ADDIS ABABA UNIVERSITY

COLLEGE OF SOCIAL SCIENCES

DEPARTMENT OF SOCIOLOGY

INCENTIVES AND CHALLENGES FOR LOCAL INSTITUTIONS IN COFFEE FOREST MANAGEMENT: THE CASE OF BILO-NOPHA WOREDA, ILLU ABBA BORA ZONE.

BY: BEKALU DIBABA

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A THESIS SUBMITTED TO THE DEPARTMENT OF SOCIOLOGY IN PARTIALFULFILLMENT OF THE REQUIRMENTS FOR THE DEGREE OF MASTER OFARTS IN SOCIOLOGY

BY: BEKALU DIBABA

ADVISOR: ABEJE BERHANU, PHD

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This is to certify that the thesis prepared by BekaluDibaba, entitled: *incentives and challenges for local institutions in coffee forest management:The Case of Bilo-Nophaworeda, Illu Abba Bora zone* and submitted in partial fulfillment of the requirements for thedegree of Master of Arts in sociology complies with the regulation of the university and meets the accepted standards with respect to originality and quality.

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Internal examiner		
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External examiner		
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Abbreviation

AFCO: Agriculture and forest conservationOffice

BNWA: Bilo-NopaWoreda Administration

ECFF: EthiopianCoffee Forest Forum

EFWCO: Ethiopian Wildlife Conservation Organization

EARO: Ethiopian Agricultural Research Organization

FAO: Food and Agricultural organization

FGD: Focus Group Discussion

FTC: Farmer Training Center

PHE: People,Health and Environment

IAD: Institutional Analysis and Development

IBC: Institute of Biodiversity Conservation,

IBCR: Institute of Biodiversity Conservation and Research

IFRWAE: Illu Abba Bor Forest Resource and Wild Animal Enterprise

MAB: Man and Biosphere

MNRDEP: Ministry of Natural Resource Development and Environmental Protection

MoARD: Ministry of Agriculture and Rural Development

NEPA: National Environmental Protection Authority

NFPA: National Forest Priority Area

NTFP: Non-Timber Forest Products

PFM: Participatory Forest Management

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Abstract

The role of institutions in the management of natural resource in general and forest resource in particular is increasing from time to time as the forest bio-diversities are threatened by different anthropogenic factors. It is, therefore timely to investigate the role that institutions play in the management of natural resources. The main objective of this study was to assess the role of local institutions in coffee forest management taking the case of Bilo-Nophawereda, Illu Abba Bora zone . By using institutional analysis and development (IAD) framework adopted from Ostrom, (2006), this study tried to illustrate how attribute of the rule in use, attribute of the community and attribute of forest resources are affect the management of coffee forest in the study area.

The study employed both qualitative and quantitative research method in the form of triangulation. Out of 16 kebeles in the study area the researcher purposively selected 3 adjacent kebelesto thecoffee forest areas. For quantitative interview 125 household were selected from three kebelesby using systematic random sampling technique. On the other hand in-depth interviews, key informant interviews and FGDs were conducted to support and substantiate data obtained through household survey.

The findings of the study revealed that, both formal and informal institutions are participating in coffee forest management at local levels. Rulesestablishedby the government to protect the coffee forest area reduce the benefit of local community and make their ownership right insecure, this in turn, negatively affects their participationin coffee forest management activities.Attribute of the community and forest resource also influence the management activities either positively or negatively. Some of them operate as incentive that enhances the management activitiesincluding, cohesiveness, homogeneity and topography, and forest derived goods and services while othersoperate as disincentive for management activities including, group size, distance and lack of clear boundaries. Along with the challenges of coffee forest management, the lack of sense of ownership, illegal encroachment and lack of coordination between different stakeholders are the major critical problems to conserve coffee forest in the study area.

Chapter One:Introduction

1. Background of the study

The breadth, fluidity and power of institutions make them difficult to understand.Some scholars use the term institution to refer to an organization such as, the USA congress, a business firm or political party. On the other hand, other scholars use the term to refer to the rules, norms and strategies adopted by individuals operating within and across organization (Ostrom 1999:3).

According to Yeraswork (1997:31) institution is any social arrangement that is constituted and regulated by the a system of social rules; and social rule system are shared and socially constructed rule regimes specifying to a greater of lesser extent *who may or should participate, and who is excluded and who should do what, when and how in relation to whom.*

Stellmacher and Mollinga (2009:46) stated that, beyond shaping human—human interactions, institutions can have a considerable role in shaping human-nature relationships. In this sense, institutions represent the critical role in the relations between humans and forests as they can determine and regulate human access to forest resources.

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 an individual and collective actions associated with access to, control over, and the use of natural resources are organized (Teklu2006).

Zewdie (2009:20) argued that, natural resource management is often shaped by a number of overlapping institutions i.e. both formal and informal from the social, political, economic and

cultural spheres. The formal institutions operate at local, regional and national level to manage the forest and forest resourceswhile, informal/indigenous institution of the community operates at local level to manage natural resource in general and forest resource in particular. Teklu(2006:125) also added the particular importance of local-level institutions in protecting and managing natural resources. 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.

In Ethiopia both informal/customary institutions and formal/state initiated institutions are engaged coffee forest resources management activities at local level. Informal/customary institution take precedence in the management of natural resource while, the involvement of formal institutions in the natural resource management mainly forest resource are recent phenomena (zewdie 2009:64).

Different studies indicated that, in Ethiopia forests and forest derived natural resources are not well managed and their existence continues to be threatened. Coffee forest 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. (Woods, 2012 et al; Amonge 2013;*Tadesse*and Demel 2001).

In support of this idea, Mellesand Mohammud (2005) contends that, in Ethiopia due toLackof coordination among the various institutions; weak institutional arrangements; lack of the necessary skilled manpower, especially at the grassroots levels; lack of political commitment on the side of officials; lack of the culture of listening to expert opinions before decisions are made by political authorities; maladministration; overemphasis on rapid economic growth at the expense of the

environment (through investment projects), among others, the country is suffering from severe environmental degradation.

As indicated above, the role that local institutionsplay in the management of natural resource in general and coffee forest in particular is high. Therefore having the aforementioned explanations in mind, the researcher intended to conduct a study on assessing the role of local level institutions in coffee forest management activities the case of Bilo-Nophawereda, Iluu Abba Bora Zone.

1.1..Statement of the problem

Studyby Agrawal and Ostrom (2001) shows that local level institutions operate as incentives and disincentives in the use and management of coffee forest. Local institutions can take different forms usually dichotomized into community-based indigenous/customary institutions and state initiated formal institutions based on their origins. Furthermore, they added that, local level institutions vary due to various factors that engross the interaction among themselves and the influences of external conditions including attributes of the rule in use, attribute of forest user community and attributes of forest resource.

Study by Stellmacher (2006) at Kaffa and Bale mountain indicated that, understanding forest resource management is the most advantageous human-forest interaction in achieving vivid goals, which are sustaining efficiency and equity of forest resource use and management. To do so, understanding the role that different institutions play at local level in forest resource management and utilization is very important.

Andnet(2010) studyat Yayo forest also tried to show the role of different community initiated customary institutions and state initiated formal institutions in the use, conservation and

management of forest resources. The studyrevealed the importance of different local level institutions for the sustainable use and management of forest resources.

Another study by Zewdie, (2009) in three selected woreda of Yayo forest also tried to explore institutions from federal to local level, rules that act either as incentives or disincentives for local users and rules leading to conflicts in coffee forest use and conservation. The study has identified the impact of different institutional arrangements including policy and proclamation, property right and other formal rules and regulation on the lives of local forest user communities.

During the course of reviewing the above related literature regarding institutions of coffee forest management, most of them focuses on the effectiveness of institutional arrangements in managing coffee forest and their likely impacts on the lives of local forest user communities but, little is said about the relationship between local institutions and participationinto coffee forest management activities. Therefore this study tried to assess incentives and challenges associated local institutions on the participation level of local forest user community towards the management of coffee forest resources.

In the particular study wereda after demarcation of forest resource as a national forest priority area local community participation in coffee forest management activities has decreased as compared to before demarcation time. Problem like illegal encroachment including, (timber logging, expansion of agricultural land, illegal use of different forest products) and conflict between local communities and government agents over the dejure ownership of forest land are still unsettled issues.

Therefore, the aim of this particular study was to assessthe role of local level institutionsincluding attribute of the rule in use, attributes of forest user community and forest resources in affecting local forest user participation intocoffee forest management activities at the particular study area ofIluu Abba Bora Zone.

1.2.Objective of the study

1.2.1. General objective

The general objective of this study is to assess the role of local institutions incoffee forest management, focusing on Bilo-Nopawereda, Iluu Abba Bora Zone. .

1.2.2. Specific objective

- To investigate the effectiveness of rules in use to managecoffee forest in the study area.
- To examine the impact of local forest user attributein themanagement of coffee forest.
- To identify the attributes of forest resources that influence the management of coffee forest in the study area.
- To investigate the major challenges of coffee forest management in the study area.

1.3.Scope of the Study

The main concern of this study is local institutions, local level institutions are area specific and culture based, therefore, the result of this research will not indicate the whole image of forest resource management and institutions that are found across all forests and all cultures in the country. Thus,the study focuses on institutions both (formal and informal) that influence coffee forest management activitiesin specific study site. Assessing the existing local institutions

including incentives and disincentives associated with rulesin use, attributes of forest user community (cohesiveness, heterogeneity and group size), forest land and its derived natural resources(topography, distance, size and quality of forest derived goods and services and challenges of coffee forest managements are the main focus area of this study.

1.4.Significance of the Study

Today a number of scholars, development practitioners, and environmental activists forward micro-institutional solutions as the remedy for renewable forest resource management. A study on local level institutions in the management of coffee forest is very important to overcome institutional problems at the grass root level. In this regard this studyadded a stock of knowledge concerning local institutions at various aspects.

By disclosing incentives and disincentives of local institutions including attributes ofrules in use, attribute of the community and forest resources in the management of coffee forest, the finding of this study may be useful to overcome problems of coffee forest management at local level.

Disclosing challenges of coffee forest management especially after demarcation rules imposed to govern the behavior of local forest user communities may also useful for policy makers and stakeholders participated in the management activities. In this regard, it shows insight for policy makers to revisit their plan for the effective managementofcoffee forest through active involvement of local communities and help stakeholders participated in the management activities to solve their weak coordination problem towards the same goal.

Further, this research will provoke similar studies of wider coverage of different forests in different regions beyond adding to the stock of existing knowledge and narrowing the research gap in the study area regarding the issue of local institutions and coffee forest management.

1.5.Limitation of the study

One of the major problem to conduct this study was Lack of well-organized document about the biosphere reserve areas. The coffee forest area is under the control of Yayo national forest priority area and there is no well-organized documents available at woreda level, therefore, to get necessary information about the area the researcher obliged to go the central office biosphere conservation. The other problem was the unavailability of office workers due to field work and meeting.

1.6.Organization of the Paper

For the purpose of convenience as well as logical presentation of the study, this paper has been organized in to five Chapters. Chapter one deal with background of the study, statement of the problem, objective of the study, scope of the study, significance of the study and limitation that the researcher encountered to conduct this paper. In the second chapter, review of related literature has been presented. The third chapter presents research methodology and description of the study area. The core of this research paper is embodied in chapter four hence, attempts was made to present the data and discuss the result. Finally, under chapter five the body of this research paper has been winning-up with brief conclusion and recommendation based on the finding of the study.

Chapter Two: Literature Review

2. Definition and review of conceptual terms

2.1.What are institutions?

Endless disputes over the definitions of key terms such as *institution* and *organization* have led some writers to give up matters of definition and to proposegetting down somehow to practical matters instead (Hodgson 2006). Ostrom, (2006:2) explains the difficulties of studying institution by explaining the issue starting from the definition of the word institution itself. It is hard to make much progress in the study of institutions if scholars define the term institution as meaning almost anything.

Ostrom, (1986) in Edwards & Steins, (1996:6) defined Institutions as:
"sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation of rules will be used, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to' individuals dependent on their actions."

By his work of the institutional theory Scott, (2004: 2-3) on the other hand define institution as follows "*Institutions comprises regulative, normative and cultural-cognitive element that together with associated activities and resource provide stability and meaning to social life''*
In this conception of institution, Scott incorporates multifaceted, durable social structure made up of symbolic elements, social activities and material resources.

Erikssonk, (2005) on the other hand, defined *Institutions* as behavioural rules for social interaction. These prescribe behaviour for actors in recurrent situations of interaction with other actors – and

thereby solve social interaction problems. They form ‘the rules of the game’ while the actors are the ‘players of the game’. Institutional arrangements provide a structure that says which person has which particular right to use which forest resource to what extent, denote manners in which way goods and services are to be used, as well as conservation measures that are to be accomplished.

In sum, in the context of this study institution is used to referee the broader sense as rules which direct human activities, it can be defined as the formal and informal rules that enables and constrains human behavior towards the management of coffee forest resources.

2.1.1. **Types of institution**

Different writers argued that institutions prevail in all areas of social life, at all levels and can be categorized in a number of ways. One important distinction is the one already made between formal and informal rules (Stellmacher, 2007; Zenger and Olin, 2001;).

Attribute of institution which is most commonly highlighted in the literature is their degree of formality. Different institutional theories including DonglasNorth’s new institutional economics approach classify institutions according to formality which has led to the dichotomous itemization of formal and informal (Stellmacher 2007:3)

According to, Zenger and Olin, (2001) institutions provide rules, constraints and incentives that are instrumental to the governance of exchanges. These institutions or governance mechanismscan be either formal or informal in nature. They define formal institutions as rules that are readily observable through written documents or rules that are determined and executed through formal position, such as authority or ownership. Formal institutions thus, include explicit incentives, contractual terms, and firm boundaries as defined by equity positions. They also define informal

institutions, in turn, as rules based on implicit understandings, being in most part socially derived and therefore not accessible through written documents or necessarily sanctioned through formal position. Thus, informal institutions include social norms, routines, and political processes.

Zewdie, (2009:20) on the other hand argued that, institutions can be categorized into formal and informal/customary based on the formality of their rules and regulations or can be classified into local and beyond local institutions based on their levels of operation.

In the context of this study both formal and informal institutions are used to refer the incentives and challenges associated withrules and regulation governingcoffee forest resource in the study area.

2.2. Conceptual and Analytical Framework

For this study IAD framework has been used for analyzing institutional aspect of coffee forest management at local level.

2.2.1. The Institutional Analysis and Development (IAD) Framework

The IAD framework provides a meta-theoretical toolbox, created to facilitate organizing diagnostic prescriptive and analytical capabilities in order to make statements about the performance of institutions and the most important structural variables of institutional arrangements. It predominantly focuses on the question how various institutions directly or indirectly determines human activities by providing different incentives and disincentives (Stellmacher, 2006).

According to Ostrom, (1990) IAD framework is a multi-level conceptual map with which one can zoom in and out of particular hierarchical part of the regularized interactions in an established

social system. It assume a context to particular interaction in which the general network of regular action would be analyzed, the particular rule in use and the particular common outcome that they hope to achieve.

2.2.1.1.Major Components of IAD Framework

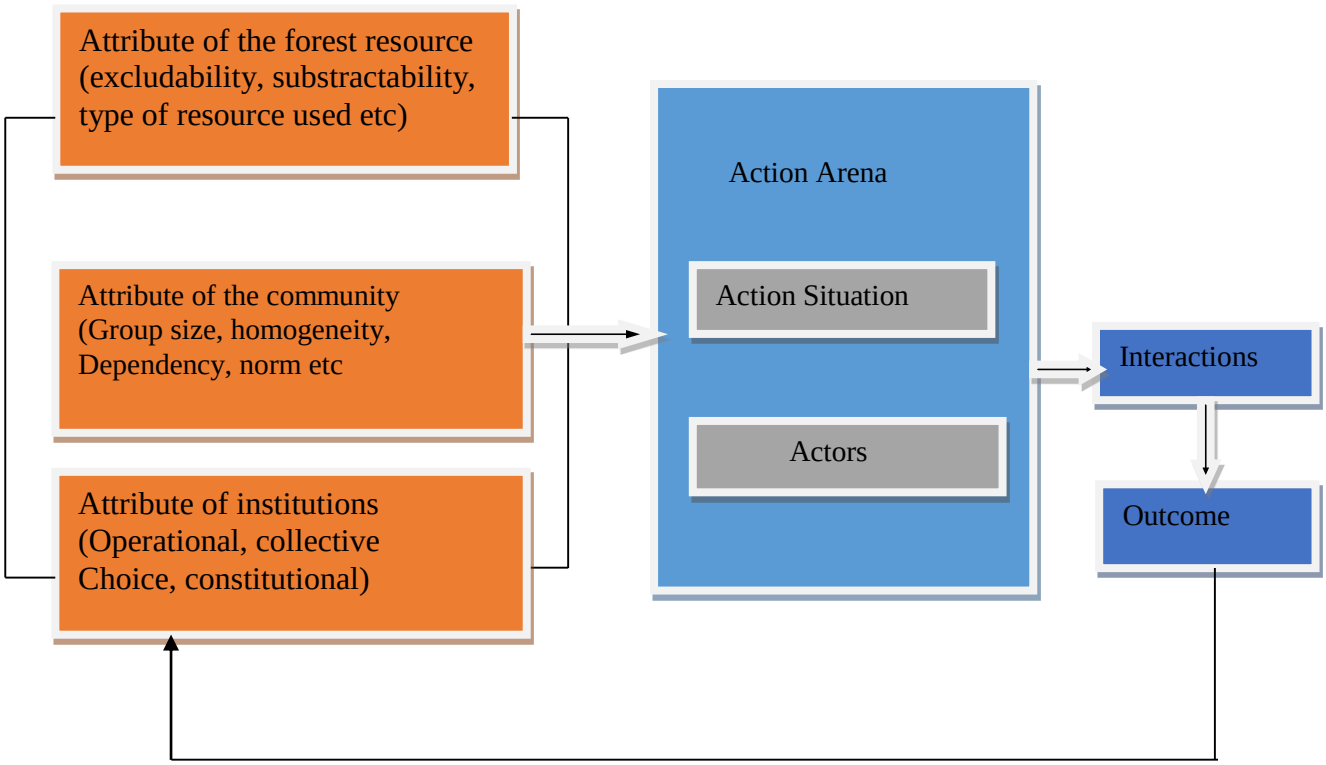
I. An Action Arena: The Playing Field.

The core analytical unit of institutional analysis is an 'action arena' in which participants (e.g. individuals, families, firms, voluntary associations, governmental units) interact in a structure of incentives generated by the characteristics of the goods involved, the rules-in-use, and the attributes of the community (Ostrom 2006). This theoretical structure is applied to analyze, explain and predict human behavior within a broad area of different institutional arrangement (Ostrom1999:5).

The action arena contains interacting individuals with decision-making competence, i.e., the 'actors'. Their decisions, which are affected by exogenous variables, entail activities that produce the action arenas' outcomes. In this way, the action arena can be understood as the "decision environment of the actors".

In the context of this study, the action arena is Bilo-Nophawereda protected coffee forest area of southwestern Ethiopia and its management activities at local institutional levels. The action arena includes individuals and organizations that make coffee forest management decisions based on the information they have or how the actions influence the outcome and different costs and benefits attached to the actions and outcomes.

Figure 1. The Institutional Analysis and Development Framework



Source: Adapted from ElnorOstrom*et al*. (2006)

The action arena consists of action situation and the actors as stated below

The Action Situation

According to Ostrom, (2011: 12**)** the action situation is characterized using seven variables that include: participants, positions, potential outcomes, action-outcome linkages, the control that participants exercise, types of information generated and the costs and benefits assigned to actions and outcomes.

In our case, as an action arena, the action situation is the social space where local community, different governmental and non-governmental organization and other stakeholder interact over use and conservation of the coffee forest.

The Actor

The actor in a situation can be thought of as a single individual or as a group functioning as a corporate actor. The term "action" refers to those behaviors to which the acting individual or group attaches a subjective and instrumental meaning. All analysts of micro-behavior use an implicit or explicit theory or model of the actors in situations in order to derive inferences about the likely behavior in a situation (and thus about the pattern of joint results that may be produced). The analyst must make assumptions about how and what participant's value; what resources, information, and beliefs they have; what their information-processing capabilities are; and what internal mechanisms they use to decide upon strategies (Ostrom, 2011:12-13)

The main actors in this study include all local level stakeholders directly or indirectly involved in the management of coffee forest areas including, local communities, state initiated formal institutions, and community initiated customary institution and non-governmental organization. These actors participate in different action situation.

II. Exogenous Variables

Attributes of the natural resource, attributes of the community and the rules-in-use are exogenous variables affecting the action arena and patterns of interaction and thereby the outcomes.

Attributes of natural resource

Exclusion and subtractability are the biophysical attributes of the resource that can influence the action arena. These two attributes are mostly used to distinguish the four different types of goods and services that include toll good, private good, public good and common-pool resources. The coffee forest can be categorized as strictly regulated common-pool resources for which human

institution is needed to prevent the "tragedy of commons" in which individuals prioritize their short-term individual interests to destroy the coffee forest. Collective action institutions (mainly gained from informal institutions) are needed to constrain these short-term interests. Action situation is also affected by the attributes of the given physical world (Zewdie, 2009).

Attributes of the community

Attributes of the community comprise "generally accepted norms of behavior, the level of common understanding about action arenas, the extent to which the preferences are homogeneous, and distribution of resources among members" (Ostrom, et al. 1994 cited inStellmacher, 2006:30). Ostrom (1999:13) bundles these attributes under the idiom 'culture', which appears to be inappropriate as culture is just one attribute of the community, among historical, social, political and economic factors as well as patterns of flexibility and change. Concurrently, in case of human-forest interaction, important variables are for example size and heterogeneity of the forest users, as well as their dependency on the forest resources.

Attribute of the rule in use

According to Ostrom, (1999:15) institutional analysis is on understanding the formal and informal rules that affect behavior in the action arena. It represents the operating rules that are commonly used by most participants and on the sources of these rules, rather than on rules that can be articulated but are not widely observed.

The rules-in-use are norms that are actually respected by the actors participating in the action situation. Rules-in-use influence the incentives and behaviors of the actors in action arena that

include both the self-enforcing social norms and the formal rules (Andersson, 2006 cited in Zewdie, 2009: 59).

III. Analyzing Patterns of Interaction

Once the constraints of the physical and material world, community attributes, and rules-in use are taken into consideration, patterns of interaction flow logically from the behavior of actors in the action arena. Patterns of interaction refer to the structural characteristics of an action situation and the conduct of participants in the resulting structure. In tightly constrained policy action situations with little or no uncertainty, participants have a limited range of strategies, and a policy analyst can make strong inferences and specific predictions about likely patterns of behavior (Ostrom, 1999:24).

IV. Outcomes

Just as patterns of interaction flow logically from a rigorous IAD analysis, insight about outcomes flows logically from similarly well-founded observations about patterns of interaction.

According to Ostrom, (1999:25) when we analyze outcomes, we are really analyzing the performance of a policy system. Hence, we need some kind of objective standard or principle for comparison. Sometimes, programs or policies provide these baselines.

2.3.Review of related literature

2.3.1. Local institutions engaged in forest resource management

According to Stellmacher, (2005) local institutional arrangement can provide the "rules of the game" for human behavior towards forests, both as enabling as well as constraining factors.

Furthermore, he argued that local institutions are grouped according to their genesis, upon which community-initiated institutions, governmental initiated institutions and NGO-initiated institutions are distinguished.

Stellmacher and Mollinga,(2009:50) contends that, there are local institutions, both formal and customary/informal/indigenous, having a crucial role in the livelihood of local dwellers. This can be categorized into state-initiated formal institutions and community initiated indigenous institutions that are principally based on the indigenous knowledge and/or long experience of local people. Indigenous institutions are categorized into self-help work organizations groups, council of elders, religious institutions and other customary knowledge of coffee forest conservation and use.

Zewdie, (2009:64) identify various form of formal and informal/indigenous institutions that are directly or indirectly involved in coffee forest conservation as well as other natural resource management activities. There are formal institutions related with coffee forest management that operate at local or higher levels. The Ministry of Agriculture and Rural Development, Institute of Biodiversity Conservation, Woredaand KebeleAdministrations, and Oromiya Government Forest Supervising Agency are some of the formal organizations operating in coffee forest management or own potential relevance to the coffee forest management. *Qoro, abbalagaa*, and *abbabokku*are heads of the Oromo indigenous institutions existing until the coming of the *Derg*regime. *Tuulla, xuxee and shane*are the other territorial-based indigenous institutions that operate in descending chain of command under the *Abba Lagaa*.

Teklu, (2006) study identified different coffee forest management institutions found at local levels. He categorized institutions into politico-administrative structures, organizational structures and

community-based local organizations. Politico administrative structures include *Wereda* administration, *kebele*administrations and development teams. Organizational structures, on the other hand, include agricultural and rural development coordination offices, agricultural cooperatives, civil society groups and special purpose committees. Religious organizations, conflict resolution organizations, rotating credit and saving organizations, labour-based work organizations and oxen sharing organizations are the major community-based local organizations he identified.

2.3.2. **Demarcation rule and forest resource management**

The EPRDF government basically retained the NFPA concept by integrating the demarcated sites into the forest categorization concept and the regionalization policy of Forest Proclamation 9/1994. Accordingly, the Forest Proclamation 9/1994 assigned five forest administration categories outlined as 'state forests', 'state protected forests', 'regional forests', 'regional protected forests' and 'private forests (Stellmacher; 2006: 105). Furthermore, Stellmacherindicated that after demarcation of coffee forest as a national forest priority area different management zone are categorized by the government as (core, buffer and transitional zone).

To serve the three functions, a Biosphere Reserve should have an appropriate size: a *conservation function*, to preserve genetic resources, species, ecosystems and landscapes; a *development function*, to foster sustainable economic and human development, and a *logisticsupport function*, to support demonstration projects, environmental education and training, and research and monitoring related to local, national and global issues of conservation and sustainable development as set out in Article 3 of the Statutory Framework of the World Network of Biosphere Reserves (Fite, 2008 cited in Andinet, 2010: 67).

Zewdei, (2009: 127) study indicated that, the rules governing the coffee forest are made (or adopted by) at the Institute of Biodiversity Conservation at federal level that originally comes from the scientific knowledge of biosphere reserve management. These rules are passed down to govern the behavior of people living in the coffee forest area. The source of rules that impose strict protection at core zone and semi- coffee forest production in buffer zone is scientific which adopted from UNESCO Man and Biosphere (MAB). Each biosphere reserve ideally consists of one or more core areas, a buffer zone and a transition zone.

The impact of coffee forest demarcation on the livelihood of the local community is very huge and multi-dimensional. There is no advantage of demarcation to the adjacent community; all it can bring poverty resulting from the prohibition of forest products mainly wild coffee (Ibid).

2.3.2.1.Community participation in rule enforcement and decision making process

According to Jesse, (2002: 2) decentralization and community participation are vital channels for bringing broader sections of a population into the decision-making process. It is the way for the bottom-up approach where the community and other stakeholders at all levels play an active role through participating in planning, implementation, benefit sharing, etc of a given resource management or a project activity.

There is now a growing consensus among the large body of literature about the attribute of users and resource has been applied in the design of policies intended to enhance the participation of local user in the governance and management of natural resource (Catacutan and Tanui, 2000).

Yeraswork, (2000: 45) divided participation as *mobilist, instrumentalist and radical* model. As he argued *mobilist* are participation base on material and labor contribution and it is not applicable to

rural development discourse and practices. The *instrumentalist* model is "participation as a means" in which people must have some voice because they may be in unique possession of information essential in planning and their involvement will help build their commitment. Here the involvement of people is limited to provide information and expressing felt needs and preference during and prior to the stage at which detail are worked out.

The *radical* model is "participation as an end-in-itself" in which people are the center of planning, implementation and evaluation, "putting people first or putting the last first". The approach advocate a lot of good can be done if only people engaged in development work were endowed with the right attitude. In this types of participation people are active in decision making and they play a great role in planning, implementing and evaluating processes (Yeraswork,2000:45).

According to FAO, (2010) command-and-control management did not fill a gap in the absence of management but rather replaced previously existing systems. Resource controversies in many parts of the world, for example, in the current rural Andean context, municipalities are frequently the framework within which local governance is nested. Empowering local citizens and community organizations in decision-making processes, not only increases efficiency, but also provides a real possibility to individuals or groups to transform their choices into desired actions and outcomes. The ultimate goal for adopting a synergetic approach is to strengthen the livelihood strategies of both households and local communities.

Stellmacher,andMollinga (2009: 47-48) contends that, the NFPR can be historically portrayed as an ambitious attempt to tackle the problem of loss and degradation of the primary forests in Ethiopia. However, it did not work out in practice. This failure can be mainly traced back to the fact that attempts were made to administer and conserve forests in a top-down manner, hence by

means of a centralized body most of the time under the MoARD and integrated into the overall political structure. Similar to nationalization and top-down forest policies in other East African countries such as Tanzania and Kenya, also the ruling decision makers in Ethiopia overestimated.

To sum up, for the purpose of this study community participation is the involvement of local community in the rule enforcement and decision making process at local and national level derived policy and proclamation that affects their use and management of coffee forest resources.

2.3.3. **Ownership right and forest resource management**

As Agrawal and Ostrom, (2001) argued, ownership right is an enforceable authority to undertake particular actions in specific domains. The rights of access, withdrawal, management, exclusion and alienation can be separately assigned to different individuals as well as being viewed as a cumulative scale moving from the minimal right of access through possessing full ownership rights.

Ownership right is defined as defacto or dejure based on the nature or sources of the rules and it can be defined as a bundle of right including, access right: the right to enter the defined physical property; withdrawal: the right to obtain the products of resources; management: the right to regulate internal use patterns and transform the resource by making improvement; exclusion: the right to determine who will have an access right, and how that right may be transferred; and alienation: **t**he right to sell or lease either or both of the above collective choice rights (Agrawal and Ostrom, 2001).

USAID, (2006:3) report indicate that, ownership rights and the role they play in sustainable natural resource management, good governance and empowerment of poor communities is gaining

significant attention in development and environmental programming. The report also shows the due emphasis that given by many Literature and practical experience to ownership rights as an important consideration in rural empowerment and sustainable management of land and natural resources. Moreover, development agencies are increasingly recognizing ownership rights as a critical factor determining how land and natural resources are used and managed, and how benefits from these resources are distributed.

Many literature overstate the importance of secure ownership rights in the management of natural resource in general and coffee forest in particular. Yeraswork, (2000) book clearly stated the importance of secure tenure system in the management of land and land related natural resource. He argued that, secure tenure system play a great role in managing the natural resource whereas, insecure tenure system is constrain the adoption of conservation practice by local communities.

As research studies indicated after demarcation of coffee forest as a national forest priority area ownership right over coffee forest is not secure. Before demarcation, the majority of the coffee forest area was ownership of private or individual farmers. Currently, the legal right to manage the forest is in the hands of the government though the community living in this area is claiming traditional ownership right to this coffee forest. (Zewdie, 2009; stellmacher, 2006)

For the purpose of this study ownership right is one of institutional arrangement that can affect the management of forests coffee through imposing different disincentive rule that restrict the use right of local coffee forest user communities after demarcation of coffee forest as a national forest priority areas.

2.3.4. **Local community attribute and forest resource management**

As many literature indicated, local communities are important in the process of enforcing and maintaining the rules to manage forest resource that exist in their surroundings. One of the important attribute of the local community is that, it lays conducive ground to protect the forest resources. Cohesiveness, homogeneity and integrity of the community play an important role in the process of managing their forest resources (Yeraswork 1997; Ashenafi and Williams 2005 Agrawal 2007).

Community attributes have made crucial contributions to the enforcement and maintenance of the rules constituting the management of the common property forests. These community traits are: Cohesiveness of communities (engendered by history/myth as to the common origin, the existence of venerated community symbols, and fairly small size, homogeneity of communities, in terms of occupation and wealth, insulation from external forces such as commercial interests (Yeraswork 2001:4).

Agrawal (2007:248) also indicates that characteristics of groups, among other aspects, relate to size, levels of wealth and income, different types of heterogeneity, power relations among subgroups, and past experience have an impact on the management of commons.

Stellmacher (2006:29) contends that, attribute of the community especially heterogeneity and group size have a great impact in the forest resource management. Nowadays commonly accepted to perceive appropriators as a heterogeneous entity, with axes of differentiation within each group, and multitude differences which crisscross groups and form sub-groups. Main differences among appropriators occur along dividing lines such as class, origin, age, caste, religion, ethnicity, and gender. Dispartment can be undertaken in two ways, ‘horizontal’ and ‘vertical differentiation’. As

a matter of fact, composition of people using resources from Ethiopian coffee forest is highly diverse in terms of origin, ethnicity, culture and religion. For example, a specific family or political elite may hold privileged positions regarding resource endowments. A particular ethnic clan may hold relatively more power, and a village elder may have a final say in who is empowered to use a particular forest resource.

Regarding the impact of group size Ostrom(1999) devised three supplementary explanations. First, cost for devising institutions increases with larger groups of appropriators. Second, larger groups enhance ethnic, cultural, and linguistic diversity, hence reduce homogeneity and thereby complicate shared understanding about resources and their management. Third, larger appropriator groups have more heterogeneous concerns, perceptions and assets.

2.3.5. **Forest land and Forest Resources attribute**

Forests constitute critical habitat for humanity, providing a range of ecological and environmental services including protection of biodiversity, sequestration of carbon, provisioning of fresh air, renewal of soil fertility, and maintenance of hydrological flows. Rural communities worldwide also depend on forests heavily, as these contribute significantly to their livelihoods, providing basic needs, cash resources, and safety-nets during times of crisis (Shackleton et al. 2007 cited in Harini, 2011).

Yeraswork, (2001) study contends that, attribute of forest resource can be viewed as primarily owing the characteristics of the forest resource and its derived goods and services that helps the adjacent community for different purposes. The characteristics of forest resource indicate, whether forest resources are located on very steep hillsides or river banks, or on well accessible plains may

significantly impact on human-forest interaction, as forest land may be virtually inaccessible for ploughing by oxen or for constructing infrastructure, and hence less likely to be deforested.

Regarding this ideaAshenafi and Williams (2005:5) study reveals that, the Guassa area has not been brought under crop cultivation or extensive tree plantation, despite the general craving for land in Menz, due primarily to its peculiar physical attribute it lies above the tree line and neither tree nor crop cultivation yield good return. Hence, there is no permanent human settlement in the areas. The community of the area managing this resource as a discrete common property resource and cultivation had to be prohibited.

Distance from the forest is also considered as contributing factor for coffee forest management activities. For example (Gunatilake 1998) indicated that Proximity to the forest has an effect on natural resource management. Those who are close to the forest will rely more on natural resource than those far from it. This means if people travel small distance to collect natural resource products, there is a high tendency of visiting on daily or weekly bases.

The other positive attribute that enhance the protection and maintenance of forest resource are, its derived goods and services. It endowed with different resource that necessary needed by the local community, these are its quality of being a source of abundant forest products and/or services when humans invest time, labor and/or capital input to extract them from forest resources. Products are visible and transportable. Whereas, services tend to be less tangible, such as aesthetic and cultural value of forests, its importance as a flora and fauna habitat, and regulation functions (Stellmacher, 2006:23).

2.3.6. **Challenges of coffee forest management**

Redolent of Hardin's Tragedy of the unmanaged Commons' (Hardin, 1968), individuals were incentivized to exploit forests unsustainably, or convert them to other land uses, without investing in proper land management, as future access rights remained uncertain (Mulugetal et al., 2015). According to stellmacher, (2006:39) humans can use, destroy as well as conserve forests for entirely different purposes, both consumptive as well as non-consumptive. Prominent examples are extraction of fuel wood, timber or NTFPs, land reclamation, biodiversity or watershed protection, sequestration of carbon, as well as cultural, religious, aesthetic, recreational or historic values.

As Woods et.al, (2012:1), argued much of the highland forest is secondary in nature having been cleared in previous centuries when the population in this area was much greater. The present forest has also been altered more recently by communities who selectively collect various products from the forest, enhance stands of some species for harvesting and also clear small patches for cultivation.

Teklu and Thomas (2004)in Zewdie (2009:1) contends, Previous efforts made to conserve coffee forest in particular and forests in general did not have significant impact as they did not take into account the interests of the local community by failing to include farmers in decision making processes. Lack of continuity of the already initiated conservation efforts, political unrest, tenure insecurity, lack of awareness and participation by local communities in different project phases, impacts of population growth and resettlement are the major factors contributing to forest degradation.

Lack of coordination and clear areas of responsibilities among different stakeholders participated in coffee forest management are the other problem that affect the management process of coffee forest. Different stakeholder have different ideas about the rules, role and institution of governing the coffee forest managements. There is also no common understanding on the power, rules and role of the institution governing access to and control over the natural resources Zewdie 2009:188).

2.3.7. **Forest management and conservation policy in Ethiopia: an overview**

Forest management and conservation policy of Ethiopia begin during the era of Emperor to conserve and manage forest resources from depletion. Thus, forest management and conservation police of Ethiopia structured on a time axis broken down to the Emperor's, the Derg'sand the EPRDF period.

2.3.7.1.The Imperial Period

The development of a state-initiated forest policy and administration took place relatively late in Ethiopia when compared to other African countries. According to (Kigenyi et al., 2002 cited in Stellmacher 2006:102), this can be basically traced back to the fact that Ethiopia was never colonized by the Europeans, and hence the idea of state obligation to natural resource conservation was not introduced from outside.

Sisay (2008) study shows, the first elaborate and modern legislation on forest resources came during emperor Haile Selassie I (1930-1974) in 1965 which gave recognition for three forms of forests (namely state forest, private forest and protected forest). The main objective of the forest legislation during the 1960s was not so much to promote resource conservation but rather to enlarge the sources of state revenue. This shows that the forest resource management paradigm

during that time was environmental protection type because the forests were preserved and protected for their economic value mainly as a source of fuel wood and construction material.

As Stellmacher(2006:103) argued generally, during the time of Emperor Haile Selassi I, the Ethiopian government made attempts to establish an institutional framework with the objective to promote environmental protection in general and forest protection in particular. However, none of these measures was ever implemented in practice. Accordingly, we can speak of a 'dry-run' period with no actual impact on the ground.

2.3.7.2.The Derg Period

In 1980, *Derg*proclaimed a new law called forest and wildlife conservation and development proclamation No. 192/1980 by accusing the previous government of its improper and unplanned exploitation of the country's forest resources and stated that the forest cover was depleted because of the selfish interest of the aristocracy and the nobility (Sisay, 2008, cited in Amonge. 2013: 124).

According to Stellmacher (2006:103) by the end of the Ethiopian Empire in 1974, more than 75% of the Ethiopian forests were owned by the private sector, mostly landlords. With the nationalization of land in 1975, as depicted above, private ownership of forests was abolished and the entire forest area of Ethiopia was handed over to the state administration.

Yeraswork (2000) cited inAshenafi and Williams (2005:5) mentioned that, following the 1975 land proclamation the role community initiated forest resource management in the country declined. Although Mengistu's*Derg*regime was overthrown in 1991 by the current, more economically liberal government led by Prime Minister Zenawi, the key factor affecting the management of natural resource across Ethiopia was the 1975 Agrarian Reform.

To recapitulate, during the Derg regime due to inappropriate forest management police, forest resource was highly degraded especially, as a result of mass resettlement and villagization following the 1984/85 famine, state use of forest resource for their economic value and the expansion of large scale commercial farms (Amogne2013:125-126).

2.3.7.3.The Current Situation

According to Ayele, (2011:38) in 1991 the Derg regime was overthrown again by the Ethiopian People Revolutionary Democratic Front (EPRDF). The government of the Federal Democratic Republic of Ethiopia (FDRE) established following the three years transition period follows more or less similar land holding patterns to what the Derg had established in its time. Significant developments of course include the introduction of the federal government structure with the constitutional authority to administer the resources in the region and the recent development of land certification which of course brought about better confidence from the farmers perspective.

As Stellmacher (2006:106-107) study shows, the proclamation of 9/1994 assigned five forest administration categories as state forest, state protected forest, regional forest, regional protected forest and private forest. The EPRDF government basically retained the NFPA concept by integrating the demarcated sites into the forest categorization concept and the regionalization policy of Forest. Despite, the categorization between 'state forests', 'state protected forests', 'regional forests', 'regional protected forests' and 'private forests' by the proclamation it did not work out in practice, but rather created confusion between different state levels (particularly federal and national) about responsibilities.

In sum, from the above discussion one can conclude that in this dynamic process and historical period different indigenous and external organizations interact to control and regulate the use and the management of coffee forest. The state efforts for environmental protection in general and the commitment to primary forests in particular did not bring the intended results under any Ethiopian government (Stellmacher 2006:106-107). This is due to a number of factors which carry different weight from different views and are difficult to assess in general. The most notable are the vague definition of and conflicts about competences, a defective and/or incomplete implementation (e.g., NFPAs were legally established and demarcated but lacked management plans), and the non-involvement of the local forest users in decision making.

Chapter Three: Research Method

3. Introduction

In this chapter, the researcher begins with discussing the background of the study area and the issue under consideration and then goes on to the detail research approaches and methods such as research design, sampling techniques, data collection tools and methods of data analysis employed in this study.

3.1.Description of the study area

3.1.1. Geographical setting

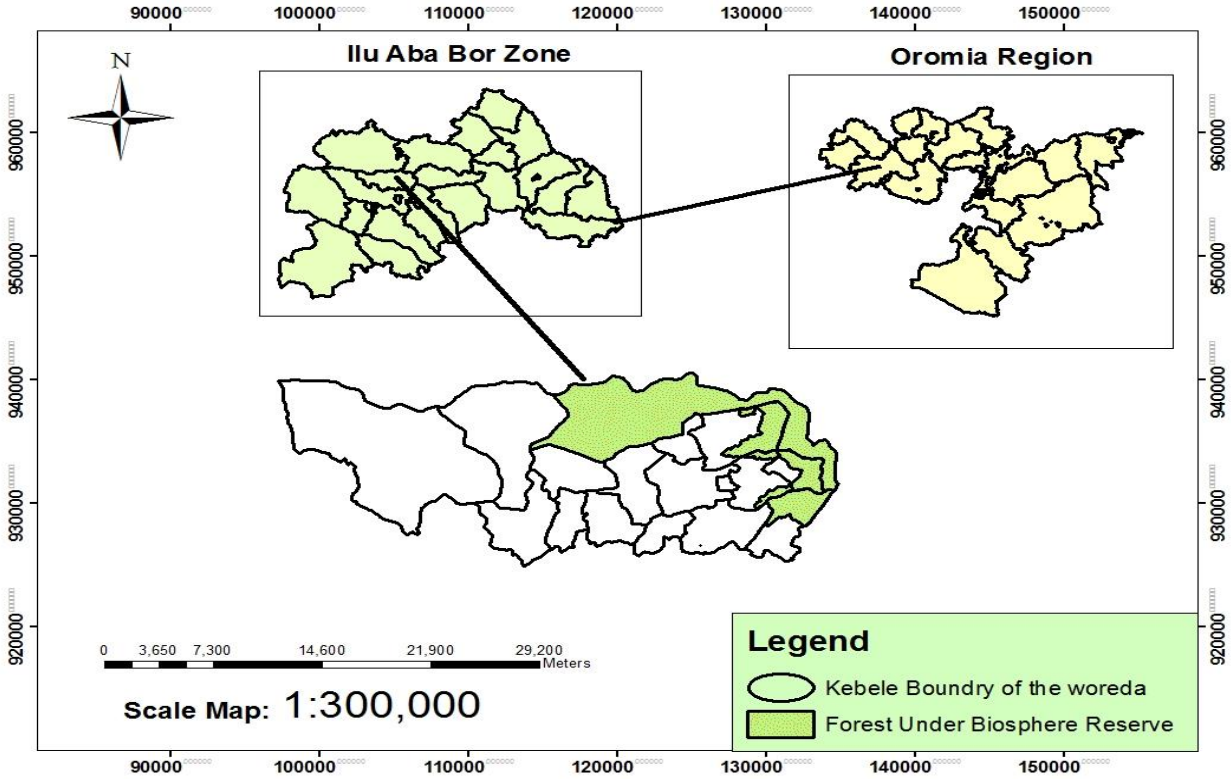
Iluu Abba Bora is situated in southwestern part of Oromia Regional State as well as the country. It is bounded by East Wellega and Jimma zones in the east. Iluu Abba Bora also shares a border with West and East Wellega in the North; SNNPR in the south, and with Gambella Regional State in the west. The total area of the zone is 1,633156.6 hectares divided into twenty two districts (Zewdie, 2009).

Bilo-Nophaworeda is found in Iluu Abba Bora zone of Oromia Regional State at about 615km from Addis Ababa the capital of Ethiopia and 18km from Mettu, which the administrative seat of Iluu Abba Bora zone. The total land area of the woreda is 39,000 hectors and The *Woreda*is composed of 16 *Kebele.*

3.1.2. Climate

Bilo-Nophaworeda is located between $8^0 2^0 42^{00}$N and $8^0 31^0 18$' North and $35^0 37^0$ 48^0 E and $36^0 05^0 18^0$East. Agro-ecological zone of the woreda is fall in 95% under high land (*badda)* and the remaining 5% is lowland (*Gammoojji*). The mean annual temperature of the woreda is 18^0c up to 23^0c and the mean annual rainfall is from 1200mm-2100mm per year. It is unimodal type of rainfall that increases in May to October and decreases in December. Regarding the topographic location, most part of the woreda is Mountains and some parts of the area covered by rift valleys. Bilo-Nophaworeda is located in 1700 meter above sea level.

Figure 3: Map of the study area



Source: Ethio-GIS

3.1.3. **Population and economic condition**

According to woreda administrative report of (2013), the total population of Bilo-Nophaworeda population is 30,383 from this the number of Male is 16,001 and the number of female is 14,382. Out of the total number of population in the woreda only 3750 peoples are live in the town area and the rest 26,633 of them live in the rural areas.

Regarding the ethnic composition of the respondents majority of the inhabitants are belongs to Oromo ethnic groups. Other ethnic group from Amara and Tigry also exist in the woreda due to re-settlement program and in-migration in the past few decades. In the study area different

religious organization are also existed, among this Orthodox, Protestant and Muslims are the dominant one.

With regard to the economic activities of the local community, majority of them engaged in agriculture and agriculture related activities. Forest derived goods and service like (coffee, honey, timber extraction) etc are the major agricultural activities of the community which accounts up to 75% of local livelihood strategies, on the other hand, crop production like (maize, sorghum and teff) and livestock rising like (cattle, sheep, goats, donkey) etc account 20% of the livelihood strategy of the community. Few urban dwellers account 5% are engaged in different small trade and daily labor activities (BNWA, 2015)

3.1.4. **Natural resource endowment**

South-western Ethiopia in general and Illu Abba Bora zone in particular is well-known byits natural resource endowments. Bilo-Nophaworeda is one of the vast forest areas that consists many species within it and it was incorporated in to Yayo forest priority areas (NFPA) for conservation in 1999. The total land area of the woreda is 39,000 hector that covered by different kinds of land uses. According to secondary data of woreda land administration, coffee forest land cover 20,230 hectar of total land areas, on the other hand Savannah wood land, grazing land, savannah grass land and marsh land covered 9,063hector of total land areas. The remaining 9,707 hector of land covered by Cultivation area.

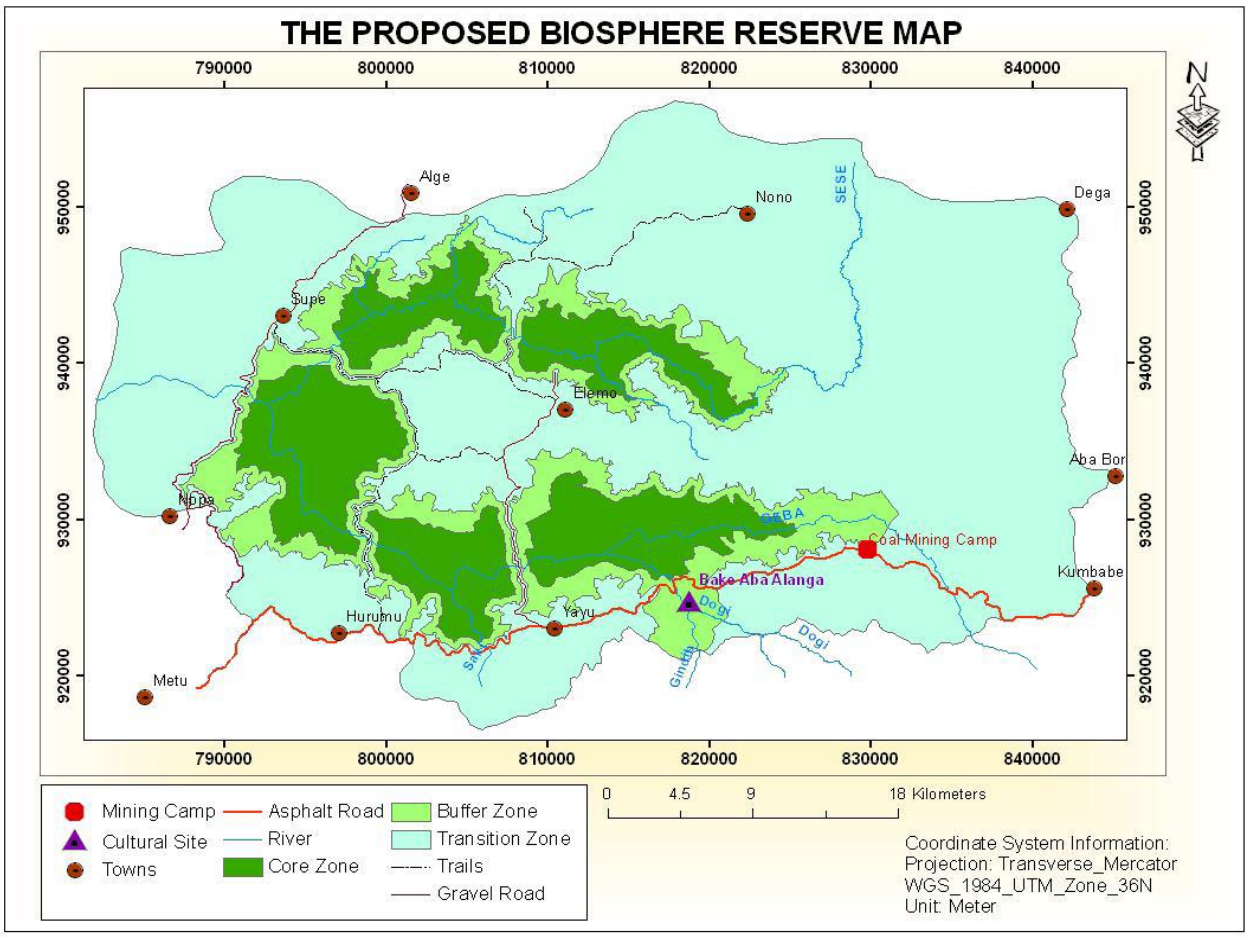
The forest ecosystem is endowed with a variety of plant species. The most common are *Hambabessa*(*Albiziagummifera*) *Waddessa*(*Cordiaafricana*), *Qararoo* (*Aningeriaadolfifriedertel)*, *Hogda*(*Ficusvarta*), *Sondi*(*acacia lahai*), *Alale* (*Albizia grand ibracteata)* andotherstheir scientific names are unknown like *(Bakkannissa, Lookoo, Abrangoo-*

Jaldessaa, Qassoo, and Lolchiissa) are some of the plant species that existed in the coffee forest areas.

According to secondary data from woreda agriculture and forest conservation office indicated the coffee forest of Bilo-Nophaworeda consist different species of animals. Anubus baboon (*Jaldessaa*), colobus monkey (*weenni*), other more than fifteen (15) species of animals are exist in the coffee forest area.

3.1.5. **History of Bilo-Nopha Forest Conservation**

During the imperial period Bilo-Nophaworeda coffee forest area was held as common property resource and private goods of the local communities. The current core zone area of the forest were under the control of landlord and the buffer zone area of the forest was owned as private goods of local communities through *Gabbar*system. After nationalization of land during the military regime, the coffee forest area was controlled by different peasant association and committee established for this purposes. At that time the coffee forest area was control by both the association and individual private property with full use right. After EPRDF came to power since 1991, coffee forest area become under the dejure ownership of the governments to preserve different bio-diversity in the coffee forest areas. The forestry administration at the federal level has classified 58 most important high forest areas in Ethiopia as National Forest Priority Areas since 1985 (Zewdie, 2009). From the 58 NationalForest Priority Areas in the country, Illubabor zone has five National Forest Priority Areas these include Yayu Forest, Gaba-Dhidhesa, Gabre-Dima,Sibo-totiQobo and Sale-Nono.



Source: Adopted from Andnet, 2010

Due to its national and international importance, Bilo-Noph coffee forest area has been designated as a site for wild Arabica coffee (*Coffeaarabica*) conservation as a gene reserve by the government of Ethiopia since 1999; under the control of Yayo national forest priority areas which consists other five woreda's that forest area are adjoining, these including Yayo, Chora, Alge, Hrumu and Dorani. The coffee forest area is cover 13,305 hector land from four adjoining kebeles including (Ulmaya, Kitabir, AgataSuli and government forest that bounded to those kebeles). After demarcation of forest area as national forest priority area for bio-diversity conservation, the use and management activities of coffees forest are limited and strictly forbidden.

3.2.Research Design

This study employed both cross-sectional and approximating longitudinal research design in order to obtain data concerning the issue under study. To get information regarding the rule in use to manage the coffee forest area, the behavior of forest user group, attribute of forest land and its derived resources and challenges of coffee forest managements, cross-sectional research design the most appropriate one.

Approximate longitudinal research design also employed to get information regarding the participation level of local community in the management activities of coffee forest before restriction and their past ownership right in the protected forest areas.

3.3.Research approach

Triangulation is primarily a way of assuring the validity of research results through the use different research methods and approaches. Besides, it has also additional advantage of allowing the researcher to cover different aspects of his /her research objectives or research question by employing different sources, data and research methods (Yeraswork, 2010:66). Therefore, in this study methodological triangulationwas used to address different objective of the study. Additionally, it also used to support and substantiate quantitative data with qualitative one.

3.3.1. **Methodological Triangulation**

The researcher has employed a methodological triangulation to validate the research result which can be briefly summarized in the following table.

Table 1: methodological triangulation

Objective	Units of Analysis	Data Sources	Methods of Data Collection
Effectiveness of rule in use to manage coffee forest in the study areas.	Forest user community Woreda administration, agricultural and forest office, district manager of bio-sphere area	A). Sample of household heads, B). Key informants C) in-depth interviewee D). forest user community as a group	• Household Survey • In-depth interview • FGD
Attribute of local community	Forest user community	A). Sample of household heads, B) in-depth interviewee C) forest user community as a group	• Household Survey • In-depth interview • FGD
Attribute natural resource	Forest user community district manager of bio-sphere area	A). Sample of household heads B). key informants C) in-depth interviewee D) forest user community as a group	• Household Survey • In-depth interview • FGD

Challenges of coffee forest management practice	Forest user community, Woreda administration,	A). forest user community as a group B). key informants C) in-depth interviewee	• FGD • In-depth interview

3.4.Study population

The target population of this study was households of three selected kebeles who live in coffee forest adjoining inBilo-Nophaworeda including Ulmaya, Kitabir andSuli.

3.5. **Sample design and sample size determination**

Several reasons make sampling useful rather than complete enumeration. These include considerations regarding time, cost and available resources, and practicability (yeraswork, 2010). For this study both probability and non-probability sampling technique have been used to draw the required number of sample units.Accordingly kebeles were selected purposively from the entire kebele in Bilo-Nopawereda, therefore out of 16 kebeles in the wereda, 3 of them were purposively selected by the researcher based on their adjacent to the coffee forest areas (bio-sphere reserve areas). And then, household heads for information has been selected from the 3 kebeles by using systematic sampling method.

Purposive sampling wasalso employed to select the required number of respondents for in-depth interview, key informants and FGD discussants. Respondents for information were purposively selected based on their knowledge and experience including (member of local community, well-known local community elders, and experts at different level) on the issue under investigation.

This study has been conducted in the three selected site of Bilo-Nophawereda, which have direct contact with the coffee forest areas. From total number of households in the three selected kebeles, the researcher used the following formulas for sample size determination.

$S = X^2 N P (1- P) \div d^2 (N -1) + X^2 P (1- P)$.

S = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population variability (assumed to be 0.10 since the population is homogeneous in terms of geography, similar social class and similar economic activity).

d = the degree of accuracy expressed as a proportion (0.5).

The total households of the three selected kebele (N) is 1142.

The total households of Ulmayakebele (N_1) = 453,

The total households of Kitabirkebele (N_2) = 261 and

The total households of Sulikebele (N_3) = 428.

S (Total number of sample) =?

X^2 = at 95% level of confidence is 3.841,

d= 5% or 0.05 and P=0.1

Therefore, using the above formula, $\mathbf{S = \frac{(3.841)(1142)(0.1)(0.9)}{0.05^2(1142-1)+(3.841)(0.1)(0.9)}}$**=125 (approximate)** sample of respondent will be used for this study.

For more informationsee[http://www.extension.psu.edu/evaluation/pdf/TS60.pdf accessed on 16/11/2014](http://www.extension.psu.edu/evaluation/pdf/TS60.pdf)

On the other hand, to determine the proportion number of sample (respondents) in Ulmayakebele (n_1), Kitabirkebele (n_2) and Sulikebele (n_3), the researcher used the following formula.

Thus, $n_1 = S\ (N_1/N)$ and hence $n_1 = 125\ (453/1142) = 50$.

$n_2 = S\ (N_2/N)$ and hence $n_2 = 125\ (261/1142) = 28$.

$n_3 = S\ (N_3/N)$, which is $n_3 = 125\ (428/1142) = 47$.

Table 2: Sample Size Calculations.

Kebele's	Total household	Sample population
Ulmayakebele	453	50
Kitabirkebele	261	28
Sulikebele	428	47
Total	1142	125

Hence, from Ulmayakebele, 50 respondents, from Kitabirkebele, 28 respondents and from Sulikebele, 47respondents have been selected proportionally. Systematic sampling was used in this study to distribute questionnaire. By dividing the determined sample population (as determined by sample size technique formula) for total population multiplied by hundred percent, the interval is obtained as follows.

K= $\frac{n}{N} X 100\%$

K= $\frac{125}{1142} X100\%$ **= 11.** Thus, using the kebele register, every 11th person has been taken until 125 samples selected.

3.6.Method of data collection

In order to achieve the stated objectives, this study has used a methodological triangulation so as to substantiate the primary and secondary data that was collected from different sources. To do so, both primary and secondary sources have been employed. The sub-sections that follow describe the detail of primary and secondary data sources.

3.6.1. **Primary Data Collection**

*3.6.1.1.**Household survey***

Household survey was used to obtain information regarding the socio-demographic characteristics, rules in use to govern forest resource, attribute of the forest resource user groups and forest resources areas. The survey instrument (questionnaire) consists of four parts, the first part of the questionnaire asked the demographic and socio-economic condition of respondents. The second and third parts of the questionnaire asked about the attribute of the forest use community and natural resource and their importance in the management of coffee forest. The fourth part of the questionnaire was about rules that govern the forest and their association with coffee forest management and the final parts of the questionnaire was prepare to ask the participation of local community in coffee forest managements.

Survey instrument was administered by translating in to local language (*Oromiffa*). The researcher and enumerators undertook face to face interview with the respondents since majority of them were unable to read and write.

Conceptualization and Operationalization

Conceptualization

- **Local institutions:** refers to both formal and informal/indigenous institution, having a crucial role in the management of coffee forest (Agrawal, 2007)
- **Coffee forest:** is a forest that is characterized by a high abundance of wild Arabica coffee populations and continuous, various vegetation structure (Andnet, 2010).
- **Bio-sphere reserve area:** protected forest for sustainable conservation of biodiversity
- **Core zone:** refers to the place that exclusively established for biodiversity conservation or to ensure that all plants and animals' species and communities survive throughout the area (Tadesse,2003 cited in zewdie, 2009).
- **Buffer zone:** refers to the area set aside as buffer the core zone from human interference, while allowing conservation and sustainable utilization of forest resources (Tadesse, 2003 cited in zewdie, 2009).
- **Participation:** refers to the involvement of local community in coffee forest management activities
- **Incentives:** refers to any inducements that can enhance the management of coffee forest
- **Disincentives:** refers to any barriers that impedes the management of coffee forest

Table 3: Operationalization

Concept	Variable	Indicator	Measurement
Socio-economic status	Income	Average total income per annual	**Scale**

			Actual total income per year in Birr
	Educational qualification	Level of Education attained	**Ordinal** Can't read and write, can read and write, primary education, secondary education, college and above.
Socio-demographic characteristics	Sex	Indicate male or female	**Nominal** Male or Female
	Age	Length of time (year) that one has been alive	**Scale** Age in completed year
	Demarcation rule	The current rule that govern coffee forest areas	**Ordinal** Completely fair , fair Not fair
Attribute of rule in use	Collective decision making	Participation of local community in collective decision making of rule design and enforcement process	**Nominal** Yes , no
	Ownership right	Use and management right of coffee forest resources	**Nominal** Secure, insecure

Attribute of natural resources	Distance from forest	Actual distance of respondent's house from the forest land in hrs.	**Ordinal** Less than 30 min, 30min-1hr, 1hr-1:30hr 1:30hr- 2:00hr Above 2:00hr
	Multiple use	the importance of coffee forest based on the multiple goods and service they provide	**Nominal** Yes, no
Attribute of the community	heterogeneity	Impact of community difference in terms of occupation and ethnicity to manage coffee forest	**Nominal** Yes, no

*3.6.1.2.**In-depth and Key informant interview***

The researcher employed semi-structured interviews which alsoused to supplement the ideas and questions designed in the household survey. Informants for in-depth interviews have been selected purposively based on their knowledge and experience on the issue under study. Therefore, six (6) in-depth interview was conducted to gather detail information regarding the role that local institutions play in coffee forest management in the study areas from local community member.. To get more information about the topic under study, the researcher conductedkey informant interviews with (2) well-known and influential Local community elders and (3) experts like, woredaadministrator, director of agricultural and forest conservation office, and district manager of bio-sphere reserve area.

*3.6.1.3.**Focus group discussion***

Focus group discussionhave been also used to triangulate the reliability and validity of the data collected by other methods. The main reason for using the focus group discussion is to gain understanding on the respondents' attitudes, feelings, beliefs, experiences and reactions, (Camic,& Yardley,2003).

In this study three focus group discussions were held with household in the three selected kebeles. Each focus group discussion contained (10) member of discussants. The member of Focus group discussion is local community who participate in different social group activities including men, women and elders. They categorized based on their homogeneity to make them free to feel their ideas without any frustration.

3.7.Archival analysis

Several written documents including journals, articles, books and other documents which focus on institution of coffee forest management have been reviewed by the researcher. The review of these documents was useful in identifying the gaps in previous researches on the subject under study and in the selection of appropriate research framework and tools for the study.

3.8.Method of data analysis

3.8.1. Quantitative data analysis

The quantitative data for the study was analyzed using descriptive statistics aided by SPSS version 20. The findings in turn were analyzed qualitatively. Descriptive analysis of the data was carried-out using percentages and frequency.

3.8.2. **Qualitative Data Analysis**

Qualitative data collected through key informant interview and focus group discussions were analyzed according to the main themes of interviews and discussions. Here, qualitative data collected concerning challenges of coffee forest management were analyzed separately as it is a separate specific objective of the study. Whereas, additional data generated through interview and FGDs concerning rules in use, attribute of the community and forest resource were simultaneously analyzed with survey data.

3.9.Ethical consideration

Yeraswork (2010: 219) has clearly pointed out that "research must be regulated by ethical norms and values", the researcher has been directed by the following obligatory ethical guidelines while collecting data from the sample of survey respondents and in-depth interviewees.

- All information was collected from respondents and key informants with their consent and willingness
- All information obtained from the sources was kept and treated confidentially
- The data were analyzed and interpreted without naming any of the respondents or informants
- Limitations and failures of the study were honestly explained
- The different assumptions and theories that were utilized from other sources (books, journals and research reports) were properly cited and acknowledged

Chapter Four: Data Analysis and Presentation

4.1. Introduction

This study was conducted to assess the role of local institution in the management of coffee forest. Institutional analysis and development frameworks was used to analyze the attributes of different exogenous variable and their association with the action arena. Here therefore, due emphasis is given to the different institutional arrangements that operate in the study area and their likely impact on the management of coffee forest. Issue like attribute of the rule that govern coffee forest, attribute of forest user group in terms of homogeneity and cohesiveness, natural resource attribute in terms of topography, distance, quality of goods and services and challenges of coffee forest managements are the major emphasis of this study.

The first section presents the demographic and the socio-economic characteristics of the respondents. The second section on the other hand, deals with attributes of rules in use to manage forest resources and incentives associated with this rules. The third section deals with attribute of forest resource community and section four deals with the attribute of the coffee forest resource. Finally, the major challenges of coffee forest use and managements are presented.

4.2. The Socio-economic and Demographic Characteristics of the respondents

4.2.1. **Socio- demographic characteristics of the respondents**

The total numbers of informants who participated as sample subject in this study were 125 individuals. Among the total number of sample household heads participated in the study 118(94.4%) were males and the remaining 7(5.6%) were females. Regarding the age categories

47(37.6%) respondents were fall within the age group of 41-50, and the second larger age category 33(26.4%) respondents were fall under the age group of 21-30. The remaining 16.8%, 15.2%, and 4% fall under the age group of 31-40, 51-60 and above 60 respectively.

Again, regarding the religious affiliation 45.4% respondents out of total population were followers of Protestant Christianity and the remaining 32% as well as 22.6% respondents were followers of Ethiopian Orthodox Christianity and Islam respectively. The survey result also shows that there are three ethnic groups that exist in the study area - Oromo, Ahmara and Tigre. Among those ethnic groups 72% Oromo, 19.2% Amhara, and 8.8% Tigre were participated as sample respondents respectively.

Table 4: frequency and percentage distribution of respondents based on their demographic characteristics

Socio-demographic characteristics	Frequency	Percent	Cumulative percent
Sex of respondents			
Male	118	94.4	94.4
Female	7	5.6	100.0
Total	125	100.0	
Respondents age			
20-30	33	26.4	26.4
31-40	21	16.8	43.2
41-50	47	37.6	80.8
51-60	19	15.2	96.0
Above 60	5	4.00	100.0
Total	125	100.0	

Religious affiliation				
Orthodox	40	32.0	32.0	
Muslim	28	22.4		54.4
Protestant	57	45.6		100.0
Total	125	100.0		
Ethnic group				
Oromo	89	72.0	68.0	
Ahmara	24	19.2		87.2
Tigray	12	8.8		100.0
Total	125	100.0		

Regarding household family size the table below shows that, almost half (49.6%) of the total respondents have household size of 6-10 members, about 31.2% have 3-5 members and the remaining 15.2% and 4.0% have less than 2 and above 11 members respectively. Generally, the study area is characterized by a relative large family size as more than three-fourth of respondents has more than 5 members.

Table 5: Frequency and percentage distribution of respondents by their household size

Household Size	Frequency	Percent	Cumulative Percent
less than 2	19	15.2	15.2
3-5	39	31.2	46.4
6-10	62	49.6	96.0
11 and above	5	4.0	100.0
Total	125	100.0	

Educational status is the other characteristics of the community which indicate the literacy level of households. The survey result indicated that, the majority of respondents which account 50.4% are "able to read and write". Respondents who "can't read and write" accounts 36.8% total number of respondents. Specifically, 11.2% and 1.6% respondents attended primary and secondary education respectively. This shows that, the educational status of the respondents is relatively low. This could have adverse impact on the management of coffee forest area due to the fact that lack of knowledge about the contribution of coffee forest area in preserving bio-diversity.

Table 6: Frequency and percentage distribution of respondents by their level of education

Educational status of household head	Frequency	Percent	Cumulative Percent
Can't read and write	46	36.8	36.8
able to read and write	63	50.4	87.2
primary education	14	11.2	98.4
secondary education	2	1.6	100.0
Total	125	100.0	

4.2.2. **Economic Structure of respondents**

As the survey data revealed, almost all of the respondents have land which is either it is forest or crop land. Regarding the size of land they own, 26.4% of respondents have between 1.6-2.0 hector land, and 24.8% of the respondents have between 0.6-1.0 hector lands. The other 20.0%, of the respondents have between 1.1-1.5 hector land. The remaining 14.4% respondents have between less than 0.5and above 2 hector land respectively. As secondary data from land administration of the study woreda reveals, 6, 687 households in the woreda have land, from this the number of male

land owners are 5921 and the number of female land owners are 766. The data also reveals that, the average land holding size of household in the study area is 2.32hector.

Table 7: Frequency and percentage distribution of respondents by their land holding size

Land holding size of respondents	Frequency	Percent	Cumulative Percent
less than 0.5ha	18	14.4	14.4
Between 0.6-1.0ha	31	24.8	39.2
Between 1.1-1.5ha	25	20.0	59.2
Between 1.6-2.0ha	33	26.4	85.6
above 2.00ha	18	14.4	100.0
Total	125	100.0	

Regarding livelihood activities, agriculture that includes different kind of crop production, forest products and animal production are the major means of subsistence for the community in the study area.

Table 8: Frequency and percentage distribution of respondents by their livelihood strategies

livelihood strategy of household		Frequency	Percent	Percent of Cases
	Depend on forest	121	49.4%	98.4%
	crop production	82	33.5%	66.7%
	Livestock rearing	42	17.1%	34.1%
Total		245	100.0%	199.2%

Note: total is greater than the sample because it is multiple responses

As table 8 shows, the major livelihood strategy of the sample respondents is forest and forest derived resource which account 98.4% the total livelihood strategy of the community. Product

like, wild coffee, honey, charcoal, timbers and non-timber products are mainly used as sources of livelihood by the local community. Crop production is the other livelihood strategy of sample respondents which consists 66.7% of the sample population. Products like, maize, teff, and sorghum are the major products that are produced by the community in the study area. In addition, livestock rearing is another livelihood strategy of the community which consists 34.1% the total livelihood strategy of sample respondents. In the study area farmer undertake animal production activities including (cattle, sheep, goat and donkey) side by side with farm activities.

4.3. Institutions of coffee forest management

Institutions that encourage protection of coffee forest at various levels in a given society are very essential to ensure sustainable existence of coffee forest. Different institution have been formed at different time and in different place in attempt to respond to increasing pressure on natural resources. Forest resources are more likely to be sustainably utilized if an effective structure of institutional arrangements exist that give rise to an authority system responsible for wise management of resources at the local level (Zewdie, 2009). In the study area both formal and informal institutional arrangements exist and are engaged in the coffee forest management practice. The following section gives some detailed explanation of the existing local institution and their role in coffee forest resource management.

4.3.1. **Informal Institution**

Community initiated indigenous institutions are principally based on the indigenous knowledge and/or long experience of local people. Local community initiated informal institution found in Bilo-Nopha community, specifically among those located adjacent to protected coffee forest areas.

In the study area among customary institutions currently operating and participating in coffee forest management activities *Iddir,* council of elders, and *Jigaand laffee,*are identified.

Iddir

Iddir is voluntary association that plays a crucial role in managing coffee forest in the study areas. As stellmacherand Mollinga (2009) indicated, *iddir* is an Ethiopian phenomenon. It can be found all over the country and even among Ethiopian communities abroad, across all social classes, ethnicities, and religions. In the particular study area, family represented by head of households in this association. The member of *iddir* association held per week and pay for membership contribution to the *iddir* treasures. They also meet occasionally to nominate the member of *iddir* committee which govern the activities of *iddir* association. It also play a crucial role in the management of forest resource in the study areas. As in-depth interview result with local community elders indicated, the member of *iddir* social association have rules that guide their behavior toward the use and management of coffee forest. There is a rule that Punish those illegally use the protected coffee forest areas, membership is punished in cash or imprisonment depend on their level of accusation. There is also rules that obliged local communities to participate in collective action activities like, protection or group meeting. In Nopha village if the member of *iddir* groups are not participated in collective action activities of forest management and group meeting they punished 10birr and double if they repeated it.

Jiga and Laffe

Jiga and Laffeare self-help working group that focus on provision of labour, financial and other support to the people exposed to different forms of hardship. As local community elders told to

the researcher, *Jiga* is activity that perform when the household lost one of his family member whereas, *laffe* is activity that performed when household of a given community lost his relatives. The main difference between *jiga* and *laffe* is that the former one is morning work from 8-12 clock but later one is night work from 2-5, beside to this the member of *jiga* group is large in number than the member of *laffe* groups. In the management of coffee forest area the role of *jiga* and *laffe*areindirect. As woreda agricultural and forest conservation office key informants said, the member of *jiga* and *laffe work* groups used as a forum for formal discussion between the local communities and government agents regarding the use and management of coffee forest in protected areas. Through these work groups awareness creation programs about the bio- sphere reserve areas and penalties of encroaching the forest areas are given to the local communities.This working system are not organized spontaneously by their participants, rather they have a fixed groups and rules that distinguish members from non-members.*jiga* and *laffe*working groupsarrangement have a rules that state who should do what, when and how regarding the management of coffee forest toprotect from damages resulting from illegal user and grazing.

Council of elders

Council of elders is a group of elders which are selected by local communityand involved in various societal activities such as conflict resolution and decision making in critical societal issues. According to information of elderlykey informants, one of such council of elders in the study area is "*GummaaAbottiGadda"* which plays several roles in the life of local community. Among others some of the roles that the council of elders performs are Maintaining the culture of the local community, giving a decision regarding different issues, resolving conflict between individuals and giving awareness creation about protecting forest resource to the local

communities are some of the major role of council of elders in the study area. *Sera kaka*/ rule of swear is one of the mechanism used to investigating repeatedly committed crime through a group of council of elders. Different kind of crime including distraction or illegal use of forest resources lead to kakaby council of elders. The community of the study area has developed respect for their customary rules. Fearing kaka, curse and social sanction would help them to prohibit the community members from cutting trees in protected areas. The member of council of elder is fixed and permanent, they also have high link with the local government administrative and work with each other towards the management of coffee forest areas as well.

Generally, the role that customary institutions paly in the management of forest resource is decreased from time to time in the study area. As elderly key informants indicated, the role of customary institutions in the management of coffee forest are now currently reduced due to government involvement through its formal institutional structures. Regarding this issue one of 56 year male local community informants said;

> *Previously, the role of council of elder was high in the use and management of coffee forest areas. We help each other and manage our forest resource by using traditional customary institution like jiga, laffee and dabo, but now currently the role of customary institution is reduced and it come under the shadow of different formally organized institution that initiated by governments* (Field interview:10,2,2015).

The result of FGD discussant group also indicated, organization of local community in different state initiated institution reduce the influence of informal institutions that the local community perpetuated for long time.

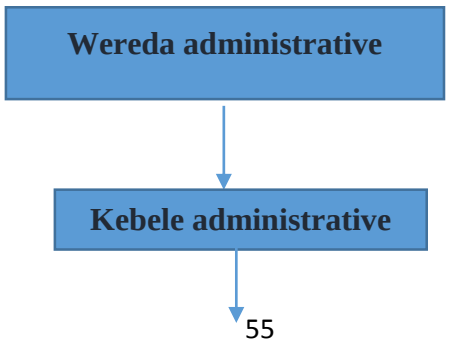
4.3.2. **Formal Institution**

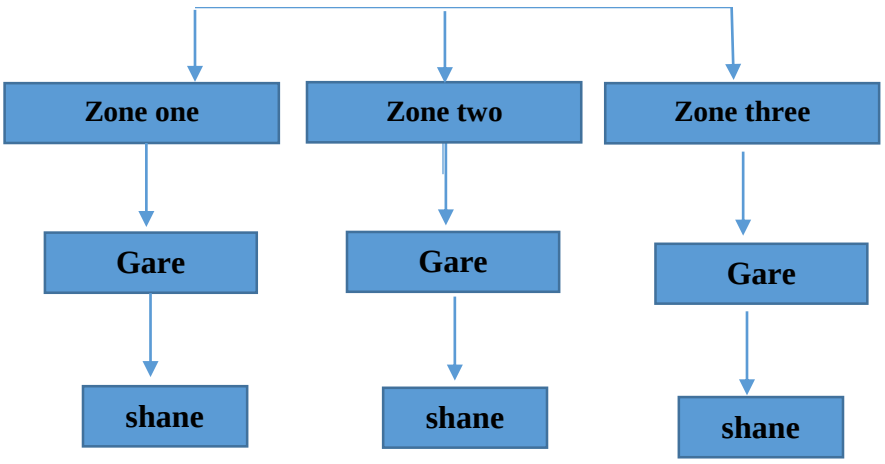
There are formal institutions related with the use and management of coffee forest. As information obtained from wereda administration and agricultural office indicate, there are different government and non-governmental institutions that are engaged in the process of managing the coffee forest areas. Bilo-Nophaworeda administration (BNWA), Agriculture and forest conservation office (AFCO), Illubabor Forest resource and wild animal enterprise (IFRWAE), Development agent (DA) and NGO's like Sustainable land management (SLM), Ethiopian coffee forest forum (ECFF), People health and environment (PHE) and Ethio wet-land are all formal stakeholders which operate at the local level in the management coffee forest areas.

The structure of Bilo-Nophaworeda administration (BNWA) is organized hierarchically in the form of top-down control and bottom-up flow of information. As the wereda communication offices report indicated the hierarchical structure is based on the geographical location of the areas.

The woreda administration is the official local government agency responsible for the coordination of the activities of different stakeholders who participated in coffee forest resource management. Providing administrative, logistics and giving solution to the problem that beyond above the capacity of kebele administrative is the main responsibilities of woreda administration.

Figure 5: The Hierarchical Structure of Bilo-NophaWoreda Administration





Kebele administration is the other local institution deals with the day to day activities of the rural residents. Under this structure there are three zones incorporating 3 up to7 *gares*under them. In its role of forest resource management the kebele administration most of the time imposes penalties on those violating forest use rules. The lower level hierarchical structure reports the illegal use of coffee forest to the kebele administration and then it is up to them to bring the accused people in to justice. The kebele administration also have the power to control or allow local community to use products from the coffee forest area.

Zone, *gare* and *shane* are lower level hierarchical structures in which the local community is organized themselves to perform different management and conservation activities of forest resources. *Zone* is the place where different *gares are* organized and discuss on various issues like agricultural and forest resource managements. The main role of *zone* is giving solution or transferring the issue reported by *gare* discussion groups. *Gare* is the platform for giving possible solution to the lower disagreement that occurred at the *shane* level. It control and manage the day to day activities of *shane* groups and gives simple decision like, the encroachment of cattle in the protected areas or problem over commonly used resources at *shane* level. *Shane* is the lowest

structural in which farmers are organized in to 1to 5 cell based on their neighborhood, here farmers have responsibilities to manage coffee forest area through controlling each other activities and reporting the illegal use of protected forest by their group member.

According to woreda agricultural and forest conservation office director said, in the management of forest resource the hierarchy indicates that, if someone encroaches the protected coffee forest area at *shane level a*member reports to *gare* group discussion and the *gare* group transfers it to the *zone* if it is beyond their capacity to handle it, then the *zone* tries to give possible solution or report it to the upper bodies or kebele. Regarding the effectiveness of this arrangement he said;

> *The structure of formal institution is very effective in managing coffee forest resources in our woreda, that every hierarchical structure work through coordination to control illegal encroachment of coffee forest areas. In this year (2008 E.C) through the effort of collaborative activities among government and local communities six people have been accused by encroaching in to the core management zone area and sentenced for 2 up to 4 years at Ulmaya and kitabirkebeles. (*Field interview: 10, 2, 2015)

Agriculture and forest conservation office (AFCO) is the other formal institutional arrangement that is engaged in coffee forest resources management activities. They work in transitional zone area of the forest, but also participated in activities like “cut and care” system (the principle that local communities should undertake regeneration activities if they wants to use trees for different construction and home purpose), fire management system (wild fire of forest for beekeeping), awareness creation service to local community and plantation of trees and coffee in biosphere reserve areas.

Illu Abba Bora zone forest resource and wild animal enterprise also engaged in the management and conservation activities of coffee forest in the study areas. The enterprise have five district in the five selected biosphere areas and work in all woredas that coffees forest are adjacent to the community. The major activities of this enterprise is organizing and controlling the activities of all member of district workers regarding the management of protected coffee forest areas, demarcation of forest boundaries at different management areas. As the manager of the enterprise said, the enterprise is self-help organization and not supported by government, it depends on self-generated income by conducting different activities like, planting of different forest products and selling them to the farmers. They raise the issue of human resource as one of the big problem in effective management of coffee forest in the all biosphere reserve areas. As key informants from agriculture and forest conservation office indicate, the enterprise only stand for its own benefit than conserving the forest area, it participated in few management activities like demarcation of different management zone in the years interval merely by marking red line on trees, otherwise they give more attention to the their own income generation activities.

At the kebele level Development Agents (DA's) are responsible for planning and implementing different activities through the structure of formal institution. Among the activities they are undertaking development team based afforestation, crop production, and conservation of coffee forest and carrying out control of soil conservation activities are the major one. Development teams are important to manage coffee forest resources at local level, they work together with the local community and undertake awareness creation activities at FTC regarding the importance of forest resource in protected areas.

Furthermore, different non-governmental organization (NGO's) like SLM, ECFF, PHE, and Ethio-wetlands are also other stakeholders that are participated in the management activities of coffee forest. Almost all of them are engaged in activities like Participatory forest management (PFM), provision of equipment's and material, awareness creation service about biosphere reserve areas. Some of the NGO's have an advisory board in the four kebele which protected coffee forest are adjoining. The advisory board have an office at local level to discuss on issue of forest resource management and problem associated with forest management with local communities. As the woreda administrator said to enhance the livelihood of local community in their own garden coffee area without disturbing the protected forest, the role of different NGO's are high. For example ECFF provide portable solar machines that reduce local community dependency on forest resources.

4.3.3. **Rules affecting community participation to manage coffee forest**

In the study area even though the degree of participation differ from individual to individual, all of the local community members have participated in different kinds of management activities to protect the coffee forest area. Among the management activities performed by local communities to protect the coffee forest area planting different kinds of trees, regeneration activities, group meeting regarding the protectionof coffee forestarea and collective action activities like group work are the major one. As elderly key informants indicated, after coffee forest area come under the control of state as a national forest priority area, participation of local community in the management activities are decreased. The rule commenced to govern the forest was cause for a number of household'seviction from their coffee plots on which their livelihood was dependent for many years. Demarcation rules, and ownership right are the major factors that affecting

participation of local community in coffee forest management activities. Thus, in the following sub-section this rules and regulation would be discussed in detail.

4.3.3.1.**Demarcation rule and participation in coffee forest management**

In the study area, the current demarcation rules that used to govern the coffee forest area is not respected by most of the sampled respondents. Majority of the respondents 73.6% perceived demarcation rule as not fair and the other 23.2% of the respondents perceive the demarcation rule as fair. The remaining 3.2% of respondents were perceived the demarcation rule as completely fair. Generally, the results obtained from household survey indicated that the current demarcation rule of coffee forest is not fair for the majority of sample respondents.

Table 9: Frequency and percentage distribution of respondents based on their perception regarding the current demarcation rule of coffee forests

Demarcation rule	Frequency	Percent	Cumulative Percent
Completely fair	4	3.2	3.2
Fair	29	23.2	26.4
Not fair	92	73.6	100.0
Total	125	100.0	

Moreover, various studies also indicated that the impact of coffee forest demarcation on the livelihood of the local community is very huge and multi-dimensional. As Zewdie, (2009) study indicated, demarcation rules have no advantage for the adjacent community; all it can bring is poverty resulting from the exclusion of community from accessing forest products mainly wild coffee.

Similarly, in-depth interview result with local community elders and FGD discussant group revealed that, demarcation of forest resource has brought impacts on reduced role of local community regarding the use and management right of coffee forest in biosphere reserve area (core and buffer) zone. As they said, there are some activities which the community are allowed to do but some others are forbidden and restricted by law.

As informant point out the core zone are securely protected site for conserving biological diversity by restricting access. In this management zone many activities are prohibited, including expansion of agricultural land, management of wild coffee, settlement, livestock grazing, timber extraction and collection of dead trees, wild honey harvesting, hunting and grazing. As the biosphere management guideline indicates, only four activities are allowed in the core zone area i.e. enrichment of plants using indigenous species, establishment of research plots, ecotourism and education and training center. Although the guideline says this, key informants at woreda agricultural and forest conservation office director indicates, local communities can also use different spices that do not exist in the buffer zone area but they are not allowed to cut and carry.

The elderly key informants also add up that, buffer zone is surrounded or contiguous to the core zone. This area act as a buffer for the core zone and accommodate more human activities. In buffer zone management area more than ten activities are prohibited, including settlement, introduction of coffee varieties, planting exotic trees timber harvesting and hunting of wild animals are the major one. In this management zone activities like small-scale agricultural activities, (without expansion of the existing farm land), coffee forest management (without expansion of forest land), traditional honey production and other few activities are allowed.

Preventing local community from accessing core zone areas and limited their use right to the buffer zone are intend to reduce pressure on forest. The goal of current demarcation rule is preserving the remaining bio-diversity in the coffee forest area. As key informants interview with district manager of bio-sphere reserve indicates, different activities are performed to conserve forest and its inhabited bio-diversity without affecting the livelihood of local communities. As he said;

> *We are not sustaining the forest at the cost of local community livelihood, we gave them another option that can enhance their productivity at their garden coffee forest areas. Facilitating and providing different extension service at FTC center, regarding how to get better production in their own garden coffee area without disturbing protected forest in demarcated areas are the major activities that we currently working through cooperating with different stakeholder* (Field interview:15,2,2015).

Generally, demarcation rule of coffee forest initiated by government to conserve primary coffee forest in different parts of the country is one of the rule that operated as disincentive for local community to participate in coffee forest management activities in the study area.

Local community participation in decision making process

Empowering local citizens and community organizations in decision-making processes, not only increases efficiency, but also provides a real possibility to individuals or groups to transform their choices into desired actions and outcomes FAO, (2010). In the study area the participation of local community in any kind of decision making process is very low, and from the total respondents only few of them had a chance to participate in the decision making activities at local level and the

majority of them are not participates in any decision making process regarding the management of coffee forest at any level.

Table 10: Frequency and percentage distribution of household based on their participation in to decision making process

Participation in decision making process	Frequency	Percent	Cumulative Percent
No	109	87.2	87.2
Yes	16	12.8	100.0
Total	125	100.0	

The above table indicated that, 87.2% of respondentsare not participated in decision making process but only 12.8% of respondents have a chance to participate in decision making process at local level. This implies that majority of the respondents are neither the initiator nor the major factor in making decision over events affecting their lives.

Likewise, in-depth interview result with local community elders indicated, government first demarcate the forest without any prior participation and awareness creation among the local communities. However, only few member of the communities were got the chance to participate in discussion and decision making process. Indeed, the first target of the policy was saving the forest from deforestation and then after, turning in to local community participation and giving awareness creation about the rule that govern the coffee forest areas. This "prior action and late participation" principle of government create a confusion on the local communities initially when the rule was applied. Regarding this issue 62 years male interviewee told the researcher that;

> *For the first time stranger come to our area and mark the red line on road, home and big trees, for the moment none of us knows what is going on, after few weeks they return back*

and took our lands and forest that we inherited from our forefather (field interview, 15,2 2015).

FGD discussant group also indicated that, the rule that currently governing the coffee forest is directly imposed from the government bodies without any prior participation of the community. This rule is discouraging the participation of the community in coffee forest management through imposing restriction over the use right of different forest products. prohibition of entering the core zone and conducting different management activities; prohibition of selective use of trees for timber and their own household consumption; limited access of forest resource in the buffer zone and prohibition of collecting fuel wood from both core and buffer zone are some of the rule that imposed on the local community without any intense participation of them in decision making process.

The absence of community participation in decision making process initially when the rule commenced was another factor that operates as disincentive for local communities to participate in the management activities of coffee forest at biosphere reserve areas.

4.3.3.2.**Ownership right and participation in coffee forest management**

The respondents were asked whether ownership right of coffee forest at bio-sphere area is secure or not. The following frequency table is used to indicate the ownership right of respondents in protected coffee forest area.

Table 11: Frequency and percentage distribution of respondents in termsof their ownership security

ownership right	Frequency	Percent	Cumulative Percent
Secure	14	11.2	11.2

Insecure	111	88.8	100.0
Total	125	100.0	

The above result shows that, 88.8 % of respondents answered the ownership right of coffee forest in protected area as insecure and the remaining 11.2 % of them on the other hand answered the ownership right of coffee forest in protected area as secure. The survey result indicated that, majority of the respondents have insecure ownership right over their coffee forest resources and this in turn, affect their participation in the management activities.

Yeraswork, (2000) clearly stated the importance of secure tenure system in the management of land and land related natural resource. He argued that secure tenure system plays a key role in managing natural resources while, insecure tenure system is detrimental the adoption of conservation practice by local communities. Interview result with FGD discussant groupalso indicated that, in the protected area ownership right of the local communities are not secure; they do not have certificate for their buffer zone area (semi-forest coffee) plots up to now and the bad demarcation experiences they have encountered in the past decrease their participation to manage coffee forest.

As it was mentioned above in the study area the use and management right of forest resource in different management zone is not similar. In this regard, in the core zone area of coffee forest, local communities have limited operational level (access and withdraw) right, i.e., they have the right to enter in to the coffee forest area and harvest only spices without any management activities. Any other activities like wild coffee harvesting, management, beekeeping, timber extraction, etc are strictly forbidden. In the core zone, local community have no right over collective-choice level (management, exclusion and alienation) right at all.

On the contrary, the local community have relatively both full and limited operational level (access and withdraw) right in the buffer zone. Products like wild coffee, traditional honey production and different spices are accessed and withdrew by the farmers, but some products like timber harvesting, animal fodder, modern beekeeping and fuel woods are not allowed to access and withdrew. In this management zone local community also has some collective-choice level (management and exclusion) right over products like semi-forest coffee and honey but they do not have alienation right at all.

Regarding their participation in to management activities at biosphere reserve area, the 62 years male interviewee said;

> *Before demarcation core zone coffee forest area forest was our common property resources and the buffer zone area was our individual private plot. We used and managed the common property resource in a sustainable way as we manage our private forest resources for the past many years, but now it is government that control our previous private and common property coffee forest areas. Therefore, after demarcation our role in the use and management of coffee forest is decreased as compare to the previous time.*

The above interview result revealed that, local community has lost its ownership right in protected coffee forest area and their participation in management activities are decreased as compare to before demarcation time in which they have secure ownership right. The ownership right of coffee forest in bio-sphere area is the other rules that operate as disincentive for the local communities to participate in the management of protected coffee forest area.

4.4. Attributes of the coffee forest user community

4.4.1. **Cohesiveness, Heterogeneity and Group Size**

Community attributes have made crucial contributions to the enforcement and maintenance of the rules constituting the management of the common property forests. These community traits are: Cohesiveness of communities (engendered by history/myth as to the common origin, the existence of venerated community symbols, and fairly small size, homogeneity of communities, in terms of occupation and wealth, insulation from external forces such as commercial interests (Yeraswork2001).

Cohesiveness is one important attributes of the community that positively affectthemanagement of coffee forest in the study area. In Iluu Abba Bora Oromo's Consanguineand affinal kinship relations are widely observed. They trace consanguine kinship groups through patrilineal family that is common among the Oromo people (Bartels1975in Zewdie 2009:17). As elderly key informants indicated, a decades ago local community of Bilo-Nopha area was highly cohesive due to their common cultural beliefs, norms and values. They have a culture of common life and their attachment was very high. In the past time Oromo people had its own traditional beliefs *waqefanna*. It is belief in one God which is the creator of the whole universe and encompasses forest ritual and scared forests. At that time the use over coffee forest area was depend on the ancestral background which was known as *JahanNoonnoo*. *JahanNoonnoos*is kinship system among Illu Abba Bora Oromo which discussed on a right claim to share of the forest from elders controlling the allocation. Hence, people who could have traced their descent from the ancestral background used and managed the coffee forest area and non-members were excluded from the use right. Through using their common ancestral background,local community of Bilo-Nopha village preserve their coffee forest for the past many years.

As literatures indicated, following the agrarian reform of 1975 the role of customary institution in general and the role of kinship in particularcease to exist and replaced by peasant association and different committee established to conserve forestresource throughout of the country.Afterward local communities are also ethnicallyheterogeneousresulting from their origins in Tigray, Wollo and Gonder through government-initiated settlement program.

As elderly key informants indicated, following the abolishment of indigenous institutions and arrivals of re-settlers from other parts of the country there was a problem of coffee forest management in the study area. The competition over forest products and agricultural land expansion was become high, where the forest accessed openly due to the devaluing of customary rules. Locals was competing to hold the forest for coffee plantation and landless individual competing to hold the forest either for farm land or coffee plantation.

The study area communityis also known by its heterogeneity, in terms of occupation, belief system, and other characters. As the survey result indicated, most of the communities in the study area depends on forest and forest derived resource, crop production and cattle rising as their means of livelihood strategies, they also belongs to the different religious affiliation and ethnic groups. As secondary data obtained from woreda communication office indicated, among the total population in the woreda 50% of them are Protestant and the remaining 28% and 22% are the followers of orthodox and Muslim religious group respectively. On the other hand, three ethnic groups are also exist in the study area from Oromo, Amara and Tigrian peoples, which consists, 75%, 15% and 10% of total population respectively.

In the same way, respondents were asked whether the heterogeneity of the community in terms of occupation and ethnicity has an impact on their participation in to coffee forest management

activities or not. Accordingly, 83.2% of respondents answered heterogeneity of the community have no impact on their participation in to coffee forest management but only 16.8% of respondents responded that heterogeneity has impact on their participation in to coffee forest management.

Table 12: frequency and percentage distribution of respondents in terms of their perception regarding the impact of heterogeneity in coffee forest management

Heterogeneity of the community	Frequency	Percent	Cumulative Percent
No	104	83.2	83.2
Yes	21	16.8	100.0
Total	125	100.0	

The household survey result implies, majority of the respondents perceive that heterogeneity of the community has no impact on their participation into coffee forest management activities.
In fact it is indicated in many literature that, the longtime attachment of forest resource users with the forest concerned, which is very much determined by the 'rootedness' of a community. In this regard, most of the local Oromo population living in their home for many years have high affiliation with the forest and they have their own norm, culture and value towards forest use and management than the re-settlers. In this regard study by Stellmacher, (2006) also revealed that, attribute of the community especially heterogeneity and group size have a great impact in the forest resource management.

Conversely, the result obtained from in-depth interview with elderly key informants and FGD discussant group indicated, heterogeneity of the community have no impact in the management of

coffee forest. Even though, the local community consists different ethnic group especially after the 1980 resettlement program of government both locals and re-settlers have common interest to participate in management of coffee forest area. The re-settlers to the region simply learn and accept the rules of the established group and their cultural difference on the other front do not affect their participation in managing coffee forest. Specifically, one 53 years male local community elder told the researcher the following information regarding the impact of heterogeneity in coffee forest management activities;

> *For the first time when the settlers were arrived, there was a disagreement between us because they clear the coffee forest area for agricultural purpose that our livelihoods are mainly depends, but now a days whether the individual is locals or settlers are not obstacle for the management of coffee forest because there is a common interest between us to manage protected areas* (field interview: 11, 2, 2015).

The FGD discussant group also indicated that, before demarcation there is no effective rule that govern the behavior of local forest user community and there was conflict even between the locals over economic interest, but after the coffee forest area is become under the custody of government, there is a rules that provide a structure toguide which person has which particular right to use which forest resource to what extent, in which way goods and services are to be used, as well as conservation measures that are to be accomplished. Therefore there is no disagreement between locals and re-settlers over the use and management of coffee forest areas.

Group size of the local forest user community is another factor that affect the management of coffee forest. The study area forest user community is large in size, the total number of coffee forest user is 2,670 people living in 1142 household from the three selected site of study woreda.

As elderly key informants indicated, high group size impede the coffee forest through increasing pressure on forest resources and creating conflict of interest and illegal encroachment over the coffee forest user. Moreover, Ostrom(1999) study state three negative impact of large group size. First, cost for devising institutions increases with larger groups of appropriators. Second, larger groups enhance ethnic, cultural, and linguistic diversity, hence reduce homogeneity and thereby complicate shared understanding about resources and their management. Third, larger appropriator groups have more heterogeneous concerns, perceptions and assets.

4.5. Attribute of the coffee forest resources

4.5.1. Topography, distance, size and boundaries of the coffee forest area

The forest of south-west highland of Ethiopia are predominantly of the broad-leafed evergreen type. In the higher areas, above 2,400masl, bamboo (Arundinaria alpine) is found, while in the lower altitudes below 1200masl the high forest grade in to lowland forest and then woodland savannas (Adrian et.al, 2012). The particular study areas of Bilo-Nophawereda is existed in the south-western part of the country and topographically it is not suitable for any agricultural activities and settlement purposes. It is a mountainous land and difficult to conduct any kinds activities in this area. The peculiar characteristics of the coffee forest land is one of the main reason that local community preserve the forest land for many years. In this regard district manager of bio-sphere reserve said that;

> *Bilo-Nopha biosphere reserve area is one of the most unsuitable forest areas for access from the all block that exist under yayo forest. Especially Sulikebele is the most mountainous part of the forest even for the extraction of forest products.*

The other attribute of forest resource that affect the management of forest products are distance from the forest areas. Respondents were asked how much in hour their homes are far from coffee forest area and the following frequency table used to indicate the distance of forest from the home of respondents.

The below table depicts that, 28%, of respondents answered that the distance between their home and coffee forest area is approximately far from 30min -1hr and the other 20.8% respondents answered that the distance between their home and coffee forest area is approximately far from 1hr-1.30hr and 1.30-2.00hr respectively. The remaining 19.2% and 11.2% of respondents were answered about less than 30min and above 2.00hr that their home is far from the coffee forest areas. The above household survey result depicted, majority of the respondents are far in distance up to 2.00hr from the coffee forest area and their participation is less in the management activities. As the further coffee forest area far from the home of local community, the lower participation of local community in coffee forest management.

Table 13: frequency and percentage distribution of respondents in terms of their distance from coffee forest area

Distance from forest	Frequency	Percent	Cumulative Percent
less than 30min	24	19.2	19.2
30-1hr	35	28.0	47.2
1.00hr-1.30hr	26	20.8	68.0
1.30hr-2.00hr	26	20.8	88.8
above 2.00hr	14	11.2	100.0

Total	125	100.0

Similarly, a study conducted by Gunatilake, (1998) indicated that the distance from the forest is also considered as a contributing factor for coffee forest management activities. Proximity to the forest has an effect on natural resource management. Those who are close to the forest will rely more on natural resource than those are far from it. This means if people travel small distance to collect natural resource products, there is a high tendency of visiting on daily or weekly bases.

In the same way to survey, the in-depth interview result obtained from selected local community elders and FGD discussant group also confirm that, the core zone area is very far from the home of local community and it takes up to seven hours to reach in to it. Buffer zone relatively near to the home of local community and they more participated in this management zone than core zone area which far from their home.

Regarding size and boundaries, the coffee forest area is very difficult for effective control. As in-depth interview result with selected local community elders indicated, the size of the coffee forest area is vast and there is no clear boundaries for effective managements. As elderly informants said, the largeness of the coffee forest areas by itself create difficulties of effective control and management activities. Beside to the largeness the coffee forest there is also no clear boundaries that exclude non-member to control illegal users. People from Suphe and Algeworeda come up to Nopha inside of the coffee forest areas to extract forest derived products. There is also no guards to protect and control the coffee forest areas, because it is beyond the capacity of local administration to hire many guards at a time.

As local community elders told to the researcher, even though the coffee forest area is large in size and there is also no clear boundary to exclude others, before demarcation local community by itself manage the coffee forest area sustainably through using their own traditional mechanism without any problems. But after demarcation illegal users are intensified due to government control the forest by prohibiting the use and management right of people.

4.5.2. The qualities of the coffee forest derived resources

The other positive attribute that enhance the protection and maintenance of coffee forest resources are, its derived goods and services. Natural resource endowed with different resource that are necessary needed by the local community, these are its quality of being a source of abundant forest products and/or services when humans invest time, labor and/or capital input to extract them from forest resources (Stellmacher, 2006).

It is the fact that, the coffee forest in the study area are managed not only due to its inconvenient physical attribute but also managed due to different goods and services they provide for the local communities, for instance, Wild coffee, beekeeping, fuel wood, timber for construction and biodiversity conservation are some of the goods and services that coffee forest in the study area provided for the communities. Consequently, the local community members have common interest to manage the coffee forest area.

Table 14: Frequency and percentage distribution of respondents in terms of their perception about multiple utilization of coffee forest.

Note: total is greater than sample because it is multiple response answer

Respondents were asked about the importance of coffee forest based on the goods and service they provides. Accordingly, 96%, of the respondents perceive the importance of coffee forest as source of cash income. The other 64.8% and 56.8% of the respondents were perceive the importance of coffee forest as subsistence use and preserving biodiversity respectively. A sizable few 43.2. % of the respondents perceive the importance of coffee forest as protecting soil erosion and water conservation respectively.

Similarly, the result obtained from in-depth interview with local community elders and FGD discussant group also indicated that, the livelihood of the majority of the communities depend on forest and forest derived resources. They used forest and forest derived product as a means of their

Goods and Service from forest products	frequency	Percent	Percent of case
Cash income earning	120	36.8%	96.0%
Subsistence use	81	24.8%	64.8%
Biodiversity conservation	71	21.8%	56.8%
Soil erosion and water conservation	54	16.6%	43.2%
Total	326	100.0%	260.8%

income generation so as to fulfil the basic needs of their family members. Local community protect and actively participated in the management of coffee forest area as it have significant contribution to their livelihood strategies. In sum, attribute of forest land and its derived goods and service operate as incentive and disincentive to manage coffee forest in the study area.

4.6. Challenges of coffee forest management

Coffee forest of south-western Ethiopia witness alarming deforestation at annual rate of up to 9%. This is mainly due to the expansion of small holder's agriculture and over utilization of timber and non-timber forest products driven by poverty, this development does not only promote change of local climate, land degradation, erosion and scarcity of forest products-all aggravating poverty cycle, but also leads to the irreversible loss of forest bio-diversity and the coffee gene pool (Stellmacher and Mollinga2009:44).To reduce deforestation and preserve different bio-diversity in the coffee forest area, government initiated the national forest priority area (NFPA) program that used to conserve forest in different management zone. The rule that prohibits and limits the use of different coffee forest products in the protected areas by local community create another problems on the lives of forest adjoining communities.

Result from in-depth interview with local community members and FGD discussant group indicated, lack of sense of ownership is one of the major problem that affect the management of coffee forest after demarcation rule imposed on local community to govern the protected areas. Different forms of ownership existed before demarcation including private goods and common property resource. After demarcation, however, the majority of community members have no both operational-level (access and withdrawal) and collective-choice level (management, exclusion and alienation) rights. This makes the use and conservation of coffee forest very difficult. Local community members have been managing their coffee forest resource which they inherited it from their forefather through using indigenous resource management mechanisms for the past many years and still now claim ownership right. In the past years the buffer zone coffee forest area was their own individual plot and the core zone area was used as a common property resources. Before

the current rule used to manage the forest area, there was through indigenous institution like council of elders, and different local organized work groups that common property resource was managed and any kind of illegal use over coffee forest resources were handled. Following the 1975 agrarian reform the role of those indigenous institution was undermined and replaced by different government formal structure like peasant association. Now after the bad demarcation rules, local community loss their privileges and ownership right both at the core and buffer zone areas. Regarding this issue one 54 years old male interviewee said;

> *Before demarcation if someone cut-down the tree in the commonly used coffee forest area, it is our duty to bring him/her in to our local justice,because it is our collective action to to use forest resource properly and manage it. But, now we are deprived the use and management right over our forest resources and it's the government that control our previous forest areas* (field interview: 18, 2, 2015).

Likewise, the results obtained from FGD discussant group also revealed that the imposition of demarcation rule without any intense participation the local community members in decision making process, reduce their participation in coffee forest management activities. As discussants said, after demarcation of coffee forest area, local community feel lack of sense of ownership even for their semi-forest plot in the demarcated areas. This is because they do not have ownership certificate or green card that insure their guaranty of private lands.

Illegal encroachment is another challenges that affect the management of coffee forest in the study area. The illegal use of different forest products like timber logging and cutting trees have increased in the past few years, this is because local communities deprived forest resources ownership that they use and manage for the past many years. As elderly key informants indicated,

monitoring the all parts of the coffee forest area is very difficult, because it covers 13,305 hector undisturbed forest land and there is also no gauds that control the forest area. Illegal encroachment of coffee forest in the protected area is increase due to lack of effective rule that govern the forest areas especially after it become under the ownership of government. Regarding this issue Nopawereda, administrator told the researcher during interviewing that;

> *Illegal encroachment in to the coffee forest is not increased but it is the number of accused people come in to justice was increased. Previously the rule that manage coffee forest was weak and bringing the illegal user of coffee forest to justice was very difficult, but now the rule is relatively strong and the number of accused people as illegal user is increased. This year in our woreda more than thirty accused (peoples) were brought in to justice and have been following their trial through the effective work of different local institutions.*

On contrary to what the Nophaworeda administrator said, that is, there are improvements in controlling illegal encroachments after demarcation of forest as a national priority area, but the result obtained from elderly key informants indicated the reverse to what was said by woreda administrator. As they indicated, currently illegal encroachment is very high as compared to the previous years in which local communities were managed their own forest according to the rules passed in their traditional customs.

Until now the local communities are claiming their ownership of the forest land and still there is conflictual relationships are exist between local communities and government agents. As the informants said, disagreement over the dejure ownership of forest resource in the study area aggravate the expansion of illegal encroachment, rapid deforestation and degradation of forest resource habitants.

In other case, lack of coordination and clear cut area of responsibilities in the different structure of formal institutions are the other challenge of coffee forest management in the study areas. As key informant interview with bio-sphere reserve manager indicated, there is misconception among the different stakeholders in understanding the principle of the rule that govern coffee forest at the core and buffer management areas. On one hand, government agents perceive that there is no difference between the core and buffer management zone in a sense that both areas are protected and any kind of use and management activities are strictly forbidden. On the other hand, other stakeholders like NGO's perceive that there is a difference in the core and buffer management zone by using UNSCO Man and Biosphere principle. According to the principle local community have some use and management right over their buffer zone forest areas. This misconception create a great confusion on the local coffee forest users. As the director of bio-sphere reserve said, thisyear due to misconception of different stakeholders about the rule that govern coffee forest area, five farmers were arrested in the other block of the coffee forest area by using prohibited products in buffer management zone.

These problems of misconception have been arising from lack of coordination among different stakeholders that participated in management activities. The coordination ofdifferent stakeholdersis weak and less organized; all of them work without any common plan and objective that lead to common ends. There is also very less accountability and transparency between different areas of position that facilitate the effective management of coffee forest. Therefore, lack of well-organized relationship between different stakeholders which are engaged in management activities worsen the problem of coffee forest resource management in the study areas.

In conclusion, even though different anthropogenic factors like, overpopulation due to both natural increase and in-migration, using timber for economic and house consumption purpose, conversion of forest land to agricultural areas and new settlements have threatening the existence of different biodiversity which are found in coffee forest areas. However, the rules that formulate to solve the above problem created another big problems on the livelihoods of the local community in the study area. Since the rule that government used are less participatory and derived from the experience of foreign countries, local community had no chance to participated in the situation that affect their lives. The unplanned and unorganized nature of the rule resulted in eviction of local community from their forest land, insecurity of ownership right, illegal encroachment over the protected coffee forest areas and conflict between the local communities and government agents.

Chapter five

5.1. Conclusion and Recommendation

5.1.1. **Conclusion**

Increasing number of scholars and practitioners have come to the conclusion that appropriate and enforced local institutions determine who enjoys which useand access rights to particular forest resources can be enhance the management activities of forest resources. As the finding of this research indicated, in the study area both formal and informal institutions participate in coffee forest management activities directly or indirectly.

Among the formal institutions participating in coffee forest management activities,Bilo-Nophaworeda administration (BNWA), Agriculture and forest conservation office (AFCO),

Illubabor Forest resource and wild animal enterprise (IFRWAE), Development agent (DA) and NGO's like Sustainable land management (SLM), Ethiopian coffee forest forum (ECFF), People health and environment (PHE) and Ethio wet-land are the major one. Formal institutions engaged in coffee forest management activities and influence both operational and collective level right, though imposing different incentive and disincentive on the local forest user communities.

The finding of this study indicated that,Jiga and laffe, Iddir, and council of elders are customary institution which participate in the management activities of coffee forest areas. The role of informal institution is direct at operational level rules (access and withdraw), council of elders and other self-help organizations influence the behavior of forest adjacent local communities in the use and management of bio-sphere reserve areas. However, there is no direct role of local customary institutions in forest resources management particularly in collective-choice rights (exclusion and alienation).

Afterdemarcation rule imposed to govern the behavior of local forest user community, the legal owner of forest is state and previous benefit people got from the coffee forest area is prohibited, this in turn, affect their participation in to coffee forest management activities.The current rule that govern the forest area is imposed on local forest user without any intense participation of them in decision making process. The rule is derived from UNSCO Man and Biosphere principle and imposed to govern their behavior towards forest resources, in this process local forest user communities are neither the initiator nor the major factor in making decision over events affecting their lives. The Absence of local community participation in rule enforcement process is the other factor that discourage theirparticipation in to coffee forest management activities. Insecurity of

ownership especially, after government control the forest and evict farmers from their land is also the other factor that impede the proper management activities of coffee forest in the study area.

Attribute of the community which live in forest adjacent area is the other influencing factor for coffee forest management. In this regard, community cohesiveness, heterogeneity and group size are the major attribute of the community which has positive and negative impact towards coffee forestmanagement. In particular study area, cohesiveness of the community in the past many years was one of the main reason for the preservation of coffee forest area in its current form without any distraction. Although, it is clear stated in many literature heterogeneityof community as hindering factor to adopt good forest management strategies, currently, in the particular study area the existence of re-settlers to the community is not obstacle to the management activities of coffee forest resources.

As the finding of the study further reveals the majority of the people in study areas depend on forest and forest products. The study area coffee forest is source of abundance resources and provides a full range of potential and actual forest resources for local communities.Coffee forest area islocated in mountainous land scape and not suitable for any settlement and agricultural activities, this unsuitable nature of the coffee forest area for different agricultural and settlement purposes create good opportunity for the preservation of the forest areas. Proximity of forest area from the home of local community, the total land size it covers and lack of clear boundaries that excludes members from non-members are the other characteristics of the coffee forest area that impedes the proper management activities. Quality of goods and services derived from the coffee forest area is the other factor that facilitate the management activities. Wild coffee, timber for construction and house consumption and other spices are the main goods and services that local

community benefited from the coffee forest areas as a means of their livelihood strategies and preserve it because of it's their means of existence.

The finding of this study also revealed that, there are many challenges affecting the management of coffee forest in protected coffee forest area, lack of sense of ownership after demarcation of coffee forest as a national forest priority areas, illegal encroachment of coffee forest areas due to lack of effective rule that manage the forest and lack of coordination among different stakeholders participated in the coffee forest management activities are some of the problems that affected the effective management of protected coffee forest in the study areas.

5.1.2. **Recommendation**

Based on the finding of the research the following issues are addressed as recommendation.

- Encouraging and giving recognition to customary self-help working groups and council of elders participated in coffee forest management activities. Natural resource management like coffee forest cannot be possible without active involvement of customary institution in the management activities.
- Facilitating participation of local community in decision making process regarding events affecting their lives. To reduce the illegal use of forest resource and to enhance the active involvement of local community in coffee forest management activities, giving awareness creation services and opening arena of participation is important for the effective co-management activities of forest resources.

- Giving ownership certificate to local community for their semi-forest coffee plots. To create secure ownership and good coffee forest management in buffer zone area giving ownership certification is very important.
- Establishing clear-cut area of responsibility and coordination between different stakeholders participated in coffee forest management. To reduce misconception and fragment work of different stakeholders, the rule that clarifying the position and responsibility of different sector should be necessary.
- Providing material and financial support for government stakeholder directly participated in coffee forest management activities. Strengthing the human and bureaucratic structure government stakeholdersenhance effective management of coffee forest areas.

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