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COLLEGE OF LAW AND GOVERNANCE

SCHOOL OF GOVERNANCE AND DEVELOPMENT STUDIES

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MANAGEMENT PRACTICES OF TREES PLANTED THROUGH GOVERNMENT INITIATED CAMPAIGNS IN ETHIOPIA SINCE 2016: THE CASE OF SELECTED AFFORESTED SITES IN HAWASSA ZURIYA WOREDA, SIDAMA REGION.

M.A. THESIS

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MANAGEMENT PRACTICES OF TREES PLANTED THROUGH GOVERNMENT INITIATED CAMPAIGNS IN ETHIOPIA: THE CASE OF SELECTED AFFORESTED SITES IN HAWASSA ZURIYA WOREDA

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Statement of Author

First, I declare that this thesis entitled “Management Practices of Trees Planted by Government Initiated Campaigns in Ethiopia Since 2016: The Case of Selected Afforested Sites in Hawassa Zuriya Woreda, Sidama Region”is the result of my work and all material used for this thesis have been acknowledged and given recognition through citation. This thesis is submitted in partial fulfillment of the requirements for M.A. degree at Hawassa University and deposited at University Library to be made available to borrowers under rules of the Library. I seriously declare that this thesis has not been submitted to any other institutions anywhere for the award of academic degree, diploma or certificate.

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ADVISORS' APPROVAL SHEET

This is to certify that the thesis entitled *"**Management Practices Of Trees Planted By Government Initiated Campaigns In Ethiopia Since 2016: The Case Of Selected Afforested Sites In Hawassa Zuriya Woreda, Sidama Region"*** submitted in partial fulfillment of the requirements for the Degree of Master's with specialization in Governance and Development, the Graduate Program of the School of Governance and Development Studies, and has been carried out by Bereket Kea under our supervision. Therefore, we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the school.

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We, the undersigned members of the Board of Examiners of the final Master's degree open defense by Bereket Kea ID NO GADS/0003/11 have read and evaluated his thesis entitled *"**Management Practices Of Trees Planted By Government Initiated Campaigns In Ethiopia Since 2016: The Case Of Selected Afforested Sites In Hawassa Zuriya Woreda, Sidama Region"***, and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirement for the degree of Master's Arts in Governance and Development Studies with Specialization in Governance and Development Studies.

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ACRONYMS AND ABREVIATIONS

CAF	Cancun Adaptation Framework
CRGE	Climate Resilient Green Economy
EFAP	Ethiopian Forestry Action Program
FAO	Food and Agriculture Organization
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
GE	Government of Ethiopia
GHG	Green House Gases
GTPII	Growth and Transformation Plan II
IFM	Improve Forest Management
MoA	Ministry of Agriculture
MoWE	Ministry of Water and Energy
NAMA	Nationally Appropriate Mitigation Action (NAMA):
NAP	National Adaptation Plan
NEP	National Environmental Policy
NTFP	Non-Timber Forest Products
PFM	Participatory Forest Management
REDD	Reducing Emissions from Degradation and Deforestation
UNFCCC	United Nations Framework Convention on Climate Change

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Abstract

This thesis was conducted with the main objective of assessing management practices of trees planted through government initiated campaigns in Ethiopia since 2016: the case of selected afforested sites in Hawassa Zuriya Woreda, Sidama Region. For achieving the objective of the study, both primary and secondary data were generated by employing qualitative and quantitative methods. Purposive and systematic random sampling procedures were applied to select two kebeles and 118 sample households respectively. The quantitative data was analyzed using in descriptive statistic like: frequency and percentage, where data is depicted in tables. Moreover, the qualitative data was analyzed using narration and descriptions that was used to authenticate the study. The results of the study showed that, the new government policy of campaigned tree plantation was not put clear demarcation of who to manage forests in the kebeles level. It didn't sufficiently consider endogenous knowledge of community forest management, which could help the forest management work easy. Even-though, the communities have their own indigenous knowledge and have awareness about the benefits of forests for their livelihood in local and environmental changes in globally, there are unclear land tenure policy ,lack of participatory forest management approaches, lack of supporting sufficient budget and low participation of gender issues in the forest management. It was recommended to improve forest management that; encourage forest management through community control system, allocate sufficient budget for forest management, making awareness for the community about environmental changes and its effects, expand indigenous knowledge of community based forest management system and implementing forest protection laws for those who violates forest laws.

Keywords: *Government Initiated Campaigns**,** Participatory forest management, indigenous knowledge, land tenure, government policy and environmental change.*

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The forest cover of Ethiopia has suffered severe deforestation and degradation through heavy exploitation resulting from an escalating demand for fuel wood and land for cropping and grazing (Lisanework and Mesfin, 1989). Historical sources indicate that in the early twentieth century about 42 million hectares, or the equivalent of some 35 percent of Ethiopia's land area, might have been covered with forest (EFAP, 1994). With the inclusion of savannah woodland, the estimate rises to some 66 percent of the country. In the early 1950s, the remaining forest covered some 19 million hectares, or 16 percent of the total land area (EFAP, 1994). By 2000, the coverage was estimated at only 4.2 percent (FAO, 2001).

Destruction of the natural forests of Ethiopia results directly in the loss of unaccounted plant and animal species as well as in a shortage of fuel wood, timber and other forest products. It also indirectly leads to more aggravated soil erosion, deterioration of the water quality', further drought and flooding, reduction of agricultural productivity, and to an ever-increasing poverty of the rural population. It is obvious that the depletion of forest resources contributes significantly to the climatic and physical environment change. To worsen the matter, the reforestation effort is not, by any means matching with the rate of deforestation (Abayneh et al, 2011).

Plantation development is a key strategy to address the problem of deforestation and supplement the shortage of supply of woods from natural forests. Plantation programs are conducted to achieve several objectives: to provide high value commercial timbers and fuel wood, to rehabilitate degraded lands, for agroforestry purposes, etc. Ethiopia, especially since 2007 is undertaking encouraging massive tree-planting campaigns in connection with the celebration of its unique Millennium, mainly with participation of rural people. However, several challenges are reported on these massive annual plantation campaigns, i.e. lack clear strategy on plantation programs, lack of truthful survival and forest inventory data at the regional and national level, poor input provision such as budget, forest seed, and nursery materials etc (ibid).

Ethiopia is vulnerable to the impacts of climate change and the unpredictability of climate variability. The country's adaptive capacity is constrained by limited livelihood options for the

majority of the population, inadequate ability to withstand or absorb disasters and the prevailing biophysical shocks it faces. To address these challenges, there is a need for stronger climate change adaptation policies, programs and implementation capacity, across sectors, levels of intervention and actors (MoA 2015 and MoEF 2015).

The adaptive capacity of a country can be improved by integrating climate information into planning and decision-making for development interventions, and prioritizing a focus on climate resilience across policies and programs. Ethiopia is on a good track, registering consistent and fast economic growth; transforming the agricultural, manufacturing and service sectors; developing infrastructure; and addressing the challenges of the vulnerable people. The enabling climate change policy environment supports these positive strides. Notably, the country has developed Climate Resilient Green Economy (CRGE) strategy and mainstreamed it into the second Growth and Transformation Plan (GTPII). Ethiopian government plans to move action on climate change adaptation forward by developing and implementing this National Adaptation Plan (NAP), in an effort to bring about transformational change in the country's capacity to address the impacts of climate change. The current efforts to develop this NAP are in compliance with Ethiopia's obligations under the Cancun Adaptation Framework (2010) of the United Nations Framework Convention on Climate Change (UNFCCC). The Framework recommended that countries formulate a NAP as a means of identifying medium and long-term adaptation needs and strategies, and mandate institutional responsibility for the effective implementation of NAP strategies and programs to address those needs (Till Pistorius , et al, 2017)

The area of forest is unevenly distributed in the country. Oromia, Southern Nations and Nationalities Regional State and Gambella region account for 95% of the total high forest area (WBISPP, 2004). The estimated total growing stock in the forest and wooded land is estimated at 285 million m3 and the commercial growing stock is 25% of this estimate which is 71.2 million m3 (FAO, 2010). The growing stock per hectare is estimated at 21.9 m3 which indicates that high forests are under stocked and producing below capacity. The estimated loss per annum is 1.1 million m3 (FAO, 2010). The major issue is the annual destruction of the natural forest for agricultural expansion. This is estimated to currently total about 59,000 ha per annum in the three main forested regional states of Oromia, Southern nations, nationalities and Gambella only

(WBISPP, 2004). Oromia regional state which contained over 50% of the high forest in the country is estimated to have lost 31% of its forest as a result of agricultural expansion. The total forest cover loss from 1990 to 2015 is estimated to be in the range of 803 000 ha (WBISPP, 2004).

Currently, ownership of natural forests is public. Plantation ownership ranges from government to individual farmers and communities. Industrial plantations are 100% publicly owned, while the non-industrial plantations are both publicly and privately owned. These forests supply local people with products such as fuel wood and construction wood, as well as other intangible benefits. Despite this, there is no reliable and up to date information on forest and tree resources regarding areas, locations, species, wood volumes and growth. The status and trends of forest industries is not well documented (WBISPP, 2004). Organizing and documenting reliable information is helpful for improving and planning the management of forest resources and monitoring changes. This study is therefore conducted with the objective to address gaps in information of managing practices of the tree plantations through government-led campaigns in Ethiopia since 2016.

1.2 Statement of the Problem

As a part of the efforts by the government, there have been various massive campaigns and mobilizations to make the country withstand the effects of climate related problems. Some of the efforts include watershed development, tree plantations and adopting proven technologies. Some of the initiatives took the form of campaign and implemented throughout the country within short period of time where the issues of later follow ups remain in question. Studies conducted by different body in different parts of the country reveal that the survival rate of the trees planted is low due to poor follow ups.

The study conducted by Daniel (2017) on the survival rate of planted trees in Tigrai region shows that the regional mean was 52% with high level of variation that ranged from 0 to 100% survival of out planted seedlings. Generally, the planting activity has failed and the reasons are lack of pre and post planting management, moisture stress, poor soil and site condition, planting unmanageable number of seedlings, weak law enforcement and lack of monitoring and evaluation mechanism.

In Hawassa Zuriya Woreda, two types of ownership were identified; private and communal. Among the ownership types, the private was the most successful while the communal was failed. For successful plantation, watering, post and pre planting management of out-planted seedlings and budgeting and permanent employment of guards were recommended.

Ethiopia has been in tooth and nail fight with poverty and Ethiopian government has shown its commitment to such efforts through massive resource mobilization and policy formulation in bid to reduce poverty and to transform the country's economy. In line with this effort, building climate resilient economy has been put on frontline. One of the strategies is intense tree plantation program implemented throughout the country. It is well noted that such efforts bear huge investment in terms of financial costs and manpower (MoA 2015 and MoWE 2015).

The government's efforts to bring the country under re/afforestation should be seen in light of the perceptions, attitudes and awareness of the public in order to make the impacts of such efforts sustainable. Since the planted trees need management and follow up, it has been unclear whether the government's approach is in line with public perceptions or not. It is obvious that tree planting has become major tool to fight climate change and also it has become one of the environmental governance points of debate worldwide. But there has not been a concerted effort to identify the perceptions of the public with regard to massive tree plantation program that would have contributed to the low survival rate of the planted trees in public and communal lands (Till Pistorius , et al, 2017). This same problem is rampant in Hawassa Zuria woreda that the author has noted on preliminary investigations.

Hawassa Zuriya Woreda is located stretching the western and southern shores of the Hawassa Lake. The forest status of the Hawassa Zuriya Woreda largely determines the ecological stability of Lake Hawassa since most of the sedimentation and siltation are coming into the Lake arise from highland areas of Hawassa Zuriya Woreda. As a result, the government has given prime attention for reforesting the barren lands in the area through seasonal government initiated tree plantation campaigns. Therefore, the study was strived to identify the perceptions, attitudes and management practices of residents of Hawassa Zuriya Woreda in managing trees planted by government initiated campaigns.

1.3 Objectives of the Study

1.3.1 General objective

The general objective of the study was assessing the management practices of trees planted through government initiated campaigns in and around Hawassa zuriya woreda, Sidama region.

1.3.2 Specific objectives

The research has the following specific objectives:

1. Assessing the local area practices in managing trees planted through government campaigns in the study area
2. Analyzing the perceptions of the local people on government driven tree plantations
3. To measure the survival rates of trees planted through government campaigns in the study area
4. To identify the factors that affected the survival of trees planted through government campaigns in the study area

1.4 Research question

1. What are the management practices used for trees planted through government campaigns?
2. How did the community perceive tree plantation through government initiated campaigns?
3. What is the survival rate of the trees planted through government campaigns?
4. What are the factors affecting the survival rate of the trees planted through government led campaigns?

1.5 Significance of the study

The study can serve to generate firsthand information on the perceptions, attitudes and management practices of trees planted through public mobilizations and campaigns. The government has been mobilizing the public to engage in massive tree planting programs in either in the form of afforestation, reforestation and agroforestry schemes.

After planting the trees, there should be feedbacks and data on the how it is being managed and how the society perceives and to what level various stakeholders discharge their responsibility with regard to protecting and managing the trees. The study might help to fill the gap that would occur as a result of the lack of feedback. The study has generated information on the society's perceptions on tree plantation campaigns and attitudes towards protecting the planted trees.

1.6 Scope of the study

The study was primarily sought to generate information on the public perception and attitudes and management practices, if any, with regard to campaign led tree plantation programs. The study was mainly used qualitative research approach with some quantitative survey data as the study has mainly intended to dig out the management practices of the trees planted through government-led tree plantation. In area scope, the study was delimited to the Hawassa Zuriya Woreda because of the limited time, human and financial resources available to conduct the study in depth and wide area coverage.

1.7 Operational definitions

- **Government initiated campaigns:** the campaign that was organized by the government bodies to mobilize community active participation for development agenda. .(FAO, cited in Kate Schreckenberg, et al., 2006)
- **Participatory forest management:** Participatory forestry refers to processes and mechanisms that enable those people who have a direct stake in forest resources to be part of decision making in all aspects of forest management, from managing resources to formulating and implementing institutional frameworks.(FAO, cited in Kate Schreckenberg, et al., 2006)
- **Indigenous knowledge:** Local and indigenous knowledge refers to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings. For rural and indigenous peoples, local knowledge informs decision-making about fundamental aspects of day-to-day life. http://www.unesco.org/new/en/natural-sciences/priority-areas/links/related-information/what-is-local-and-indigenous-knowledge accessed on 15/06/2020

- **Land tenure:** Land tenure is the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land. (For convenience, "land" is used here to include other natural resources such as water and trees.) Land tenure is an institution, i.e., rules invented by societies to regulate behavior. Rules of tenure define how property rights to land are to be allocated within societies. They define how access is granted to rights to use, control, and transfer land, as well as associated responsibilities and restraints. In simple terms, land tenure systems determine who can use what resources for how long, and under what conditions (http://www.fao.org/3/y4307e/y4307e05.htm, accessed on 15/06/2020)
- **Government policy:** Government policy describes a course of action, creating a starting point for change. They can influence how much tax the community pays, immigration status and laws, pensions, parking fines, and even where you go to school. While policies are driven to be non-discriminatory, they can affect specific groups of individuals. Policies are not laws, but they can lead to laws. (https://www.livecareer.com/resources/careers/planning/government-policy accessed on 15/06/2020)
- **Environmental change:** Environmental change is a change or disturbance of the environment most often caused by human influences and natural ecological processes. Environmental changes can include many numbers of things, including natural disasters, human interferences, or animal interaction. Environmental change does not only encompass physical changes, but it can be things like an infestation of invasive species is also environmental changes.(https://en.wikipedia.org/wiki/Environmental_change accessed on 15/06/2020)

1.8 Limitations of the study

Some of limitations of the study were challenged by the pandemic disease corona virus (COVID-19) gathering information from different unpublished sources. The study was financial shortage during data Collection, respondents' refusal to provide detailed information and time constraints. There was also unavailability of key informants during data collection, lack respondents awareness to give all the necessary information.

But, the researcher tried to minimize these problems and come up with reasonable findings.

1.9 Organization of the Study

This study is organized in five chapters. The first chapter provides a general backdrop about the research problem and its setting. Statement of the problem, objectives of the study, research questions, significance of the study, delimitation, limitation and organization of the study are the sections that constitute chapter one. The second chapter deals with review of the related literature. Wide range of experiences pertaining to children's lack of access to primary education with particular emphasis on pastoralist area of Semen Ari and practices were presented under chapter two. Chapter three is devoted to methodological aspects of this particular study undertaking. Research method adopted, sampling technique employed, data collection instruments used, methods of data analysis and ethical consideration are the major components of the third chapter. Presentation, analysis and interpretation of the field level data are treated under chapter four. Discussions regarding findings of the study are presented under each objectives of the study in a way to facilitate clear linkage between the purposes of the study and their corresponding findings. Chapter five comprises conclusion and implications for future action. Issues for future consideration are identified and presented under the last section of chapter five.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Theoretical literature review

2.1.1 Experience of Tanzania with Common Property Forest Management

Tanzania has one of the most well developed systems of participatory forest management (PFM), which is the name used for a variety of common property forest management schemes. Currently about 2.8 million hectares are under some type of PFM management as part of a concerted effort to end open access on public lands. The allocation of forests and their management responsibility to villages, private individuals or to government was promoted. Central, local and village governments may demarcate and establish new forest reserves. Devolution of power from the central government to local or village levels is nothing new in Tanzania and even in the 1960s and 1970s the government began to devolve control over natural resources through the process of "villagization." The Villages and Ujamaa Villages Act (1975) and Local Government Act (1982) among other things helped develop common property as a legal form of ownership and control.

The National Forest Policy (1998) promotes the transfer of public forests and national forest reserves to village level management and the Forest Act (2002) provides for registration and other procedures through which villages, groups or individuals may secure local jurisdiction over forests or take on management functions in forest reserves. There are three forms of common property forest management. In village forest reserves villages have ownership of forest lands. Community forest reserves are owned and managed by Proceedings of workshop: Policies to increase forest cover in Ethiopia part of a village and village forest management areas are parts of government reserves placed under community management only. There are two management approaches. Joint forest management (JFM) divides both management responsibilities and returns between local and/or central governments and communities living near forests. Community based forest management (CBFM) can be applied to village lands that were registered under the Village Land Act (1999).

What is interesting about CBFM is that, like in Nepal, villagers take full ownership and management responsibility for an area that has been designated as village forest reserve lying within the village territory. After the village forest reserve has been established, villagers can harvest and sell timber and other forest products and have full rights to define and enforce rules of access and monitor villager performance. Early reports indicate that PFM can improve forest quality. Although, as in Nepal, empirical evidence is limited, many villages are reporting improvements in water level and quality, natural regeneration in degraded areas, fewer fires, reduced encroachment by farmers and more wildlife (ibid).

2.1.2 Experience of Bolivia

Bolivia is different than the other two cases noted, because there has not been a concerted effort to reduce open access through the creation of common property. There are a variety of institutional regimes that control natural resources in rural Bolivia, but local communities have had substantial control over natural resources since 1952 when a major revolution ushered in an agrarian reform. Government reforms in the mid-1990s further decentralized forest control, but these measures mainly affected the lowland forests. In most areas systems are informal and evolved locally, implying significant and idiosyncratic differences in CPFM across communities. Some indeed are indigenous and have evolved over centuries.

According to Bluff stone (2007a), based on a 2000 survey of village level officials and 378 households in 32 communities in the five Bolivian Andes departments of Cochabamba, Chuquisaca, Oruro, Potosi and La Paz, in some villages there is defacto open access, with effectively no management. In the remainder, though, a variety of locally-developed structures and officials regulated forests. For example in some areas no managers were named, but in meetings villagers agreed on limits to Proceedings of workshop: Policies to increase forest cover in Ethiopia forest use. Other areas had a variety of officials involved, including mayors, deputy mayors, council members, community directors, general and agricultural secretaries, peasant union presidents, community presidents, forestry officers, forestry directors and heads of committees for environmental protection.

According to recent research by Bluffstone *et al* (2007), management in most villages is based on custom rather than formal rules and by some measures could be considered very weak management. For example, only 28% say that forest access is at least somewhat clear,‖ few respondents reported having fixed allotments for fuel wood (only 8%) and about three-quarters thought they would definitely not‖ be penalized if they took more forest products than they were allotted. Nevertheless, this system, which largely evolved naturally, appears to be affecting villagers‘ behavior. For example, Bluff stone *et al* (2007a) find that better CPFM is positively correlated with more and higher quality on-farm trees and response is generally quite elastic. This means that reducing open access causes villagers to put less pressure on the (free) common lands and perhaps use their own land more effectively.

Furthermore, using this same data set Bluffstone *et al* (2007b) find that better common property spurs adoption of a variety of new production techniques that substitute for products from (free) common lands. For example, households experiencing better common property forest management were more likely to use improved *Lorena* cooking stoves that often use less wood. They also more frequently use compressed natural gas as cooking fuel. These results suggest that common property management creates incentives to shift out of the free good from the forest and/or use forest products more effectively. Finally, Bluffstone *et al* (2007b) find that households facing better regulated forests tended to have fewer animals. To make up for the loss in fertilizer produced by animals, these farmers tend to adopt chemical fertilizers more readily than households having open access to forests.

2.2 Empirical Studies

Different studies have been conducted on the perception and survival rate of the tree plantation throughout country and having different area coverage and at different times. Study by Kaba Urgessa (2001) identify people’s awareness of changes in forest cover and attitudes towards tree planting and ownership, an investigation was carried out in six districts of the Jimma Zone of southwestern Ethiopia from 1991 to 1995. The results revealed that a significantly large proportion of the respondents perceived the forest cover in these areas as rapidly declining, mainly as a result of the shifting cultivation widely practiced.

The study also showed that farmers are very interested in tree planting and are in favor of private ownership of trees and forests. Protection of natural regeneration is also recognized as an important complement to tree planting in the rehabilitation of degraded forest landscapes.

The study conducted by Daniel Hagos (2017) on the survival rate of planted trees in Tigray region shows that the regional mean was 52% with high level of variation that ranged from 0 to 100% survival of out planted seedlings. Generally, the planting activity has failed and the reasons are lack of pre and post planting management, moisture stress, poor soil and site condition, planting unmanageable number of seedlings, weak law enforcement and lack of monitoring and evaluation mechanism. In the study area, four types of ownership were identified; private, communal, state and youth group. Among the ownership types, the private was the most successful while the communal was failed. For successful plantation, watering, post and pre planting management of out planted seedlings and budgeting and permanent employment of guards were recommended.

Improved management of degraded natural forest comprises a number of forest management techniques and activities such as area enclosure, enrichment planting, tending operations, and forest protection. They all aim to rehabilitate the productivity of the degraded remnant forestlands. Most natural forests are under the state ownership, classified as Priority Forest Areas (PFA) or regular state forests managed at the woreda level. A total area of 482,240 ha was identified to be suitable for improve forest management (IFM) through PFM (Till Pistorius, et al, 2017).

2.3 Absence of clear strategy

Attempts have been made to prepare action plan for forestry development at federal as well as regional level for proper implementation of forestry development program especially in selected forest priority areas. However, the forestry strategy and action plans developed at regional and federal levels (EFAP, OFAP, and TFAP) have not been properly implemented. Due to this the national forest priority areas were neglected and degraded due to illegal cutting of trees as well as forests. The lack of clear strategy is being reflected in some of the regions with the execution of communal planting without the full willingness of the society. There is lack of systemic approach, coordination, and appropriate planning of projects.

No clear strategy is set what to plant where (in agroforestry), what kind of management to apply on the existing area enclosures and how to help the local people from the interventions. In the region planting is mainly done on communal lands, most farmlands are bare, Communal plantations are dominated by eucalypt; other alternative species need to be sought (Abayneh Derero et al, 2011).

2.4 Participation of the rural and urban people

Participation of the rural and urban people in tree planting and conservation of the natural forests is very important to achieve the proposed strategy. Involving farmers and local people who live around the forests in tree planting and natural resource management is critical for conservation and development of forestry. This can be done through a participatory process where farmers and local people are involved in planning, design and implementation of the management plan. This exchange of information and partnership will help build confidence and to reassure all that the programs are relevant to their needs and ensures they have a sense of responsibility towards the project. Attention should be given to the creation of effective local management organizations to mobilize farmers in the conservation, development and appropriate use of forests and agroforestry products. Institutional arrangements at the community level are often key elements in natural resource conservation in planning agroforestry and tree planting for field implementation. The FAO's experience in small farmer development work suggests organizing farmers into small homogenous groups of about 10-15 farmers or heads of families so the people can more easily obtain government service. These informal groups work best when farmers have similar incomes, problems and aspirations (Rao, 1986 as cited in Badege Bishaw, *2003*).

2.5 Relevance to the national sustainable development plan/s or national strategies

Ethiopia's development objectives are set out in the country's national development plan, the Growth and Transformation Plan (GTP). The overarching goal of the GTP is reducing poverty and transforming Ethiopia into a middle-income country by 2025. The GTP has identified priorities for making Ethiopia a middle-income country, including boosting agricultural productivity, strengthening industries and increasing energy production. These priorities are built upon current and projected economic and social realities of Ethiopia.

The CRGE strategy aims to support the country's development objective of achieving middle-income status by 2025 in a carbon-neutral and climate-resilient way by transforming development planning, investments and outcomes. The strategy builds on the policy objectives of the NEP, the Growth and Transformation Plan and the voluntary NAMA. The strategy is supported by two national strategies: the Green Economy Strategy and the Climate Resilient Strategy (MoEF, 2016).

2.6 Relevant existing sectorial plan/strategies.

Voluntary Nationally Appropriate Mitigation Action (NAMA): The NAMAs contain mitigation targets across seven sectors (agriculture, building, energy, forestry, industry, waste and transport). These action plans are identified from the Growth and Transformation Plan (GTP) and are aligned with its overarching goal of sustaining economic growth while reducing poverty. These overall goals are aligned with bringing co-benefits while reducing GHG emissions (Ibid).

The Green Economy Strategy: A green economy strategy with four building blocks and fast-track initiatives was put in place in 2011. The GE Strategy takes an economy-wide approach to greenhouse gas reduction. It clearly presents and elaborates climate change mitigation actions across seven sectors that will enable Ethiopia to realize a low emission, fast and sustainable economic growth. It has set out initiatives for emissions abatement, budgetary requirements, institutional mechanisms and a GE action plan (Ibid).

The REDD+ Strategy: The REDD+ strategy aims to reduce emissions from deforestation and forest degradation, and enhances the role of conservation and sustainable management of forests. By creating financial value for carbon stocks, it aims to show the value of forests. The World Bank funds the REDD+ (Ibid).

One of the forestry sector mitigation goals in the GE strategy is to undertake activities that include "afforestation (2 million ha), reforestation (1 million ha) and forest management (2 million ha of forests, 2 million ha of woodlands) to increase carbon sequestration in forests and woodlands." The NAMA measures for reducing emissions from the forestry sector and from abatement through CO2 sequestration are consistent with the sectorial mitigation goal (Ibid).

2.7 Current legal/policy framework

According to Ministry of Environment and Forest (2016) the current policy framework is discussed as below:

Environmental Policy: The National Environmental Policy (NEP) provides the overarching policy and legal context for public policy responses to climate change. The NEP outlines policy objectives that pertain to climate change, including a focus on climate monitoring, control of greenhouse gases and use of renewable energy. The NEP provides the statutory mandate to the Ministry of Environment and Forest to coordinate the national response to climate change.

Forestry Policy: The major objective of the policy is to meet public demand in forest and forest products and to enhance the socio-economic and environmental contribution of forests. In the forestry policy, besides the definition of forest ownership (private and state) and purpose (protection and production), decentralized forest administration is recognized.

Climate Resilient Green Economy (CRGE) Vision: The CRGE Vision outlines Ethiopia's ambition to build a climate-resilient green economy by 2025. It has three corresponding objectives: fostering economic development and growth, ensuring mitigation of greenhouse gases and supporting adaptation to climate change. It builds on the policy objectives of the National Environmental Policy, the Growth and Transformation Plan, the NAMA and the EPACC (FDRE, 2011).

2.8 Benefits of Tree Plantation

According to Ministry of Environment and Forest (2016), the benefits of tree plantation are:

Social benefits: ***Income generated, jobs created, improved health, increased capacity and skills***

Potential economic benefits of the tree plantation measures include reducing poverty through increased production of wood and other fruit tree products for home and market consumption. Introducing and promoting A/R measures will provide the targeted communities with tangible benefits, such as timber products, fruits, fuel wood and fodder.

Production of NTFPs will ensure an added source of income to participate in Afforestation or Reforestation and agroforestry activities.

Nursery establishment and production of seedlings will provide additional income to farmer families. Farmers will earn money by selling seeds and other by-products. The promotion of fuel-efficient stoves will improve the health status of the farmer families in the areas.

Economic benefits: ***Increased business activities, increased availability of food, reduced fuel wood consumption***

Farmer families will generate their own food and will be food secure. Farmer families will stay in their home areas and they will not migrate elsewhere. Fruits and vegetables will enrich the nutrition of farmer families. In addition, they will strive to sell some of the excess production of fruits and vegetables on the market to earn some income. Furthermore, participants will gain access to local markets for timber, fuel wood, fruit and fodder. Fuel wood consumption will be decreased due to the introduction of fuel-efficient stoves. Through the implementation of NAMA measures, the participating communities will reduce their fuel wood consumption, which helps in reducing the indoor air pollution as well as deforestation.

Environmental benefits*: Reduced soil erosion, improved water conservation, reduced degradation or deforestation*

Decreased soil erosion is the most visible environmental benefit of the NAMA. After afforestation, no more precious soil is washed away during the rainy season, and the fields at the bottom of the hills are protected against damage from water runoff. Furthermore, the yield from the fields will increase because the forests, which typically include numerous nitrogen-fixating tree species, improve soil fertility and therewith directly contribute to the productivity of the fields. The soil and water conservation values of vegetation within and outside of the treated area will benefit the local people in the targeted areas. Agroforestry practices are also set to play a major role in improving soil fertility and fodder availability, and in meeting household and market demands.

2.9 Conceptual Framework

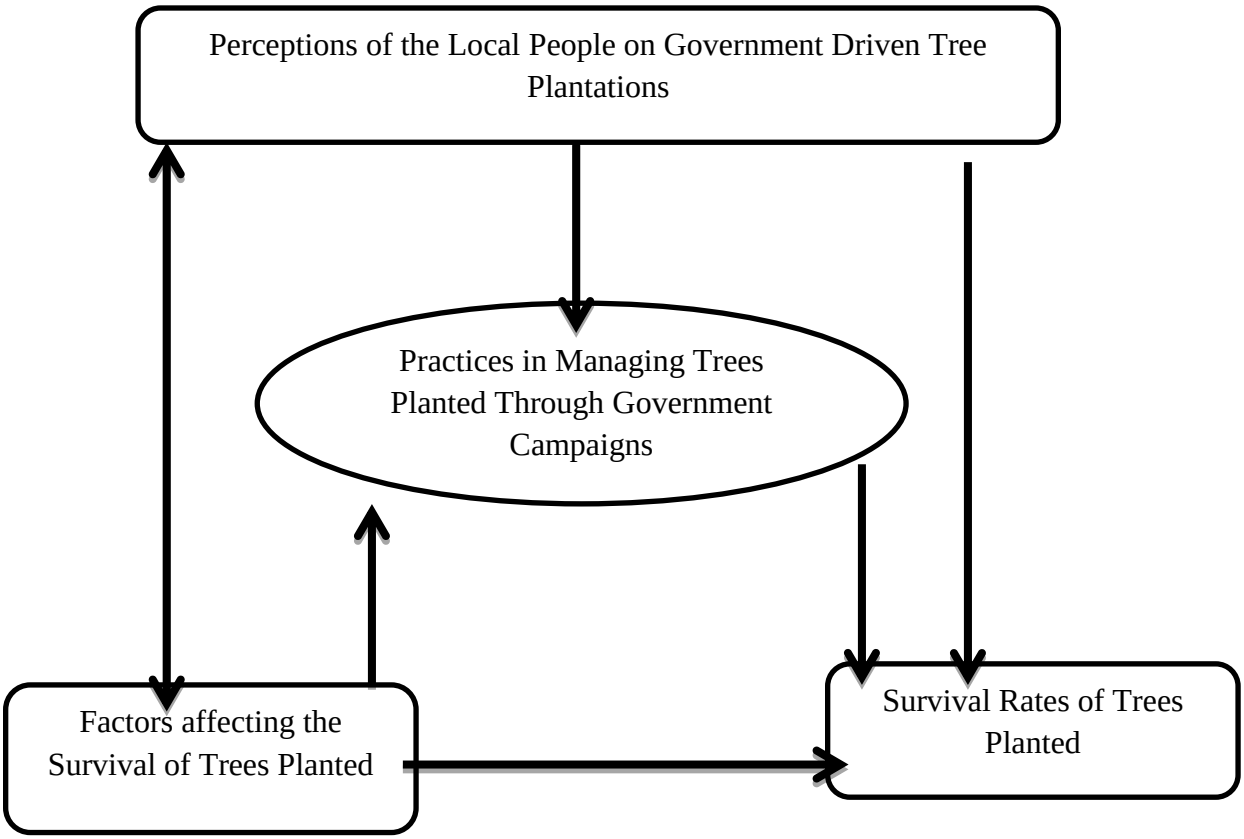

Figure 2.1: Conceptual frame of the study

Source: Constructed by the author based on literature (2020)

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Description of the study area

The study was conduct in the Hawassa Zuria woreda in Sidama Regional state; it was located at 298 km South of Addis Ababa and 25 km from Hawassa to the West and its geographical location area lies between latitude $7^0$00'- 0.oo^{0}72' at north and longitude $38^0$29'- $59^0$99' at East. The relative location of the Hawassa Zuriya Woreda is that it borders With Hawassa Lake in the east, with Boricha Woreda in the south, and it borders with Aje Woreda of the Oromia Region in the west and north. Dore Bafano town serve as the Woreda's center and Hawassa International Airport is also located in the Hawassa Zuriya Woreda.

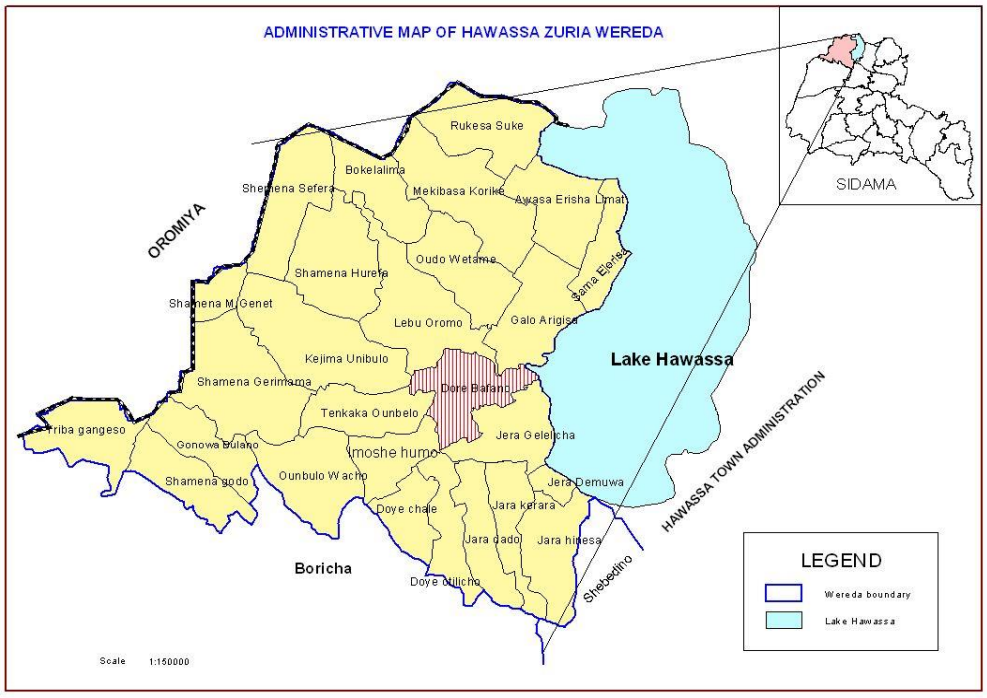

Fig. 3.1.: Map of Hawassa Zuriya Woreda

Source: Hawassa Zoria woreda Finance and economic development office socio-economic office (2020).

Regarding the climatic conditions of Hawassa Zuria woreda, there is no reliable meteorological data. However, the several scattered data reveals that the town experiences a woina dega climate with average annual rain fall of 1200mm-1500 mm and the mean annual temperature lies between 18-28.5°C this also confirmed by the fact that as with altitude between 1500-1708 meters above sea level.

According to HZWFEDS Social profile, (2018) the total population of Hawassa Zuria woreda is 180,000 of which male 91,800 and female 88,200 as CSA the annual population growth rate of the Sidama Region is 2.9 percent per year. The total number of households in the woreda is estimated to be 8512 households with an average family size of 6 persons per house.

3.2 Target Population

The target population of the study was farming community of Hawassa zuriya woreda found in the two kebeles; Labu koruma and Hurufa, where fovernment initiated tree plantations are located. The units of the analysis were household heads for random sampling and key informants were used for purposive inquiries.

3.3 Sampling procedure

Multi-stage sampling method was used in the study. Accordingly, the study area, Hawassa Zuriya woreda was selected in the first stage using purposive sampling method due to the existence of several campaign based tree planted sites. In the second stage, two tree planted sites through government driven campaigns was purposively selected among the available afforestation sites within the woreda. In the third stage, sample households were randomly selected from the communities that are living around the afforestation sites. The sample households were involved in sampling survey using questionnaire.

Furthermore, key informants from the community and concerned governmental institutions were purposively selected based on their knowledge and information concerning government campaign based afforestation practices.

3.4 Sampling techniques and Sample size determination

To determine the total households sample size the Yemane (1967)

$$n = \frac{N}{1 + N(e)^2}$$

$$= \frac{597}{1+597(0.05)} = 118$$

Where n= is the sample size **N**= is the total number of households∂ = is the margin of error Therefore, the sample size for this study was 118 respondents.

From seven kebeles of the Hawassa Zuria Woreda, the researcher has selected 2 sample kebeles by using purposive sampling technique. Because, the researcher has previous knowledge and the areas host tree plantation sites under government initiated afforestation camping program.

With regard to the sample households a total of 118 respondents were selected by using systematic random sampling. Moreover, interview respondents were selected from Hawassa woreda EPF office experts, selected kebeles Agricultural development agents and community around the planting sites.

Table 3.1: Sampling frame of kebeles

Sample kebeles	**No of households**	**Sample households**	
		Frequency	Percentage
Labu korumo	**352**	**70**	**59**
Hurufa	**245**	**48**	**41**
Total	**597**	**118**	**100**

3.5 Method of Data Collection

The methodology employed was qualitative approach and the data was collected from both primary and secondary sources. Survey, was an instrument to collect most of the qualitative data through structured questionnaires. Moreover, participatory rural appraisal methods were also in use to gather reliable firsthand information from the respondents. Both primary and secondary data were collected from relevant sources.

The primary data pertaining to respondents who participate in the technology dissemination were gathered from sample respondents through structured questionnaires.

3.5.1 Observation

On top of personal life an experience, field observation to select the study area was carried out the major area of focus. This observation and experience acquired from just being member of the community were help to assess research questions and objectives.

3.5.2 Questionnaires

The questioners were also including both open and close ended questions. Particularly open-ended questions are used to extract response and further explanation. The questioners were filled by data enumerators by asking sample respondents from the selected 2 kebeles.

3.5.3 Interview

To supplement the data collected through questionnaire the researcher also conduct structured interviews with environmental protection and forest office head and employee. The objective of the interview was to solicit ideas which will not be cover by the questioner and for the purpose of triangulation.

3.5.4 Focus Group Discussion

FGD Participants were selected from a narrowly defined target population whose opinions and ideas are relevant to the research. The discussion was observed and main points were jotted down in notebook by researcher and mobile recorded by the help of others. They were selected from agricultural development agents, kebeles leaders and community members who live around the planting sites 6 members in each kebeles (total two groups) were selected to collect data.

3.6 Sources of Data

The sources are from both primary and secondary sources. The records kept by the Department of Environment and Natural Resource Protection were analyzed. Primary source of data were the respondents participating in in depth interviews.

3.7 Method of Data Analysis

Mixed method of data analysis was applied in this study. Data processing is essential part of the research operation by: coding, editing, data entry and checking were undertaken by the researcher. For the purpose of this study the available data were analyzed and presented by using mixed methods such as qualitative and quantitative technique.

For quantitative, statistical package for social sciences (SPSS computer software version 20) helped the researcher in working with descriptive statistics like frequencies, percentage and tables to assess the management practices of trees planted through government initiated campaigns in Ethiopia: the case of selected afforested sites in Hawassa Zuriya Woreda.

Qualitative data from focus group discussions, key informants interview and own observations were organized, then analyzed by using narration in order to confirm its validity and reliability with the quantitative data set.

3.8. Validity and Reliability

3.8.1 Validity of the study

Validity has been defined by "the extent to which [a test] measures what it claims to measure" (Gregory, 1992). A measure is valid if it measures what it is supposed to measure Joppe (2000) argues that validity determines whether the research truly measures what it was intended to measure or how truthful the research results are. Therefore, the researcher ensured that the questions designed are based on the specific objectives.

3.8.2 Reliability of the study

Joppe (2000) defines reliability as: The extent to which results are consistent over time and an accurate representation of the total population and if the results of a study can be reproduced under a similar methodology. This study applied the same with view to achieving reliability as per the objectives of the study.

3.8 Ethical Consideration

According to this during data collection researchers are expected to respect the participants. Therefore, the researcher communicated all respondents legally and smoothly. Any communication with the concerned bodies were accomplished at their voluntarily agreement without harming and threatening the personal and institutional wellbeing.

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS

The purpose of this research was to assess the management practices of trees planted through government initiated campaigns in Ethiopia since 2016: the case of selected afforested sites in Hawassa Zuriya Woreda, Sidama Region. Data were gathered from 118 selected households by using close ended survey questionnaires. Additionally, key informants (6 in number) were interviewed in the *woreda* level and two FGD (14 in numbers) was held with selected respondents in the *kebele* level. The data gathered from the respondents were analyzed by using descriptive statistics with frequency, percentage and tables. Data gathered from survey questionnaire was analyzed through statistical packages for social sciences (SPSS) version 20 software. Lastly, the data obtained from the open ended items of the interview and observation were organized and analyzed qualitatively to supplement the data collected through the questionnaires.

4.1. Characteristics of the Respondents

4.1.1. Demographic characteristics of the Respondents

The demographic features of the respondents include gender; age structure and marital status as it has been presented in Table 4.1

Out of the total 118 household respondents, 80.5 % (95 hhs) were male- headed and the remaining 19.5 % (23 HHs) were female-headed. Beside this, out of the total respondents 118 (100%) of sample respondents belong to productive age group. This is favorable condition for natural management when the concerned bodies use that potential for natural resource management effectively. Furthermore with respect to marital status 80.5% (95 hhs) of the respondents were married; 3.4% (4 hhs) were single; 3.4% (4 hhs) were widowed and the remaining 12.7% (15 hhs) were divorced.

Table 4.1.: Demographic Background of the Respondents

Variables	Category	Frequency	Percentage
Gender of Respondents	Male	95	80.5
	Female	23	19.5
	Total	118	100
Age of Respondents	Below 20	1	0.85
	21-35	51	43.22
	36-50	52	44.07
	51-65	14	11.86
	Total	118	100
	118	118	100
Marital status of respondent	Single	4	3.4
	Married	95	80.5
	Divorced	15	12.7
	Widowed	4	3.4
	Total	118	100

Source: Own household survey, 2020

4.1.2. Socio-economic status of the Respondents

Table 4.2 clearly illustrates socio-economic status of the sampled households. The educational status of respondent as Table 4.2 below shows that respondents with no formal education, those who attended adult education , those who attended primary education and those who attended secondary education account for 15%, 16%, 80% and 7% respectively. With regard to education status of the respondents, more than one fourth of the respondents of sampled households were uneducated. This in turn, could have its own negative implication in relation to forest management because uneducated people are likely to have less awareness about laws, regulations, policies and strategies. Concerning the family size, 47.46% (56 hhs) of the respondent reported below 5 family members; 57(48.30%) respondent reported 6-10 family members and 4.24% (5 hhs) respondent reported they have a family size of above 10 members. Apparently, this study showed the most of the respondents in the study area had large family size and it likely resulted in to poverty and their life is depended on forests which eventually could have pressure on forests.

The monthly income of the respondents' is more or less irregular and as a result they had no fixed income. The average income of the respondents in the area has showed disparity. Accordingly, 21.19% (2 5hhs) of respondents claimed that they had an average monthly income of below 500 birr; 59.32% (70 hhs) of respondents got about 500 – 1000 birr and 19.49% (23) of respondents' income was above 1000 birr. Most of household heads asset holdings depend on farm activity in the study area. On the other hand, land tenure conditions of the respondents were dominantly private 82.2% (97 hhs), whereas 14.4% (17 hhs) rented and 3.4% (4 hhs) kebele/school owned rented.

Table 4.2 . Socio-economic status of the Respondents

Variables	Category	Frequency	Percentage
Educational Level	No formal education	15	12.7
	Adult education	16	13.6
	Primary education	80	67.8
	Secondary education	7	5.9
	Tertiary education	0	0
	Total	118	100
Family size	Below 5 households	56	47.46
	6-10	57	48.30
	Above 10	5	4.24
	Total	118	100
Households income	Below 500 birr	25	21.19
	500-1000	70	59.32
	Above 1000	23	19.49
	Total	118	100
Land tenure condition	Private	97	82.2
	Rented	17	14.4
	Kebele/school owned rented	4	3.4
	Total	118	100

Source: Own household survey, 2020

4.2 Local practices in managing trees planted through government campaigns

In order to know whether the respondents were well acquainted with the tree plantation through government initiated campaigns, they were asked for how long they had lived in the area and the distance from their home to the site of the plantation. Table 4.3 shows that 83.9% (99 hhs) reported that they got land from their family and live in the area more than 20 years, 7.6% (9 hhs) responded that they had lived in the area 16- 20 years; 1.7% (2 hhs) lived 11-15 years, 1.7% (2 hhs) and the rest 5.1% (6 hhs) said they have lived less than 5 years in the area. Moreover, majority 97 (82.2%) of the respondents are living in the nearby area of the tree plantation sites.

Table 4.3. The respondent's stay duration and distance to the plantation sites

Variables	Category	Frequency	Percentage
Year of Stay in the area	Below 5 years	6	5.1
	6-10	2	1.7
	11-15	2	1.7
	16 -20	9	7.6
	Above 20 years	99	83.9
	Total	118	100
Distance from planted area	In front of the area	97	82.2
	100-200 meters	18	15.3
	Above 200	3	2.5
	Total	118	100

Source: Own household survey, 2020

As table 4.4 below shows, from 118 respondents, most of the respondents; 91.42% (107 hhs) responded that they had trends of planting trees in their garden; while, only 8.58% (11 hhs) of the respondents replied that they have no practice of planting trees on their holdings. On the other hand, most of the respondents 68(63.55%) get seedling from purchase from the others, 17 (15.89) provided from NGOs, 13(12.15) provided from government and 9 (8.41) develop from his own nursery.

According to key informants interviewed, the government provides seedling and awareness creation training for the community. According to the FGD participants, the community had old age practices of planting trees on private land in pasture, along pasture and in communal lands. However, providing of seedling and awareness creation by the government body is very limited.

The study also finds that the private nursery site and follow ups are rarely accustomed as the community use traditional way of raising seedlings.

Table 4.4 Practices of the community planting trees on their Garden

Variables	Category	Frequency	Percentage
Trends of community planting tree in their garden	Yes	107	91.42
	No	11	8.58
	Total	118	100
Sources of seedling for plantation	Develop his own nursery	9	8.41
	Purchases from others	68	63.55
	Provided from government	13	12.15
	Provided from NGOs	17	15.89
	Total	118	100

Source: Own household survey, 2020

Table 4.5 shows that, from 118 respondents, the only 20.03% (26 hhs) said that the community had some sort of indigenous practices of forest management in the study area and 77.97 (92 hhs) responded as they had no practices. On the other hand, on the practiced of the management, most of the respondents 89.81% (97) claimed they practiced neither modern nor traditional way of forest management, 5.56% (6 hhs) said they practices traditional, 2.74% (3 hhs) use modern practices and 1.68 % (2 hhs) both ways of the managements. This implies that new government policies are not clear for the community, and they don't know about who is responsible to manage.

Asked about the cause for poor conservation practices, about 85.29% (29 hhs) of the respondents said that there was no permission from the government, 11.76% (4 hhs) replied lack of community awareness and 2.95% (1 hh) replied ignorance are the main causes for poor management system in the kebeles. This implies that the government bodies did not support community by providing seedling. Community forestry has been defined by FAO (1978) as any situation, which intimately involves local people in a forestry activity.

It embraces a spectrum of situations ranging from woodlots in areas with short of wood and other forest products for local needs, through the growing of trees at farm and community level to provide cash crops and the processing of forest products.

Despite major problems of deforestation and land degradation, massive soil conservation and afforestation programs have been going on in Ethiopia since the early 1970's (Hurni, 1990; Gamachu, 1990 as cited in Badeg, 2001). Community level tree planting has been practiced for so long time through planting trees and earning cash income for their survival, simultaneously reduced dependence on crops. Similar finding by Sandewall et al. (2015), planted trees and natural forest are the second income source as a percent of total households in Ethiopia after crop production and 6–25% for Vietnam. However, increase of tree and forest plantation at the expense of unsustainable farm raises incomes for some, it did not immediately bring household out of food insecurity and shortage. Other reason farmers decided to plant tree compared to producing crops because growing of trees required less labors. *Eucalyptus* tree was the most dominant types of tree planted in the watershed (more than 90%) which is followed by *Juniperusprocera*tree (locally called *Tid*) to some extent *Sesbaniasesban, tree Lucerne, shrubs* and *grass* was recently practiced. Due to fast growing, less time required for treating and less susceptible to climate change farmers preferred *eucalyptus* tree. On the contrary, from long experience they had farmers expressed *eucalyptus* tree has negative ecological effect, as it needs large volume of water requirement (Worku*et al., 2017).*

According to FGDs participants, though the communities had indigenous forest management practices, due to lack of clear laws that helps community to manage the trees planted in their surroundings through government initiated campaigns and the government's monopoly over managing forests, the community have no understanding about the way or practices of following up and managing tree planted.

Table 4.5. Indigenous forest management systems

Variables	Category	Frequency	Percentage
Availability of Practices of indigenous forest management system	Yes	26	22.03
	No	92	77.97
	Total	118	100
Systems of forest management	Traditional ways	6	5.56
	Modern ways	3	2.78
	Both ways	2	1.86
	Others	97	89.81
	Total	118	100
Causes for poor managements	No permission from the governments	29	85.29
	Lack of awareness in the community	4	11.76
	Ignorance	1	2.95
	Total	34	100

Source: Own household survey, 2020

As indicated on table 4.6 below regarding the responsible bodies to manage forest in the study area, about 94.92% replied the government had the major responsibility. Likewise, only 3.39% (4 hhs) of the respondents replied the community had the responsibility in managing the trees planted in the area. Furthermore, 11.86% (14 hhs) said religious institutions are in charge and the remaining 0.85% (1 hh) said Idir leaders manage forest in the kebeles. This implies the community and others stakeholders had little right to manage forests. According to FGDs, "Terara Latisha enterprises" that work on forest management has as the leaders of the enterprise who are also the members of kebeles leaders.

According to key informants' interview responses, modern forest management practices was not practiced in the kebeles because there were policy gap, with no clear laws and regulation which give responsibility for the community based organizations like Idir Leaders, Religion leaders to manage forests. In addition, the recent law have not given clear responsibility for zonal and woreda level administrative bodies. That implies the government was the only responsible bodies to manage forests.

Table 4.6. ***Responsible bodies to manage planted trees in the area***

Variables	Category	Frequency	Percentage
Government	Yes	112	94.92
	No	6	5.08
	Total	118	100
Community	Yes	4	3.39
	No	114	96.61
	Total	118	100
Religion institutions	Yes	14	11.86
	No	104	88.14
	Total	118	100
Idir leaders	Yes	1	0.85
	No	117	99.15
	Total	118	100

Source: Own household survey, 2020

4.3. The perceptions of the local people on government driven tree plantations

With regard to the effectiveness of development agents' technical support to protect trees planted through government initiate campaigns, Table 4.7 below shows that more than 61.86% (78 hhs) judged the effectiveness as low, 42.37% (57 hhs) said very low, 19.49 (23 hhs) low, responded as ineffective and the only 19.49% (23 hhs) said it is medium and 12.71% (15 hhs) responded as high. This implies, the development agents have little role to follow up planted trees.

On the other side the main causes for low effectiveness of development agents' technical support to protect planted trees through government campaign, 13.56% (16 hhs) respondents said that ignorance was the cause, 96.61% (114 hhs) said lack of commitments by government bodies, 84.75% (100 hhs) replied lack of budget and lack of will of community 11.02% (13 hhs). This implies that lower hierarchy of government bodies' conduct tree plantation in most politicked manner for only the sake of earning political images and don't allocate sufficient budget.

According to key informants interviews from Woreda replies that the different ideas were raised by different experts, on one side, they replied as there were effective technical development agents' support to protect planted trees in government campaign and the other replied as there are no logistic support from the government to equip development agents as a result the support is ineffective.

The researcher observed very poor nursery site in farmers training center and communicate with development agents and as they replied as they have no logistics support from government bodies and due to lack of budget the nursery site was ineffective. This implies that the government officials have no commitment to support kebeles development agents technically and financially, as a result development agents' were ineffective technically to support to protect planted trees through government campaign.

Table 4.7. The Effectiveness of development agents' technical support to protect planted

Variables	Category	Frequency	Percentage
Level of effectiveness of development agents technical support	Very high		
	High	15	12.71
	Medium	23	19.49
	Low	23	19.49
	Very low	57	42.37
	Total	118	100
Causes for low level of Development agents technical support			
Ignorance	Yes	16	13.56
	No	102	86.44
	Total	118	100
Lack of commitment of government bodies	Yes	114	96.61
	No	4	3.39
	Total	118	100
Lack of budget	Yes	100	84.75
	No	18	15.25
	Total	118	100
Lack of will of community	Yes	13	11.02
	No	105	88.98
	Total	118	100

Source: Own household survey, 2020

As shown in the table 4.8 below, from total of 118 respondents, all of the respondents, i.e. 100% (9.32% (11 hhs) highly disagree plus 90.68% (107 hhs) disagree) replied as the governmental forest management law, rules and regulations has been ineffective in the study area. Attention should be given to the creation of effective local management organizations to mobilize farmers in the conservation, development and appropriate use of forests and agroforestry products.

Institutional arrangements at the community level are often key elements in natural resource conservation in planning agroforestry and tree planting for field implementation. This implies that, the respondents have no any awareness and information about the forest laws.

Table 4. 8. Effectiveness of Governmental forest management laws

Variables	Category	Frequency	Percentage
Effectiveness of Governmental forest management law, rules and regulations	Highly disagree	11	9.32
	Disagree	107	90.68
	Somehow agree	-	-
	Agree	-	-
	Highly agree	-	-
	Total	118	100

Source: Own household survey, 2020

As Table 4.9 shows below, with respect to the participation of community in planting trees through government initiated campaign, 54.25% (67 hhs) responded as very low, 21.34% (24 hhs) said the participation was low, 11.02% (13 hhs) responded as medium and 11.86 % (14 hhs) said high. This shows more than 75% of the respondents responded as the community participation in this program was low. This implies the community participation was very low. On the side of participatory forest management, almost all of the respondents (about 96.61%) responded as it had not been practiced in the kebeles. This implies the communities' role was neglected in the environmental and forestation programmes decision making processes. Concerning division of role, 94.87% (111 hhs) responded that there was no division of role and only 5.13% (7 hhs) respondents said there was share of role between stakeholders to manage forests. This implies that forest management issue was taken as the solely government issues and it seems there is little or no awareness among the lower government hierarchy to divide the role amomg potential stakeholder.

According to the Key Informants of *woreda* environmental protection and forestry office experts, the forest management right is at the hand of government bodies and the community based organizations had the only right of planting trees.

According to FGDs "*Terara Latisha limat enterprises*" that work on forest management who are the leaders of the enterprise arealso members of kebeles administration and if the campaign was for one week, the communities participate only first days for the sake of name saving or avoid being absent. Apart from the day of mass plantation, the responsibility to follow up and manage the trees planted and forests would remain on the hands of government bodies and the community based organizations have only the right of planting trees and there were no clear division of role between regional, zonal and Woreda Environmental protection and forest sectors. This finding is also supported by the other studies like a study by Badeg B. (2001) which suggested that the participation of the rural and urban people in tree planting and conservation of the natural forests is very important to achieve the proposed strategy. Involving farmers and local people who live around the forests in tree planting and natural resource management is critical for conservation and development of forestry. This can be done through a participatory process where farmers and local people are involved in planning, design and implementation of the management plan. This exchange of information and partnership will help build confidence and to reassure all that the programs are relevant to their needs and ensures they have a sense of responsibility towards the project.

Table 4.9. Participatory forest management practices

Variables	Category	Frequency	Percentage
Levels of active participation of community in planting trees	Very high		
	High	14	11.86
	Medium	13	11.02
	Low	24	21.34
	Very low	67	54.24
	Total	118	
Agreements of Level of participatory forest management practiced in the area	Highly disagree	4	3.39
	Disagree	114	96.61
	Somehow agree	-	
	Agree	-	
	Highly agree	-	
	Total	118	100
Division of powers to manage forest in the area	Yes	7	5.13
	No	111	94.87
	Total	118	100

Source: Own household survey, 2020

The sample respondents were asked whether they realized the looming environmental and climatic consequences of desertification. Accordingly, the sample respondents responded as 89.83% (106 hhs) referred they were aware of decline in biodiversity and ecosystem services through loss of species and ecosystems, about 88.03% (103 hhs) were aware of decreases in crop products, 93.22% (110 hhs) feel increase of drought, 90.68% (107 hhs) were aware of acid rain and regional-scale air pollution, 89.83% (106 hhs) said they know about ozone depletion, 92.37% (109 hhs) mindful of global warming and climate change, 88.14% (104 hhs) were cognizant of land degradation due to desertification, erosion, salinization, 88.14% (104 hhs) told they were facing freshwater pollution and scarcities as a result of it, 91.53% (108 hhs) said they understand it as a threats to human health from persistent inorganic pollutants and heavy metals and 88.98% (105 hhs) replied they were acquainted about excessive nitrogen production and over fertilization.

FGDs confirmed they that plant trees to meet the needs of fuel wood, construction materials and fodder from trees planted outside forests, to reduce degradation of soil resources and improve productivity of agricultural lands and to reduce the pressure from the remaining natural forests and to conserve biodiversity. This implies the communities had awareness about forest issues but the government policies were not clear for them.

Table 4.10. The main consequences of the expanding desertification.

Variables	Category	Frequency	Percentage
Declines in biodiversity and ecosystem services through loss of species and ecosystems	Yes	106	89.83
	No	12	10.17
	Total	118	100
Decreases of crop products	Yes	103	88.03
	No	15	11.97
	Total	118	100
Increases of drought	Yes	110	93.22
	No	8	6.78
	Total	118	100
Acid rain and regional-scale air pollution	Yes	107	90.68
	No	11	9.32
	Total	118	100
Ozone depletion	Yes	106	89.83
	No	12	10.17
	Total	118	100
Global warming and climate change	Yes	109	92.37
	No	9	7.63
	Total	118	100
Land degradation due to desertification, erosion, salinization	Yes	104	88.14
	No	14	11.86
	Total	118	100
Freshwater pollution and scarcities	Yes	104	88.14
	No	14	11.86
	Total	118	100
Threats to human health from persistent inorganic pollutants and heavy metals	Yes	108	91.53
	No	10	8.47
	Total	118	100
Excessive nitrogen production and over fertilization	Yes	105	88.98
	No	13	11.02
	Total	118	100

Source: Own household survey, 2020

4.4. The survival rates of trees planted through government initiated campaigns

As Table 4.11 and figure 4.1 shown below, regarding the level of survival rates of planted trees through government initiated campaign, 35.59% (42 hhs) rated as very low, 54.24% (64 hhs) said low and the remaining 10% (12 hhs) responded as medium.

This shows greater than 89% of the respondents responded as level of survival rates of planted trees through government initiated campaign in the area was low. With respect to trends of survival rates of planted trees through government initiated campaign in the area, 38.13% (45 hhs) indicated as increasing, 27.97% (33 hhs) said it has been decreasing, 21.2% (25 hhs) said there is no change and some 12.7% (15 hhs) said they are unaware of the trend of the survival rate of the trees planted. According to this survey result, the survival rates of planted trees in sampled kebeles are low.

Table 4.11. The levels and trends of survival rates of planted trees

Variables	Category	Frequency	Percentage
Level of survival rates of planted trees	Very high	-	-
	High	-	-
	Medium	12	10.17
	Low	64	54.24
	Very low	42	35.59
	Total	118	100
Trends of survival rates of planted trees	Increasing	45	38.13
	Decreasing	33	27.97
	No change	25	21.2
	Unaware	15	12.7
	Total	118	100

Source: Own household survey, 2020

Key informants of *woreda* environmental protection and forestry office experts confirmed that the survival rate of the planted trees was medium due to protection problem, technical problem from nursery site to plantation sites, shortage of water in the planted area, and lack of follow-up by concerned bodies but the trends of survival rate were increasing since 2016.

Focus group discussion gave different ideas on the survival rates but concludes on the survival rates were very low due to the area had shortage of water, the area was not free from animal trembling and human and even grazing of animals by local community at the night time and morning was common due to that the survival rate is very low and the trends also very low. The researcher observed that there were very low survival rates of planted trees and there are has been little or no change with respect to trends of survival rates.

This implies that the survival rates of planted trees and the trends of survival rates were very low due to technical, social, financial and policy related issues. The researcher took personal observation to the area along the tree plantation sites and observed grown sparsely distributed trees planted before years.

Fig. 4.1: The survival rates of planted trees and showing the barren land

As Table 4.12 below shows, regarding the realization of the potential benefits of tree plantation for the ecology of the area and environment at large, the respondents put forward their views. Accordingly, 96.61% (114 hhs) indicated the trees as source of water, 95.76% (113 hhs) referred sample availability of grass to livestock, 94.92% (112 hhs) identified bee keeping, 94.07% (111 hhs) claimed fuel wood and 94.92% (112 hhs) said trees avoid environmental change. This implies the community has some level of the awareness on benefits on planted tree for their livelihood in particular and for environment in general.

FGDs confirmed that they plant trees to meet the needs of fuel wood, provide grass to livestock, construction materials and fodder from trees planted outside forests, to reduce degradation of soil resources and improve productivity of agricultural lands and to reduce the pressure from the remaining natural forests and to conserve biodiversity. This implies, the communities have awareness about benefits on planted tree for individual, local and globally.

The problems related with seedlings survival need a further investigation. Focusing on numbers is a problem: there needs a paradigm shift from quantity to quality. There is serious seedlings survival problem; there are trees on backyard, however, farm lands remaining bare; this depicts management problems in the latter.

Grazing poses the greatest problem on the success rate of agroforestry interventions, open grazing remains to be a threat to seedlings survival. Moisture stress happens to be the principal causes of seedling death in arid localities. In some places, termite attack is the major cause of seedling death. Due to all these and other problems in nursery, planting and post planting activities, performance of the planted seedlings happen to be inferior quality. There is also problem of species/provenance site matching. However, these narrated problems on seedling survival happen to contradict with the reported seedlings survival report of 56 to 87% to a certain extent. There are site preparation problems, planting problems, time competition with agricultural activities and people sometimes do not own the planting objective (Abayneh Derero et al 2011)

Table 4.12. The benefits of effective planted trees for the ecology

Variables	Category	Frequency	Percent
Provide water	Yes	114	96.61
	No	4	3.39
	Total	118	100
Provide grass to livestock	Yes	113	95.76
	No	5	4.24
	Total	118	100
Bee keeping	Yes	112	94.92
	No	6	5.08
	Total	118	100
Fuel wood	Yes	111	94.07
	No	7	5.93
	Total	118	100
Control environmental change	Yes	112	94.92
	No	6	5.08
	Total	118	100

Source: Own household survey, 2020

4.5. The factors that affects the survival of trees planted through government campaigns

According to Table 4.13 below, farmers gave their verdict on major factors that affect survival rates of planted trees in the kebeles. Accordingly, abolition of socially accepted community by laws and regulation by current government environmental laws, lack of interest to expand indigenous natural resources management practices by government bodies, lack of gender equality responsibility in natural resource management, land ownership related questions in the community, lack of budget to control the planted tree and lack of community participation in re/afforestation programs, processes and policy formulation process. This implies the community had awareness on the major factors that makes low survival rates of planted trees.

Key informants of *woreda* environmental protection and forestry office experts confirmed that the community had socially accepted laws and regulation but these laws and regulations were not incorporated as an integral parts of recent laws, it also did not consider gender role or responsibility, land ownership related questions in the community, lack of sufficient budget to control the planted tree, lack community participation in policy issues of environment not only because of the higher stake of local people in the management of the forest resource but also in the perspective of considering multiple interests of households, which necessitates firsthand knowledge, transparent decision making and opportunities to negotiate and accommodate multiple interests indecision making.

FGDs also confirmed that the communities had socially accepted laws and regulations but it was not practiced in the kebeles, it was also not consider equal gender responsibility, land ownership related questions in the community, lack of community participation in policy issues of environment. This implies, the new forest policy was erodes socially accepted community laws and regulation, lack of interest to expand indigenous natural resources management mechanisms, lack of gender equal responsibility in natural resource management, land ownership related questions in the community, lack of budget to control the planted tree and lack of community participation in policy issues of environment.

Table 4.13 The major factors that make low survival rates of planted trees

Variables	Category	Frequency	Percent
Abolition of socially accepted community laws and regulation by current environmental government laws.	Yes	112	94.92
	No	6	5.08
	Total	118	100
Lack of interest to expand indigenous natural resources management mechanisms by government bodies	Yes	112	94.92
	No	6	5.08
	Total	118	100
Lack of gender equal responsibility in natural resource management.	Yes	112	94.92
	No	6	5.08
	Total	118	100
Land ownership related questions in the community	Yes	113	95.76
	No	5	4.24
	Total	118	100
Lack of budget to control the planted tree	Yes	113	95.76
	No	5	4.24
	Total	118	100
Lack community participation in policy issues of environment	Yes	112	94.92
	No	6	5.08
	Total	118	100

Source: Own household survey, 2020

Table 4.14 shows below, regarding to the measures taken to improve the survival rates of planted tree through government initiated campaign in the kebeles, the respondents had identified the possible measures that would help to enhance the survival of the tree planted. Accordingly, the respondents suggested forest management through community follow up system, forest management through government control system in partnership with stakeholders, promoting forest management through stake holders', allocating sufficient budgetary resources for forest management, making awareness for the community about environmental changes and its effects, expand indigenous knowledge of community based forest management system and introducing forest strict forest protection laws to contain violators. This implies the government has a lion share to equip community and to solve environmental issues of the country in locally.

FGDs confirmed that the measures to improve the survival rates of trees planted should be to enhance forest management practices through community system, allocate sufficient budget for forest management and expand indigenous knowledge of community based forest management system and implementing forest protection laws for those who violate forest laws

Key informants of *woreda* environmental protection and forestry office experts also confirmed, the measures to improve the survival rates of trees planted through government initiated campaign in the kebeles is to encourage forest management through community control system, encourage forest management through stake holders, allocate sufficient budget for forest management, making awareness for the community about environmental changes and its effects, expand indigenous knowledge of community based forest management system and Implementing forest protection laws for those who violate forest laws. This implies the government bodies, the stakeholders and the community should take measures to improve the survival rates of planted tree.

Table 4.14. The measures to improve the survival rates of planted tree

Variables	Category	Frequency	Percent
Encourage forest management through community control system	Yes	109	92.37
	No	9	7.63
	Total	118	100
Encourage forest management through government control system	Yes	28	23.73
	No	90	76.27
	Total	118	100
Encourage forest management through stake holders' control	Yes	100	84.75
	No	18	15.25
	Total	118	100
Allocate sufficient budget for forest management	Yes	106	89.83
	No	12	10.17
	Total	118	100
Making awareness for the community about environmental changes and its effects	Yes	104	88.14
	No	14	11.86
	Total	118	100
Expand indigenous knowledge of community based forest management system	Yes	101	85.60
	No	17	14.40
	Total	118	100
Implementing forest protection laws for those who violates forest laws	Yes	101	85.60
	No	17	14.40
	Total	118	100

Source: Own household survey, 2020

CHAPTER FIVE
5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This section is divided in to three subsections. The first summarizes the major findings of the research. The next section presents the conclusion of the results while the third subsection forwards the recommendation based of the findings.

5.1 Summary

The majority of the respondents were found in 20-65 ages' groups. This shows the greatest number of beneficiaries were categorize in productive age. The respondents included male and female household headed, as study indicated the numbers of male headed household respondents were much greater than female headed in sampled *kebeles*. There was inequality between male headed households and female headed households. The majority of households had 6-10 members in the family, this affect negatively the income of household heads and results to poor asset holding (affect asset accumulation negatively).

According to education status more households in the study area were uneducated. This in turn, could have its own negative impact on forest management because uneducated people cannot understand easily different activities. The majority of the respondents responded that community plant trees in their garden but they get seedling through purchase, the government bodies fail to support seedling for the community. In the side of participatory forest management, most of the respondents responded as there are no practices in the community due to lack of clear governmental policy and strategy.

Most of the respondents responded as planting tree benefit them in their livelihood and environment in globally. There were also no divisions of powers between stakeholders to manage forests. In the side of development agents' technical support, most of the respondents responded as it was not effective due to lack of government bodies to support the programs. As a result the survival rates of planted tree through the government initiated campaign were very low and the trends of survival rates are decreasing. Most of the respondents' responded as the major factors for low survival rates of planted trees were poor stakeholders coordination, lack of commitments of government bodies to follow-up and budget allocation, land tenure problems, no providing seedling and low community participations to manage forest in the area.

5.2 Conclusion

This thesis attempted to analyze the management practices of trees planted through government initiated campaigns in Ethiopia since 2016: the case of selected afforested sites in Hawassa Zuriya Woreda, Sidama region. Data where obtained by using questionnaire, key informant interview, FGD, own observations and secondary sources that have been discussed.

The Ethiopia government starts planting trees to sound the problem of expanding desertification, government initiated campaign program in 2007 but the study focuses on tree plantation program that has been conduct since 2016. This study found that the community plants trees in their garden but they get seedling from purchase, the government bodies fail to support seedling for the community. There were no participatory forest management practices in community level due to lack of clear governmental policy and strategy on tree plantation and follow up. The community had awareness on planting trees and particularly the benefit of planting trees for their livelihoods and environment in general. But there were no divisions of roles and responsibilities between stakeholders to follow up and manage forests. The development agents' technical support was deemed ineffective due to lack of government bodies' support. The survival rates of tree planted in through government initiated campaign found to be low and the trends of survival rates were also steadily increasing.

Generally, the major factors for low survival rates of planted trees were poor stakeholders' coordination, lack of commitments of government bodies to follow-up and limited budget allocation, land tenure problems, poor quality seedling and low community participations to manage forest in the area.

5.3 Recommendations

Based on the above conclusion in the following recommendations have been forwarded from this study.

- ✓ The government should enforce active laws and commitment are needed to make effective national re/afforestation programs
- ✓ The government should adopt adequate forestry and natural resource education, research, and extension service is needed to meet the demand for and challenges of managing our natural resources on a sustainable basis.
- ✓ The government should work with and provide financial and other support to existing farmers' associations and forest management groups.
- ✓ The government should provide financial resources and organizational capacity for long-term monitoring and adaptive management, and employ (and train) local people to carry out this management.

- ➢ The government should prepare policy and strategies that encourage society participation in environmental issues.
- ➢ The government should incorporate gender perspectives and involving women as agents of change in a response in the time of mitigation and adaptation.
- ➢ The government should work hard to involve in carbon trading by enhancing afforestation and reforestations to ensure green economy.
- ➢ The government should work in close collaboration with the NGOs/CSOs so as to avoid the alarming environmental problems at rural.
- ➢ Federal, regional and local governments should adopt regular monitoring and evaluation of effectiveness of tree plantations through government led campaigns

Reference

Abayneh,N. M.,and Kaleb K.(2011). Strategic Actions for Integrated Forest Development in Ethiopia. EIAR. Addis Ababa, Ethiopia

Africa News https://www.africanews.com/2019/05/27/ethiopia-pm-launches-4-billion-tree-planting-project-starting-in-oromia/ Retrieved on 27/05/2019

Badeg ,B (2001). Deforestation and Land Degradation on the Ethiopian Highlands: A Strategy for Physical Recovery. International Conference on Contemporary Development Issues in Ethiopia. Kalamazoo, Michigan. USA

Badege. B (2003), Deforestation and Land Degradation on the Ethiopian Highlands: A Strategy for Physical Recovery.

Bluffstone. (2007a). Based on a 2000 survey of village level participatory forest management: a field manual to guide practitionary in Ethipia.

Carandang, W.M., Tolentino, E.L. and Roshetko, J.M.m (2006). Smallholder Tree Nursery Operations in Southern Philippines – Supporting Mechanisms for Timber Tree Domestication. International Tree Crops Journal (in press).

Daniel. H (2017).Assessment of seedling survival and plantation success: A case stdy from Tigray Regional State, Ethiopia. Tigray Agricultural Research Institute, Tigray, Ethiopia.

Ethiopian Forestry Action Programme (EFAP). (1994). *The challenge for development*. Final report, Vol. 2. Addis Ababa, Ethiopia.

FAO, (1978). Forestry for Local community Development. FAO, forestry Paper 7. FAO, Rome

FAO. (2001). *Global Forest Resources Assessment 2000 – main report.* FAO Forestry Paper No. 140. Rome.

FAO. (2010). State of the World's Forests. 2010. Rome.

FAO. (2011). Participatory Forest Management in Ethiopia, Practices and Experiences FAO Subregional Office for Eastern Africa (SFE) SFE Technical Paper

Federal Democratic Republic of Ethiopia. (2011). Ethiopia's Climate-Resilient Green Economy Strategy. Addis Ababa, Ethiopia.

Federal Democratic Republic of Ethiopia. (2011). Ethiopia's Vision for a Climate Resilient Green Economy: Vision, Addis Ababa, Ethiopia

Federal Democratic Republic of Ethiopia. (2019). Ethiopia's Climate Resilient Green Economy National Adaptation Plan. Addis Ababa, Ethiopia

Kaba U. (2001). Perceptions of forest cover and tree planting and ownership in Jimma Zone, Ethiopia

Kate Schreckenberg, Cecilia Luttrell and Catherine Moss. (2006). Participatory Forest Management: an overview

Lisanework, N. & Mesfin, T. (1989). An ecological study of the vegetation of the Harena forest, Bale. *Sinet: Ethiopian Journal of Science*, 12(1): 63-63.

Million.B (2011). Forest Plantations And Woodlots In Ethiopia. A Platform For takeholders In African Forestry. African Forest Forum. Nairob Kenya

Ministry of Environment and Forest. (2016). Afforestaton, Reforestation,and Agroforestry NAMA Facilitating implementing and Readiness for Mitigation Project- Ethiopia

National Forest Policy. (1998). The analysis of the ecological and economic needs of the country and availability of human and other resources

Sorecha, E.M. (2017). Growth and survival rate of endemic trees of Ethiopia : *Olea africana* and *Hagenia abysinicca* in the degraded lake of Haramaya Watershed, Ethiopia. J. Degrade. Min. Land Manage. 4(4): 863-871, DOI: 10.15243/jdmlm.2017.044.863.

Stein Holden, S. B., Bekele S. (2003). Tree Planting for Poverty Reduction in Less-favoured Areas of the Ethiopian Highland. Small-scale Forest Economics, Management and Policy, 2(1): 63-80, 2003

Till, S. C., and Gilbert W. (2017). Implementing Forest Restoration in Ethiopia

WBISPP, (2004). A Strategic Plan for the Sustainable Development, Conservation and Management of the Woody Biomass Resources. Final Report. Federal Democratic Republic of Ethiopia, Ministry of Agriculture. 60 pp

Wubalem, G. D., and Abraham Y. (2012). Forestry and Forest Products: technologies and Issues. Ethiopian Institute of Agricultural Research, Addis Ababa, Ethiopia.

APPENDIX I

HAWASSA UNIVERISITY

COLLECGE OF LAW AND GOVERNANCE

SCHOOL OF GOVERNANCE AND DEVELOPMENT STUDIES

DEPARTMENT OF GOVERNANCE AND DEVELOPMENT

Dear respondents, I would like to inform you that this questionnaire is prepared for academic purpose only. I am conducting a research entitled on "management practices of trees planted through government initiated campaigns in Ethiopia: the case of selected afforested sites in Hawassa Zuriya Woreda, Sidama Region." The outcomes of this research will help the efforts made by the responsible bodies to management practices of trees planted through government initiated campaigns. Thus, I kindly request you to fill this questionnaire honestly without any hesitation. No information will be disclosed prior to your consent.

You are not required to write your name.

I would like to thank you for your cooperation!

General Instruction: Circle the choices for closed ended questions and mention your suggestions for open ended questions in the space provided.

Part I. Socio-Demographic and Economic I nformation

1. Sex: 1. Male 2. Female
2. Age in years----------
3. Marital status:

1) Single 2) Married 3) Divorced 4) Widowed

4. Educational level A. No formal education B. Adult education C. Primary education D. Secondary Education E. Tertiary Education
5. Family size ----------
6. The household's monthly income ----------
7. The distance from plantation area A. below 200 meters B. 200-500meters C.500-800meters D.800Meters-1.2Kilometers E. Above 1.2Kilometers

Questions related with community participation in planting trees

1. Is there any indigenous forest management system in your kebeles? 1. Yes 2.no
2. If yes, how did it manage? 1. In traditional way 2. in using modern technology 3. In both way 4. If others----------
3. If no, why? 1.no permission from government 2. Lack of awareness 3. Ignorance 4. If others----------
4. How do you evaluate the level of community participation in planting trees?
   1.very high 2. High 3. medium 4. Low 5.very low

5. Who manage forest resources in your locality?			
s.no	Types of managed bodies	Alternatives	
		Yes	No
5.1	Government	**1**	**2**
5.2	Community	1	2
5.3	Religion institutions	1	2
5.4	Idir leaders	1	2
5.5	If others , specify:		

6. Are Development agents giving training for community on protecting planted trees?
1. Yes 2. No

7. If your answer is no for question no 5, why?			
s.no	Types of causes	Alternatives	
		Yes	No
7.1	Ignorance	**1**	**2**
7.2	Lack of commitment of government bodies	1	2
7.3	Lack of budget	1	2

7.4	Lack of will of community	1	2
7.5	If others , specify:		

8. Was the survival rate of planted trees is high? 1. Yes 2.no

9. What are the major factors that make low survival rates of planted trees?			
s.no	Types of factors	Alternatives	
		Yes	No
9.1	Abolition of socially accepted community laws and regulation by current environmental government laws.	**1**	**2**
9.2	Lack of interest to expand indigenous natural resources management mechanisms	1	2
9.3	Lack of gender equal responsibility in natural resource management.	1	2
9.4	Land ownership related questions in the community	1	2
9.5	Lack of budget to control the planted tree	1	2
9.6	Lack community participation in policy issues of environment, still less participation in environmental affairs.	1	2
9.7	If others , specify:		

10. Is there a participatory forest management practice in your locality? 1.Yes 2. no

11. Do you believe the governments divide power to manage forest from central to local up to village? 1. yes 2.no

12. What contributes does forest bring to your livelihood improvements?			
S.no	Types of factors	Alternatives	
		Yes	No
12.1	Provide water	**1**	**2**
12.2	Provide grass to livestock	1	2
12.3	Bee keeping	1	2
12.4	Fuel wood	1	2
12.5	Control environmental change	1	2
12.6	If others , specify:		

13. What may cause expanding of desertification on your livelihood?			
s.no	Types of consequences	Alternatives	
		Yes	No
13.1	Declines in biodiversity and ecosystem services through loss of species and ecosystems	1	2
13.2	Decreases of crop products	**1**	**2**
13.3	Increases of drought	1	2
13.4	Acid rain and regional-scale air pollution	1	2
13.5	Ozone depletion	1	2
13.6	Global warming and climate change	1	2
13.7	Land degradation due to desertification, erosion, salinization	1	2

13.8	Freshwater pollution and scarcities	1	2
13.9	Threats to human health from persistent inorganic pollutants and heavy metals	1	2
13.10	Excessive nitrogen production and over fertilization	1	2
13.11	If others-----		

14. Do you agree the effectiveness of rules and regulation of natural resource management enforcing law against a person who violate the Laws? 1. Highly disagree 2.disagree 3.somehow agree 4.agree 5.highly agree

15. What measures do you suggest to improve the survival rates planted trees?			
s.no	Types of factors	Alternatives	
		Yes	No
15.1	Encourage forest management through community control system	1	2
15.2	Encourage forest management through government control system	**1**	**2**
15.3	Encourage forest management through stake holders' control	1	2
15.4	Allocate sufficient budget for forest management	1	2
15.5	Making awareness for the community about environmental changes and its effects	1	2
15.6	Expand indigenous knowledge of community based forest management system	1	2
15.7	Implementing forest protection laws for those who violates forest laws	1	2
15.8	If others-----		

APPENDIX -II

HAWASSA UNIVERISITY

COLLECGE OF LAW AND GOVERNANCE

SCHOOL OF GOVERNANCE AND DEVELOPMENT STUDIES

DEPARTMENT OF GOVERNANCE AND DEVELOPMENT

Key Informant Interviews for Agriculture Extension workers (Development Agents)

Dear key informants, this interview guideline is intended to collect data on "management practices of trees planted through government initiated campaigns in Ethiopia: the case of selected afforested sites in Hawassa Zuriya Woreda, Sidama Region." The researcher hereby assures you that the information you provide is going to be reported and communicated in aggregate and utmost care and will be taken for its confidentiality.

Thank you very much for your cooperation.

1. As field worker, what looks like the community local practices to protect trees planted through government initiated campaign?
2. What are the perceptions of community on tree planted through government initiated campaign?
3. Is there any conflict between indigenous forest resource management and government forest management policy?Is there any conflict between community and government bodies for ownership of trees planted areas?
4. What looks like the participations of stakeholders in forest managements?
5. What are your roles to increase the survival rate of planted trees through government initiated campaign?
6. How about the budget allocation and commitments of the government bodies to planted trees through government initiated campaign?
7. How do you evaluate the effectiveness of survival rate of planted trees through government initiated campaign?
8. What are the major challenges that make low survival rates of planted trees through government initiated campaign?
9. What do you suggest to increase survival rates of planted trees through government initiated campaign?

APPENDIX-III

HAWASSA UNIVERISITY

COLLECGE OF LAW AND GOVERNANCE

SCHOOL OF GOVERNANCE AND DEVLOPMENT STUDIES

DEPARTMENT OF GOVERNANCE AND DEVELOPMENT

Key Informant Interviews for environmental protection and forestry office workers

Dear respondents: The interview guideline is intended to collect data on "management practices of trees planted through government initiated campaigns in Ethiopia: the case of selected afforested sites in Hawassa Zuriya Woreda, Sidama Region" only.

The researcher hereby assures that the information you provide is going to be reported and communicated in aggregate and utmost care and your response is kept in confidential.

Thank you very much for your cooperation!

1. What are the local practices in managing trees planted through government campaign?
2. What are the levels of perception of community to protect trees planted through government campaign?
3. Does the local community get any training/awareness creation education on importance of planting trees for human and environment?
4. Do you believe that the surrounding community have know how about the advantages of planting trees for individual, local, national and international level ?
5. How do you evaluate the survival rate of trees that was planted through government initiated campaign?
6. Is there any participation of Community Based Organizations (idir leaders, religion leaders) and kebeles leader's participation in planning, implementing, assessing and evaluation of planting trees through government campaign? If yes, what looks like the levels of participation?
7. How do you think about the willing of the community to protect tree that was planted through government initiated campaign?
8. What do you think the major challenges of trees that were planted through government initiated campaign?

9. Do you believe that there are Clear authorities to manage of a tree that was planted through government initiated campaign?
10. How do you evaluate the enforceability of rules and regulation of natural resource management enforcing law against a person who violate the Law?
11. What do you think the level of commitment of local community to manage trees that was planted through government initiated campaign?
12. What do you think the level of commitment of government body especially kebeles leaders and environmental protection and Forestry office to manage trees that was planted through government initiated campaign?
13. What do you suggest to increase the survival rate of trees that was planted through government initiated campaign?

APPENDIX-IV

HAWASSA UNIVERISITY

COLLECGE OF LAW AND GOVERNANCE

SCHOOL OF GOVERNANCE AND DEVLOPMENT STUDIES

DEPARTMENT OF GOVERNANCE AND DEVELOPMENT

Checklist for Focus Group Discussion

Dear respondents: This FGD guideline is intended to collect data on "management practices of trees planted through government initiated campaigns in Ethiopia: the case of selected afforested sites in Hawassa Zuriya Woreda, Sidama Region" only.

The researcher hereby assures that the information you provide is going to be reported and communicated in aggregate and utmost care and your response is kept in confidential.

Thank you very much for your cooperation!

1. What do you evaluate the survival rates of tree that was planted through government initiated campaign? If your answer is low, what is the cause for low survival of tree that was planted through government initiated campaign?
2. How do you evaluate the awareness of community around the plantation sites to protect planted trees?
3. Do you believe that government policies and practices are influenced on forest use right?
4. What is the community perception on tree that was planted through government initiated campaign?
5. What are the major challenges that make low survival rates of planted trees through government initiated campaign?
6. What do you suggest to increase the survival rate of trees that was planted through government initiated campaign?

APPENDIX-V

The Structured Observation that Researcher going to observe are

1. Presence of trees that was planted through government initiated campaign
2. The survival rate of trees that was planted through government initiated campaign
3. The survival rate trends of trees that were planted through government initiated campaign
4. Presence of demarcation area between planting sites and private owned areas
5. Levels of making areas free from animal and human
6. Other visual practices in the areas