

**ASSESSING EFFECTIVENESS OF LOCAL INSTITUTIONS IN
PARTICIPATORY FOREST MANAGEMENT ARRANGEMENTS:
THE CASE OF TIRO –BOTOR BECHO FOREST, SOUTH
WESTERN ETHIOPIA**

MSc. THESIS

BY

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JIMMA, ETHIOPIA

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FOREST MANAGEMENT ARRANGEMENTS: THE CASE OF TIRO –BOTOR
BECHO FOREST, SOUTH WESTERN ETHIOPIA**

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MSc. Thesis Draft

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DEDICATION

I dedicate this thesis manuscript to my friend Dereje Damena Jote with whom I shared numerous life and his support will never be forgotten in my life.

BIOGRAPHY

The author was born on December 19, 1988 in Oromia National regional state, Jimma Zone, Botor Tollay woreda, Wayu town which established from Chora Botor woreda . It exists at about 288 kilometer south west of Addis Ababa. The author was born from his father Ato Mekonnen Tilahun and his mother W/ro Shawaye Badada. He attended his Elementary education (1-8): From (1995-2002G.C), at Wayuwadessa Elementary School and High school (9-10): From (2003-2004G.C), at Limu Genet Senior Secondary School. Then he joined Asella ATVET College in 2005 and graduated in 2007 with diploma from the department of Natural Resource Management from Asella Agriculture technical, Vocational Education Training. The author employed and worked at Chora Botor Woreda Agricultural and Natural Resource Office, for 4 years as expert of forest development and he again joined Jimma University in 2012 and graduated with B.Sc. degree in Natural Resource Management in July 2013. After his graduation, he was served from 2014 to 2017. He has been working in Botor Tollay woreda Agricultural and Natural Resource Office in the position of Natural Resource management expert, until he got the chance to rejoin Jimma University in October 2018 to pursue his M.Sc. degree in Natural Resource Management specialization in Forest and nature conservation and management.

STATEMENT OF THE AUTHOR

First, I declare that this thesis is my work and all published and unpublished references used for this thesis have been properly acknowledged. This thesis has been submitted in partial fulfillment of the requirements for MSc. degree at Jimma University and is deposited at the University Library to be made available to borrowers under rules of the Library. Brief quotations from this thesis are allowed without special permission provided that accurate acknowledgement of source is made. Requests for permission for extended quotation or reproduction of this manuscript in whole or in part may be granted by the head of the department of Natural Resource Management or the Dean of the School of Graduate Studies when in his or her judgment the proposed use of the material is in the interest of scholarship. In all other instances, however, permissions must be obtained from the author.

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ACRONOM AND ABBREVIATION

ANOVA	Analysis of variance
EFAP	Ethiopian Forestry Action Program
FAO	Food and Agricultural Organization
FARM AFRICA	Food and Agricultural Research Management of Africa
FDRE	Federal Democratic Republic of Ethiopia
FPA	Forest Priority Area
FUC/G	Forest User Cooperatives/Groups
FGD	Focus Group Discussion
JFM	Joint Forest Management
MELCA	Movement for Ecological Learning and Community Action
MOA	Ministry of Agriculture
MOARD	Ministry of Agriculture and Rural Development
NFPAS	National Forest priority Areas
OBNRDEP	Oromia Bureau of Natural Resource Development and Environmental Protection
OBOARD	Oromia Bureau of Agricultural and Rural Development
OBOLEP	Oromia Bureau of Land and Environmental Protection
OFAP	Oromia Forestry Action Program
OFWE	Oromia Forest and Wildlife Enterprise
ONRS	Oromia National Regional State
PES	Payments for Environmental Services
PFM	Participatory Forest Management
RFPAS	Regional Forest Priority Areas
SFM	Sustainable Forest Management
SNNP	South Nation, Nationalities and People

ABSTRACT

The economy of Ethiopia and the livelihoods of its people largely depend on the utilization of forest resources. Despite the significant role of forest resources in Ethiopia, its management has been challenged because of poor legal and institutional framework, which resulted in considerable loss of the country's forest cover and bio-diversity resources. Ethiopia has introduced Participatory Forest Management (PFM) around mid-1990s to establish effective alternative to address the prevailing forest management problems in the country. The new scheme created a framework for collaborative forest management between local communities and government forestry agencies by defining their respective roles, responsibilities and benefits in the management of forest resources. It attempted to create a local solution to the forest management problems by building community based institutional arrangement and accountability to foster collective action for better management and use of forest resources. However, there is limited empirical evidence whether participatory forest management has ensured sustainable forest management and contributed to the livelihoods of forest dependent communities. Therefore, this study aims at assessing the performances of participatory forest management institutions in Tiro- Botor becho National forest priority area. The study was designed specifically to assess the similarities and differences among different local institutions at different scales in sustainable forest management and the diverse benefits that communities derive from forest resources as an incentive for engaging in sustainable forest management. The study employed both qualitative and quantitative data collection methods. About 120 respondents from three forest cooperatives were randomly selected for interview. Besides the structured interview, key informant interview and focus group discussion were conducted to triangulate data. Descriptive statistics is used for data analysis. This study revealed that the establishment of PFM in the study area facilitated easy access for local community to extract various forest resources. The PFM members perceive that they can easily access different forest products such as fuel wood, poles for building houses and fences, grass for livestock and grazing land, medicinal plants for human and livestock, edible wild fruits and fibers for hand crafts preparation. The study also revealed that drivers of deforestation and forest degradation such as agricultural expansion, illegal harvesting of forest products, overgrazing in the forest, and forest fire were reduced after the establishment of PFM institutional arrangement in the study area. About 83% of the respondents believe that forest conditions such as regeneration have improved since the establishment of PFM in the study area. The improvement in forest condition is mainly because of active involvement of PFM members in exercising their use right and shoulder management obligations. Therefore, this study concludes that the establishment of PFM institution in the study area has a potential to achieve the twin goals of sustainable forest management and improving the livelihoods of forest dependent communities. However, emphasis should be given to improve the awareness of community members about different rules and regulations, enforce monitoring system and accountability of different parties involved in the forest management.

Key words: PFM, Forest benefit, forest management, Tiro-Botorbecho forest.

1. INTRODUCTION

Ethiopia has experienced severe deforestation and degradation of its biological diversity mainly due to faulty property right structure and institutional stagnation that result in confusion, insecurity, and resource use conflicts (Ayana, 2013 ;Kasa *et al.*,2016). Various legislative measures were enforced to avert the grim situation and ensure sustainable forest management. However, the major change in direction has occurred since the mid-1990swhen forest management responsibilities has been shared between government and community based institutions (Alemahu, 2008 ; 2018). The forest Proclamation No.94/ 1994 recognized, for the first time, the need to involve communities residing within and around the forests in development and benefit sharing (Anonymous, 1999; Alden and Mbaya ,2001). The new approach is aimed to balance social, environmental, and economic objectives by reconsidering the role of local-level institutions in resource management and involve local communities in decision-making (Ayana *et al.*, 2018). Intervention by which community could be benefited was started and more scaled –up throughout the country. Participatory forest management was introduced to Ethiopia and expanded significantly by Farm Africa, European Union and GTZ with the dual objectives of conserving forest resources and improving the sustainable livelihood of the community (Yinager *et al.*, 2007). Involving local people in the management of natural resources has been identified as one of the most appropriate approaches to sustainable development. Excluding people from decision making roles to resources has been shown to increase poverty and dissolve local levels responsibility (FAO, 2007). However, in many cases people’s perceptions of these efforts are rarely elicited, analyzed and included in decision-making processes and readjustment measures have been taken (Saguye , 2017). Despite its objectives and strategies, PFM is not as such serving its dual purpose. Institutional process and performance are controversial among scholars, policy makers, practitioners and development.

Policies that emphasize on the community being influenced by intervention such as PFM programs should relate people’s access to the livelihood condition of forest dweller community (Das, 2009). Partnerships, collaboration and multi-level interaction at various institutional and geographical scales are fundamentally essential for solving forest resource and socio-economic problems. Ethiopia has revised the 2007 forest law and enacted a new

forest proclamation in January 2018 that further strengthened participatory forest management approach (Ayana, *et al.*, 2018). Understanding local communities' forest benefit sharing, perceptions and attitudes towards forest management institutions and the factors that influence their perceptions is important for designing management policies that are sensitive to their need (Tesfaye, 2011).

1.1. Statement of the problem

To date more than 210 community based forest management¹ groups are managing about 1,752,488 million hectares of forest in Ethiopia, (Reda and Beshah, 2019). PFM provides local incentives to local communities to conserve forest resource through sharing the costs and benefits of conservation. The benefits may include forest use right (policy), environmental, economic through sale of forest products, and employment opportunities. However, despite the move and interest to further promote the participatory resource management approach in Ethiopia, community based forest management institutions are alleged for their incapability to provide a significant impact on the natural resource and livelihood of forest -dependent community mainly due to their failure to take into account the complex and multi-layered socio-political, economic and equity issues. Notwithstanding the current progress in stimulating community involvement in resource management (Alemayehu and Wiersum, 2006; Ayana *et al.* 2018), the new scheme poorly addressed the intra-community dynamics and unequal participation among different social group. The women, who were increasingly targeted as primary beneficiaries of forest management institutions, are left aside from active participation and reaping the benefit. With the expansion of community based forest resource management regime, a question of efficiency, sustainability, empowerment, and equitable allocation of the benefits and costs of participatory forest management arrangement has been emerging as a central theme than ever before. The government commitment is to scale-up more institutional arrangements but fair and equitable forest benefit distribution has been ignored. In the Ethiopian case in general and in the study area in particular, therefore, these questions need to be properly addressed to give a new direction for participatory forest management. Few previous studies conducted on the participatory forest management of Ethiopia (Reda, 2019) focused on limited dimension or variables governing the whole system.

¹In this study, community based forest management scheme encompasses range of forest management arrangements including participatory forest management, joint forest management and collaborative forest management.

The new forest management regimes had invited local people to participate in planning, designing, implementing, managing and benefit sharing of forest resources. Integrating the needs of local communities in forest conservation processes are key for the effectiveness of PFM institution in ensuring sustainable forest management and improving the livelihoods of the local communities (Ayana *et al.*, 2018). However, the forest dependent communities were rarely considered in decision-making processes. Understanding local communities need in the implementation of forest policy and factors affecting their need so as to know the effectiveness of local forest management institutions are seldom considered. For sustainable forest resources management to take place it is essential to understand the interfaces among different institutional actors involved in the new forest management regimes. There is a need to clearly understand who could potentially gain or lose benefits by the establishment of forest management institutions. In the absence of effective institutional arrangement at federal, regional and local levels, natural resources are in danger of adverse effects. Hence, community based natural resource management institutions and natural resource management issues are not a discrete concern, but embedded within complex and multi-layered socio-political and economic affairs. The broad variety of factors including perspectives, values and interests, power relations and societal and political trends are rarely considered (Anonymous, 2013). It focused on the robustness of social-policy system which result in efficient use and sustainable conservation of the resources, equitable allocation of the benefits, durable institutions governing the resources, and empowerment of resource dependent communities in the study area.

1.2. Objectives

1.2.1. General objective

The general objective of this study was to assess the performances of participatory forest management institutions in Tiro- Botorbecho National forest priority area.

1.2.2. Specific objectives

The specific objectives of this study were :

- To assess similarities and differences among different institutions at different scales in sustainable forest management.

- To identify the diverse benefits that communities derive from forest resources as an incentive for engaging in sustainable forest management.
- To assess communities perception on the forest status.

1.3. Research questions

- What are status of similarities and differences in the performance of forest management institutions among different forest user cooperatives?
- What are forest benefits that are derived from forest institutions for the local community?
- What are communities perception towards forest status?

1.4. Significance of the study

The research finding of this study is believed to contribute to filling the knowledge gap to better understand the functioning of community based forest management institutions, to deliver the information on the benefit sharing mechanisms and participation of forest resource users , similarities and differences among forest users groups in the process of sustainable forest management performances. The study findings can be used as an input for policy makers to take into account the role of institutional arrangements in the governance of sustainable forest resource management based on activities of forest policy enforcement required. It also put light on areas for further research regarding inter-institutional linkages in forest resource management.

1.5. Scope and limitation of the study

The study was covered only one national forest priority area out of 58 national forest priority area due to resource and time limitation. It focused on factors affecting sustainable management of forest resources based on three variables, namely the characteristics of the resource, the characteristics of the users including the actors who are involved in managing the resource, forest-livelihoods relationships and the institutional arrangements through which the resources are managed. But it did not assess the biophysical connection with sustainability of forest management. Hence, the aspect regarding the impact of biophysical resources assessments deserves future research.

2. LITERATURE REVIEW

2.1. Basic Concepts in Forest Management Dynamics

2.1.1. Sustainable forest management (SFM)

The concept of sustainability in a forestry perspective has a development history that dates back over 300 years (Wainaina, 2015). In recent decades; it has spread in an exceptional manner to other areas. To some authors, the concept of sustainability is currently belonging to the field of social ethics (Larson and Pulhin , 2012) . “The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems” (Larson, 2012) .This is the concept which harmonizes ecological and socio-economic concerns at different scales of management and for different time periods and are just refining the definition of sustainable development given by the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Macharia,2015) .

Sustained forest management entails the balancing of the economic, environmental and social functions and values of forest for the benefit of present and future generations (FAO, 2000).It refers to recognitions of the needs of forest dependent communities; increased benefits from forest resource utilization for the rural population, increased local involvement in decision making on forest development and conservation programs. Countless rural development interventions have failed to make a long-term impact because of inadequate involvement of local people (Macharia,2015). Greater attention must be given to creating incentives for local participation and ensuring that communities are involved meaningfully in forest management planning and implementations. The roles of women and nongovernmental organizations are especially important (Tesfaye, 2011). Community-based forest resources management (CBFRM) conceptually embraces the notion that forests should serve people and that the rural population should have a natural and formal role to play in co-managing forest resources. Hence, co-management explains features of partnerships between local communities or resource users and agencies of national governments, which normally possess the legal

mandate for environmental protection. Inter-institutional linkages and partnerships in managing the common pool resources limit the access of outsiders and self-regulating its own use through various forms of incentives (Berkes, 2006 cited in Adhikari, 2007). If members of forest cooperatives are assured that future harvests would be theirs by right, and not end up being harvested by others, they have the economic incentives to self-regulate resource use (Adhikari, 2007).

2.1.2. Community based forest management (CBFM)

Environmental or resource management regime has varied definitions. In its most basic sense, community based forest management (CBFM) is the sharing of power and responsibility between the government and local resource users (Deresa , 2011). It can be defined as a situation in which two or more social actors negotiate, define and guarantee between or amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or a set of natural resources, while the state share responsibilities of decision making with the community institutions (Gibson *et al*, 2000).

Community-based forest resources management (CBFRM) conceptually embraces the notion that forests should serve people and that the rural population should have a natural and formal role to play in co-managing forest resources. Hence, CBFM explains features of partnerships between local communities or resource users and agencies of national governments, which normally possess the legal mandate for environmental protection. Collaborations between forest departments and communities are formalized through joint forest management agreements under which a joint forest management committee (JFMC) is formed in every village participating in the program. All households in a JFM village become members of the JFMC. Proclamation No.1065/2018 article seven defines as a forest developed, conserved, utilized and administered by the community on its private or communal possession based on by laws(local agreement) and plans developed by the local community.

2.1.3. Socio-economic impacts of community based forest management

The role of forest in any country or region settled by two poles, the forest resource (supply) on one hand and the need by the society (demand) on the other hand. Neither supply nor demanded are static. The forest resource can be managed for the purpose of optimal supply,

but with time, society changes its use of products and services in quality as well as in quantity (Tesfaye, 2011). Forest and trees are an important resources base for a sustainable economic and social development, providing a large variety of wood products, non-wood products and social services. According to Mohammed (2013), socio-economic issues that pressure local communities to use forest resources are farm land, awareness level, family size, and income.

Therefore, the system of community based forest management (participatory forest management) seeks to initiate the process of eliminating the main causes of forest depletion through local community needs by linking socio-economic situation with sustainable forest management.

2.1.4. Participatory forest management (PFM)

The ‘PFM’ in Ethiopia is synonymous with joint forest management where the government owns the forest and forest land but vests use right to local communities with an arrangement where the resource is subject to collaborative management between local user groups and public forest administration (Ayana, 2007). Management approach executed through the agreement between the state and the local community that inhibit inside or around the forest area over the management, protection and utilization of forests owned by the state on the basis of predefined responsibilities and benefit sharing mechanisms Proc.1065/2018 . Participatory forest management captures both the joint management and community management (Duguma *et al.*,2018).In the process of participatory forest management implementation the concession, state forest ,royalty fee, forest management plan, local agreement, and benefit sharing terms often used and so their definition/expression stated.

Concession: a contract given to a person with legal standing to develop, conserve or to utilize a given state forest for a defined period of time art.10 /Proc.1065/2018;whereas‘’The grant of some land to be used for a specified purpose’’ by Oxford dictionary.

Forest: ‘‘preparation and dissemination of best practices and technologies on the development, conservation and utilization of forests to enhance the knowledge and skills of forest developers (Proclamation.1065 art.28).’’ ‘‘Forest’’ is an area of more than 0.5–1.0 ha with a minimum ‘‘tree’’ crown cover of 10–30%, with ‘‘tree’’ defined as a plant with the capability of growing to be more than 2–5 m tall (FAO,2001).

Natural forest: a forest which is composed of naturally grown trees, shrubs and other woody and non-woody plants, article 21 Proc.1065/2018 ; whereas forest land is defined as plot of land demarcated or designed for the purpose of forest development and conservation.

State forest: any exclusively, conserved, and productive forest, which is under the ownership of the FDRE art.6 of Proc.1065/2018.

Forest management plan: a plan developed for the development, conservation and utilization of natural or plantation forests by conducting a detailed study of the forest resources (Duguma *et al.*,2018).

Local bylaws (local agreement): The local bylaws are often local arrangements between members of the community and are used to resolve issues between members or groups that feel they are disadvantaged in how they are rewarded (Duguma *et al.*,2018).

Royalty fee: payment made by a person engaged in the business of forest products for the movement of such products from one place to another and the payment collected from one place to another and the payment collected from the transaction shall be allocated for sustainable forest development on the basis of art.27 Proc.1065/2018; where as defined by Oxford dictionary as “Payment to the holder of a patent, copyright or resource for the right to use their property”.

Benefit sharing: The specifications available on benefit sharing were found to be very weak in all the countries (Duguma *et al.*, 2018).Benefit sharing is where profits or products are distributed either among community members, between communities and the private sector or between communities and the state. Benefit sharing is a potent tool for active community involvement in natural resource management (Macharia, 2015). The distribution of benefits among the members of the community has to be fair and equitable. For distribution of benefits, interests of the weaker marginalized sections of the society have to be taken in to account predominantly. Interests of women should also be guarded as they are the ones who are a primarily associated with forest ecosystems and spend a great deal of time inside the forest areas. The government has indicated socio-economic conditions of forest dweller community concerns are intertwined and needed to be addressed simultaneously.

However, there is need to address the implementation of government policies and greater communication and involvement of local communities, especially in out-lining the opportunities that exist for them (FAO, 2010). In the past, some communities have encroached on forest areas arguing that the benefits from the forests accrue more to “outsiders” through the excision and licensing processes than to forest adjacent communities. There is also limited filling knowledge gap of the stakeholders’ especially local community through initiation of different awareness creation program and consultation with communities about the rules and procedures of the forest resource co-management which limits their ability to take advantage of their property right to use forest resources in sustainable way. Individuals are unlikely to alter their behaviors without receiving some sort of direct benefit and protected area will not survive for long whenever local people are denied access to needed resources and skills to manage Njogu (2004).

Participatory forest management helps local communities to generate sustainable and competitive income through sustainable use of forests. Its approach is based on a close integration of resources, human and institutional development in a way designed to reduce pressure on forests, their diversity and resources (Holmes and Watts, 2008). Active involvement of all stakeholders especially local communities is currently hampered by lack of information on potential benefits as well as lack of awareness on the mechanisms for benefit sharing (FAO, 2015). Benefit sharing was one of the strongest reasons for acceptance and success of JFM in India as communities tend to have high expectations of immediate benefits that could accrue through their involvement in participatory forest management (Phiri, 2009). The cost-benefit sharing mechanisms should be clearly defined before deciding on the proportion of share of benefits by taking into account various costs and benefits to be incurred. Local community participation is the key strategy to current forestry conservation and management (FAO, 2015). Therefore, forest benefit sharing is allocation of benefits between government, community and among community from forests, forest Proclamation No.31/1065/2018.

2.2. Forest Management Dynamics in Ethiopia

The modern management of Ethiopian forests can be categorized into three periods. First, at the beginning of the 20th century, Menelik II established the first forest regulations. This

attempt to regulate the conservation and utilization of forests included demarcating boundaries and designating crown forestlands. Additional efforts were made by the government to put the forest resources under formal management, but these ideas were never put into practice (Amente, 2006). Second, after all land was nationalized in 1975 a comprehensive natural forest inventory was completed (Stellmacher, 2013). Based on the inventory results, the Forestry and Wildlife Development Authority created five pilot projects for a new natural forest management program. The five forest areas chosen were Munessa Shashemene, Tiro-Boter Becho, Menagesha Suba, Dindin and Megada State forests. Some of the activities initiated included detailed forest inventories, new road construction, adoption of improved logging techniques, and testing of various silvicultural systems. Plantations were large-scale and established in densely populated areas, where they took land away from the surrounding farmers. Continued establishment of the plantations was halted due to strong resistance from farmers (Amente, 2006).

Shortly, after the pilot projects, the government designated 58 national Forest Priority Areas (FPAs), covering an estimated area of 2.3 million hectares (Kubsa & Tadesse, 2002) but currently reached to more than 3.5 million hectares (Reda, 2019). The national FPAs were created to establish the protection and development of the remaining natural forests; 40% of the forest area was to be used for production forestry, while the remaining 60% was dedicated to biodiversity conservation and watershed management. However, out of the 58 designated areas, management plans were only created for eight, and due to lack of forestry skill and knowledge, only two of the formal management plans were ever implemented (Amente, 2002).

The third period and current management policy was created following the decentralization of forest management to the nine regional states. The national regional states and their executive governments now manage the FPAs located within their territory. In some regions, management responsibility was further decentralized to the woreda level (Amente, 2006).

2.2.1. Development of Forest Policy and Legislation in Ethiopia

Forest policy : according to Deresa (2011), forest policy is widely understood as a negotiated agreement among government and other stakeholders on a shared vision on forests and their

use. However, forest policy studies have been the ‘poor aspects’ of research on land use and cover change in the tropical rainforest countries and even the wide range of research conducted on tropical deforestation following the realization of the biodiversity crisis did not include a commensurate increase in studies of forest policy in the tropics. Tropical Forest Action Plans (TFAP) has almost neglected policy measures that would discourage the destruction of forests (Rudel, 2008). Governments of forest rich countries also made effective policy responses to tropical deforestation impossible as they failed to routinely involve citizens in governance, and that lacked the political capital to apply conservation policies that did not enjoy widespread popular support. In some countries the forest policies have aspect to have given attention to issues of sustainability, but they were seldom implemented (Rudel, 2008). Effective sanctions against their violation of law are insufficient, while institutional effort in support of wise natural resource management in the absence of clear use rights is likely to be wasted (Cotula and Mayers, 2009). The ever widening gap between policy and practice further accounts for the decline in forest resources, even in the presence of accommodative policies. There is a positive move that forest policies around the world undergoing a broad based transformation, among other factors, because of the recognition of the growing variety of goods and services provided by forests and trees at the local, national and global levels (Deres,2011).

New Proclamation came into picture during the period of the transitional government, forest conservation, and development and utilization Proclamation No. 94/1994. Concurrently, in connection to this proclamation a working document that has direct relation with forest development and conservation, called Ethiopian Forestry Action Program (EFAP), was also in practice. EFAP set objectives of forestry development, to sustainably increase production of forestry products, to increase agricultural production by reducing forest degradation, conserve forest ecosystems and to improve the welfare of rural communities. These were the tree and forest production program, the forest resource and ecosystems management program, the forest industries development program, and the wood fuel energy efficiency development program (Tesfaye, 2011). These primary programs were backed by four supportive programs, namely, the technology development and dissemination program , the sectorial integration program , the planning, monitoring and evaluation program and the

human resources development program and all programs are governed by four principles: verifying secured resource management, promoting a participatory process of development, facilitating private sector forestry and adopting an integrated approach to forestry sub-sector development also later to Constitution of 1995 and the establishment of the Federal Democratic Republic of Ethiopia, Proclamation No. 94/1994 and EFAP which later turned into Regional Forestry Action Programs (RFAP) are the most known documents as long as forest development is focused.

According to Tadese and Teketay (2018), the modern forest policy concerning forest land ownership, conservation, development and utilization was a phenomenon occurred for the first time during the Italian occupation. However, many indigenous peoples continued to regulate their rights of ownership, use of and access to forests according to their age old customary laws and institution (Deres,2011). About 70% of recent forest cover of Ethiopia is found in Oromia national regional state (Reda and Beshah, 2019). The NFPAs were handed over to the Regions as part of the decentralization in line with article 52 (2) of the FDRE constitution. Accordingly out of 58 NFPAs, 49 fall in Oromia and currently managed as Regional Forest Priority Areas (RFPAs), with concession right of Oromia. Forest and Wildlife Enterprise (OFWE) to own, develop and maintain income generated from the forests .Oromia has formulated different regional forest related laws and working documents that were ratified by the regional legislative body. Among them are Oromia Forestry Action Program (OFAP) which was ratified in 1998 and Oromia Forest Proclamation which was decreed in 2003. OFAP attempts to address the development programs that are associated with forestry and forestry related policy; proposes institutional reforms and investment programs, which facilitate forestry development in Oromia (OFAP-Vol.1, 1998).The forestry sector governance both at federal government and regional states level has been characterized by unstable institutional arrangements suffering from frequent restructuring.(Tadesse and Teketay,2018), stated that forest sector in Ethiopia has undergone over 35 to 40 round of institutional restructuring since 1930s, which is on average once every two years. Especially, the frequent changes in forest policy and organizational structure through newly setting up, merging, shifting, expanding or downsizing for the last 35 years (Berhanu,2008) have significant impact on management of forest resources in the

country. This put sustainable forest management under challenges of competing/conflicting interests among different stakeholders.

Table 1. Summary of forest management approaches in Ethiopia

Policy arrangement dimensions	Historical periods			
	Imperial era (1941–1974)	Early socialist era (1975–1985)	Late socialist era and the transition period (1986–1994)	Federal republic (1995- up to present)
Dominant discourse coalition	Agricultural modernization: Imperial ruling elites (the landed class and the nobility)	Production forestry: classical foresters, FAO, UNDP, and SIDA	Environmental conservation: ecologists, soil scientists, agro-foresters, and biologist	Agricultural intensification: ruling party, private sector, and World Bank
Competing discourse coalition	Forest protection: forestry professionals (mostly expatriates)	Multi-functional forestry: ecologists and conservation biologist	Production forestry: classical foresters, SIDA, and FAO	Economic forestry: forestry professionals
Power configuration	'Absolute' power in the hand of the Emperor and the nobilities who owned most of the forest lands	Highly centralized power arrangement. Top-down flows of command and little or no room for open competition between different views	Authoritative power with the centre, some room for competition between different discourse coalitions	Decentralized democratic system, continuation of the past authoritarian tradition, increasing role of non-state actors
Rules	The five years Imperial Government Plans, the 1965 Forest Law, geared towards exploitation of resources and modernization	The 1975 Land Reform, State ownership of land and all natural resources including forests, the 1980 Forest Law, enormous discretionary power to the State Forest Agency (FAWCDA)	The 1994 Ethiopian Forestry Action Program (EFAP), the 1994 forest law, overemphasis to the environmental role of forests, recognition of regional State forests (first time)	The 1995 constitution, the 2001 Rural Development policy and strategy, and the 2007 Forest Policy, continuation of the State ownership of land and forests

Source: (Ayana *et al.*, 2013).

2.2.2. Forest management institutions and roles in sustainable forest resource management

The analysis of community based forest resource institution is based on concept of common property regime, which require the involvement of a group of people to work together in pursuit of the shared interest (Marshall, 1998), institutionalization, as a process of reducing the transaction cost of negotiation and uncertainty and enhancing the bargaining power of resource users and their capacity to manage the risks encountered. According to North's definition (1990), institution includes "informal constraints and formal rules" and "their

enforcement characteristics", which "provide the rules of the game of human interaction". Ostrom *et al.*, (2002) defined institutions as a set of rules that people configured and applied to specify what to 'do' and 'not to do'. If efficient in their functioning, institutions reduce uncertainty in the behavior of individuals and create incentives towards greater levels of coordination and cooperation. Because institution is the glue that makes sure that everyone, including the state, is acting according to the commonly set norm, thus, it represents a major force in shaping human behavior, and a fundamental way in solving collective action problems. As consequence, they structure incentives in human exchange whether political, social, or economic (Schmidt *et al.*, 2001). Whatever definition is used, institutions are the result of human beings' efforts to establish order and increase predictability of social outcomes and they can reinforce general trust by reducing the incentives of cheating through the monitoring and sanctioning of specific opportunistic behaviors. Scholars postulated that robust institutional performance around community based forest resource is positively related to policy choices that encourage equitable allocation of benefits, empower the users of the resources, institutionalize efficient mechanisms for adjudicating dispute, promote accountability and credibility of office holders, and create local-level incentives to develop substitutes (Agrawal 2002; Gibson *et al.*, 2000; Anderies *et al.*, 2004). The policy choices are also likely to encourage local institutional innovation where users develop clear criteria for group membership, match harvesting rules to the regenerative capacity of the resource they own, and articulate better with higher level institutions (Agrawal, 2002). Agrawal (2002) further classified the conditions under which successful community based forest management is maintained or will evolve into: Characteristics of resources, nature of groups that depend on resources, characteristics of institutional regimes through which resource are managed, the nature of relationships between local and external actors.

Forest institutions were introduced into complex socio-institutional landscape that mediated access to forest resources. This landscape consisted of formal rules (forest laws), customary authority, forest utilization practices, and complex social actors operating at various scales (Cotula & Mayers, 2009). At the community level, there may now be three sets of authorities with important powers over people and natural resources; the community's traditional authority structure, the local administrative authority and the forestry managing authority (Larson *et al.*, 2008). Governments wish to utilize the economic and employment potential of

forest resources through production of high quality and high quantity timber by alienating the surrounding forest-dependent communities. Forest governance, management and access rights are closely linked with forest ownership.

Common property regime refers to a property rights arrangement or a social institution in which a group of resource users share rights and duties as regards management and use of the resource regardless of owning the resource (Ayana, 2007). The people closest to the natural resource are best placed to know how to manage the resource and have the incentives to manage it in a sustainable way (Nunan, 2006). The dislocation of local communities outside the boundaries of the Protected areas and denying them access to key livelihood resources through legal means has made the management of forest priority areas unsuccessful both in terms of biodiversity conservation and equity in Ethiopia (Bassi, 2003). Where state authority over forest areas is weak, local people act as semi-autonomous exercising their own rules and practices and selectively implement or ignore laws imposed externally by the state (Wollenberg *et al.*, 2007). The better the conditions of the forest, the greater is the incentive to engage in forest management, other things being equal (Beach *et al.*, 2002). Recognizing the user rights of local communities on the easily accessible forests, a number of developing countries have formally pursued decentralized approach by making communities the key stakeholder in forest management (Dachet *et al.*, 2008).

In Ethiopia where government has failed to halt forest degradation and initiated joint forest management programs geared towards participatory forest management in the late 1990s (Tadesse and Teketay, 2018), there is very little support for forest management decentralization amongst policy makers.

2.2.3. Gaps of Existing Policy Strategies of PFM

At national level, Proclamation No. 1065/2018 proclaims to involve communities in development, conservation and utilization of forests were aimed to help as an implementation tool for forest development, conservation and utilization policy and strategy of Ethiopia. Article 10 sub article 4 of this proclamation states that the harvesting of forest products, grass and fruits as well as the keeping of beehives in state forests may be permitted based on the objective realities of the locality. Regarding the penalty, cutting trees or removing, process or

using in any way forest products from a state forest shall be punishable with not less than one year and not exceeding five years imprisonment and with birr 10,000 to birr 20,000, as well as any person who destroys, damages or falsify forest boundary marks will be penalized imprisonment not less than one year and not exceeding three years and with fine birr 10,000 to birr 30,000. Hence, the types of penalty continues up to eight years with birr 20,000. According to this penalty with PFM perspective, the proclamation favors active involvement of participatory forest management and benefit sharing. Implementing this law, particularly in rural areas where majority of wrong doers are small holder farmers whose livelihoods depends on forest resources may not be the solution. Oromia forest Proclamation No. 72/2003 defining forest ownership and administration in Oromia regional state. The Proclamation No. 1065/2018 also recognizes three types of forest ownership: State Forest, Private Forest, and Community Forest. Among these state forests classified to productive, protected and preserved forest. Therefore, community based forest established on protected forest as per Proclamation No.1065/2018 sub article 21. This Proclamation differs from Proclamation No. 542/2007 which only recognizes State and Private forest ownership, currently proclamation 542/2007 repealed. Proclamation No. 72/2003 supports a service oriented regional forest authority that gives technical assistance to farmers developing forest farms and reforestation of degraded lands and private forests. Therefore, for the safeguarded forest management; socio-politics, local interest and perspectives linkage with forest management and conservation is required.

3. METHODOLOGY

3.1. Description of the Study Area

3.1.1. Location

The study was conducted at Tiro Botor-becho forest which is located in Oromia national regional state 255 km SW of Addis Ababa and 120Km at NE of Jimma town(fig.1). It lies between Latitude 8° 0' - 8° 6' N & Longitude 37° 12' - 37° 24' E ,altitude 1600 to 3000 m ,rain fall 1600- 2399 mm and temperature15°- 19.9°C. Tiro-Botorbecho forest was demarcated in 1983 by the forestry and wild life development authority as a pilot project for a new natural forest management program (Stellmachar, 2013). It is one of 43 forest priority areas located in Jimma zone under concession of Oromia forest and wildlife enterprise (OFWE) and has its own management plan. It covers 36,084 hectare of natural forest, 2,294hectares of plantation, and 20,773 other land uses and total 59,151hactare (OFWE, ONRS-Regulation No.122/2009 .It is one of the few remaining patches of the dry evergreen afro-montane forests of the country that composed of mainly tree species including *Podocarpusfalcatus*(Birbirsa/Zigba),*Oleaeuropaeasubsp.Cuspidate*(Ejersa/Weyra),*Hageniaa byssinica*(Hexo/Koso),*Juniperusprocera*(Gaattira/Tsid)and*Prunusafricana*(Hoomii/TikurEnc het), which makes it an important source of forest seeds. It exists within Chora Botor, Botor Tollay, TiroAfeta and Limukossa administrative woredas. The study was conducted on areas selected from Tiro Afeta and Botor Tollay administrative but both are part of Tiro –Botor becho forest priority area .The study was undertaken on natural forest cooperatives intervention established since 2014 for member of 740 within three peasant associations. Tiro-Botorbecho forest is currently under the joint management of OFWE and the local community organized in forest users’ cooperatives (FUCs). FUCs are responsible to protect and manage the forest and share accrued benefits from the forest and OFWE is responsible for forest technical and legal support. The lesson from this process of building consensus among different interest groups to formulate a viable agreement has begun to get attention in the regional forest conservation undertakings; PFM guideline in Ethiopia,(FAO,2005).Based on this guide line that Tiro-Botorbecho national forest priority area(NFPA) forest users cooperatives(FUCs) organized since 2014.

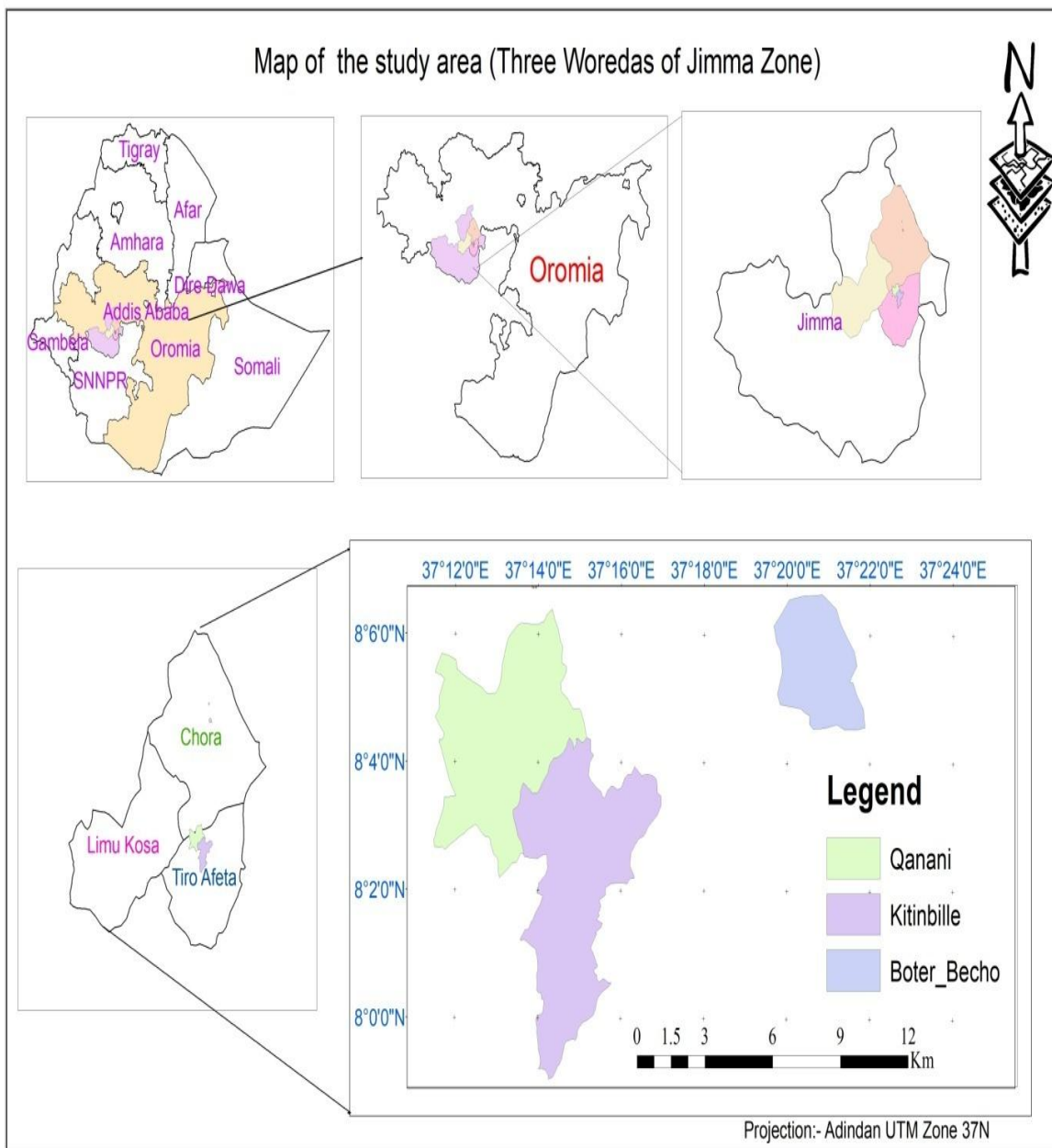


Figure 1. Location map of the study area.

3.1.2. Soils

Soils of the forest area are, in the highlands, red brown clays and clay loams while in the southern part of the forest it is black soil which is liable to water logging during the wet season. The red-brown clays and clay-loams occur in the better drained sites such as in sloping areas and hill tops (Mengesha, 1997).

3.1.3. Climate

The forest area is characterized by a high annual rainfall during most of the year. The mean annual rainfall of the area is 1600- 2399 mm. Mean annual temperature ranges from 15°- 19.9°C (Local meteorology agency).

3.1.4. Topography

Tiro- Botorbecho forest area is characterized by a broad ridge of hills stretching about north - east to south - west. There are dissected plains extended to the bottom of the hills between the central ridges and the main river valleys lying to the east and west. Closed forest remains on very steep slopes with difficult access. 80% of the high forest area is located on slopes greater than 20%, half of it on slopes over 40 (Mengesha, 1997).

3.2. Sampling procedures

Tiro-Botorbecho forest was purposively selected because of its vital potential which covers 59,151 hectares (Stellmachar, 2013). Reconnaissance survey was conducted to assess institutional performance within each peasant association. Reconnaissance survey is investigation of the study areas condition (forest users' status) which enables information to be collected. Following reconnaissance survey, three community based forest management representing Tiro-Boterbecho forest were purposively selected. Three existing forest user cooperative villages /kebeles within which forest cooperatives exist were also purposively selected. The sample size was estimated using proportional probability sampling technique.

The sample size of 120 households were selected from the total households in three peasant association using probability sampling technique estimate at 95% confidence interval (CI) and proportion value of 0.1(P=0.1) at a precision value of 0.05 (d=0.05) (Belay *et al.*, 2013). The sampled households finally distributed to FUCs members proportional to total households of peasant association (Table 2). The households selected randomly for interview. The study primarily aimed at contextual and detailed understanding of critical institutional arrangements, relationships and processes based on an in-depth understanding of a specific activity. Qualitative methods employed to get people's experience, perceptions and values, to identify and understand what people think about forest institution (Mwanje, 2001).

Table 2.Sampling PA

Study kebele	Management type	Total HH/PA	FUC members			Forest area(ha)	Respondents	Year established
			M	F	Total			
Qanani	PFM	405	242	11	253	2,711.02	40	2014
Botorbecho	PFM	399	233	13	246	238.45	40	2014
Kitinbille	PFM	408	226	15	241	2340.74	40	2014
Total		1,212	701	39	740	5,290.21	120	

Source: OFWE office; Jimma branch

3.3. Data source and collection methods

Data was collected using key informant interviews, individual in-depth interviews, and group discussions. Both structured and unstructured questionnaire were used. Unstructured questionnaire used to ask respondents to provide response in their own words and expression, while structured questionnaire were used to ask respondents to select an answer from a given set of choices. The personal interview approach was used to get adequate response .Within questionnaires, information such as: community perception on received benefits since the introduction of PFM and policy focused information were collected by underlining the option. Data were gathered from all selected forest resource users /management cooperatives working around common forest resource. The membership registration list obtained from the forest institution office was used as sampling frame. Four enumerators were used. The data of forest institution contribution for the users were collected from Tiro-Botorbecho forest governance office exists at district level and Jimma branch. Published and unpublished documents were also employed to collect regional and national forest policy focused information.

Focus group discussion (FGD) and key informants: Individuals were brought together to explore different feelings and perceptions on topics, stakeholders' relationship and law

enforcement at community and district level. All groups of FGD were composed of representatives from FUC members. The study also necessitated review of secondary data sources including official policy documents and reports. Official documents (Federal and regional forest policies, proclamations and regulations, official communication letters and administrative records, agreements between FUC and OFWE branch at forest district, FUC regulations and bylaws) are used. Besides to questionnaires, focus group discussions were used to verify the response of questionnaires in each sampled kebeles. Discussions were also employed with the key persons in the localities such as; community known persons and kebele leaders, those expected to have accumulated knowledge about the past and present situations of forest resource conservation program in the district. Information on household income was collected on forest, farm land income, livestock and off-farm activities. Information on household economy considered the annual incomes of the households for the last season (February 1, 2018 - January 30, 2019). Respondents' incomes were calculated by multiplying the quantities produced by local market price during the time of data collection. Indirect use values of forest resource were not employed.

3.4. Methods of data analysis

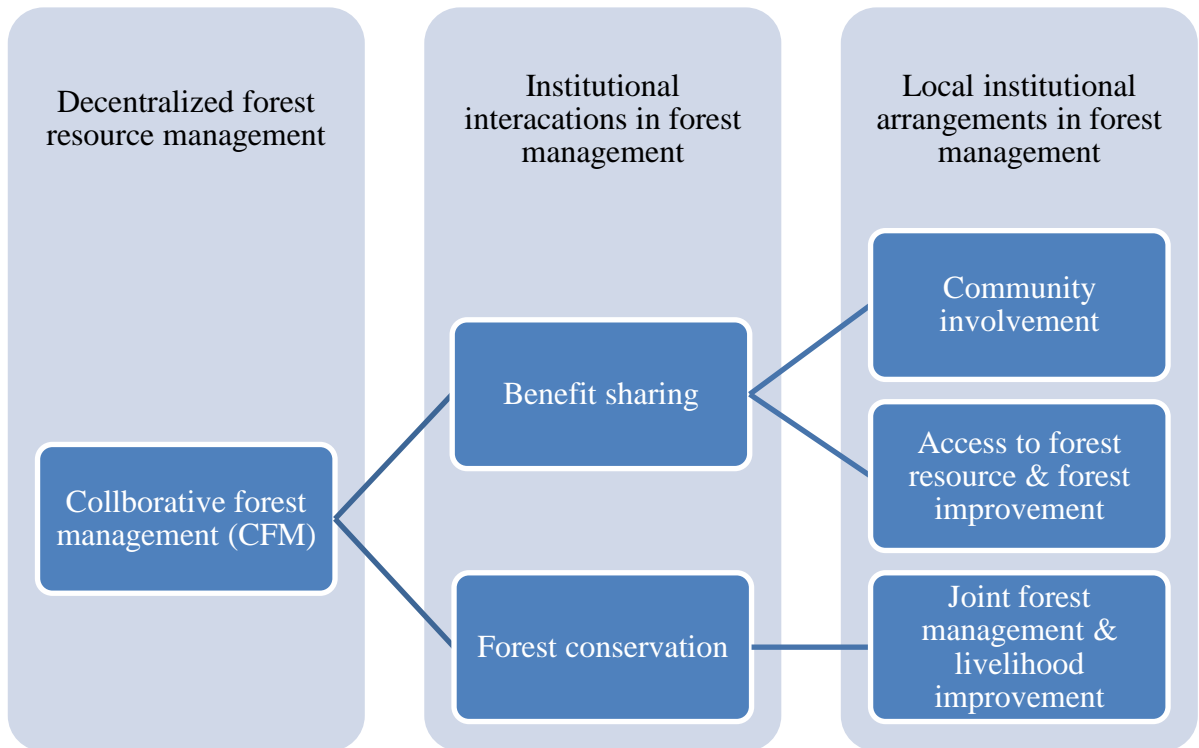
Data was analyzed both qualitatively and quantitatively. Status of linkages and interactions among the concerned forest management institutions were assessed qualitatively based on the qualitative information captured through respondent interview, key informant interview and from review of policy documents. Data was analyzed by descriptive statistics through SPSS version (20.0) software. Because descriptive statistics employed to analyze descriptive options such as: mean, frequencies and percentage were used to analyze respondents' perception of their satisfaction on institutional performances. The data was cleaned and summarized and managed using Ms excel. One way ANOVA employed to investigate socio-economic situation and the analyzed data reported in tabular form. To assess similarities and differences among different institutions, multiple comparisons by TUKY system were employed. Spearman's correlation analysis employed to know the relationship between PFM associated income with selected non parametric variables. The relationship between dependency on forest resource, users' participation in the process of forest management and benefit sharing were analyzed by Person chi-square test. Furthermore, the FUCs local by

law rules (local agreement), forest proclamations and regulations were analyzed based on the perceptions of the selected stakeholders' interview. These were intended to assess the status of interactions among different institutions and corresponding them in participatory forest management (PFM).

2.4. Conceptual Framework of the Study

The conceptual framework of the study is based on the Institutional Analysis and development (IAD) framework, based on Ostrom (2005). The framework is employed to guide the study of the situations taking place in the domain of interactions among different actors and institutional arrangements with regard to forest resource management and the benefits and management costs due to the participation and the resultant incentives that stimulate community participation towards collaborative management. Incentives can be understood very broadly as the factors that motivate human behavior ;enforce monitoring system and improve forest status. Participants are affected by socio-economic situation and policy context variables and produce outcomes that affect the participants (Ostrom, 2005). Institutions facilitated for individual actors and collective actions related with access to, control over, and the use of forest resources. Institutional analysis of forest resource management process incorporates multiple action situations at multiple levels of analysis by looking in to how national and regional forest policy changes alter local governance arrangements. Institutional arrangements in forest resource management that calls for multi-level analysis occurring within individual action situations, where actors may engage in a number of types of activities verified (Ostrom, 2005). The IAD framework distinguishes between activities at operational level, where participants implement decisions; at the local level, where make decisions about what sort of activities to engage in; and at the policy level, in which participants make decisions about how decisions should be made. Hence, IAD framework gives directions in the analysis of interactions among forest related state actors, NGOs and local resource users and the interaction among corresponding institutions in the context of Tiro-botorbecho forest.

Conceptual frame work



Source: Contextualized from Institutional Analysis and development (IAD) Framework Ostrom (2005).

4. RESULT AND DISCUSSION

4.1. Demographic and Socio-economic characteristics of the Respondents.

The survey result revealed that there was a great deal of variation in resource endowments, socio-economic and demographic situations. With regard to educational status 71.6 % of the respondents were illiterate, 24.16 % went to primary school and 4.16 % went to secondary cycle school. The survey result also showed that 4.16 % of the respondents were between 20 and 30 years of age, 44.16 % of the respondents were between 31 and 40 years of age, 43.33 % respondents were between 41 and 50 years of age, and 8.33 % were between 51 and 60 years of age (Table 3). The result showed that the most productive age group are participated. Majority of the forest users(participants) were male (90 %) and the least participants in the forest use cooperatives (FUCs) members were Female (10%) which indicates unequal participation of male and female. The agricultural land ownership varied from functionally landless to 4 hectare, of which 4.16 were land less where as 65 % of the respondents were land owned between one to two hectare and 30.83% owned between three to four hectare. Among the basic socio-economic endowments and demographic status, there were significant differences between forest users villages cooperatives regarding land holding size ($p = 0.002$), average annual income ($p = 0.046$), and family size ($p = 0.000$). The average size of land held by households living in Qananii is higher than Kitinbille and Botorbecho forest resource users respectively.

Table 3. Demographic and socio-economic survey result of respondents.

Characteristics		Qananii(%) (n=40)	Botorbech o(%) (n=40)	Kitinbille(%) (n=40)	Total (%)	P-value
Age	20-30	2.5	10	0	4.16	0.082
	31-40	42.5	55	35	44.16	
	41-50	52.5	25	52.5	43.33	
	51-60	2.5	10	12.5	8.33	
Sex	Male	92.5	90	87.5	90	0.217
	Female	7.5	10	12.5	10	
Education level	Illiterate	70	70	75	71.6	0.217
	Primary	20	27.5	25	24.16	
	Secondary	10	2.5	0	4.16	
Family size	0	5.83	0	1	6.83	0.000
	1-3	15	1	3	19.16	
	4-7	10.8	9.16	8.3	28.3	
	8-10	1.6	20	15.83	37.5	
	>10	0	3.3	5	8.3	
Land size	0	0	12.5	0	4.16	0.002
	<1ha	2.5	45	27.5	25	
	1-2ha	52.5	22.5	45	40	
	2-3	40	20	22.5	27.5	
	3-4	5	0	5	3.33	
Annual cash income (in USD)	>250	7.5	40	10	19.16	0.046
	151-250	25	20	35	26.6	
	101-150	50	15	25	30	
	51-100	2.5	20	20	14.14	
	<50	15	5	10	10	

4.2. Correlation of some selected variables with PFM associated income.

Spearman's correlation coefficient has been calculated for the relationship between PFM associated incomes and selected few households' predictor variables. This was a measure of linear relationship between two variables. This procedure employed to determine the relationship between some selected variables with PFM associated income.

Table 4. Correlation with PFM associated income

Variables	Spearman's Rho	P-value
Age	0.195	0.033*
Educational status	-0.214	0.019*
Annual wage income	-0.406	0.000**
Family size	0.579	0.000**
Livestock ownership(TLU)	-0.264	0.004*
Land holding size	-0.256	0.005*

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

The correlation of continuous variables with forest income (Table 4) revealed that there was a significant negative correlation between PFM-associated income and annual wage income ($p = 0.000$), education ($p = 0.019$), livestock ownership ($p = 0.004$) and land holding size (0.005). On the other hand, significant positive correlations were observed between forest income and age ($p = 0.033$), family size ($p = 0.000$).

Family size: Large family size especially productive group participated in forest conservation and management. Therefore, if more opportunity to be involved in forest management decision maker is given; population growth by itself can reverse the adverse effects on forest due to socio-economic integration with forest resource. Forest resources are resources in which exclusion of multiple people from using it is difficult and costly and the resource of which its unit assigned by one is no longer available to others (Deressa, 2011 &FAO, 2015). Therefore, successful community-based forest management is doubtful without the active involvement of all citizens in influencing and enforcing institutional arrangements governing forest resources. Lack of equally participating the stakeholders especially the forest dweller community in the forest management decision making process may raise problems on the sustainable forest resource management.

Age: among age classification of respondents (44.16%,) exist between 31-40 which is productive group that contribute labour in forest management and conservation practices. This idea has supportive concept of (Ostrom , 2009) that“39 age is representing the most

productive age group” and this shows participation of the productive age group in benefit sharing and forest management has importance between groups. The least age of participants lies between 20-30(4.16%) whereas the oldest age exist 51-60(8.33%).Therefore, the forest development and conservation which unable to consider family size can’t be effective. If an opportunity to participate in forest management and receive benefits not given, Population growth is the major driving factor of forest degradation and deforestation (Elleni, 2011).

Sex: in the participation of community based forest management in the study area, there are limited participation of women. The participants are the household heads while women lacks consideration from the use right. Thus; sex is one determinant which needs law enforcement to encourage them to take part in forest management. Therefore, the forest management approach which may not consider the population growth and women participation may encounter problem on sustainable forest management of the area. Women have better participation experiences towards forest conservation and management (Saguye,2017).

Land holding size: According to the survey result and data obtained from office of woreda land administration; majority of respondents (40%) have 1-2 hectares,(27.5%) from 2-3 hectares and land less occupy (4.16%) and better farm land size holders are those occupied 3-4 hectares and they are the least in number (3.33%).Whatever their difference in land holding size, they are participated significantly on forest management and conservation likewise receiving forest benefits. Despite the community based conservation approach, the socio-economic& demographic characteristics of host communities usually have a significant influence on determining interactions toward their natural resource.

The population pressure on forest resource for the sake of farm land remains the challenge over the country. Among the forest users groups of the study area Botor becho has the least farm land size because of majority of their farm land occupied by forest agencies by taking away farmland from farmers since the socialist era. The established forest users group on honey production and the accessibility of grass for their livestock as an alternative option can reduce the risk of large family size pressure on forest resource, enable them to establish economic options and they got incentives to participate on forest conservation. Promoting off-farm income options for example; value addition to non-timber forest products; promoting

local farm based entrepreneurship for forest users groups can reduce forest dependence (Duguma *et al.*, 2018).

The forest institution integration with woreda sectors like agricultural and natural resource and cooperatives on providing agricultural inputs and awareness creation on productivity increasing like farm land conservation and the grown multipurpose tree species on their farm land as well the opportunity given for the youths to engage on forest products and credit accessibility through the given right to use alternative options can also incentivize them and reduce forest dependency. Duguma *et al.*,(2018) stated that improving land productivity through proper soil conservation, promoting agro ecological intensification and diversification, institutional strengthening that implement resource governance at locals levels, devise an effective, fair and equitable policy process and governance approaches that incentivize people and recognize their needs, incentives for positive actions on forest resources management ,expansion of agro forestry-based wood growing practices through trainings and technical support are options that reduce population pressure from the forest resource. Therefore, the institutional goals to establish the effective alternatives for the local community that improves the socio-economic and addressing the prevailing forest management problems can be achieved.

4.3. Forest Resource Use by the Local Communities due to PFM intervention

Contribution of forest institution for local communities has been assessed and the survey result indicated that extraction of fuel wood, poles for building houses and fences, grass for livestock and grazing land, different parts of trees for human and livestock herbal medicinal values, wild fruits and green leaves for consumption and selling purpose and fibers for hand crafts preparation are the commonly perceived benefits (Table 5).

As in most other parts of the country, firewood is still the single source of domestic energy supply. Regardless of the socio-economic situation, firewood was the main source of energy in the study areas ($p = 0.81$). In addition, the harvest of non-timber forest products (NTFPs) resources significantly differed between forest users ($p = 0.032$) and the utilization of herbal medicinal purpose for the livestock and humans' significantly differed between villages ($p = 0.03$).Hence, this can be considered as an alternative benefits that able to reduce over

dependence from the forest resource. Fiber, fuel wood, building poles and grass for livestock are used and did not differ between villages.

The forest policy also stated that the local community share any benefits generated from the forest resource development as per their by law (local agreement) formulated based on Proclamation No.1065/2018, Art (7).Therefore, the access of forest users in receiving different forest product benefits can be used as an incentives and address the sustainable forest management problems.

Table 5. Forest resource use for the local communities

Resource classification	Qananii(%)	B/becho(%)	Kitinbile (%)	P-value
Fuel wood	95	98	95	0.81
Building and fence poles	93	88	85	0.56
Hand crafts and fibers	70	85	78	0.27
Herbal medicinal purpose	73	95	73	0.03
Honey production, Wild fruits and green leaves	63	88	78	0.032
Grass for livestock and grazing	95	98	95	0.81

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Figure 3. Tiro-Botor becho forest and FUCs honey beehives at the forest periphery.

Establishment of PFM has led to improved forest conditions, since PFM has created opportunity for the resource users to participate in the forest management and share benefits. Forest dependent communities may also get income from their own farm land; activities that mainly their livelihood condition based and directly linked to forest resource use has been studied. Respondents from Botorbecho forest users used to harvest more tradable NTFPs (honey production) 88 % and medicinal 95% from the forest than the other two villages (Table 5), which is related to the high proportion of limited farm land owned households and also better forest coverage in Botor becho users who relied most of their livelihood condition than the other two villages. (Schatzki, 2013) stated that potentially in the other area, forest resource deliver Wild Fruits and green leaves, households dietary supplements, and medicine in some cases were used. (Schatzki, 2013) also correlated that utilization of non-timber forest products ,green leaves and medicinal values with shortage of farm land size and better forest resource.

The forest resource users with shortage of farm land engaged to get diverse benefits like multiple tree species on their limited farm land. However, communities having better farm land relatively lacks high access of medicinal, green leaves and non-timber forest products since they have other sources of income and able to purchase while groups having shortage of farm land have limited capacity to purchase and claims to get on their limited farmland. The traditional user right of the local people to use the state forest resources such as fuel wood, construction wood, medicinal plants, and grazing shall be permitted based on the regulations and directives, Proclamation No.72/2003 .Those who have nongovernmental organization support (NGO) for forest user cooperatives through providing modern honey beehives modified their cultural honey production system to modern system. This result is enforced by finding of (Beshir *et al.*, 2015) that it is possible to increase community based forest users' income through marketing honey production and incentivize local communities to discontinue forest degradation. According to key informant interview some drivers of deforestation that frequently happened and reported from the respondents on PFM forest were; transformation of forest plots to agriculture, fire transmission from nearest boundary agricultural land, selective logging were negatively affected PFM forest project in the past. Coffee plantation started by some local dwellers was stopped after the forest handed over to forest cooperatives because of restriction from forest authorities to protect forest from degradation which stated on forest utilization plan.

Table 6. Perception on PFM institutional performance & its implication on livelihood.

Variables		Name of village (%)			Total (%)	Sig.
		Qananii(%)(n=40)	Botor becho(%)(n=40)	Kitinbille%(n=40)		
Forest rule Enforcement	Very satisfied	15	5	5	8.3	0.43
	Somehow satisfied	42.5	55	52.5	50	
	Not satisfied	42.5	40	42.5	41.6	
Community participation in forest mgt& Conservation	Very satisfied	65	85	60	70	0.001
	Somehow satisfied	25	10	7.5	14.16	
	Not satisfied	10	5	32.5	15.83	
Functioning of forest management committee	Very satisfied	32.5	37.5	32.5	34.16	0.96
	Somehow satisfied	35	30	37.5	34.16	
	Not satisfied	32.5	32.5	30	31.16	
Perceived benefits due to PFM	Very satisfied	20	60	17.5	32.5	0.000
	Somehow satisfied	20	30	67.5	39.16	
	Not satisfied	60	10	15	28.3	
Forest use right	Very satisfied	22.5	17.5	22.5	20.83	0.76
	Somehow satisfied	65	47.5	65	59.16	
	Not satisfied	12.5	35	12.5	20	
Forest helps to reduce poverty	Very satisfied	35	40	27.5	34.16	0.14
	Somehow satisfied	52.5	55	47.5	51.6	
	Not satisfied	12.5	5	25	14.16	
Capacity building provided by institution to forest users	Very satisfied	22.5	7.5	22.5	17.5	0.042
	Somehow satisfied	45	77.5	57.5	60	
	Not satisfied	32.5	15	20	22.5	

Satisfaction levels: are used to determine the fulfillment of forest users need or desire from forest institution performances and among the interviewed members ‘very satisfied’ used to indicate for the highly utilized(for the received benefits as they expected), ‘somehow satisfied’ for some received benefits below their expectation and ‘not satisfied’ the least benefits or utilization they received. Tesfaye (2017) employed to identify the scale values of forest users groups perception through very satisfied, somehow satisfied and not satisfied for highly received, below the expectation and for the least received benefits respectively. Hence, level of satisfaction has been determined by the received benefits and community dependency on forest resources from the forest management institutions in accordance with forest use policy of Ethiopia and regional forest proclamation. These are communities’ responsibility to maintain the health of forest condition through active participation and diverse benefits they received. Difference in perceived benefits towards PFM is significant ($p=0.000$) between FUCs villages. Difference in received benefits of Botorbecho kebele FUGs satisfaction (60%) is higher than the other two kebeles (Table 6).

High percentage of local community’s satisfaction towards forest conservation & management indicates forest conservation effectiveness and socio-economic benefit (Tesfaye , 2017). The difference is due to the forest groups of Botor becho kebele use modern beehives and off-farm activities provided for forest user groups by non-government organization called Biovision and socio-economic difference between villages. According to this result and potentially other areas ,the community that benefited most from the forest management through capacity building or employment were found to be the community with more a socio-economic advantage (Agrawal ,2001). The state forest shall be utilized according to the management plan, utilization schedule prepared by Oromia forest and wild life enterprise (OFWE) Proclamation No.72/2003.According to article 6(1) of this proclamation, the organized community granted with community forest shall have the right to use forest products sustainably, protect the forest from human encroachment. Therefore, forest management institution established access to local communities to exercise their use right and shoulder their duties.

According to respondents interview result and conducted from forest administrative body, the forest institution provided employment opportunity for local communities. Among

respondents in all sampled villages, 35% respondents answered as at least one of their family employed as labour worker; where as 12.5% and 26.6% respondents replied as at least one of their family employed as permanent forest institution staff worker and engaged on forest product groups respectively (Table 7). Generally 89 respondents (74.1%) indirectly received forest benefit through their family employment opportunity. Therefore, as long as they received forest benefits, they can participate more on forest management and conservation. The decision by the local community's either to participate in forest developmental activities or not is largely determined by their perceived benefits from forest resource (Vandenabeele, 2012).

Table 7. Benefit received from forest institution through employment opportunity.

Statement	Frequency (N=120)	Percent (%)
At least one of their family employed as labour worker	42	35
At least one of their family employed as permanent worker	15	12.5
At least one of their family engaged on forest product	32	26.6
Total	89	74.1

4.4. Community perception on FUCs local agreement, awareness level, fairness and enforcement works

4.4.1. Community awareness level towards forest policy

As per the discussion held with forest resource users, 62.5% responded as 'not clear' towards their awareness level of forest policy while 22.5 and 15 % responded as somehow clear and clear respectively. This means among all respondents from the three villages, 37.5 % benefited from the capacity building being initiated and developed by the forest institution, while the rest of the respondents (62.5%) not benefited (table 8). Based on these responses, the result revealed that a low level of community awareness level (62.5 %) were the main reasons for the lack of effective institutional performance. Communities in the study area have limited awareness on the country's forest policy, rules and regulation including detail knowledge expected in respecting their rights and responsibilities simultaneously while conserving and managing forest resource and exercising their social and economic needs.

According to Tesfaye (2017), low level of capacity building and awareness level are main factors affecting effectiveness of community based forest management institutions. According to key informants' interview, strong monitoring activity which develops awareness level of forest users' organization process of forest cooperatives has no consistence. The forest rules are all in written documents and most of FUCs members are illiterate that did not understand what was written in it. No enough monitoring system from the staff experts and authorities to fill the knowledge gap for the forest user cooperatives/group. Unless consecutive familiarization of the written rules can easily be captured by illiterate community group , it is doubtful that the members can internalize them fully.

(Deresa,2011)stated that the gap in community awareness level on forest policy can create a risk of elite captures the forest institutional benefits and the illiterate may lost the benefits. The problem of elite who are either educated, or wealthy families, politically connected local officials, or leaders may utilize the benefits while the illiterate may ignored. There was also finding that “ in CBFM schemes in which extractable wood products such as timber or firewood are involved, the interests of elites may even jeopardize the CBFM goals (Duguma *etal.*,2018)”.

Table 8. Clarity on forest policy

	Frequency (N=120)	Percent (%)
Not clear	74	62.5
Somehow clear	27	22.5
Clear	18	15
Total	120	100

Clarity levels: used to identify how forest users know the forest policy documents about their rights and obligations and overall forest resource services so as to know institutional status in awareness creation towards forest policy. Based on their response ‘not clear’ stated for users haven’t concept about their rights and obligations to maintain forest service locally and globally ‘somehow clear’ used to indicate for those having some concepts about forest use right importance for their livelihood and forest management and ‘clear’ stated for users having good concept about forest use right, diverse forest service locally and globally and

forest resource use rights and obligations they have; generally clarity levels used to identify status of users awareness on the forest policy in their participation of forest management process. Because forest governance institutions positively related with forest policy which specifies the negotiated agreement among the government and other stakeholders on a shared vision on forests and forest resource use.

The scale values are categorized based on the forest resource users' response for the displayed questions of forest policy awareness level. (Deres, 2011) used 'not clear, somehow clear and clear' to identify forest resource users awareness level towards forest policy. Those who responded as clear and somehow clear are respondents who have educational level and able to easily understand trainings, written documents and accessed to services given by forest institution professionals during forest cooperative organization process and aged respondents from their traditional knowledge perspectives. The old respondents and the more educated people are generally more aware of about the ecosystem function of the forest and were concerned about the consequences of completely deforestation and degradation of the forest (Stellmacher, 2007). Monitoring and ongoing capacity building activities particularly from forester experts and Government were the problems. FUCs agreement guideline (by law) recognizes that the resource users (the forest dwellers) are no longer marginal, instead, accepts that they are partners with a right to have the management of the local forests and who expect professional services and assistance from the foresters.

According to Tadese & Teketay (2018), in PFM forest users organization phases such as mobilization, implementation, reflection and monitoring phase, there is a problem in the third phase (monitoring) that after community forest users cooperatives organized. The new forest proclamation is enacted on the basis of enhancing environmental, social and economic benefits that may arise from multi-lateral and bilateral agreements, in accordance with article 51(5). The laws acknowledge the principle that forest owners should receive the revenues derived from the utilization of forest, art. No.72/2003, page 7 and art.8, No.1065/2018. That means, forest law of Ethiopia obliges forest owners to implement the directives issued by the environmental protection and those pertaining tree species and forest communities. However, to implement what stated on the written policy document; the awareness level of forest

dependent communities towards forest policy is law. Since forest institutions positively related with forest policy; its effectiveness requires good awareness level of forest users towards forest policy to handle their negotiated agreement among the forest users and state. Forest policy enhances all stakeholders to go in line with the signed agreement for sustainable forest management by identifying what has to be done and not to be done in line with the policy document.

4.4.2. Formulation procedure of the local agreement

As per the discussion held with forest users and key informants, the forest use agreement and the internal by-law (local agreement) formulation process of the FUGs/FUCs, which commit members to certain rights and responsibilities in forest management, were first drafted by OFWE and NGOs with limited consultation with the local communities. This is furthermore confirmed by the survey result where 92 (76.6%) of the respondents indicated that the FUCs local agreement (by law) was developed by the higher institution and the forest users involvement was in the form of consultation (Table 9). The credibility of the available legal system is (60.8%). The problems of local agreement formulation and users credibility on the available legal system shows problem of transparency. Problem of transparency between the FUCs and forest administrative bodies is an indicator that the government is not yet fully convinced that local communities can manage the forests on a sustainable manner. Simply crafting a rule or writing a treaty without full participation of local communities can't create an effective forest institution (Ostrom, 2008 cited in Deresa, 2011). Effective forest management does indeed exist where boundaries are clearly demarcated and enforced for forest resource institutions, especially "implementing rules that clearly define who have rights to use a forest resource and its boundaries is key requirement for institutional arrangements effectiveness" (Deresa, 2011). However, still there were cases of rule violation which call for strengthened and reformed forest monitoring functions in the process of by law (local agreement) formulation and implementation to be in place.

Table 9. Forest users' perception on local agreement formulation procedure

Statement	Perception	Frequency (N=120)	Percent (%)
1 Formulation of FUCs local agreements	Prepared by higher authority & brought to FUCs	92	76.6
	Prepared by local forest cooperatives	25	20.83
	Not sure on the procedure	3	2.5
2 Credibility in the available legal system	Believe on the available forest use right	73	60.8
	Not believe on the available forest use right	40	33.3
	Not sure	7	5.8

The survey result revealed that the gaps in the involvement of the local community stake holders in the process of forest management plan and decision making process. Forest cooperatives have obligations to have forest management plan and community local agreement documents (bylaw) at the office of the responsible government organ art.8,No.1065/2018. But after forest blocks handed over to forest users cooperatives , the overall management process are left on hands of forest cooperatives and kebele administrative bodies. In the case of Ethiopia, the government retains the ownership of the forest while the local communities organized in forest user groups (FUGs) have use rights. The use rights are granted under the condition that communities maintain at least the forest cover present at the time of PFM introduction. Each FUC/G democratically elects its executive committees who run the day to day activities of the group.

FUC/G also developed bylaws (local agreement) that guide its activities and penalties in case of disregards an agreement by members or outsiders. But the government has the right to revoke it if the forest cover is reduced or if the forest is found 'important' for other uses of national importance (Aklilu *et al* .,2014). The FUCs agreement of the study area contains important aspects about the management of the forest resources in a way that ensures the community's confidence, but in the study area 60.8 % respondents were confident on

whatever the political system occur; they have forest resource use right. This might be from general training they obtained and resulted from aged respondents through their traditional knowledge perspectives (Tesfaye, 2017). However, 33.3 % responded as they suspect the current political system because of occurrence of unstable political system in different periods in the country and following its consequence, the forest ownership may be changed. But the agreement held between forest governance authority and users cooperatives have boundaries of the forest resource by block and specifies who owns it, who uses it and in what condition. The agreement assigns roles and responsibilities (including those of the forest service). This was what needs transparency and reaching on consensus. But 5.8% respondents were not gave response, might be from lack of detail concept on the property right regime overall condition.

4.4.3. Fairness in the implementation of local agreement

The survey result indicated that 61.7% responded as ‘somehow fair’, where as 33.3% believe as ‘the implementation of local agreement’ is not fair (table 10). Based on this result, the forest users’ local agreement implementation mechanism lacks fairness. According to the information from the key informants, the effective implementation of the FUC regulation was facing gradual obstruction due to the excessive interference of local political administrative bodies. The FUC regulation explains about the requirement that members need to get permission from the FUCs to access forest and extract poles products for domestic consumption. The OFWE’s power and retaining of absolute mandate to permission for any request of poles and timber for house construction was in violation of the article 28 of the FUC regulation formulated by higher forest institution.

Table 10. Perception on fairness of the forest users’ local agreement.

Perception	Frequency	Percent
Completely fair	6	5.0
Somehow fair	74	61.7
Not fair	40	33.3
Total	120	100.0

Fairness: This is used to indicate how the forest use right and local users agreement implementation status is free from higher level, political administrative and or influential

person's interruption or pressure. The scale value 'completely fair' expresses as the rules/local agreements implemented as per the agreement/the enacted rule whereas 'somehow fair' indicates the rules are implemented to some extent(below expectation) and 'not fair' stated for the rules are implemented out of the rule/ agreement. These are categorized based on the response answered by the forest users on the local agreement process of implementation. Therefore, fairness of forest users' local agreement has contribution for the effectiveness of forest management institutions.

4.4.4. Forest policy enforcement

The survey result revealed that majority of respondents (48.3%) require enforcement activities regarding legality rather than financial, logistics and technical support (Table 11). This indicates that they are institutional gaps in creating enforcement of the legal system to safeguard the forest resource & the users' right as well as to enhance cooperation among stakeholders. Information gathered from the FUC committees revealed that poor legal implementation since the legal system demands eye witnesses which is not easily obtainable. Support from the police to forest users cooperatives (FUCs) in following up of illegal forest activities is lacking. Furthermore, there is a lack of willingness from the court bodies to implement the criminal code on illegal forest users. Forest rule enforcement can be affected by stakeholders' weak coordination and could have been solved by the presence of governance activities organized in local FUC rule enforcing mandate with formal kebele administrative bodies and district level court (Deresa,2011).On the other hand, according to informal discussions held with members of FUCs, illegal extractors are suspected bribes to some committee members to gain access to the forest resources and to carry out activities that would be illegal.

Table 11. Perception on support needed for the forest users from higher authorities

Type of support	Frequency	Percent
Financial	34	28.3
Technical training	11	9.2
Logistics/material provision	17	14.2
Legality	58	48.3
Total	120	100.0

Policy enforcement: This is used to indicate how the rights and obligations of forest institutions and local communities as per the joint forest management agreement, enacted forest policy, rules and regulation on benefit sharing and technical supports provision implemented in the process of sustainable forest management so as to know the institutional gap that has to be fulfilled for the effectiveness of institutions. The support types has been categorized based on users response on the gap required to enforce them. Therefore, the perception of forest resource users towards different support delivered to them from the forest institution has been conducted and the local communities' perception on the existing gap and that has to be fulfilled for their livelihood improvement and sustainable forest management has been studied. As key informant interview indicates, government structure had contributed to the slow implementation of PFM.

Therefore, halting this trend by one single stakeholder and independently implemented rule of law brings little hope for success. An effective implementation of the PFM process requires participation, negotiation, empowerment and collective decision-making of all stakeholders (Ameha *et al.*, 2014). Hence, institutional collaboration is required to the strong forest law enforcement to be implemented. Within the local community, the different actors have to agree on use rights to forest resources, on how costs and benefits will be shared, on which rules will be enforced and on every stakeholders responsibility. The 5% royalty fee from the total sell of timber pole production that has to be shared for forest user communities based on forest proclamation of Ethiopia N0.1065/2018. But from the total income of district forest institution; 5% only is unfair and has to be improved. But the forest administrative responded as “royalty fee which is divided to forest users is rule given by higher forest institution based on Oromia forest proclamation art.16, No.1065/2018”. In fact the rule didn't indicated the role

of community in designing royalty fee which means it is duty of higher forest authorities (regional and federal).

Finding on sub-saharan Africa stated that “there is no country that explicitly describes requirements and procedures for equitable and fair benefit sharing mechanisms among participating members”(Duguma *et al.*,2018). Therefore, clear institutional legal enforcement is required. Policy options inappropriate to local contexts, weak institutional capacity to implement them and/or the judgment enforcement of laws and regulations and political condition all contribute to limit the effectiveness of PFM (Cotula and Mayers, 2009).

4.5. Forest conditions before and after the establishment of FUCs

It is acknowledged that forest cover can be maintained under JFM/PFM, where management responsibility is shared between local communities and the concerned forest conservation, development and utilization department and agencies. According to the response from the household survey, 83.3 % of the respondents perceive as forest condition has been improved after participatory forest management(PFM)establishment (Table 12). The improvement in forest condition was naturally brought about by increase in forest regeneration which is in turn a result of decrease in degradation through over grazing, agricultural expansion in forest boundary and Charcoal production(Table 12).The decrease in forest degradation activities could be result of existence of effective local patrolling in PFM.(Agrawal and Chhatre, 2008) stated that probability of degradation of a forest reduces and the possibility of regeneration increases with increases in the level of local community involvement in the participatory forest management (PFM) approaches. Thus, this study result indicated that establishment of PFM has resulted in improved forest conditions, since PFM has provided opportunity for the forest resource users to be involved in the forest management to exercise their use right and shoulder their responsibility. “PFM is successful in regenerating the forest resource and reducing forest degradation pressures as a result of diverse benefits delivered to local communities (Takahashi and Todo, 2012)”. Forests under PFM that responsibly managed under local users arrangement utilized based on management plan.

Specifically, PFM typically places new restrictive rules and regulations on forest-related livelihood options, mainly in the form of harvesting restrictions that may lead to decline in forest based incomes (Aklilu *et al.*, 2014).

Table 12. Perception of local communities on forest condition

Parameters	Perception	Frequency	Percent
Illegal forest harvest	Not at all	2	1.7
	Decrease	89	74.2
	Increase	29	24.2
	Total	120	100.0
Charcoal production	Not at all	52	43.3
	Decrease	68	56.7
	Total	120	100.0
Agricultural expansion in forest boundary	Not at all	27	22.5
	Decrease	93	27.5
	Total	120	100.0
Overgrazing in forest	Not at all	2	1.7
	Decrease	91	75.8
	Increase	77	22.5
	Total	120	100.0
Regeneration status	Decrease	13	10.8
	Increase	100	83.3
	Not sure	7	5.8
	Total	120	100.0

Therefore, the success of PFM depended much on the extent of rights of access to forest products or forest property rights, forest management task, decision making power and the capacity of communities to create viable institutions. Most of the people that supported the forest PFM were those who received benefits from the forest institution. Because they are responsible to maintain healthy of forest condition and receive benefits as the cost of their participation. Deresa(2011) stated that “ the change in the role and responsibilities of the local community from being considered as forest enemies to the part of forest management has motivated the morale of the community to engage in different forest management activities like patrolling, nursery management”.

4.6. Perception of FUCs on forest services

About 56.83 % of the respondents weigh more towards the short term socio- economic benefits in terms of financial revenue and social value it generates to the individuals than non-economic benefits(ecosystem services) that delivered to the community and 34.83 % of the interviewed people perceive the forest as a source of rain and water; habitat for various wildlife and biodiversity and as a resource for maintaining the fertility of the land, and therefore deserves sustainable stewardship by the stakeholders especially by the local communities.

Table 13. Perception on forest significance

Village	Utilized forest benefits (%)			P-value
	Ecosystem services (%)	Socio-economic services (%)	Both ecosystem & socio-economic (%)	
Qananii	40.5	47.5	12	0.04
Botorbecho	28	69	3	
Kitinbille	36	54	10	
Total (%)	34.83	56.83	8.3	

Out of 120 sampled respondents, 56.83% gave the first priority towards the short term economic benefits in terms of financial revenue it generates to the individuals, where as 34.83% respondents gave first priority for non-economic benefits that forest deliver to the community (Table 13). This difference in perception can be explained by the result that the local people in Botorbecho had less diversified sources of income; and hence the forest resource played a considerable role in the livelihood of these residents, either from direct resources, such as fuel wood sell, construction pole or, from extraction of NTFPs. “Forest resource has considerable role in delivering different forest resources and products for the local communities”(Van Arend, 2011 and Van Bommel, 2013).The success of forest management approaches depends on establishing appropriate tradeoffs between conflicting interests which means social aspect and environmental context (FAO.2009). Therefore, this calls to furthermore, awareness creation among the forest users community to more

encourage their understanding about the long term non-economic benefits of the forest to maintain ecosystem services and constituent of human well-being .

The scale values ‘socio-economic services’ used to identify the supplementary income and social values users receive and ‘ecosystem services’ used to indicate environmental provision of forest resource and users gave values by weighing one over the other and selecting both socio-economic and ecosystem services among the forest service provision based on the three category option displayed.

According to Tesfaye(2017), forest significance has been categorized under protective and productive importance. The protective type of benefits are the social, environmental, and community development benefits whereas the productive type of benefits are financial revenue that individuals generate both in the form of individual subsistence and cash income from firewood, poles for construction , charcoal, fibers , and NTFPs. Although the other types of benefit we get from forest resource are easily overlooked; forest resource also play an important role in providing different ecosystem services like for provision of food, fresh water, wood and fiber; for climate regulation; for Cultural value like aesthetic, spiritual , educational, and recreational value (Pereira, 2011); for social services which maintains good social relationships through creating social cohesion and mutual respect; for supporting nutrient cycling and soil formation ; for health services through access to clean air and water (Millennium Ecosystem Assessment,2005).Hence, giving first priority for productive (economic) gain than protective benefit or ecosystem, cultural and social services has the problem on sustainable forest management to establish effective alternatives for forest dependent communities and addressing the prevailing forest management problems. Therefore, the unbalanced concept among forest users towards the forest significance can affect effectiveness of forest management institutions to achieve its goals.

5. CONCLUSION AND RECOMMENDATION

5.1. CONCLUSION

This study attempted to assess the performances of participatory forest management institutions in Tiro-Botor becho forest. The local community status of satisfaction on the institutional arrangements determined by their dependency on the forest resources under the governance of forest management institutions in accordance with Federal and regional (OFWE) forest policy and diverse benefits received. Most of the respondents believe on the forest institutional arrangements contribution for their livelihood and sustainable forest management practices through provision of fuel wood, poles for building houses and fences, grass for livestock and grazing land, different parts of trees for human and livestock herbal medicinal values, wild fruits and green leaves for consumption and selling purpose and fibers for hand crafts , forest use rights and through employment opportunities.

The federal and regional (OFWE) forest policy analysis of forest resources management clearly revealed how forest management institutional arrangements contribute for the twin goals of participatory forest management that improving the livelihood of forest dependent communities through verifying equitable benefit sharing among forest resource users and to enhance sustainable forest management. However, fair and equitable distribution of benefits between forest users' villages(FUCs) and government, active women participation, unclear forest use right and benefit sharing mechanism , low awareness creation and weak rule enforcement remains challenge for the local forest management arrangements to effectively implement the participatory forest management(PFM) goals. The forest policies were not effectively implemented comprehensively .Generally, there is potential to achieve the institutional goals of sustainable forest management. However, the unequal participation and benefit sharing among the communities were not fully considered. Institutional arrangements are influenced by a number of stakeholders' relationships and socio-economic conditions of local community. The synergy between conservation and development under participatory forest management principle is the preferred option for better outcome.

5.2. RECOMMENDATION

The forest governance should also accelerate capacity building on poverty reduction activities by establishing effective alternatives; for example the enforcement on honey production for Botor becho village has to be scaled-up for the left villages. There should be more consideration for groups engaged (organized) on forest products in collaboration with woreda cooperative office to save forest from population pressure by participating specially the youth and those have shortage of farm land. Hence, the forest governance should consider the socio-economic difference between users groups. Forest dependent communities required to strengthen their organizational capacity in order to re-claim responsibilities in management and conservation of forest resources through education and other forms of capacity building activities. The educational awareness creation and capacity building activities can enhance the participation process.

The educational process should also run parallel to the actual roll out of the institution so that in the process of drawing up plans, developing participatory tools the stakeholders can learn from each other. Appropriate educational processes should be used to mobilize prior and new knowledge and build competence among the forest resource user members. Regional forest governance should fully support the local institutions because the PFM approaches are mainly NGO driven. Planners and managers must ensure fair and equitable distribution of forest benefits among forest users, as well as forest users groups should be free of any influences /interruption. The forest administrative body should safeguard the interest of those who may lose from the new forest management regime, especially as they are often the women. Local forest rule enforcement should have to be linked with better forest condition and equitable access to the forest benefits to verify sustainable forest management by local forest management arrangements.

Better research has to be undertaken on the biophysical resource assessment to know the overall effectiveness of new forest management regimes. The government should safeguard the forest management institutions to be autonomous through empowering all stakeholders.

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APPENDIX

APPENDIX

Survey questions for respondents selected from Tiro-Botor Becho National forest priority area, Tiro-BotorBecho forest district Jimma branch .

Characteristics of the respondents

Name _____ Age _____ Sex _____

Ethnic group _____ (Oromo, Amhara, gurage ,Others)

Family size /population male ___ Female ___ Total _____ PA _____ forest user group _____ District _____ Educational level (Zero level, primary, secondary, higher education)

Name of forest user group/cooperative _____ Size of farm land owned individually and, in group of forest user respectively _____, _____.

Year of being member of forest user group _____

Socio –economic status : low income _____ medium _____ high _____ Total livestock ----

1.Community perceptions on the institutional performances of Participatory Forest Management:

No.	Parameters	Very satisfied (1)	Some how satisfi ed (2)	Not satisfied (3)	No Opinion (0)
1.	The rules of access and forest use are clear				
2.	The system for deciding who has access to the forest resources is a fair one				
3.	The process for distributing and accessing forest products is fair and acceptable				
4.	We are either formally or informally involved in monitoring the forest				
5.	We feel that we and others in the village are able to take the amounts of forest products from common lands that are needed for household use, but not more				
6.	We have influence on bylaws for deciding how much forest products people can take from common lands				
7.	The forest managment committe monitor who takes what products from our forests				
8.	Members of the forest managment committe generally watch who takes forest products from our forest				
9.	The controllers of our forest (who decide how much each person can take) are democratically chosen				
10.	The FUG/cooperative benefits our household				
11.	In general, our forest is able to meet our household demand				

12. Who formulated the local bylaw? 1. Government 2. NGO 3. Users
4. Community 5. Others_____

13. How was the formulation procedure of the local bylaw?

1. prepared by the higher authority and brought for cooperatives 2. prepared /designed by forest cooperatives and used 3. prepared/ designed in collaboration of cooperatives with higher authority.

14. Have you participated in the formulation of the local bylaw? 1. Yes 2. No

15. If your answer is yes, to what extent your opinion and interest was incorporated? 1. Fully 2. Partially 3. To some extent 4. Rarely

16. Have you accepted the local bylaw? 1. Yes 2. No

Why? _____

17. In your assumption, how many of the users accepted the local bylaw?

1. All 2. Majority 3. Some 4. Few 5. Not at all

18. Does the implementation is consistent with the rule? 1. Yes 2. No

19. If your answer for Q.18, is no, why?

1. Gaps in setting the rules 2. Partiality of the implementers
3. Absence of legal acceptance 4. Others _____

20. How is the clarity of the rules in the bylaw?

1. Very clear 2. Clear 3. Slightly clear 4. Not clear

21. Do you think that the rule effectively reward cooperation?

1. Yes 2. No

,Explain _____

22. Do you think that the rule effectively penalize opportunism?

1. Yes 2. No

Explain _____

23. Users who violate rules-in-use are likely to receive graduated sanctions (depending on the seriousness and context of the offence)? 1. Yes 2. No

Explain _____

24. Are the rules in the bylaw fairly implemented? 1. Yes 2. No

25. Do the users have the right to improve or change the local bylaw?

1. Yes 2. No

26. Does the local bylaw have legal acceptance or recognized by formal court? 1. Yes 2. No

27. If no why.....

28. What benefits do you get from the forest?

No.	Environmental Benefits	Economic Benefits	Other Benefits
1			
2			
3			
4			
5			
6			
7			

2.For staffs/ key informants/

1.How do you evaluate community based forest management acceptance as per your strategic plan? A.Poor B.Medium C. good

2.What are challenges in achieving the planned activities ?

A. community awareness/readiness B. available bureaucracy /nature of policy

3.Is there problem of power sharing among regional, zonal and district level forest governance ?

A. yes B. No

4.Do you believe that the different social groups are equally participating in the program?

A.yes B.No

5.If you say ‘no’ for quest. number 4,what would be the reason behind it? A. Policy implementation/enforcement

B. Absence of accountability among the stake holders

6.Do you believe that the forest condition has been improved as a result participation?

A.yes B. no

7. If you reply ‘yes’ for number 6.,what is the status of forest condition improvement ?

A. fair B .low Medium D. high

8. Do you believe that the forest institution has achieved responsibility to participate in surrounding developmental activities as per the policy? A. yes B. no

9. If you reply 'no' for quest. Number 8., what would be source of the problem?

A. Policy implementation B. Accountability /monitoring

10. How do you evaluate simplicity of policy to be implemented by the stake holders?

A. can be easily implemented B. It needs some modification C. others

11. How much tax your forest institution pays annually for Government?

12. What has to be done to maintain harmonized relationship between forest institution and surrounding community?_____.

3. What is your perception of forest management in your community based forest?

No.	Parameters	Strongly Agree (1)	agree (2)	No Opinion (3)	Disagree (4)
2.1.	The forest helps reduce poverty				
2.1.1.	Our forest is able to meet our household demand				
2.1.2.	There are limits on how much fuel wood we can collect from our forest?				
2.1.3.	There are limits on how much leaf litter we can collect from our forest?				
2.1.4.	There are limits on how much grazing or fodder collection we can do on common lands.				
2.1.5.	We are either formally or informally involved in monitoring the forest.				
2.2.	We feel that we and others in the village are able to take the amounts of forest products from common lands that are needed for household use, but not more.				
2.2.1.	Village authorities monitor who takes what products from our forests.				
2.2.2.	Villagers generally watch who takes forest products from our forest.				

2.2.3. Other villagers would be very unhappy with us if they found that we had taken more than our allotment of fuel wood, fodder or grazing.				
2.2.4. We could lose some or all of our rights to collect forest products if we were caught taking more than the amounts you are allowed to take.				
2.2.5. All other households have the same allotment of fodder or grazing rights per year as our household.				
2.3. If we took more fuel wood from the forest than we were allowed to take, we would face some sort of punishment.				
2.3.1.If we took more fodder or did more grazing from the forest than we were allowed, we would face some sort of punishment.				
2.3.2. We would feel embarrassed or bad if we took more than our allotment of fuel wood, fodder or grazing.				

4.Participation

1. Have you participated in designing the use rule? Yes or no
2. if yes, Why have you participated? _____
3. Would you explain your contribution? _____
4. What role have you been playing in the implementation of the plan?

5. How often do you have contact with NGO? About what?

5.Satisfactions in the use-rule/how the rule is working in practice

1. To what extent your opinion and interest was incorporated in the use rules?

2. To what extent does the implementation of the rule met your expectation?

3. How do you evaluate the clarity of the rules?

4. How do you evaluate the objectivity of the rules?

5. Do you think that the rule effectively reward cooperation and penalize opportunism?

6. Confidence in the legal system

1. How do you evaluate the neutrality and fairness of the legal system?

2. How do you see the credibility of the judge?

3. To what extent does the existing law effectively punish opportunistic behavior?

4. Do you think that the current government will change the management style like access right of the forest against community interest?

5. How do you feel the stability of the current political system?

6. What is your confidence on the legal system as a guardian of collective interest even if the current political system is changed?

7. Credibility of local monitors

1. Would you explain how the user group executive committee appointed?

2. Are they transparent in decision making?

3. Are their decisions fair and equitable?

4. How often do the all members come together to evaluate the executive committee?

5. Are they accountable to the all member?

8. Sense of security in the continuity of the regime

1. I would like to ask you a question about how secure you feel in the continuity of the current common regimes?

2. How do you evaluate the effectiveness of this common regime?

3. Which management regime do you prefer (past and present)? And why?

4. Do you think that this system is going according to its plan?

9. Indicators of cooperation

Compliances to the common rules

1. How do you evaluate your compliance to the common rules?

2. Number of records for not complying to the commonly set rules

3.Reasons for obeying and disobeying the rules

10.Commitment to fulfill the common goals

1.Could you list some of your major contribution to the common resources?_____

2.How do you evaluate your commitment to fulfill the common goals?_____

3.What are the differences and similarities between your own private property and the common resources?_____

4.What do you do if you encounter one of your close relative looting from the common resources?_____

5.How do you mediate your family resource need and the use-rule?_____

6.Are they both compatible?

11.Long term planning and investment

1.Who is responsible for this forest? And why?

2.What is your plan for these common resources?

3.Could you list some of your major investments in the common regime?

4.Could you explain your responsibilities in the common regime?

5. Do you keep on managing this resource even when the support from the NGO` terminate? And why?_____

Community perception of Change observed since the introduction of CBFM (PFM)

Change observed	Direction of change
Illegal harvest from the forest	Decreased /increased
Charcoal production	Decreased/increased
Regeneration status	Decreased/ increased
Coppicing	Decreased/increased
Community participation	Decreased /increased
Illegal marketing of forest product	Decreased/increased
Expansion of agriculture in to forest boundary	Decreased/increased
Number of wildlife	Decreased/increased
Pressure on wildlife (like hunting)	Decreased/increased
Overgrazing in the forest	Decreased/increased