Setting Breeding Objectives and Developing Seed Systems with Farmers
Setting objectives and priorities is a crucial component of successful breeding programs as it determines the future course of action, maximizes chances for success and the impact achieved, and clarifies roles and responsibilities of partners.
The book provides valuable insights not only for plant breeders but also development workers who seek to encourage farmer innovations with regard to variety development. Bio-diversity specialists involved in in situ management of plant genetic resources, as well as educators and trainers in the above mentioned fields will find useful tools and overviews.
2005, 188pp.; 20 x 26 cm; paper, ISBN 3-8236-1449-5; 28 Euro

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The author:

Teklu Tesfaye was born in 1969 in the Gamo Gofa province of Ethiopia. He obtained his Bachelor of Sciences Degree in Agricultural Economics from Alemaya University of Agriculture, Ethiopia, and his Master of Sciences Degree in Agricultural Extension from Reading University, England. His Masters Thesis concentrated on Farming Systems Research (FSR). The author joined the Center for Development Research (ZEF) of the University of Bonn in October 2002 as a junior research fellow. He conducted his research under the framework of the CoCE (Conservation and Use of wild Coffea arabica populations in the montane rainforests of Ethiopia) project, a collaborative research program between ZEF and the Ethiopian Agricultural Research Organization (EARO). Teklu Tesfaye finished his PhD in June 2006 at the University of Hohenheim, Germany. Currently he is working at the Research-Extension-Farmer Linkages Department of the former EARO and now the Ethiopian Institute of Agricultural Research (EIAR).

The book:

In this book, Teklu Tesfaye argues that a number of interacting local-level institutions, both formal and informal, influence the conservation and use (management) of coffee forests in South West Ethiopia. Formal institutions were found to have been acting in a unilateral mechanism through top-down and narrow technocratic processes. They offer little chance, if any, for the participation of the ultimate resource users and thus failed to respond to their felt needs. They therefore were not in a position to safeguard coffee forests from the rampant deforestation. Informal institutions, although having played their part some time in the past, have simply been disabled through government measures such as policies and legislations. Those that have withstood the test of time were very much confined in their sphere of influence and most ended up serving social purposes instead of ensuring the management of natural resources. Besides, the linkages between them and formal institutions have been very weak thereby worsening the situation. The ownership of coffee forests has largely remained public. However, the existing public property right system has not been effective enough in producing the resources in sufficient amount to meet the ever increasing demand. Thus, it needs to be revised and a robust and flexible property right system needs to be put in place.

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