Enhancing the Role of the Forestry Sector in Building Climate Resilient Green Economy in Ethiopia:

Strategy for scaling up effective forest management practices in Oromia National Regional State with emphasis on participatory forest management

Center for International Forestry Research
Ethiopia Office
Addis Ababa

CIFOR

THE FEDERAL DEMOCRATIC
REPUBLIC OF ETHIOPIA
MINISTRY OF ENVIROMENT,
FOREST AND CLIMATE CHANGE

Enhancing the Role of Forestry in Building Climate Resilient Green Economy in Ethiopia

Strategy for scaling up effective forest management practices in Oromia National Regional State with emphasis on participatory forest management

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FOREWORD

The Ministry of Environment, Forest and Climate Change (MEFCC) is taking steps to achieve the forest sector targets set in Ethiopia's Climate Resilient Green Economy Strategy. The Second Growth and Transformation Plan of the Ministry has set specific objectives that will contribute to achieving these targets. We have plan to select and scale up innovations that will significantly enhance the performance of the forestry sector and its contribution to national development and environmental well-being. In this regard, over the past two years attempts have been made, among others, to identify effective forest management practices and enabling conditions for scaling them up. This regional strategy document for scaling up effective forest management practices in Oromia National Regional State, with particular emphasis on Participatory Forest Management (PFM), was produced as one of the outputs of a project entitled "Enhancing the Role of Forestry in Ethiopia's Climate Resilient Green Economy", and implemented between September 2013 and August 2015. CIFOR and our ministry actively collaborated in the planning and implementation of the project, which involved over 25 senior experts drawn from Federal ministries, regional bureaus, Federal and regional research institutes, and from Wondo Genet College of Forestry and Natural Resources and other universities. The five forest management practices studied were: the establishment and management of area exclosures; the management of plantation forests; Participatory Forest Management (PFM); agroforestry (AF); and the management of dry forests and woodlands. Each team focused on only one of the five forest management practices, and concentrated its study in one regional state. Accordingly, the team that studied practices in PFM focused on Oromia National Regional State. The other teams examined practices in exclosure; smallholder plantations; agroforestry; and the management of dry forests and woodlands, and worked respectively in Tigray; in Amhara; in Southern Nations, Nationalities and Peoples; and in Benishangul Gumuz National Regional States. The findings of all teams were used in the write-up of this strategy, though this report focuses primarily on PFM. The engagement of senior experts and researchers from regional institutions made the document more relevant to the region, and created opportunities for building the capacity of all staff involved in the process. The draft document was presented and discussed at various workshops, and was assessed and endorsed by the respective regional authorities.

The Ministry of Environment, Forest and Climate Change (MEFCC) will continue to be actively involved in similar processes. I take this opportunity to encourage relevant offices in the region to make best use of the document, and plan to further improve its content and scope by building on experiences to be gained during the implementation of the strategy. It is important that we systematically document the process and outcomes of the scaling up process and draw lessons. Implementing this strategy will further build the capacity of the region to plan and implement the scaling up of good practices in forest management. The selection and scaling up of effective practices supports regional and national efforts to develop the forestry sector, and significantly enhances its contribution to building a climate resilient green economy in Ethiopia, as envisaged by the government. On behalf of the MEFCC, I would like to thank all team members and their respective institutions for their contributions. I am particularly grateful to the Center for International Forestry Research (CIFOR) for initiating and implementing this joint project, which played an

important role, not only in filling gaps in knowledge and skill, but also in building capacity at various levels. I also thank the Strategic Climate Institutions Program (SCIP) for funding the project. As SCIP is financed by the Governments of the UK, Norway and Denmark, I would like to extend my appreciation to the peoples and governments of these three countries for their support.

Ato Kebede Yimam
State Minister
Ministry of Environment, Forest and Climate Change
Federal Democratic Republic of Ethiopia
Addis Ababa
15 October 2015

FOREWORD

The causes and consequences of forest resource degradation are well known. Global phenomena such as genetic, soil, biomass and other natural resources degradation, climate change and desertification are significant challenges, which threaten the ways of life of current and future generations, and are now high on the international agenda. Many communities are vulnerable to the impacts of forest resource degradation, and may eventually be unable to fulfil their basic human needs. Therefore, it is urgent that we determine how best to stop and reverse deforestation and forest degradation, before they reach irreversible levels. In the past, it was unusual to manage forest resources without a conventional, de jure regulatory system, supported by government-employed professionals and guards. This system contributed little to the improved management of forest resources, and forest destruction has increased over time.

This prompted various development actors and professionals to seek out innovative solutions. As a consequence, twenty years ago, a Participatory Forest Management (PFM) approach was initiated in Oromia, using a range of methodologies and techniques. PFM is very well-suited to decentralization and the rural development strategies of Ethiopia and Oromia, which encourage the participation and empowerment of rural communities in forest resource management. From the PFM approaches that were implemented, we have learned that local people are well equipped to share the responsibility of forest conservation, as long as they are included in the decision making process, on issues that affect local forests and their lives. The aim of introducing PFM was to promote a forest management system that makes a significant contribution to local livelihoods, thereby also securing the future of the forest resources, and the sustainable flow of forest products and services. Through PFM, forest resources management is planned and implemented in a way that actively seeks the involvement of local communities, and builds their confidence. Communities become partners, with the right to a say in how their local forests are managed. Most importantly, PFM demonstrates that if people are given secure access to forest resources, there is enormous potential for forests to play a substantial role in contributing to food security, and in transforming people's lives. Recognizing this, we are committed to further promoting PFM as a regional priority, and as a feasible forest resource management system. Thus, Oromia Regional State actively supports PFM projects, so that they could be scaled up at regional level. To this effect, PFM has been incorporated with regular activities of our bureau and is being replicated in different parts of the region. Attempts have been made to manage approximately one third of the region's forests under PFM. Oromia intends to manage all of its forests using a PFM approach within a short period of time, if possible.

In this regard, this strategic PFM document, entitled: "Enhancing the Role of Forestry in Building Climate Resilient Green Economy in Ethiopia: strategy for scaling up effective forest management practices in Oromia National Regional State with particular emphasis on participatory forest management", will offer significant, innovative inputs for regional and national forest management strategies, particularly related to PFM. Therefore, the strategic directions proposed in this strategy document are of utmost use towards realizing the region's efforts to ensure sustainable forest management.

This document significantly contributes to strengthening existing PFM practices, and the implementation of improved methods of PFM in new areas.

It is my pleasure to thank all actors who were involved in the successful completion of this PFM strategic document. It is also my great pleasure to extend my thanks for the funding provided by our development partners (the Governments of the UK, Norway and Denmark), without whom it would have been nearly impossible to produce this document. Last, but not least, I would also like to extend my warmest gratitude to the team members who produced this document in a timely manner.

Zelalem Jemaneh Jirata
Oromia National Regional State, Head of the Bureau of Agriculture with the Status of National Regional State Vice-President, and Chairman of the Board of Managing Directors for Oromia Forest and Wildlife Enterprise
October 2nd, 2015

PREFACE

In addition to their direct contributions to household economies through wood and non-timber forest products, forests contribute significantly through their services to the environment and to various sectors of the national economy (i.e. agriculture, energy, water, health, tourism, etc.). Nationally, the forestry sector contributes to employment generation and income diversification, earning of foreign currency through export, and savings through import substitutions. The sector's ecosystem services for agriculture are well documented, although it is difficult to determine their economic value. Forests are, and will continue to be, important in the sequestration of carbon.

Unless growing demands for wood and other forest products and services are met, the rate of deforestation and degradation will continue to rise. Horizontal expansion of agriculture will result in the conversion of forests, woodlands, and bushlands to agricultural fields, if techniques to promote sustainable intensification are not implemented. Therefore, deforestation and degradation are major environmental challenges for Ethiopia. Thus, effective management of its forests is critical.

Identifying and scaling up effective forest management practices is key to significantly enhancing the forest sector's contributions to local livelihoods, the national economy and the environment. Wider adoption of good forest management practices enhances the contributions of the forestry sector by building a climate resilient green economy. CIFOR, in collaboration with Federal ministries, and regional and federal research and higher education institutions, implemented a project that focuses on identifying effective forest management practices for scaling up.

The study focuses on the following forest management practices: exclosure management (based in the Tigray region), smallholder plantations (based in the Amhara region), agroforestry (based in the SNNPRS), PFM (based in the Oromia region), and the management of dry forests and woodlands (based in the Benishangul Gumuz region). Our team worked in Oromia and critically assessed experiences in PFM, in view of identifying good practices. The study also examines the limitations and weaknesses of this type of forest management, and identifies a number of improvement measures. In preparing this document, the team also considered other forest management practices, based on the findings of the teams working in the other four regional sites. Specific suggestions were also made regarding those management practices. In selecting and proposing effective forest management practices for scaling up, the teams benefitted from a series of discussions with communities and senior experts from the region, and from national progress reviews and planning meetings. This strategy document was informed by the findings of our field and desk-based research, the results of graduate students' thesis research, and the comments and suggestions of participants at all levels.

The authors of the document would like to thank several individuals and institutions that contributed to the preparation of this strategy. In particular, our thanks goes to the CIFOR Ethiopia office, for initiating this project and engaging us in its implementation. We thank our respective institutions for allowing us to be involved in the project and

work on the write-up of this document. We are also grateful to the staff of the regional bureaus, the regional research institute, the Oromia Forests and Wildlife Enterprise (OFWE), and the various PRM associations in the region, for taking part in the series of discussion sessions that we held. Their contributions have improved the content and relevance of the strategy to the region. It is our hope that this strategy will be implemented, and will serve as a basis to plan and implement further work to develop the forestry sector in Oromia.

The authors

ACKNOWLEDGEMENTS

This publication is an outcome of a project entitled "Enhancing the Role of Forestry in Ethiopia's Climate Resilient Green Economy: A Knowledge, Action Research and Innovation Project", which was implemented between September 2013 and August 2015.The project was designed and implemented by CIFOR in collaboration with its national partners, including the Ministry of Environment, Forest and Climate Change, the Ministry of Agriculture and Natural Resources, the Ethiopian Environment and Forestry Research Institute, Wondo Genet College of Forestry and Natural Resources and other higher education institutions and federal and regional research institutes. Over 25 senior experts from 16 organizations were engaged in the project. The intended outcome of the project was to identify effective forest management practices for scaling up, focusing on: area exclosure in Tigray; PFM in Oromia; smallholder plantations in Amhara; agroforestry in SNNPRS; and the management of dry forests and woodlands in Benishangul Gumuz. The major project outputs are strategies for scaling up selected practices for each of the five regions as well as a national road map for the MEFCC to support national efforts to enhance the role of forestry sector in building a climate resilient green economy.

This document was prepared for Oromia National Regional State, and was produced with the support of senior experts from the Ministry of Agriculture and Natural Resources, Wondo Genet College of Forestry and Natural Resources, and Oromia Forest and Wildlife Enterprise. We gratefully acknowledge the contributions of all individuals and institutions to the collection of data and writing-up of this strategy. The draft of this strategy document was improved by feedback from experts and senior officials from the region. The contributions of Obbo Didha Diriba, and Obbo Ararsa Regassa, respectively Director General and Deputy Director General of Oromia Forest and Wildlife Enterprise (OFWE), in reviewing this document, improving its regional relevance, and in obtaining the endorsement of the regional authorities are gratefully acknowledged.

The CIFOR Ethiopia office is grateful to members of the National Project Advisory Committee, which oversaw the project, to ensure its relevance and timely completion. I am particularly thankful to His Excellency Ato Kebede Yimam, State Minister of Forest, Ministry of Environment, Forest and Climate Change, for chairing the Project Advisory Committee for over two years. He attended all planned meetings and provided guidance to the project. He also took note of project findings, and encouraged researchers to generate policy and practice relevant findings, and better inform the activities of the Ministry and relevant regional bureaus. Members of the Project Advisory Committee included: the Dean of Wondo Genet College of Forestry and Natural Resources, the Director General of Oromia Forest and Wildlife Enterprise, Head of Amhara Forest Enterprise, Natural Resources Management Process Owners in the regional Bureaus of Agriculture of the five regions, and heads of the Natural Resources Research wings of regional agricultural research institutes operating in the five regions. Our sincere thanks also go to the authors and their respective institutions for taking lead role in the write-up of the strategy, as well as to the respective regional bureaus for actively taking part in the tasks and for reviewing and approving the strategy document.

Our thanks also go to the SCIP Fund for financing the project. The SCIP Fund is financed by the UK, Norway and Denmark. To meet the emerging needs of our national partners, we revised the project activities twice in two years. I would like to recognize the SCIP Fund Management Team for their support with this. With their help, the team managed to plan and implement additional activities without increasing the project budget. We hope that this document will assist national efforts to develop the forestry sector, specifically related to the selection and wider adoption of effective forest management practices. It was also our intention that the process would help to build human and institutional capacity of national partners, which the project funders were particularly keen to achieve.

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October 20th 2015

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1. BACKGROUND

1.1 Introduction

Deforestation and forest and land degradation are major challenges to natural resources management in Ethiopia, and undermine landscape productivity. Hence, Ethiopia's natural resource management agenda prioritizes the protection of existing natural forests and woodlands through participatory forest management (PFM), and supporting smallholders and the private sector to develop commercial plantations. In response to policy changes and market signals, smallholder farmers also expanding their woodlot plantations. PFM has been recognized as an important mechanism to engage communities in the responsible management and use of natural forests. Although PFM has been practiced in various parts of the country since mid-1990s, primarily in Oromia and in Southern Nations, Nationalities and Peoples Regional State (SNNPRS), it has only recently been officially pursued by the Federal government. Other regions, such as Amhara and Benishangul Gumuz have also started to promote PFM. Reports indicate that large tracts of natural forest are managed under PFM. However, systematic studies of PFM sites, and attempts to identify examples of good practice for scaling up, are limited in number. Future PFM initiatives in Oromia and other regions should be guided by a scaling up strategy, formulated on the basis of lessons from selected practices. The scaling up process should be informed by empirical study of the successes and failures of past efforts. This document is an outcome of a joint project by the Center for International Forestry Research (CIFOR) and the Ministry of Environment and Forests (MEF), and was conducted by a national team that aimed to fill gaps in knowledge related to successful forest management practices.

In 2014, five national technical teams set out to study the impacts of five selected forest management practices (i.e. PFM, agroforestry [AF], smallholder plantations, area exclosure and the management of dry forests), with the aim of identifying best practices for scaling up. One of these teams worked on identifying effective practices in the establishment and management of PFM practices in Oromia. The team also visited sites inSNNPRS. The information generated by the team was used to develop a scaling up strategy and a national road map, to guide the scaling up of effective practices in PFM. The reports of the other four research teams were also consulted in proposing other effective forest management practices to be tested and scaled up in Oromia. This strategy aims to guide forest development initiatives, and support the scaling up of effective forest management practices, particularly PFM, in order to significantly enhance the role of the forestry sector in building a climate resilient green economy by 2030.

1.2 Country profile

As a result of its long history of farming on hillsides, and its largely rural, agriculture-dependent population, Ethiopia is faced with high rates of deforestation and land degradation. Commonly cited causes are: extensive forest clearing for agricultural use; overgrazing; and the exploitation of existing forest for fuel, fodder and construction materials (Bishaw 2001). Poor conditions are more pronounced in Northern Ethiopia, where land degradation has been accelerated by long-standing human impacts, including changing land use and deforestation (Hurni 1988; Nyssen et al 2009), and significant

demand for biomass for the ever-increasing human and livestock populations (Tekle 1999). The most effective countermeasures taken to halt this process include planting trees, and assisting natural regeneration by excluding human and animal interference in the form of exclosures (Pohjonen and Pukkala 1990; Tekle 2001).

In Oromia and SNNPRS where most of Ethiopia's high forest are found, deforestation and degradation are common. PFM has been promoted to reduce deforestation and degradation of forests and woodlands (D&D). There have also been attempts to scale up PFM, to cover larger areas of natural forest and woodlands. Some studies indicate that forest conditions, and their contributions to local livelihoods, improve when they are put under PFM. However, issues related to inclusiveness and sustainability are cited by various scholars as areas of concern.

1.3 Overview of the forestry sector in Ethiopia

1.3.1 The forest resource base and management

Ethiopia is endowed with various ecosystems that are composed of diverse fauna and flora. The vegetation of Ethiopia comprises over 7000 species, of which, 1150 are endemic to the country. It also harbors diverse fauna including 240 species of mammals and 845 species of birds, of which, 22 species of mammals and 24 species of birds are endemic (Teketay et al. 2010). The landscape, which ranges from low altitudes in the Northeastern Lowlands to a chain of mountains in the Northern Highlands, forms the basis of Ethiopia's diverse ecosystems. The Southwestern part of Ethiopia, in particular, supports the country's high forest ecosystem. The Central Highlands also support dry montane forests, which harbor economically important tree species. The forest ecosystems in Ethiopia's Southwestern and Central Highlands are useful, not only for the supply of wood, feed, energy and environmental goods and services, but also as habitats for rich biodiversity, including endemic birds and wild animals. Despite the significant services provided by forests, reliable information on Ethiopia's vegetation resources, including information on: their spatial coverage; distribution; changes over time (i.e. deforestation or re-growth); growing stock in the standing vegetation; and regeneration and recruitment status, are scattered and inconsistent (Teketay et al. 2010). According to a census by the Woody Biomass Inventory and Strategic Planning Project (WBISPP 2004), a total of 59.7 million ha of Ethiopia's land is covered by woody vegetation. Of the total woody vegetation, 6.8% is high forest (approximately 4.07 million ha), 49% is woodland (29.24 million ha), 44.2% is shrub land or bushland (26.4 million ha), and plantations cover an estimated 955,705 ha. In terms of regional distribution, the three regional states that account for the largest areas of high forest in the country are: Oromia (62.5%); Southern Nations, Nationalities and Peoples Regional State (SNNPRS) (19%); and Gambella (9%), while the regional states that account for the largest areas of woodlands and shrub lands/bushlands are: Somali (33%); Oromia (32%); and Amhara (10%) (WBISPP 2004).

1.3.2 Significance of forestry to the national economy and local livelihoods

Ethiopia's forest resources play a significant role in the livelihoods of local communities and the national economy at large. Their direct roles include the provision of: energy, construction poles, timber, and non-timber forest products (NTFPs), which are highly valued for

their food, medicinal and commercial values. Accurate valuation of the direct and indirect values of forest resources is limited by the lack of a reliable and consistent database and a proper forest accounting system. FAO (2005) reported that 96% of the primary designated functions of forests in Ethiopia is multiple use, and an estimated 108.5 million m 3 fuel wood was collected from forests in 2005. The value of industrial, wood fuel and non-wood forest products gathered from forest in Ethiopia in 2005 was estimated at USD 752.9 million, with fuelwood representing 85% of this value (FAO, 2005). Nationally estimates of the economic contributions of forest resources are usually based on case studies and site specific assessments. There are several case studies that indicate the significance of forest resources. For example, 90% of the households in Bench Maji, Kaffa and Sheka zones in the Southwest of the country reportedly harvest NTFPs, including forest coffee, forest honey, wild forest spices (e.g. Ethiopian cardamom, long pepper and turmeric) and bamboo (Heckett and Aklilu 2009). The same study indicated that households earn 73% of their annual cash income from sale of NTFPs. According to Forum for the Environment (FFE) (Heckett and Aklilu 2009), a conservative estimate of the value of NTFPs, including forest coffee, is approximately USD 249,638,556 per year. Based on an estimate of 4 million ha of high forest and global environmental values of forests, FFE (Heckett and Aklilu 2009) estimate that the Ethiopian high forest provides ecosystem services worth approximately USD 6,276,000,000. Regardless of the accuracy of the accounting systems used, the presented figures suggest that the forest sector has significant actual and potential value. Fo rest products that could be utilized under a sustainable management plan include: semi-processed wood products, charcoal, bamboo, natural gum, ecotourism, spices and forest coffee.

1.3.3 Sectoral policies and strategies

Over the past few decades, the Ethiopian Government has put in place several sectoral and cross-sectoral policies, strategies and programmes with the aim of enhancing the socio-economic and environmental contributions of the sector. These include the Rural Development Policy and Strategies, the Forest Conservation and Utilisation Policy and Strategy, the Federal Forest Law, the Environmental Policy of Ethiopia, the three successive 5-year development plans, the CRGE Strategy and REDD+ readiness programme of Ethiopia. These policy provisions and key programmes are briefly presented in the following subsections.

Environmental Policy (1997). This is one of the policies developed in the country that is directly related to forest development and conservation. The environmental policy of Ethiopia was approved in 1997. It aims to improve the quality of life of the people through sustainable development and utilisation of natural resources. It aspires to conserve traditional resource management practices. The policy includes soil management and sustainable agriculture, forests and tree resource management, genetic, species and ecosystem diversity conservation and management. These policy provisions could play substantial roles in the promotion of afforestation and re-afforestation programmes.

The Rural Development Policy and Strategy (2001). Ethiopia issued a national rural development policy and strategy document in November 2001. This document underlines the need to rehabilitate and restore degraded natural resources of the

country. It advocates objectively designed tree planting initiatives. Specifically, it emphasises integrating tree planting in agricultural landscapes. The encouraging achievements recorded in exclosures, sustainable land management undertakings and watershed management programmes emanate from this policy direction. Yet, achievements in afforestation and re-afforestation remain limited. Lack of implementation instruments, such as appropriate and resourced institutions, regulations and directives, are mentioned as key factors undermining success. For example, Lemenih and Woldemariam (2010) reported that forestry sector received less than 10% of the overall budgets allocated to the Ministry of Agriculture both at the federal and regional levels during the last decade.

Environmental Impact Assessment Proclamation (2002). This law is one of the federal laws intended to protect the environment from the potential negative impacts of development investments. The law has a regulation and a guideline developed in 2004 to assist its implementation. The general aims of the EIA law are: to predict and manage the environmental effects of proposed developmental activities; to harmonize environmental, economic, cultural and social considerations into a decision making process; to implement environmental rights and objectives enshrined in the Constitution; and to bring about administrative transparency and accountability. The EIA law, regulations and the guideline are reasonably comprehensive to have put considered obligations on private investment and state development projects to present EIA reports from certified consultants before securing a license to invest. Guided by the federal EIA law many regional governments produced environmentally responsive investment directives particularly focusing on the protection of forests.

Forest Conservation and Utilization Policy and Strategy (2007). The formulation and enactment of this policy, which is the first in the history of the country, reflects the government's commitment towards enhancing the forest resource base of the country. The main objective of this document is to improve the economic contribution of the forestry sector and satisfying the forest product demands of the country by promoting sustainable forest management and utilisation practices. The policy also encourages the engagement of the private sector and the local communities in commercial and protective forest development. To promote the establishment and development of private and community owned forests, the policy provided incentive mechanism in the form of reduced land taxes. The policy recognised the need for certifying forest use right, which is an important provision to enhance afforestation and re-afforestation programmes. However, key provisions in the Forest Conservation and Utilization Policy and Strategy were not clearly translated into binding legal articles nor were there concrete implementation directives. Management of dry forests and woodlands as tool to promote natural regeneration of native trees and shrubs as well as sustainable utilisation and conservation of the same could benefit from this policy.

Forest Development, Conservation and Utilization Proclamation (2007). The forest Development Conservation and Utilization Proclamation number 542/2007 is the latest national forest law of the country. It is an exhaustive proclamation that attempts to provide legal grounds to the Forest Conservation and Utilisation Policy and Strategy of 2007. It

recognises two types of forest ownerships i.e. State and private. It merges communal and private ownership and puts it under private ownership. It has been criticised by lawyers for consisting of punishment articles that are difficult to pass reasonable decisions. The lack of a regulation for effective implementation of this proclamation has been mentioned as a key bottleneck.

The 2011–2015 Growth and Transformation Plan and the 2011 CRGE Strategy. The Ethiopian Government launched the 2011–2015 Growth and Transformation Plan (GTP) with the aim of making Ethiopia a middle-income country by 2025. The GTP envisages that the country's GDP per capita would grow from USD 378 in 2010 to 1271 USD in 2025. The GTP stresses the need to strengthen natural resources conservation and management. In line with that, rehabilitation and restoration of degraded lands through exclosures, multipurpose tree planting, developing management plans for priority forests and tree seed collection and distribution were the major proposed activities of the forestry sector in GTP-1. The Climate Resilient Green Economy (CRGE) of Ethiopia is the recent green growth development strategy of the country. The plan has identified four pillars, one of which is forestry, where protecting and re-establishing forests for their economic and ecosystem services, including as carbon stocks, is emphasised. The CRGE targets sequestration of more than 40 million t of CO2e through afforestation and reforestation of 3 million ha of land and sustainable management of 4 million ha of forests and woodlands by 2030. Moreover, Ethiopia's pledge at the New York Climate Summit to restore 15 million ha of degraded forestlands by 2030 is evidence of the government's determination to restore degraded lands. This is an opportunity to scale up successful exclosures and other tree planting practices. Managing dry forest and woodlands contributes to these national targets and pledges.

The National REDD+ Programme: REDD+ is expected to provide incentives for developing countries engaged in forest conservation and carbon sequestration. This global carbon offsetting mechanism provides a financial flow to forest dwelling communities. REDD+ is being embedded in the national CRGE implementation strategy. Ethiopia aspires to reduce deforestation and forest degradation by addressing their underlying derivers and immediate causes. Sustainable management of existing forests and creating additional forests are the strategic interventions that guarantee the achievements of the desired goals. Ethiopia considers REDD+ as an opportunity and viable source of sustainable finance for investment in forest management, forest conservation and forest restoration to enhance the multiple benefits of forests, including but not limited to carbon sequestration and biodiversity conservation, watershed management, increased resilience to climate change, improved livelihoods and reduced poverty. Therefore, REDD+ is expected to create additional opportunities for the forestry sector to develop and contribute more to the overall national goals of sustainable development.

1.3.4 Links between forestry and other sectors

Several sectoral policies and functions may directly or indirectly link with the forest sector. Sectors with interacting functions must be managed well to ensure sustainable development. Successful integration ensures the complementarity of the various sectors' activities, and facilitates the achievement of the nation's development goals. Sectors

that are closely linked with the forest sector are briefly discussed in the following section.

Agriculture: Agriculture is closely linked to the forest sector. Successful afforestation and re-afforestation programs positively affect the productivity of agricultural landscapes, by preventing soil erosion and downstream flooding. Forests maintain a healthy hydrological cycle, ensuring recharge and replenishment of ground water. Moreover, if firewood is widely available, crop residue can be used to fertilize farmlands rather than for cooking and heating. On the other hand, a desire to increase grain production may trigger the expansion of agricultural lands, and the conversion of forests and forest lands to crop fields. The livestock sector is also closely linked to the forest sector. Free grazing is a practice that hinders the natural regeneration and survival of seedlings. In countries with high livestock populations, such as Ethiopia, free grazing creates a considerable problem for the forest sector. On the other hand, forests are a significant source of fodder for livestock, especially during the dry season. This is particularly true in arid and semi-arid areas, where trees also serve as shade for livestock.

Water and Energy: Both the quality and quantity of a catchment's water supply is largely dependent on vegetation cover. Afforestation and re-afforestation of upper catchments, using appropriate tree species, guarantees a regular flow of clean water. However, tree species with high transpiration rates may deplete the water resources of a catchment. Thus, the tree species that cover catchment areas must be managed in order to maintain a positive water budget. The energy sector is also closely linked with forestry. Trees planted in the upper catchments are vital to safeguarding hydroelectric power projects. The forest cover in the upper catchment ensures downward infiltration of water, and minimizes downstream runoff and silt. Moreover, a continuous flow of tributary rivers within the catchment area of hydroelectric mega projects, ensures a sustainable water supply and uninterrupted power generation.

Tourism: Forests have positive impacts on tourism, as they serve as habitats for wildlife and create attractive green landscapes. Income from tourism can be used to fund the management and development of forests. However, tourism can also negatively affect forests. Felling trees for the development and construction of hotels and restaurants reduces forest cover. In addition to this, camping tourists may cause forest fires.

Roads: Road expansion often requires the felling of trees, and may trigger further degradation and deforestation as loggers will have easier access to the forest. Easier access can also facilitate investment in and the marketing of forest products by forest managers as well. Remedial measures need to be designed to mitigate such negative impacts. On the other hand, roads also facilitate access for those responsible for managing, monitoring and protecting forests. Roads may stimulate the engagement of private investors, which could contribute to the overall development of the forest sector.

2. FORESTRY IN OROMIA NATIONAL REGIONAL STATE

2.1 Forest resource base of Oromia and changes over time

Oromia is Ethiopia's largest regional state, with a total area of 363,136 km2 (Oromia Task Force 2011).The region's high forests, woodlands, and scrubland respectively account for 62.5 %, 34%, and 29 % of the country's forest resources (WBISPP 2004). Afro-alpine and Sub Afro-Alpine vegetation, high forest, woodland, riverine forests, grasslands, plantations, and bush and shrub lands account for approximately69% of the total area of the region. Moreover, out of the country's 58 National Forest Priority Areas, 49 are found in Oromia and cover approximately8.1% of the total land area of the region. Coniferous forests are distributed throughout the massifs of Shewa, Arsi, Bale, Borena, Guji and Harerghe and are dominated by Juniperus procera and Podocarpus gracilior, while broad-leaved forests are found in the most humid parts of Oromia, and are dominated by semi-deciduous Baphia forest, Olea, Syzygium guinensis, and Pouteria adaolfi-fredrci (Syn:Aningeria adolfi-fredrci) trees. Woodland and Savannah vegetation types make up approximately 21.5% of the land area of the region and are found in parts of Borena, Guji, and Central and Southern Bale (Oromia Task Force 2011).

2.2 Major drivers of deforestation and forest degradation, and mitigation measures

Levels of deforestation and forest degradation in Oromia reflect what is happening in other parts of the country. According to Oromia Regional Forestry Action Program Report (1994), the rate of deforestation in the region is estimated to be between 60,000 and 120,000 hectares per annum. At these rates, the region's natural forests will be lost in 15-20 years. Dependence on forests increases during climatic crises (Abate 2009). The primary agents of deforestation are small-scale subsistence agriculture and cash-based, large-scale farming, while a major cause of forest degradation is coffee growing, particularly commercial farming in forested areas. A second driver, in both high forests and lowland woodlands, is household energy demand, the extraction of which is often illegal and unsustainable (Unique 2014). A report by the Oromia Task Force (2011) identified the expansion of rain-fed agriculture into forests, the exploitation of forest resources for energy, and overgrazing as the major drivers of deforestation and forest degradation. Oromia's forests have suffered due to mismanagement, a problem that affects all of the country's forests, and was exacerbated in 1991 by significant political changes. The only major mitigation measures currently being undertaken are the organization of forest-adjacent communities into forest user groups and cooperatives, to share both management responsibilities and benefits. Two major legal instruments have been put in place to implement mitigation measures while ensuring fair governance of forest resources in the region. The Oromia Rural Land Use and Administration of 2007, restricts the redistribution of land, other than in the case of irrigated lands, andthe Environmental Impact Assessment Proclamation No.176/2012 prohibits any licensing organ from issuing operational licenses to investors without fulfilling certain requirements.

2.3 Governance of the forestry sector

Ethiopia's 1995 Constitution and Oromia Regional State's Constitution reassert state ownership of land and natural resources, including forests. Regional governments are

responsible for administering forests in their respective territories. In Oromia, natural forests under state ownership fall into two categories: areas that fall under the jurisdiction of Oromia Forest and Wildlife Enterprise (OFWE) (which includes most of the region's high forests), and areas that are secured through re-demarcation, which includes protected areas for the conservation of wildlife. The concession area under OFWE has grown from 1.7 million hectares upon its establishment in 2009, to 3.4 million hectares in 2015. These areas include forests put under Participatory Forest Management (PFM). The remaining patches of forests, riverine forests, and woodlands remained under the jurisdiction of district governments, and are managed by the respective Offices of Agriculture. The Oromia Forest Proclamation No. 72/2003 recognizes community ownership of forests as a third category, differing form the Federal forest law of 2007, which limits forest ownership to two categories, state and private. The 2003 law also allows the transfer of state forests, including plantations, to private investors and communities as concessions. Through such arrangements, the law attempts to establish a fair forest governance system, through which all potential stakeholders can be involved in forest development and use.

The adoption of PFM represented a major forest governance shift. PFM was introduced as an approach to give hitherto alienated communities the responsibility to manage, and the rights to use, forest resources. In the mid-1990s, following unsuccessful attempts to protect the forest with guards, NGOs such as Farm Africa/SOS-Sahel and GIZ started to organize communities into forest user groups. The PFM team assessment, as well as a number of other sources (Ameha 2014; Bekele et al. 2013; Tesfaye 2011), indicated that forest management improved in areas with CBOs. Under this system, the rate of forest degradation declined, and forests started to regenerate. Although small in scale, these programs allowed communities to legally use forests. Over the last decade, the number of organizations interesting in PFM has grown to include local NGOs and government agencies. According to Winberg (2010), in 2010 over twenty governmental and non-governmental organizations were involved in organizing communities and supporting the implementation of PFM.

Small-scale private woodlots are also increasing in area, as the region's land registration and certification program now provides individual farmers with improved tenure security and compensation in times of expropriation (Chimdesa2013). However, access to the region's expansive woodlands, which serve a large number of agro-pastoral and pastoralists, remains largely open, which exposes them to small and large-scale agricultural expansion, illegal and unsustainable fire wood and charcoal production, and free grazing. Church forests also require greater legal protection and management support.

2.4 Challenges and opportunities for forestry development in the region

Oromia contains more than half of the nation's total cover of forests and woodlands. Therefore, most of the challenges and opportunities observed at the national level also apply to the region. The region is also the first to set up a new organizational structure for the forestry sector, Oromia Forest and Wild Life Enterprise (OFWE).

The major challenges affecting forestry sector development in the region include the following:

Unsettled property rights over forests: Property rights institutions not only determine who owns what and how, but also greatly influence the relationship individuals assume among themselves with regard to a particular resource. Clearly defined property rights are, therefore, imperative for sustainable management and use of environmental resources. Oromia's Forest Proclamation of 2003 is ground-breaking in its recognition of three types of forest ownership: state, community and private, which is in contrast to the Federal forest law that is limited to two types: state and private forests. In Oromia, OFWE is legally responsible for the management and utilization of the region's state forests, be it natural forest, plantation or woodlands. The organization works hard to demarcate these resources and bring them under its concession. In this sense, the region has a defined pattern of forest ownership types. Nevertheless, due to its limited capacity, OFWE has not been able to demarcate and properly manage all of the region's forest resources. The need to increase its human and organizational capacity, to fully administer the region's forests, is obvious and urgent.

Conflicts of interest: Conflicts of interest create fierce and irrational competition among stakeholders, which can result in resource degradation. It is, therefore, virtually impossible to ensure the sustainable forest management of contested resources. This is very much the case in the dry woodlands of Oromia, where modern investment, small-scale encroachment, and individualization of the commons within, pose a formidable challenge to any planned forestry initiatives.

Institutional aspects of service provision, management and regulatory aspects of forestry: Government structure in charge of forests remains one of the nation's most unstable organizations. Frequent shake-ups have resulted in loss of institutional memory, a critical asset for policy input. Although Oromia appears to be better-off institutionally, responsibilities over forest management, forestry extension and regulation are distributed among OFWE, the Bureau of Agriculture (BoA), and the Pastoral Affairs Commission. Oromia Regional Government has made an explicit attempt to separate forest management and utilization from extension service provision and regulatory aspects. The former task has been assigned to OFWE, while the latter is performed by the BoA in the highlands, and by the Pastoral Commission in the pastoral and agro-pastoral districts of the region. OFWE, as a result of being authorised by the regional government, has become a member of the regional investment board, and ensures that forested areas are not allocated for settlement or investment. This sets a good example that should be shared with other regions (Box 1).

High population growth rate: The underlying causes of increasing fuel wood consumption and the illegal expansion of small-scale agriculture are associated with Ethiopia's ever-increasing population, which is predicted to grow to 134 million in 2030, at a growth rate of 2.62% per annum. If the population income level increases and if most people are not dependent on natural resources for their livelihoods, population growth will not be

a major concern. But the majority of Ethiopians will continue to be rural and dependent on natural resources. But if the population is growing rapidly and heavily is heavily dependent on land and forests for livelihoods, it is likely that forests could be over exploited due to high rates of deforestation and forest degradation. Other associated factors include: poverty, the lack of a sense of ownership, and political instability (Bishaw 2001; Zeleke and Hurni 2001).

Limitations of the forestry research extension service: There are significant gaps in knowledge in the fields of forest management, technology, and forest product market development. Moreover, the limited innovations in the field of forestry that do exist, are not well documented, and are poorly communicated to smallholder farmers. The medium and long-term benefits of forestry technologies for individuals and the public have not been well communicated to various stakeholders.

Law enforcement: The enforcement of forest and environmental regulations poses a significant challenge, and is a barrier to achieving many of the sectors 'objectives. The enforcement of laws requires administrative and political commitment. These are lacking at the lower levels of government, in some cases due to a lack of awareness, and in others, due to corruption. The expansive nature of forests can also represent an obstacle to successful law enforcement. .

Box 1. Organizational profile and major activities of Oromia Forest and Wildlife Enterprise (OFWE)

Text contributed by Obbo Ararsa Regassa, Deputy Director General of OFWE, October 5, 2015.

Over the last two decades, the forestry sector in Oromia has faced frequent institutional restructuring. In an effort to make forestry a viable economic sector, Oromia Regional State established the Oromia Forest and Wildlife Enterprise (OFWE) in July 2009. OFWE is an autonomous public enterprise established under Reg. No. 122/2009, issued by the Oromia National Regional State Council in 2009. It is mandated to administer and sustainably manage regional forests, woodlands & wildlife conservation areas in Oromia. To achieve this mandate, OFWE strives to develop and implement multiple-use forestry, whereby forestlands and wildlife conservation areas in its jurisdiction are managed to simultaneously provide more than one of the following development objectives: biodiversity conservation, watershed protection, and the sustainable utilization of forest products for economic development. To date, OFWE manages and holds concessions to an estimated 3.4 million ha of Oromia's forestland, which includes: 2,322,678 ha of natural forest, woodlands, highland and lowland bamboo forests; 61,340 ha of forest plantations; 969,739 ha of wildlife protection areas; and 49,453 ha of other land types. Wildlife protection areas comprise 3 newly established national parks, 13 controlled hunting areas, and 5 open hunting areas. Re-demarcation of OFWE's concessions has been underway since 2009 and is still underway. Therefore, the extent of its forestland concessions will continue to increase as demarcation affects other vegetation types, such as the remaining woodlands in low-lying areas. OFWE is committed to promoting the involvement of communities in the effective management of its natural forest concessions, through tried and tested JFM arrangements. The former, protectionist approach to forest management was ineffective, excluded people from forests using forest guards, and exacerbated resource degradation. Participatory Forest Management (PFM) has been practiced in some of OFWE's forest concessions for the last fifteen years The OFWE has introduced benefit-sharing arrangements in its PFM projects, to fairly distribute benefits derived from different forest

products and services. Benefit sharing is generally implemented based on the roles and responsibilities assumed by the parties engaged in forest management. That is, the benefits received depend on the tasks, roles and responsibilities of the actors, in the implementation of activities defined in the JFM plan. While sustainable utilization of NTFPs is exclusively managed by the CBOs, both OFWE and the CBOs manage the benefit sharing arrangements that affect other forest products and services, such as timber and trophy hunting. This strategy, where properly applied, has greatly improved forest conditions and the livelihoods of the communities involved, particularly in forest areas where there is a reasonably good level of flow of outputs from the forest. OFWE believes that PFM could deliver the intended goals of forest conservation and livelihood enhancement for communities, as long as there is a continuous flow of revenue from the forest resources. OFWE, with support from its development partners, has initiated REDD+ projects within its concessions, with the aim of generating climate finance as a source of sustainable funding for its PFM initiatives. With support from Farm Africa and SOS Sahel, preparations for Ethiopia's first REDD+ project in Bale are well underway. OFWE has also been involved in the national REDD+ planning process. The OFWE is also committed to collaborating with like-minded international and local organizations, and development partners working in the areas of sustainable forest management, biodiversity conservation, climate change adaptation, and participatory natural resources management. OFWE is structured into 9 branch offices and 38 forest districts. It has a total of 3,378 permanent and 720 contractual employees, and annually creates temporary job opportunities for more than 40,000 people. OFWE is staffed with highly skilled technical staff, trained mainly in forestry and wildlife management. One of its nine branches (Sheger) specializes in forest industries. A lack of coordination among relevant government institutions and land-use conflicts are two of the major challenges to the sustainable management of forests in Oromia. Among the major drivers of deforestation and forest degradation are small-scale agricultural expansion into forested areas, large-scale coffee plantations, cattle grazing, and fuel wood collection. As there was previously little coordination between the relevant institutions, investment certificates were often issued in natural forests and reserves without getting the review and approval of government organizations in charge of managing forests.. This contributed to the degradation of vast forestlands in the region. The neg ative impacts of promoting agricultural investment in natural forests were recognized by the regional government, which established the Oromia Board of Investment to oversee investment activities in the region, and minimize problems associated with investment in forested areas. OFWE was made a member of this board so that the board can make more informed decisions, and OFWE can raise its concerns before any decision affecting forests is made (e.g. allowing investment in forest areas). Significant progress has been made on issues such as investment, and coordination among relevant offices has now improved significantly. The board oversees agricultural investment in Oromia region to make sure that the region's social, economic and environmental safeguards are observed. OFWE must provide a written declaration to confirm that an area is not forest land before it can be acquired for investment. OFWE, as a legitimate actor in Oromia Board of Investment, believes that building strong coordination between key institutions plays a key role in saving the region's remaining forests from deforestation caused by unplanned investment.

Although there exist significant threats to forests, the sector is also faced with a number of opportunities:

- It has been nearly a decade since Oromia established OFWE. As indicated a lot of experiences has been gained. Based on the experiences gained and also based on critical review of emerging national (e.g. shift towards green economy) and international developments (growing emphasis on ecosystems services and carbon sequestration), the limitations of the existing structure of OFWE to accomplish its tasks of properly managing both planted and natural forests, the regional government may need to explore options to further improve the structure and functions of OFWE to significantly enhance the role of the forestry sector in building climate resilient green economy in the region.
- Growing global interest in reducing deforestation and forest degradation through incentive systems represents a significantopportunity, which Oromia is already taking advantage of through the Bale REDD+ project.
- Professional foresters at Federal and regional level can take advantage of the new Ministry of Environment and Forest and the Ethiopian Environment and Forest Research Institute. The CRGE plan includes forestry as one of itsfour 'pillars', which may promote increased capacity and greater availability of state resources.
- Although currently limited to farmlands, the government's land registration and certification program represents an important opportunity that could be built upon. Some studies show that tenure security forfarmers promotes better land management, including increased tree planting.
- Although the expanding market economy puts pressure on forests and other resources, it is also opensa market for wood and other forest products.
- The adoption of PFM has created opportunities for communities in the region. PFM represents a significant opportunity, with greatpotential to promote sustainable forest management and secure benefits for communities.

3 EFFECTIVE FOREST MANAGEMENT PRACTICES FOR SCALING UP

3.1 Participatory Forest Management

3.1.1 Global trends and relevant experiences

PFM is an arrangement by which government and local communities negotiate, agree upon, guarantee and implement the fair distribution of management functions, benefits and responsibilities for a particular forest. PFM encourages community participation in every domain of forest policy and its realization, to achieve sustainable forest management. The literature often applies PFM as an umbrella term to refer to various systems developed in different countries, including community forest management, collaborative forest management, and Joint Forest Management (JFM). As an approach to sustainable forest management, PFM is commonly believed to have arisen in response to challenges related to the social characteristics of managing forest resources (i.e. the issues of 'who manages the forest' and 'how'). The underlying purpose of PFM can generally be described as solving problems arising from the conflicting interests and concerns of different social actors within forest resources management, in an effective and equitable way.PFM approaches recognize and manage the conflicts between livelihood activities and conservation objectives, by reconciling the two. Thus, this approach promotes sustainable management and conservation of forest ecosystems, while improving the livelihoods of people living in, or around, these resources.

The introduction of the concept of PFM was catalyzed by several factors at the international level. The Tropical Forest Action Plan (TFAP), an outgrowth of the Agenda 21 framework initiated in Rio de Janeiro in 1992, sought to reverse deforestation by involving local stakeholders, especially communities living in and adjacent to forest areas. The 1992 Convention on Biological Diversity (UN 1992) underscores the value of the sustainable use of biodiversity, and equitable sharing of associated benefits, that arise from the effective conservation of biodiversity resources. Attempts to promote effective and meaningful involvement of local communities were made in Latin America and the Asia-Pacific region. This was achieved through various, community-based forest management initiatives,including: the devolution of management responsibilities for some forestry activities to local government units in the Philippines; land and forest allocation programs in China, Laos and Vietnam; transfer of use rights to forest user groups in Nepal; JFM programs implemented in India; and the privatization of forest plantations in New Zealand (Paul and Chakrabarti 2011). Similarly, in Bangladesh, Pakistan and Nepal, social forestry programs have promoted the involvement of local people living in and adjacent to forest areas. South Asian countries such as India and Nepal are considered pioneers in introducing and implementing PFM to promote sustainable forest management. Such collaborative management approaches were introduced because of the governments' inability to unilaterally protect public forest resources. In Africa, PFM implementation started in the early 1980s, as part of a movement towards decentralization and devolution of state enterprise management, under structural adjustment programs. This became more widespread in 1990s (Amanor 2004). Therefore, PFM is still a relatively new concept in Africa, and is still evolving. However, PFM is already widespread, and has been successfully implemented in many African countries, and is

considered a viable means of securing and sustaining forests (Wily 2002). PFM, in its different forms, has been practiced in diverse social and biophysical contexts. As a result, a considerably large volume of literature documents the principles, approaches, contextual factors, impacts, and other commonalities underlining effective practices in PFM. The literature asserts that PFM can potentially contribute towards achieving improved forest conditions and enhanced rural livelihoods, as long as local communities are recognized as important stakeholders in forest management and encouraged to participate actively. Case studies have also documented that forest-based income can serve as a supplementary or regular source of income, gap filler, or a means of coping with income crises, for those living in rural communities.

3.1.2 Selected effective practices in PFM

The selection of effective PFM practices mainly focused on high forests in different parts of Oromia region. All of the observed forest areas had undergone considerable deforestation and degradation before the introduction of PFM to promote sustainable management. The PFM approaches were mainly initiated by NGOs, and received substantial external support in their early stages. Criteria and indicators were used to identify effective PFM practices. Throughout this process, the team established that different PFM sites have varying strengths and shortcomings, which provided lessons for scaling up PFM. However, the best example of PFM, in relative terms, was situated in the Afromontane forests of the Bale Highlands in Dodola Woreda.

The following examples were identified as effective practices that should be integrated into initiatives to scale up PFM:

(i) Ensuring proper validation at initial stage, by allocating sufficient time, and making the process as transparent as possible, is beneficial. The Dodola PFM establishment process provides positive lessons in this respect. Among earlier user groups, there was a gap of five years between the first and last formed groups, as hesitant members of the community required adequate time to consider and commit to PFM. The PFM establishment process in Dodola has evolved through a long process, in order to seek solutions to real and practical problems. These issues are particular to the conditions of the implementation site. A forest management intervention, which was initiallydesigned as an Integrated Forest Management project, has gradually transformed into a more participatory forest conservation and development approach that considers the peculiarities of the forest in a given area and potential challenges to its management. After evaluating the actual impacts of the preceding interventions, the project evolved into a PFM project, with enhanced participation. The participation of communities should:

- ◊ enable direct or indirect representation of important interest groups (e.g. gender, age, forest dependence, and other social divisions that might influence relationships with forest resources) at the initiation stage
- ◊ ensure proper consideration of local stakeholders' views on forests in the planning of PFM. PFM planning should be undertaken to identify aspects of the resource valued by the local community, and incorporate

this feedback into the forest management plan

- ◊ promote the equitable sharing of power in decision-making between communities and the government (experts). The full consent of member households should obtained prior to the establishment of forest user groups. The participatory process should allow sufficient interaction to address local expectations, concerns, views, and solutions.
- ◊ empower local communities to influence the PFM process and its outcomes related to sustainable forest resource management
- ◊ ensure empowerment and the building of social capital (interactions) as essential aftereffects of participation in PFM.

(ii) The overall impact of PFM on all local stakeholders, both in the short and long-term, should be understood and measured, and due attention should be given to mitigating any undesirable impacts on people and forests. A narrow focus on the concerns of the forest user group alone, at the expense of the interests of non-members in the local community, could have serious negative repercussions on the sustainability of PFM. For example, in the case of the Dodola PFM project, non-members were: given special access to the forest, involved in demarcation, and also given replacement agricultural lands where appropriate. Therefore:

- ◊ Efforts should be made to compensate those who are negatively affected by the PFM arrangement, and provisions should be made to take into account the needs of non-member households. Non-member households should be involved at the early stages of the PFM establishment process so that they can voice their concerns.
- ◊ The forest management agreement should make provisions to mitigate negative impacts on non-members, and where appropriate, they should receive certain forest-based benefits.
- ◊ Forest demarcation activities should involve as many community members as possible.

(iii) Organization of forest user groups should consider the manageability of the group, and the degree of trust and familiarity among members when determining the size of the group. Therefore, identification of members of forest user groups, and demarcation of respective forest blocks, should take into account existing patterns of settlements and other social interactions, as well as the practicality of planning, implementing, and controlling collective forest management activities. At the Dodola PFM site, the size of user group was limited to a maximum of 30 households. Moreover, existing patterns of settlement were considered in forming user groups and in the demarcation of forest blocks. This has enabled members to modify rules on management responsibility, cost and benefit sharing, in view of the capacity and role of individual members.

(iv) Forest User Groups could be organized into nested organizations that assume appropriate functions and responsibilities in collective forest management at different levels (e.g. forest management/users association, forest cooperatives and union,

etc.). This helps to create economies of scale in the management and use of large tracts of forest resources and builds capacity for collective action and bargaining power. Higher level organizations, such as unions, can gradually assume important facilitation and development roles, commonly taken on by external actors. These include strengtening,market linkages, setting up tree nurseries/distributing seedlings, and builing infrastructure. This could eventually represent an important means of ensuring community empowerment. In this regard, the Dodola PFM project has a functioal and promising union, which has assumed the role of external supporter by undertaking: development activities, the distribution of seedlings, the provision of credits; and income generation activities that represent a significant stride towards the genuine empowerment of the community. User groups within a kebele were also formed into separate cooperatives, and a union was formed at the woreda level.

(v) Incentive mechanisms should be put in place, following the approval of local communities, to ensure the sustainable management of forest resources. Such incentive mechanisms should target important forest management outcomes(e.g. increase in area of forest cover, reduction of forest degradation, extent of forest regeneration or rehabilitation), rather than forest management activities. The community should have a clear understanding of the mechanism, and adequate capacity to follow up and demand its enforcement. In the case of the Dodola PFM project, for example, simplified approaches to forest resource assessment were developed, and members of forest user groups were trained to regularly undertake such assessments.

(vi) Accord due importance to livelihood outcomes in setting PFM objectives. Thus far, the focus has mainly been on conservation outcomes. Therefore, allocation and determination of forest use rights should be based on the needs of the local community, in light of forest potential and the opportunity cost to be borne by the local community. Therefore, forest management and utilization plans should make comparative assessments of the livelihoods of member households with and without PFM, and of members and non-member households. The Dodola PFM project has identified the needs of households for various forest-based products, and compared this with the forest's productive capacity. The findings were then used to determine the minimum forest area required per member household (starting with 12 ha per household, and later changed to 8 ha) to support a standard of living that is comparable with that of non-member households.

(vii) The institutional set-up should be tailored to promote the sustainable use of different types of forest resources in Ethiopia. Where appropriate, this should also be aligned with the existing customary institutions dealing with access to forest resources, rather than applying ready-made, prescribed arrangements. Depending on the forest type and livelihood strategies, local communities should be engaged in various forest-based activities. Unlike the organization of groups for collective management and protection, group formation processes for economic objectives (such as cooperatives) should have modality and principles that reflect the nature of the resource in this case forest that needs to be managed as per the management plan. In this regard, some PFMs have successfully established separate organizations/CBOs to perform different functions within the same PFM, including: forest user/

management groups; forest associations; or commodity based (e.g. coffee, spices, etc.) and gender-based (e.g. saving and credit) cooperatives. The experiences of several PFM projects in southwest Ethiopia offer positive examples of how this can be achieved.

(viii) To maximize PFM impacts on livelihoods, we must integrate forest management and utilization activities with other important household income sources, to increase the value of forests and their benefits to people. For instance, livestock farming was successfully integrated with forest management using a cut and carry system at the Gemechis PFM project in the Hararghe highlands. Eco-tourism activities were also introduced to increase the value of forest resources at Dodola and Bale PFM sites. These are all good practices that should be piloted in new areas, and consolidated in areas where PFM has already been initiated, as PFM is scaled up nationally.

3.1.3 Suggested improvement measures for enhancing effectiveness of PFM

Assessments of existing PFM practices have revealed some gaps that should be addressed before processes are scaled up. Suggested measures, related to each of the criteria/indicators used in selecting effective PFM practices, are listed in Table 1.

Table 1. Suggested improvement measures for enhancing effectiveness of PFM practices.

Criteria/ Indicators	Proposed improvement measures
Participation and empowerment	• Greater and all-inclusive participation (e.g. women, minorities, youth, etc.) in all aspects of PFM (including: objective setting; economic and ecological evaluations; benefit and resposibility sharing, etc.) • Balance conservation and economic objectives of PFM while setting objectives and developing management plans • Enhance access to information (e.g. market, technology, etc.) and build capa (e.g. technical,managerial, book keeping, etc.) • Enhance community empowerment in decision making • Discourage elite capture of benefits, by creating an enabling environment to allow for active participation of ordinary members (e.g. democratization of decision making) Secure forest tenure and use rights as per the Forest Management Agreement (FMA) (e.g. issuance of certification of PFM holdings). The counter -signatory of the FMA should be selected from a higher level of government (e.g. regional level). Agreements should continue to be signed either by the Director General or the Deputy Director General of OFWE, to build the confidence of communities
Institutional and organizational settings	• Facilitate the implementation of community institutions appropriate to PFM, and the legal recognition of relevant customary institutions • Establish, legalize and empower CBOs, both in forest management and forest product marketing, and devolve more decision making power to CBOs for effective forest protection and management • Provide legal provisions, specific to PFM arrangements (i.e. by adapting current co-op and association arrangements to fit to the needs of forest management under PFM). The draft revised Federal Forest Law recommends the identification of a more efficient way of organizing forest based community organizations to manage forests as the current business model of co-ops is not particularly suitable to managing forest resources. The Co-op Office should continue to provide organizational support, training, auditing and other services to forest coops.

	• Setting provisions and taking progressive actions to support the evolution of PFM to community forest ownership • Create awareness of PFM among law enforcement bodies and related offices (e.g. police officers) • Facilitate the inclusion of REDD+ issues / PES into CBO bylaws • Include Payment for Environmental Services (PES) provisions in the National Forest Law and the FMA • Organize all PFM user groups at union and/or regional level
Equity: Engagement of disadvantaged groups	• Introduce/increase quotas to ensure the participation of women in leadership Facilitate and capacitate women to effectively participate in PFM (e.g. provide training to enhance capacity; arrange suitable working times/conditions for women in bylaws) • Benefit sharing and management responsibility should take into account the economic heterogeneity of community members (e.g. degree of forest dependence, livelihood strategies, level of poverty, etc.) • Recognize different types/levels of PFM membership, combined with corresponding roles/responsibilities in collective management arrangements, as appropriate to the social and cultural practices of the community
Impact on livelihoods	• Ensure forest access rights to meet local needs, including for: timber and lumber; wildlife resources; carbon and environmental benefits • Strengthen support for forest-based livelihoods diversification • Enhance value addition and market linkages (e.g. introduce village-based, small-scale carpentry; honey processing; converting forest by-products into briquettes, trophy hunting, ecotourism, etc.) • Ensure community benefits from PES, including relevant national stakeholders (e.g. the Ethiopian Electric Power Corporation (EEPCO), irrigation facility users, tourism organizations) • Integration of forest-based benefits with other livelihoods activities (e.g. in livestock production, through climate smart agriculture)
Impact on forest conditions	• Strengthen periodic forest resource assessment through community involvement to support informed decision making on adaptive management • Enhance community capacity to act as forest managers, and ensure that forest extraction is based on a management plan to ensure sustainable forest management Use PFM as an instrument for REDD+ implementation, and increase synergy of PFM initiatives with other climate financing mechanisms • Encourage enrichment planting, and provide technical support to establish forest plantations around PFM sites where appropriate
Conflict management or resolution	• Legally grant communities the power to address all PFM-related issues, including conflicts over forests between members Revive customary practices for conflict management alongside formal institutions • Ensure the participation of all community groups (e.g. elites, women, youths, marginalized or disadvantaged groups in the community) and all relevant stakeholders (distant users) during CBO bylaw development • Consider the needs and aspirations of non-members and alleviate negative impacts of PFM that affect them (e.g. through income diversification, greater employment opportunities, micro-finance, etc.) • Enforce and periodically update internal bylaws, taking emerging needs into account

3.1.4 Potential scaling up areas of PFM

The underlying purpose of PFM is to effectively and equitably solve problems arising from the conflicting interests and concerns of various actors. Participatory approaches can be implemented to promote the sustainable management of natural resources in the following scenarios:

- the tenure right over the forest remains unclear where two or more actors have conflicting interests, claims, or concerns. This often creates an open access situation, which in turn, results in the mismanagement, overexploitation or degradation of the forest resource
- where a significant proportion of local community members are dependent on the resource, and as a result, the community has a substantial stake in the sustainable utilization and management of the resource
- if, through proper and equitable arrangements, the resource has the potential to be developed and managed on a collective basis to the benefit of all major stakeholders involved

PFM can, therefore, be practiced in all high forest areas, woodlands, degraded forestlands, catchment/communal plantations, area closure sites, riparian forests and protected areas such as parks and controlled hunting areas. However, in selecting candidate sites for scaling up effective PFM practices, the conditions under which these practices proved to be successful should be compared with the context of potential sites. Moreover, candidate sites should be ranked and prioritized. Therefore, potential areas should be assessed before implementation, in order to determine their appropriateness, and plan the requirements and pathways for successful scaling up.

Although it is recommended that PFM is first scaled up in areas and forests where itis likely to succeed, it is OFWE's policy to expand the use of PFM beyond the 0.9 million ha of forests where it is currently practiced, and implement this approach in all of the region's natural forests and woodlands.

3.2 Other forest management practices for scaling up

3.2.1 Managing dry forests and woodlands

(a) Global trends and relevant experiences. Globally, dry forests are increasingly affected by deforestation and degradation, driven by poverty, population growth, and growing demand for natural resources. Dry woodland resources are negatively affected by: a lack of market opportunities, limited recognition of the importance of dryland forests, poor governance and investment, a lack of integration among different sectors, a lack of technical capacity, and climate change.

(b) Challenges to dryland forests in Oromia. The major challenges are:

- The lack of clear legal framework to define forest and tree tenure, which has led to open access for agriculture, charcoal making, etc.
- wildfires (in the Abay and Didessa lowlands in particular)
- large scale investment (in Dabus, Fincha, and Didessa)
- poaching (in Didessa and Dati Welel)

- illegal settlement for agricultural expansion in lowland areas (in Didessa, parts of Harena, Fincha, Borana, and around Adola)
- bush encroachment, which is common in almost all pastoral areas (e.g. Prosopis, thorny acacia,)
- shortage of adoptable technological options for improved forest management (e.g. nursery equipment, modern charcoal making approaches, improved techniques for bamboo products, etc.)
- limited natural regeneration due to overgrazing
- the absence of land use planning, in particular for lowland/pastoral areas
- inappropriate tapping techniques and a lack of knowledge and skills to ensure sustainable gum/resin extraction.

(c) Effective practices relevant to Oromia Region. Effective practices in the management of dry forests and woodlands were identified in Benishangul Gumuz. The general conclusion of the Benishangul Gumuz study team was that the management of the dry forest and woodland resources in the region is largely neglected. From the evaluated candidate sites, the two areas of best management practices were gum and resin-based, and bamboo-based management of dry forests. The team observed improvements in the composition and diversity of plant species, and increased income for participants in PFM, due to the adoption of clearguidelines on benefit and responsibility sharing in managing dry forests and woodlands for gums and resins or bamboo production. There are clear similarities between woodland management in Benishangul Gumuz and Oromia, although pastoralism and agro-pastoralism dominate the livelihoods of the inhabitants of Oromia's dry woodlands, which is not the case in Benishangul Gumuz. Nevertheless, almost all the effective practices noted by the study team from Benishangul Gumuz could work in Oromia. According to the Benishangul Gumuz team's report, the PMF process starts with the organization of CBOs to implement PFM, followed by mapping of the forest area, the participatory preparation of a management plan, enrichment planting by members, the construction of fire line, regular monitoring of growing stock, and the enforcement of bylaws. This information is relevant to Oromia, as the region has limited experience of implementing PFM in dry woodlands, with the exception of an initiative in Borana. According to regional experts in Oromia, current woodland management practices are limited to resource based awareness creation, and efforts to protect endemic birds such as the Laban lark in Borana. A decade ago, Farm Africa's initiative to organize communities to implement PFM in Borana's woodlands had limited success, due to a lack of monitoring and follow-up after the termination of the project. The experts noted that in order to improve the management of the woodlands in the region, legal and institutional frameworks to govern such resources should be in place, and efforts should be made to minimize overlapping mandates among institutions and uncertainty in ownership over woodlands. Though OFWE has begun to demarcate and manage woodlands, vast areas still need to be put under improved management, and a well thought-outland use plan for woodlands is required. 34% of the nation's woodlands are located in Oromia. This significantresource can provide

multiple benefits if managed in a sustainable way. The region can restructure woodl and management to benefit local communities by building on new opportunities at national level[1] and by learning from its own wide- ranging PFM experience. To this end, the region should:

- develop clear policy direction, in which dryland forests and other resources are recognized as critical to sustain the lives of pastoral and agro-pastoral population, their livelihoods, history and culture
- develop a coordinated approach among government offices to guide the management of resources (including forests), the allocation of land for investment, and concessions for the exploitation of resources such asgum, resin, and charcoal.
- recognize (legalize) and enforce the customary use rights of dry woodland communities, by supportingthe revitalization of indigenous institutions and the documentation of local knowledge,
- organize communities into CBOs with sufficient decision making power and technical and administrative capacity; build CBOs on existing and legalized, ingenious institutions
- recognize the rights of deprived or marginalized communities,including the rights of women
- develop a management plan together with CBOs, to protect and enhance the potential of forest resources to benefit their custodians. Bush clearing to improve rangelands is commonly practiced among pastoralists. However, the following management options could be considered:
  - use wood from cleared forest, woodlands & bushlandsto produce furniture, charcoal, etc.
  - be selective when bush clearing;leavefodder and shade trees standing
  - protect the riverine forests in the dry lowlands, as these serve important protective purposes
- develop and implement fair benefit sharing mechanisms forforest products and services, including carbon finance
- adopt strategies to control damage by invasive species on rangelands in many parts of Oromia'slowlands, and turn invasive species into useful materials
- conduct inter-disciplinary and participatory research on sustainable use and value addition of lowland bamboo, gum and resin from dry forests (e.g. in Borana, North Shoa, Guder, Dedessa valleys).
- Where appropriate, integrate wildlife and tourism in managing forests through PFM (e.g. in Dati and Borana Regional Parks, etc.).

(d) Suggested improvement measures and potential areas for scaling up. The following are improvement measures proposed by the study team.

1 As identified by the study in Benishangul Gumuz Region, oopportunities for introducing sustainable dry forests and woodland management include: the availability of significant forest resources, the establishment of the MEF, plans to scale up PFM and area exclosures, the mobilization of communities to reduce threats from fire, greater awareness of natural resource management among higher officials and local people in the region, the CRGE, REDD+ initiatives, and integrated water shade development work promoted by the Ministry of Agriculture.

- Integrate bush clearing activities as an integral part of rangeland management throughcharcoal production, using organized common interest groups (CIGs), etc.
- promote the planting of multipurpose tree species,integrated with rangeland management,in strategic areas
- identify and introduce improved technologies to facilitate the utilization of cleared bush in rangeland areas
- promote improved production techniques for gum and resin in selected areas such as the Abay basin, including the Guder sub-basin, and in Borana areas associated with the Somali region
- there is potential for dry land forestry to be further promoted around Borana; in some areas of Guji; in the lowlands of Bale, bordering with Hararghe; and in the Guder sub-basin in the Nile basin.

3.2.2 Promoting agro forestry systems

(a) Global trends and relevant experiences. AF systems increase on-farm production resilience to climate variability, by buffering crops from the effects of temperature and precipitation variation, as well as strong winds associated with storms. The increased plant and animal diversity within the AF systems provides greater diversity of food, fuel, fodder, medicinal plants and income for smallholder farmers (Méndez et al. 2010). Diversity in AF systems can enhance soil conservation and nutrient cycling, reduce pest and disease incidence (Beer et al., 1998). Hence, AF systems facilitate progressive adaptation by increasing the structural and temporal diversity of the production system (Montagnini and Nair 2004). The carbon sequestration potential of AF systems is estimated to be between 12 and 228 Mg C ha-1, with a median value of 95 Mg C ha-1 (Albrecht and Kandji 2003). For smallholder AF in the tropics, potential carbon sequestration rates range from 1.5-3.5 Mg C ha-1 yr-1 (Montagnini and Nair 2004). Policy analysis has shown that at prices of $100 per MgC, carbon sequestration in AF systems has the potential to raise per capita incomes of farmers by up to 15% (Antle et al. 2007). For these reasons, AF systems may prove to be a very useful component of agricultural adaptation, both as an economically feasible strategy for smallholder farmers vulnerable to climate change, and as a profitable greenhouse gas mitigation opportunity. Studies in southern Ethiopia also support these findings (e.g. Negash 2013; Belayhun 2011; Molla 2013; Tasfay 2011). Mezgebo et al. (2013) and Kebede et al. (2014) examined water quality and use. Specific to Ethiopia, over 45 research reports have been conducted on biodiversity conservation, and more than 20 on soil enrichment.

(b) Selected practices in the management of agroforests and recommended improvement measures. AF is practiced in many parts of Ethiopia, but the practice is particularly widespread and well-developed in the SNNPRS. Traditional AF practiced in SNNRPS provides an excellent case study to demonstrate the potential of AF systems to address the needs of limited-resource farmers. Accordingly, effective AF practices were identified in SNNPRS, as AF has a long history in this region. Field assessments were carried out in three agro-ecological zones: the

highlands, mid-highlands, and lowlands. Out of these agro-ecological zones, an apple-bamboo based initiative; a fruit, coffee and enset based initiative; and Moringa based initiative were selected as examples of good AF practice. The performance of these AF systems was evaluated in terms of productivity, sustainability and adoptability. The study indicates that the various components of these AF practices have made important contributions to income generation, livelihood diversification, food security, and biodiversity conservation. The major products include coffee, vegetables, fruits, cereals, enset, animal feed, and wood for household energy and construction. The tree components of AF systems include both exotic and indigenous species. Tree and crop species richness at the study sites rangedfrom13 to 28, and 9 to15 respectively. Study sites where AF practices are common support high population density, reaching up to 1047 km2. The team that examined AF practices in SNNPR recommended the following improvement measures for selected AF practices, to further enhance their socioeconomic and ecological benefits.

- Introduce improved germplasm andvarieties of AF system components, to increase productivity
- Develop appropriate management and harvesting methods for apple, bamboo and other components
- Enhance value addition and create market linkages
- Improve processing and storage practices/technology

(**c**) **Identifying and scaling up effective AF practices relevant to the region**. Improved AF practices are widely applied in the Western part of Oromia, and are often coffee based. Similarly, fruit-based AF systems are practiced around Jimma; tree-based AF systems, integrated with watershed development activities, are found in various parts of the region; Faidherbia albida-based AF is practiced in Central Oromia;silvopastoral AF systems have been implemented in the southeastern lowlands around Guji, which integrate fodder production with watershed development activities, as a biological soil and water conservation measure. A study on fruit tree and vegetable-based AF practices in three woredas in Oromia (Dendi and Toke Kutaye in West Shewa Zone, and Arsi Negele in West Arsi Zone) has shown the potential of AF to enhance household income. The most widely plantedfruit trees were apple, banana, mango, and papaya, and the most frequently cultivated vegetables were cabbage, potato, carrot, tomato, chili, onion and garlic (Mulu 2014). These fruit trees were planted either in combination with different vegetables, or solely at the border of the farm, where they also serve as a wind break or delineating boundary (ibid). Therefore, a variety of traditional AF practices exist in the region that are candidates for further evaluation and regional scaling up, once the required improvement measures have been implemented. These include:

- chat and fruit-based AF systems in the Hararghe Highlands
- coffee-fruit-based AF systems around Jimma, Wollega and Illu Abba Bora
- enset-based AF systems in West Arsi and Southwest Shoa.

3.2.3 Managing smallholder plantations

(a) Global trends and relevant experiences. Plantation forests are man-made, and are created by planting seeds or seedlings, usually at a regular spacing. Most contain a single tree species, although mixed plantations are important in some parts of the world. Plantation forestry, like many other agricultural enterprises, aims to grow highly productive forests on relatively small areas of land, so that the land is used efficiently.FAO estimates that 31% of the world's land surface is covered by forests, of which, 6% are plantations. A little over one half of these plantations were located in just five countries: China, USA, Russia, Japan and India. In 2005, approximately three-quarters of plantations were being grown for 'production', that is, for wood for construction, paper or fuel; or for products such as gum arabic, rubber, palm fiber, palm oil, or cork. The rest were being grown for 'protective' functions such as environmental protection, catchment protection, etc. Due to clearing of native forests, the area of all types of forests around the world declined by an average of 5.2 million ha/year between 2000 and2010 (FAO 2010). In contrast, plantation areas increased by an average of 4.9 million ha/year, and this trend is expected to continue, with the total plantation area estimated to rise toapproximately300 million ha by 2020 (FAO 2010). Wood supply around the world is progressively shifting from natural to planted forests. Many different hardwood and softwood tree species are used in plantations. Three species' groups dominate. These are pines (which make up 35 % of the total area of plantations), the single species China-fir (11 %), and eucalypts (8 %). In addition to supplying industrial wood, plantations can be grown to produce bio-energy (i.e. wood to be burnt in boilers to produce electricity or converted into ethanol), sequester carbon dioxide from the atmosphere, rehabilitate or stabilize land after clearing, reduce soil salinity arising from agricultural activities, detoxify sewage waste, or enhance biodiversity in regions previously used for agriculture (Bekele 2011).

In response to the decline of its natural forest area, in the early 1970s, Ethiopia established, with the support of Sweden, a number of large-scale industrial plantations, with the primary purpose of supplying industrial round wood for the production of sawn wood, wood based panels and wood pulp. The most prevalent species in these plantations are Eucalyptus species (56% of the total), Cupressus lusitanica (32%), Juniperus procera (2%), Pinus patula (1.8%) and other species (8%). Most of these forest plantations are found in Oromia, Amhara, SNNPRS, and Tigray. These are also the regions with major commercial forest plantations. Non-industrial forests, which include woodlots, community plantations and peri-urban plantations, are mainly located in Amhara Regional State, and are dominated by Eucalyptus species. The annual tree replanting rate in Ethiopia has risen significantly in recent years. Although accurate data is lacking, the average rate of new planting for commercial purposes is estimated to be approximately 3700 ha per year, which is far below the required area for ensuring a sustainable supply of forest products. With such low rates of re-planting and plantation establishment, plantations will be unable to replace the multiple uses generated by natural forests. The supply of industrial wood from plantations has so far been of poor quality, due to poor management practices. Thus, it is important to increase the area of planted forests and improve their management, to increase

product volume and reduce the growing gap between demand and supply of industrial wood in Ethiopia.

(b) **Selected practices in managing plantation forests and recommended improvement measures**. The task of selecting best practices in the management of plantation forests was undertaken in the Amhara region. The findings indicate that E. globulus and A. decurrens were widely planted. In selecting tree species for planting, farmers considered adaptability; growth rate; compatibility with the other land uses; suitability to the objective of tree planting; and market acceptance. They also acknowledged the positive impacts of plantations on soil productivity. The field assessment indicates that the economic benefits of growing trees are greater than those associated with cultivating crops like teff and wheat. Although the major purpose of plantation forests is to generate income by selling the stand, seedling production and tree planting have also provided occasional employment opportunities for local, jobless youths and women. Tree planters were also found to generate significantly higher cash income than non-planters. Communities have established plantations using the following species: Gravillea robusta, Acacia saligna, Cordia africana, Jacaranda mimosifolia, Acacia abysinica, Croton macrostachyus, Eucalyptus camaldulensis, and Sesbania sesban. Silvicultural factors considered include site preparation, protection, species diversity, and soil and water management. In terms of ecological impacts, farmers reported that E. camaldulensis has adverse effects on the soil and crop productivity of adjacent farmland and water resources, whereas uprooting and converting eucalypt plantations to agricultural land yielded better crops in some areas. The farmers also emphasized that the expansion of plantations has supported the rehabilitation of degraded lands. Several studies have also documented the nursing effect of plantations in enhancing the regeneration of indigenous tree species such as Dodonaea viscosa (locally known as Kitkita), Podocarpus falcatus (Zigba), Olea africana (Woira), and Juniperus procera (Tsid) (Yirdaw 2002).

Table 2. Suggested measures for improving plantation management.

Gaps/constraints	Proposed measures
1. Silvicultural	
Poor seed and seedling quality	Use selected seed sources and improved seedling production techniques
Inadequate site preparation	Conduct timely and adequate site preparation
Narrow spacing	Use wider and appropriate spacing suitable to the plantation's objective
Poor planting technique	Use standard planting procedures (time of planting, pit size)
Poor post planting management	Carryout adequate weeding, cultivation and protection of plantations
High dependence on single tree species	Introduce alternate and high value indigenous timber spp. and multipurpose tree species
Inadequate coppice management	Adopt an appropriate harvesting technique

2.Economic	
Inadequate value addition	Improve small scale wood processing and product diversification
Poor marketing system	Provide market information and strengthen market linkages
3. Environmental	
Discourage undergrowth	Use of wider spacing
Competition and shading on crop land	Buffer planting and introduce minimum distance from crop fields
Adverse effect on natural resources	Avoid collection of leaves and bark from plantations
4. Institutional	
Insufficient extension and land administration service	Install better extension service system and implement proper land-use plan at local level
Inadequate institutional and policy support	Set clear objectives and management plans for plantations; develop bylaws; provide training; and enhance monitoring and evaluation
Lack of skills and knowledge of experts at various levels	Provide consecutive training to enhance capacity

(c) Identifying effective practices relevant to the region and areas for scaling up. Oromia is the region of Ethiopia where plantation forestry has been practiced for the longest time. The country's largest industrial plantations are found in this region. In addition to this, Oromia is the largest region in terms of landmass, which could facilitate the expansion of large-scale industrial plantations. Approximately 80,000 hectares of plantation forests are estimated to have been planted in the region. The region also contains the nation's largest share of natural high forests and woodlands. Scaling up effective practices in the management of plantation forests in the region is very important for the following major reasons:

- potential availability of large areas suitable for establishment of various forms of plantation forests, which could meetthe increasing demand for industrial wood products
- in view of the role of plantation forests in combating deforestation, by alleviating the pressure on natural forests, the expansion of various types of plantation forests is imperative, as more than half of the county's natural high forests and woodlands are found in the region
- the region's significant experience in the management of industrial plantation forests can support the identification of effective practices and provide lessons for scaling them up, both regionally and nationally
- due to the region's large share of forest area coverage and plantation forests, Oromia'spotential contributions towards achieving the CRGE goals are considerable.

Therefore, it is important that effective practices in the management of plantation forests are identified and scaled up. To achieve this, the following tasks should be performed:

- identify and manage different forms of plantation forest in the region, including, woodlots, small scale private plantations, communal plantation

forests, and large-scale plantation forests

- identify areas in the region's various agro ecological zones (i.e. lowlands, midlands, and highlands)for different types of plantation forests
- develop criteria and indicators to select good practices in the management of plantation forests, based on the principles of sustainable forest management; identify examples of best practice for various forms of plantation forest; identify gaps using the identified criteria and indicators
- identify improvement measures to fill gaps in existing practices and develop effective practices
- encourage enrichment planting of trees in open spaces within the natural forest and/or as buffer plantations around conservation areas
- promote community-owned plantations in communal lands designated for forest development
- promote community-based plantations using a JFM approach
- promote small-scale, private plantations for commercial purposes
- promote multipurpose smallholder plantations for home consumption and commercial sale
- enhance technical support for sustainable forest management
- undertake land use planning for plantation development, to identify appropriate sites and recommended species:(e.g. planting of eucalyptus species in targeted areas; most smallholder plantations are situated in peri-urban areas and/or in areas where there is road accessibility)
- consider existing practices for smallholder plantation development such as JFM, outsourcing schemes, and out-grower schemes
- strengthen forest extension support services set and enforce standards for forest products, harvesting procedures, and utilization
- promote roadside plantations
- introduce appropriate techniques for commercial nurseries by involving the private sector and organized groups
- promote improved production systems along the value chains by involving various actors and link with marketing.

3.2.4 Establishing and managing exclosures

a) Global trends and relevant experiences. In this strategy, we define the term "exclosure" as a method of rehabilitating land by protecting an area from the interference of animals and human encroachment for a limited period of time, depending on site capacity and vegetation re-establishment. The rehabilitation of degraded lands has been practiced in most rural societies around the world. Rotational grazing and deferred pasturing, which allow vegetation to regenerate during the rainy season, have been practiced in Tunisia, Algeria, Niger, and Somalia for many centuries (FAO 1979; Birhane 2002). Natural succession is a time-dependent process, which involves changes to vegetation characteristics such as species composition, density, cover and diversity. It is an efficient and inexpensive approach to forest rehabilitation. However, the process of natural succession varies greatly depending on the initial site conditions and seed availability. Natural forests are generally regarded as

having high capacity to stabilize the soil, because of high root densities, biomass and greater depth of root penetration. However, in severely degraded and eroded areas, low propagule availability, seed and seedling predation, as well as other physical stresses, often undermine natural succession. In such severely degraded sites, the process of natural forest rehabilitation is very slow and active planting is necessary. Various mechanisms can influence succession and support the recovery of the plant community. Some examples of mechanisms that could influence succession in degraded areas include:

- soil seed bank: exposure of the buried seeds
- seed rain and dispersal: seed fall from remnant standing trees and seed immigration from the outside
- vegetative recovery of buried plants
- artificial introduction of plants
- the physical structure (substrate) of the vegetation and the competitive capacity also affectdevelopment.

Exclosure, which refers to the management of degraded sites through agreed upon management practices and social fencing, has been widely promoted in Ethiopia, especially in the Northern and Central Highlands. Exclosures have several economic and environmental benefits. They improve the availability of animal feed, as well as wood for energy and construction. Exclosures reduce the deterioration of degraded lands, and help to enhance regeneration. They play important ecological roles in biodiversity conservation; reducing soil erosion and sediment deposition; enhancing water infiltration and stream and ground water recharges; and reducing flood hazards (Aertset al.2008). In addition to their cultural services, including their aesthetic value and use for educational purposes, the contributions of exclosures to above and below ground carbon sequestration are well recognized.

b) **Exclosures in Ethiopia. I**n Ethiopia, the practice of exclosure has been exercised for centuries, through the restricted use of forests around churches (Mengistu 2001; Birhane 2002). In Ethiopia, exclosure has been practiced as a means of minimizing interference, and letting the land rest to promote increased productivity. In the 1980s, government institutions began promoting exclosure as a means of managing degraded land, and the practice became an integral part of soil and water conservation work. Exclosure allows degraded lands to rest for several years to encourage the regeneration of natural vegetation (Bendz 1986). Vegetation establishes itself quickly in areas put under exclosure, as grazing and human interference are restricted. In some areas, the establishment of area exclosures has reduced the need for hillside terracing. The region's hillsides that were largely barren and eroded have been put under protection from interference and this has allowed recovery. Following the 1984/85 major famines (Ameha et al. 2014), farmers were mobilized by the government through "food-for-work" schemes, and were engaged in building terraces and planting trees on degraded areas. However, there are limited studies from this region on the exclosure of free grazing lands and degraded lands, and the resulting restoration of woody vegetation (Birhane 2002; Yami

et al. 2006), and increasing biomass accumulation (Kidane 2002). Degraded lands are being rehabilitated in various parts of the country where rates of degradation remain high and agricultural productivity has been adversely affected. However, achievements differ from region to region. In Oromia, exclosure is being practiced in the highly degraded highlands of Eastern Oromia (West and Eastern Hararghie), in selected areas of the Central Rift Valley, Central Oromia (North and West Shoa) and in selected woredas of Western Oromia (West Wollega). In Tigray, restoration through exclosure and enrichment planting has improved land and livelihoods. Exclosures have helped the regional state to significantly increase its vegetation cover. In Tigray alone, approximately1.2 million ha are reportedly under area exclosure (BoARD 2013).Therefore, the selection of best practices in exclosure was undertaken in Tigray. The study was carried out in eleven districts in the region's three, major agro-ecological zones: the lowlands ("Kolla"), the midlands ('Weyna Dega'), and the highlands ("Dega").

c) **Identifying experiences in exclosure relevant to the region**. Based on the reports of the research team that reviewed experiences in area exclosure in Tigray Region, and a series of regional consultations with the key actors, we propose the following effective practices in exclosure for scaling up in Oromia:

- actively engage and negotiate with communities to clarify ownership rights (either with the entire, local community, or with selected groups–e.g. youths, poor women), to: reduce conflicts over ownership and benefits from the rehabilitated land resources; agree on site selection; collaborate in the setting of objectives; identify beneficiaries; and establish mechanisms to determine responsibilities and benefit sharing arrangements. While regional experts suggest that distributing exclosures to individuals will result in more secure tenure, and thereby improve the management of exclosures, farmers prefer exclosures to be owned by individuals nested in associations. Moreover, while contribution based benefit sharing is recommendedby experts, farmers favour equitable sharing. Therefore, before proceeding with either of these options, there should be significant discussion and accord between the experts, local administration and the farmers themselves.
- bylaw establishment should be participatory and should attempt to maintain a balance between protection/ conservation and production/economic objectives of exclosures depending on sites and needs
- integrate income generating activities with area exclosures (e.g. fattening, bee keeping, ecotourism, etc.), and diversify products and services (e.g. carbon)
- using a participatory approach,develop management plans that are in line with agreed uponland rehabilitation objectives, and integrate conservation and livelihood outcomes
- integrate biophysical soil and water conservation measures with minimal disturbance of the natural environment, including in-situ water harvesting structures; and plant multipurpose trees and shrubs, which provideboth economic and environmental services

- enhance the natural regeneration process byover sowing selected species, introducing and broadcasting native flora with seed treatment, and promoting enrichment planting ofselected species
- implement policies and legal support systems to reduce free grazing, and enforce agreed up on internal bylaws
- provide institutional, technical and legal support to link producers with markets (e.g. for carbon trading)
- provide tailored research, extension and training support, to identify measures that can support the further integration of exclosureactivities and maximize benefits (e.g. species mixes)
- improve the monitoring system forexclosures and generate reliable data. The research team that studied area exclosures in Tigray proposes a five-year time series data collection schedule for efficient and effective monitoring and evaluation of exclosures
- establish corridors to better link fragmented exclosures and enhance species richness.

Similarly, consultations with regional experts identified the following issues relevant to the regional scaling up of exclosures:

- recommended priority areas for promoting area exclosure are: pastoral areas, the Hararghe Highlands, Southwest Shoa and additional areas to be identified at a later stage
- giving priority to highly degraded areas, where environmental problems such as flooding and landslides are evident, will expedite scaling up activities and community involvement
- demarcate areas for exclosure with the active participation of local administrative bodies and communities
- identify and organize CIGs to manage exclosures,giving priority to women and organized youth groups
- encourage the sowing of seeds to enhance the regeneration of important grass species
- enhance natural regeneration in exclosures through soil and water conservation structures
- integrate exclosure management with activities such as ecotourism, beekeeping and fattening.

4. REGIONAL STRATEGY FOR SCALING UP EFFECTIVE PRACTICES

4.1 Rationale and objectives of the scaling up strategy

The forestry sector is currently emerging from many years of mismanagement and neglect, caused by institutional instability and inconsistent and poor incoherent organizational collaboration. Recent developments in the country indicate that there is increased awareness of the economic and social importance of forests and the forestry sector. The country's recent development strategies have recognized the important role of forest resources, and action plans have been established in the areas of forest management, conservation, and development. In particular, the GTP and the CRGE strategy documents have recognized the strategic role of the forestry sector. The forestry sector is being given a more prominent place in national and regional efforts to combat the impacts of climate change. The demand for forest products in various sectors has also increased, following rapid growth in construction and industrial expansion; population growth; and high rates of urbanization. These new developments require greater forest productivity, and efficient and equitable management approaches must be introduced to ensure the sustainability of forest resources. There is therefore an urgent need to identify and scale up effective forest management practices, in order to achieve national forestry sector goals, and meet growing demand for forest products and services. Moreover, it is imperative that short-term and long-term objectives of managing forests are balanced, and that benefits are equitably distributedamong current and future generations. However, studies suggest that market mechanisms cannot efficiently perform such balancing tasks. As a result, strategic management interventions are required in the forestry sector. Forest management is one of the most important undertakings of the forestry sector, and encompasses all activities concerned with the protection, conservation and management of forest resources in order to achieve the forestry sector's social, environmental, and economic objectives. This strategic development process focuses on five thematic areas in forest management: PFM, the management of dry forests and woodlands, AF, plantation forests, and area exclosures. The general objective of this strategy is therefore to ensure the sustainable management of forest resources, in order to achieve the targets set for the forestry sector in the CRGE strategy document, by scaling up effective forest management practices in the region and nationwide. The specific objectives are: to identify strategies for successful scaling up of effective practices in forest management , and to contribute to the development of a national roadmap for the scaling up of effective forest management practices in order to enhance the role of the forestry sector in building CRGE in Ethiopia as envisaged in the CRGE strategy document.

4.2 Strategy development process

Due to the limited time and resources available for the task, the strategy document development process was designed in such a way that the five thematic areas of forest management were examined by five separate teams. Moreover, appropriate regions were identified for each thematic area, so that each team was assigned a single region in which to conduct their study. The team studying PFM in Oromia focused on identifying best practices in PFM, developing a regional scaling up strategy, and collaborating in the development of a national roadmap. The teams also exchanged relevant,

complementary information throughout the process, to gain national perspective. Moreover, continuous discussions and consultations were carried out between the teams, to harmonize the working procedure and develop methods for data collection, organization and analysis. The PFM team started by conducting a review of the literature on PFM, to gain an overview of national and global experiences, which addressed PFM approaches, challenges, opportunities and impacts. This was followed by the selection of the best examples of PFM practices in Oromia, using predefined criteria and indicators. Once the best PFM practice sites had been selected, impact assessments were undertaken, to evaluate the biophysical and socioeconomic impacts of PFM in the selected areas. Finally, gaps in PFM implementation were identified through ex-ante evaluation, and improvement measures were suggested for future scaling up efforts. Various tools and methods were used for field data collection, and included feedback from major stakeholders in PFM, obtained through focus group discussions, consultative meetings, and household surveys.

4.3 Scaling up of effective forest management practices

4.3.1 Scope, steps and guiding principles in scaling up

a) **Defining scaling up and its key elements.** It is important to clearly define the term 'scaling up' in order to avoid unnecessary confusion of the term, as it is used to describe a wide range of processes in various sectors, including forestry. The following definition of scaling up is used: "Scaling up is defined as means of expanding, replicating, adapting and sustaining successful policies, programs or projects in geographic space and over time to reach a greater number of people" (Hartmann and Linn 2008).

The key elements for scaling up effective forest management practices are:

(i) **Developing a scaling up plan**: In the planning stages of the scaling up of effective forest management practices, the main focus should be to conduct a realistic assessment of the prospects and parameters for scaling up, and develop a road map/strategy. Therefore, the first step in scaling up is to clarify exactly what is to be scaled up, based on the experiences of pilot activities, which can clearly determine the viability of the model to be scaled up. This includes refining and simplifying the model, to properly document those elements essential to its success in scaling up, in terms of organizational capacity, efficiency of the process, and the extent of the impact. The pilot phase therefore ensures that the model to be scaled up is based on sound evidence, including: observable changes identified by users; evidence that the perceived needs of communities and other key stakeholders are addressed; observable, relative advantages over existing practices, in terms of benefits and implementation costs; and transferability and adoptability by end users.

(ii) **Define the pathways for scaling up:** Here "pathway" simply means the sequence of steps that need to be taken in the innovation, learning and scaling up processes, to ensure that a successful pilot is taken from its experimental stage, through subsequent stages, to the scale ultimately judged to be appropriate for the intervention pursued. At this stage, it is important to define the method to be used to scale up the effective forest management practices proposed in this

strategy. Different methods of classifying pathways for scaling up are identified in the literature. Hartmann and Linn (2008) distinguish three dimensions of scaling up – horizontal, vertical, and functional. Horizontal scaling up refers to the expansion of coverage, to more people and a wider area. Vertical scaling up refers to creating the required organizational and political framework for scaling up. Functional scaling up means the application of the practice to new areas beyond the pilot project. However, these classifications are not exclusive, as one dimension must usually be complemented by another (e.g. horizontal vs vertical).

(**iii**) **Defining the roles and responsibilities of key actors:** Once the pathways have been determined, the next steps in the process are to critically define the roles and responsibilities of the organizations to be involved in the scaling up of effective forest management practices (the model taken on board for scaling up); critically assess the capacities and values of the respective actors; identify the capacity and resources required; and build on comparative advantages to increase synergy.

(**b**) **Pathways for scaling up.** There are many possible pathways for scaling-up successful interventions: (i) effective practices can be scaled up by simply expanding them to more targeted populations in a given geographical space; (ii) scaling up of these practices can also involve "horizontal" replication, from one geographic area to another, such as from kebele to woreda to the regional level (iii) "functional expansion" involves adding additional areas of engagement, by implementing two or more effective practices in a more integrated manner, to maximize the benefits and reach more targeted populations at a larger scale. Using this strategy, effective forest management practices can be scaled up in four dimensions: (i) simply by expanding innovations within a given geographical area, to reach more people within a given locality; (ii) "horizontal" replication, from one geographical area to another; (iii) "functional" expansion, by adding additional programmatic areas of engagement; and (iv) "vertical" up-scaling, moving from a local or zonal engagement to a region-wide engagement. The latter typically involves policy reform if a change in policy dimension is required, as well as institution building to help achieve the policy and institutional conditions required for the successful scaling up of the recommended forest management practices. This provides an opportunity to update regional policy, and legal and regulatory frameworks based on a new Federal initiatives.

(**c**) **Scope for scaling up.** Scaling up requires making decisions on the optimal size of initiatives, in view of: the costs and benefits of operating at a large scale (i.e. economies or diseconomies of scale); the tradeoff between quality and scale; institutional/organizational constraints; and limits to the scalability of effective practices due to contextual factors. This scaling up strategy aims to provide a strategic framework for the scaling up of effective forest management practices within the region. Accordingly, boundaries are set to limit the scope of scaling up, by identifying typologies of potential areas for scaling up (in terms of relevant technical features), and prioritization (in terms of appropriateness for scaling

up).

(d) **Guiding principles.** The regional scaling up strategy envisages the enhancement of the short and long-term contributions of forest resources, to the wellbeing of the inhabitants of the region and the nation at large. The scaling up of effective forest management practices goes some way towards realizing this vision, through the implementation of best practices in sustainable forest management. Therefore, the guiding principles that should be
adopted when scaling up effective forest management practices include:

- Forest ecosystems should be managed to maintain their ecological integrity, productive capacity, resiliency, and biodiversity.
- Management practices should respect all forest land use and forest values.
- Partnerships should be fostered to ensure the meaningful participation of all actors.
- There should be judicious and maximized use of resources to maximize economic benefits for all actors, particularly marginalized groups such as women and youths.
- Adaptive management principles should be applied in the management of forest ecosystems, taking regional and local contexts into account.
- Forests should be managed for multiple objectives (e.g. livelihoods and conservation).
- Efforts should be made to ensure public leadership of relevant institutions at all levels, and the active participation of all stakeholders, including rural communities, at all stages of the decision-making process.
- Implementers should ensure that the process is effectively managed, and that monitoring and evaluation (M&E) is carried out so that lessons might be drawn and opportunities for action identified.

4.3.2 Scaling up modalities

The regional office and sections responsible for scaling up should work closely with research institutes, both at the Federal and regional levels. The regional office and the Federal ministry should formulate research agenda, or generate topics, to be addressed by the esearch and higher education institutes. An appropriate platform to facilitate the link between the regional office and research institutions should be established. The regional office should actively engage in problem identification, proposal development, and the review and research proposal endorsement processes, to ensure that the most significant development problems are researched, and solutions are identified. The scaling up process should be implemented in close consultation with researchers. Moreover, higher education institutions should be consulted, to ensure that experts are trained in the required areas. Producing qualified experts demands the active participation of the regional office in the development and review of the curriculum. In addition to this, the scaling up strategy should create platforms, where existing investment opportunities can be discussed, and the engagement of the private sector is encouraged. During the scaling up process, the private sector can play key roles in: technology multiplication, facilitating value addition, and input and product market development. It is important to formulate legal frameworks that incentivize the involvement of private investors.

However the establishment of legal frameworks alone is insufficient. The scaling up of effective forest management practices requires sequential steps, from the initial experimental or pilot program, to a fully scaled up regional/national program. It is advisable to follow stepwise approach based on the nature of the interventions, and where they are to be implemented (Figure 1). In this case, a stepwise approach involves the following stages:

- Pilot/demonstrate selected interventions: In some cases, piloting of interventions might be necessary, in order to generate additional information that could be used to enrich the existing knowledge base, and determine the viability of the intervention selected for scaling up. This creates an opportunity to identify gaps and the reforms to policy and legal frameworks required. Furthermore, during piloting, lessons can be drawn on whether the scaling up activities can be managed using existing structural arrangements, or if readjustments and capacity building are required. The piloting phase allows implementers to test the effectiveness of the novationsinnovations, observe the satisfaction levels of users, assess the ability of the in to address the perceived needs of the communities, and determine the costs of implementation and adoption by end users.

- Design and piloting of scaling up practices phase: At this stage, the effective practices identified during the pilot phase are documented. This provides an opportunity for the implementing institution to draw lessons to inform the effective management of the process; clearly determine the technical, logistical, financial and administrative requirements, and the appropriate M&E tools to be used in the scaling up process. The outcomes, improvement measures, and tools can be summarized in an operational manual to be used as a set of guidelines for further scaling up. The tested program can then be further adapted and implemented more broadly at regional level.

- Scaling up effective practices at a wider scale at regional or national level: At this phase, full packages of effective forest management practices are properly documented; the necessary institutional settings are put in place; the necessary organizational and technical capacity for planning, implementing, and evaluating is ensured; and the required technical supports identified.

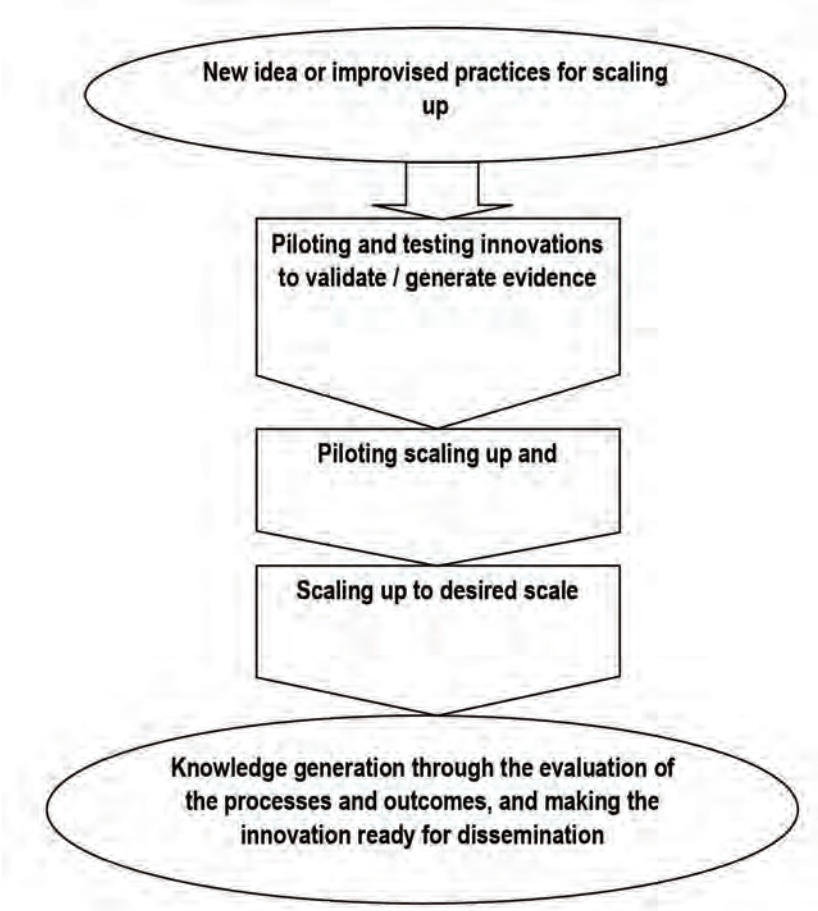

Figure 1. Schematic illustration of the stepwise approach for scaling up effective practices.

4.3.3 Opportunities and challenges for scaling up

Ethiopia's 1995 Constitution instigated the devolution of power to regional states, through the decentralization of political and resource administration. This represents an important opportunity for scaling up efforts, as lower levels of government are able to make decisions on local affairs and administer resources, including forests. The establishment of OFWE is an advantage that Oromia has over other regions. Oromia's considerable PFM experience, accumulated over the last few decades, should be capitalized upon and serve as a building block. In recent years, a number of initiatives have been launched at national level, which could support scaling up projects. These include: the establishment of the MEF, the formation of the National REDD+ Secretariat and Oromia REDD Coordination Unit, the launch of the CRGE plan, and rigorous revisions to the National Forest Law. The increasing engagement of international organizations like CIFOR help decision makers to make informed decisions. In addition to this, increasing global interest in mitigating climate change represents a significant opportunity for the region, which has already initiated a REDD+ carbon project, affecting approximately half a million ha of forest in Bale.

In Oromia, potential opportunities exist for the successful scaling up of effective forest management practices. The following represent some of the major areas:

- **Conducive policy and legal frameworks:** Existing institutions, policy and legal frameworks are conducive to promoting sustainable forest management.
- **The institutional arrangement of the forestry sector:** The recent revisions to the institutional arrangement of the forestry sector at federal level represent an opportunity for similar arrangements to cascade down to the grassroots level, which could support the delivery of forest services.
- **Establishment of Oromia Forest and Wildlife Enterprise:** The Oromia Forest and Wildlife Enterprise was organized to administer and manage priority forest areas in the region. Its branch and district offices can be used in selected areas as an entry point, to support the establishment of decentralized forest governance structures.
- **Institutional and technical capacity in the area of PFM:** Oromia has developed considerable institutional and technical capacity, which could support the implementation of some of the strategic recommendations outlined in this strategy.
- **Functional CBOs:** CBOs could act as an entry point to promote increased, local-level participation of rural communities in the management of natural resources, including forestry. The establishment and legalization of CBOs could play an important role in the implementation of PFM.
- Indigenous knowledge: Indigenous knowledge, in areas such as forest management and conflict resolution, can potentially be integrated with scientific knowledge.
- **Lessons drawn from implementing forestry related activities as part of the First Five Year GTP, 2010-2015:** The lessons learned from the implementation of the First Five Year GTP in the region could be used to inform the improved implementation of GTP-II.
- **Global and regional initiatives supporting the forestry sector:** The existence of international conventions and agreements, as well as the REDD+ pilot projects, could play a significant role in reducing deforestation and forest degradation in the region.
- **Improved infrastructure development:** In Oromia, significant progress is being made in the development of infrastructure, particularly the construction of main and rural access roads.
- **Increased awareness of the need for private sector involvement:** Awareness of the importance of private sector involvement in the forestry sector continues to increase, and should continue to be promoted.
- **Increasing demands for forest products and NTFPs:** Growing regional, national, and international demand for timber and NTFPs represents a significant market opportunity. Further efforts should be made to ensure the production of quality products, in quantities that meet internal and local market requirements.
- **Labor force and land availability:** The availability of human and land resources represent opportunities for the promotion of commercial forestry.
- **Regional land registration and certification law:** Land registration and certification could provide improved tenure security, which could strengthen community and individual engagement in the management of forest resources.
- **Increased involvement of NGOs: NGOs are starting to play a greater role in the promotion of sustainable forest management.** NGOs can be involved in marginal

and pastoral lands.

- **Integration of the forestry sector with other livelihood strategies**: The forestry sector can be integrated with other economic sectors. Forest based livelihoods have been integrated with other rural livelihoods such as fattening, beekeeping, fodder production, and agriculture, although these activities sometimes compete for land.

There are also challenges that may constrain scaling up efforts. These include:

- **Wider gap between supply and demand for tree and forest products:** According to the Oromia Task Force's assessment (2011) the region faces growing, and unsustainable demand for energy, and farm and grazing lands, due to its increasing population and continuous forest resource depletion.
- **Conflicting organizational interests:** The interests of OFWE, as the leaseholder ofmost PFM forests, might conflict with the interests of communities that would like to assume more authority over these resources. In areas where communities are responsibly managing forests, mainly for economic gains, long-terms plan should aim to increase the role of communities in the management and use of forests (except in areas where state ownership must be maintained to ensure the area's conservation or protection).
- **Poverty:** Many households are poor and depend on forests. Poverty, combined with rapid population growth will increase pressure on forests if the current patterns continue.
- **Weak law enforcement capacity:** Although the region has developed a number of policies and laws directly relevant to the sector, their enforcement has been poor. Competition for land: Conflicts of interest regarding land use (e.g. for agriculture, grazing, urbanization) put pressure on forest resources.
- **Institutional and technical capacities:** Due to the establishment of OFWE, Oromia is in a better position both in terms of human power and organizational standing to manage the region's forest resources than many other regions. However, OFWE must expand its activities and areas to cover all woredas, and to do more in managing natural forests and woodlands of the region
- **Low levels of awareness and participation among local communities:** Limited awareness of all aspects of forest resources management might be an obstacle to the implementation of the strategy.
- **Weak sectoral and cross-sectoral coordination and networking:** There seems to be little coordination between institutions linked to the forestry sector (e.g. agriculture, energy, mining, forestry, road construction, etc.). Although OFWE is influential in the development of plans that affect forests, greater interaction between institutions is required to ensure positive economic and environmental outcomes.
- **Population growth**: Rapid population growth is one of the underlying causes of deforestation and the depletion of forest resources, due to increased demand for fuel-wood, construction supplies, timber, and NTFPs, and the expansion of agriculture.
- **Gender mainstreaming:** In most cases, gender mainstreaming has not been thoroughly addressed by various institutions and practitioners.
- **Forest governance:** It is important to recognize the historical and legitimate

interests and rights of individuals and communities over forest resources. Policy, legal, institutional, and technical constraints may hinder the full participation and empowerment of communities in forest development.

- **Weak integration of research and development/initiatives in forestry:** Compared to the agricultural sector, research in the forestry sector is limited in its scope and activities.
- **Alien invasive species contributing to the loss of biodiversity:** Alien invasive species represent a serious challenge to agricultural, gazing and forest lands, and threaten forest biodiversity resources.
- **Land tenure system:** Investment in the forestry sector requires land tenure security. Lands planted with trees by individual farmers are still certified as agricultural (farm) lands, not as forest lands. This practice has undermined farmers' efforts to expand tree planting to areas under their possession. It is important that lands planted with trees are certified as forests when they reach the minimum area required by law.
- **Lack of data on forest inventory:** A country-level forest inventory is currently being carried out, and it may take some time before the data is finalized and shared. Policies and programs built on unreliable data often face problems during their implementation.

4.3.4 Enabling conditions for scaling up effective forest management practices

The following have been identified as enabling conditions to scale up good practices.

(a) **Aligning with on-going plans and initiatives.** One of the strategic options for scaling up effective practices is to effectively align them with ongoing plans and initiatives at the national level. It is vital to raise awareness of, and lobby for, the scaling up strategy among policy-makers and non-state actors that are actively engaged in the forestry sector and other economic sectors. This involves raising awareness of upcoming events, and gaining the buy-in of policymakers. Furthermore, depending on thecapacity and the available resources of the relevant organizations, collaboration should be promoted to support the implementation of the strategy. In this regard, the region's strategic directions and actionable items can be aligned with ongoing plans and initiatives such as: GTP-II, the CRGE, and the Agriculture Growth Program (AGP), the sustainable land management program (SLMP), REDD+, PFM projects, pastoral area development programs, and the community-based integrated watershed development programs.

(**b**) **Linking with livelihood strategies of communities.** Many rural communities are engaged in diversified, forest-based and agricultural activities, including non-farm activities, to support their livelihoods. Therefore, in order to effectively implement this strategy, it is highly important to ensure synergy and compatibility with other rural livelihoods, to maximize outputs and increase benefits. Therefore, this regional forestry scaling up strategy should be integrated with the regional strategies of other economic sectors, such as the agriculture, water, energy, road construction, and social sectors.

(c) **Ensuring the active participation of communities and increasing their benefits.** The participation of rural communities and other key stakeholders is crucial for

the strategy's successful implementation, and to maximize the potential economic, environmental, and social benefits. Participation should result in a share of the benefits obtained from the production of major and minor forest products. Benefit sharing arrangements should be negotiated and agreed upon by the parties involved. This is particularly important when scaling up PFM approaches.

(d) **Building the capacity of local government structures and CBOs.** The institutional and organizational capacity of relevant offices at all levels must be strengthened, in order to effectively carry out the scaling-up process. Therefore, it is vital to assess existing institutional arrangements, and the capacities of the organizations to scale up the proposed interventions. Scaling up requires political and organizational leadership, vision, and values, which should be shared with key actors actively engaged in thesector. In this regard, it is critical to establish and strengthen local level institutions, assign clearly defined roles and responsibilities, and create links between key actors at all levels. Building the capacity of the relevant institutions and their staff is key to the effective and efficient implementation of the strategy. Capacity building should be based on gaps in capacity, which can be identified by ensuring the active involvement of all stakeholders, including rural communities and relevant CBOs. Based on these gaps, training modules with an emphasis on practical training should be developed, to ensure that there is sufficient capacity in terms of institutional, organizational and human resources.

(e) **Enhancing the role of the private sector and other non-state actors.** To ensure the sustainability of scaling up efforts, a lead role should be taken by non-state actors. The active involvement of NGOs, CBOs, the private sector and other development partners working in the forestry sector should be promoted.

(f) **Strengthening cross-regional and regional-Federal collaboration in forestry.** Interactions between various actors and partners provide opportunities for mutual learning and information sharing. At grassroots' level, exchange can take place between selected non-governmental organizations, community-based organizations and farmer groups. At this level, partners should collaborate to facilitate the spread of the tree domestication process, and in so doing, scale up the impacts. Before engaging in any collaboration, however, partners should be appraised against the following criteria: reach (i.e. geographical area covered and number of farmers reached), use of participatory approaches and openness to appropriate practices, availability of trained staff, financial and material resources, transparent management and good governance, commitment to AF and participatory M&E, accessibility (i.e. transport and communication facilities), and shared objectives.

4.4 Strategic directions

Following the identification of best practices, gaps and improvement measures, we propose a number of strategic directions, categorized under the five strategic themes (Table 3).These strategic directions should serve as a basis for establishing more detailed

steps during the planning and implementation of scaling up activities. The proposed strategies can also provide strategic guidance for all stakeholders interested in supporting forestry related development initiatives in Oromia National Regional State in the future.

Table 3. Strategic directions for scaling up effective forest management practices.

Thematic areas	Strategies
Partcipatory forest managment	• Put in place policy and legal framework to ensure the effectiveness of forest-based CBOs in the context of PFM: To tailor PFM institutions to the various needs of managing and utilizing forest resources in an effective and economically viable way, To consider appropriate customary institutions in defining access to forest resources and conflict management To legalize and authorize forest-based CBOs, in order to empower them in the following areas: forest management, forest protection, conflict resolution, and benefit sharing (i.e. legalize bylaws of CBOs and forest management agreements, in order to strengthen their enforcement)
	• Build on the principle of participation as a means to empower local people, rather than as an end unto itself, to ensure that PFM remains a fair partnership between the state and local people Align the participation process during the initiation and establishment of PFM, so that people understand the consequences of their choices (risks and opportunities) Ensure that increased social capital within local communities is an essential aftereffect of participation in PFM (e.g. support or facilitate the alignment or mainstreaming of PFM related activities and events with the community's existing social activities) Improve the capacity of local people to support forest protection, and the M&E of PFM implementation
	• Strengthen PFM as a strategy for local development & sustainable forest management with the involvement of rural communities Provide adequate forest-based benefits through PFM, by giving equal priority to the livelihoods of the local community and the conservation needs of the forest resource when setting forest management goals and benefit sharing mechanisms. Target PFM objectives and provide support towards increasing forest-based benefits, in order to make forest-based livelihood strategies under PFM comparable with other livelihood strategies, non-PFM contexts, and non-member households Strengthen the capacity of local people to function as independent forest managers and to operate forest production activities profitably, by incorporating traditional knowledge with scientific approaches to managing forestlands and resources Develop forest-based, small-scale enterprises linked with markets. Increase forest-based benefits by creating markets to capture all types of forest products (e.g. support and facilitate the development of forest production activities beyond the primary extractive activities, in order to make local stakeholders of PFM beneficiaries at the higher end of the value chain) Provide support for value addition, through forest-based services such as carbon payments, watershed services, ecotourism, etc.

Thematic areas	Strategies
Partcipatory forest managment	
	Strengthen inter-sectoral coordination and networking for improved efficiency and maximal synergy, to promote sustainable forest management (i.e. forest management and production should be considered a multi-sectoral endeavor that engages all relevant actors, is integrated with the local economy, and secures the active involvement of non-member groups and the private sector)
	Work towards instigating positive attitudinal changes among major stakeholders of PFM, establish mutual trust and transparency, and strengthen communication by setting up joint consultative forums, defining appropriate roles for forest experts in PFM organization and implementation, and training both forest experts and community members in communication and social facilitation skills
	Strengthen the capacity of women and marginalized groups by organizing them into appropriate CBOs to support their effective participation in PFM
	Set up an environment of learning-by-doing in the design and implementation of PFM through action research, in order to ensure an evolving process and increasing capacity, in terms of: institutions, organizational set up, conflict management, collective forest protection and management, equitable benefit sharing arrangements, and improved integration of forest production and local livelihood activities Undertake research to identify appropriate institutional and organizational forms that can reconcile the goals of biodiversity conservation, livelihood improvement, and sustainable forest management, indifferent biophysical and socioeconomic settings
Managing dry land forests and woodlands	• Strengthen research on: improving natural regeneration and the productivity of dryland forest and woodland management ways to effectively combine traditional and scientific approaches to the management of woodlands and rangelands, and gum and resin production the status of woodland resources; problems related to the tenure, management and utilization of woodlands; and their overall socioeconomic impacts, and devise practicable solutions to promote sustainable management
	Devise economic and efficient techniques for bush clearing, and for combating the ecological impacts of invasive species, in collaboration with appropriate national and international NGOs/enterprises. These techniques should be implemented in a participatory manner, with the collaboration of CBOs, to ensure the effective coordination and implementation of the identified mechanisms
	Improve the productivity and value of dryland forests and woodlands through improved management practices, promotion of NTFP production and ecotourism, and by integrating forest production with other livelihood activities
Promoting agro-forestry systems	Assess the resource base, using secondary sources of information if necessary (e.g. Bureau of Agriculture, OFWE, NGOs and research institutions) for different agro-ecological zones (i.e. highlands, midlands, and lowlands)
	Develop criteria and indicators that are aligned with the developmental goals set for the region's forestry sector and AF system, and identify best practices, existing gaps, challenges and opportunities for scaling up
	Identify and promote more appropriate AF systems that are suitable for various farming systems, by drawing lessons from the experiences of other regions, and developing detailed strategies, guidelines, and implementation manuals for scaling up AF
	Strengthen research on AF systems, interlinking forestry with agriculture to promote: improved incomes, sustainable socio-ecological ecosystems, the diversification of tree and crop components, and the introduction of high value, suitable crop and tree species and varieties
	Support community nursery establishment and management to produce quality planting materials

Managing plantation forests	Undertake a thorough land capability, evaluation and classification study in order to identify areas suitable for various types of plantation forests and species. This should be developed into a comprehensive land use plan and made available to end users to support plantation development activities in the region
	Strengthen tree planting initiatives on degraded lands, with clearly defined objectives through massive afforestation and social forestry programs, with particular focus on allocating communal lands to those who are unemployed or landless, women, and youth groups
	Promote joint ventures between OFWE or other large scale plantation forest developers and local communities, by strengthening out grower schemes, and synergistically combining the comparative advantages of different actors, in terms of marketing, land allocation, labor resources, forest protection capacity, forest technology, etc.
	Encourage tree planting in woodlots, farm boundaries, roadsides and gardens to meet the demand for fuel-wood, construction materials, fodder and small timber. In predominantly cereal based farming systems, promote tree planting along rural roads
	Encourage the formation of small-scale forest enterprises in the areas of tree seed and seedling production, logging, plantation management, etc. by promoting outsourcing schemes, thereby creating employment opportunities for skilled forest laborers and improving the efficiency and quality of forest production and outputs
	Develop guidelines and standards for forest operations and forest products, and generate appropriate and improved technologies for plantation management, utilization, and processing of forest products. Strengthen extension and advisory services in forestry to support the effective dissemination of forest production technologies§
Managing Exclosures	Identify and demarcate areas for area exclosure with the active participation of local administrative bodies and communities
	Identify and carryout effective, timely, and economically efficient methods of area exclosure rehabilitation, by establishing structures to enhance natural regeneration, and sowing selected grasses and other useful species
	Promote participatory approaches to the protection and implementation of rehabilitation activities in area exclosures, by organizing CBOs that focus on women, landless or unemployed community members, and youths

4.5 Implementing the scaling up strategy

A number of sources have outlined general scaling up frameworks, based on pilot projects and global experiences, in order to guide similar efforts. The literature on scaling up identifies the following three major steps:

- preparation of the strategies, goal setting and planning
  - identification of the innovation or model (in this case the forest management practice)
  - assessment of scalability and identification of gaps to be filled
  - goal setting and selection ofa method/pathway for scaling up
  - development of a scaling up strategy
- legitimization, advocacy and mobilization of resources
- implementation of the practices to scaling up effective practices

4.5.1 Characterizing forest management practices for scaling up

Scaling up reflects the ideas/innovations to be scaled up, the underlying vision, the driving forces, and the necessary spaces or enablers for successful scaling up. For instance, various development programs define scaling up from their own perspective, by emphasizing one or more of the following elements in order to guide the scaling up process:

- ensuring the efficiency and effectiveness of the implementation of the program at a larger scale
- promoting higher quality, equitable or sustainable benefits in wider geographical areas
- increasing the socioeconomic impacts of the development program by reaching a larger number of beneficiaries
- mainstreaming a tested development activity by fostering policy and development programs.

For each respective forest management practice, scaling up should be defined, taking into account the most essential elements of the scaling up process. Moreover, national developmental and environmental goals, including the GTP, CRGE, and biodiversity conservation, should be reflected in the initiative's vision and goals. In this regard, the scaling up effective forest management practices adopts some of the principles of sustainable forest management. Depending on the management practice in consideration, one or more of these principles (e.g. equity, empowerment, efficiency, etc.) can be emphasized to guide the scaling up process.

4.5.2 Identification of the scope and pathways of scaling up

After the ideas/innovations to be scaled up are identified, the dimensions and pathways for scaling up must be decided. Limiting the scope and identifying pathways for scaling up requires the systematic selection and classification of potential areas. Table 4 provides a general framework for PFM practices.

Table 4. Suggested framework to characterize and select potential areas for scaling up PFM.

Practice	Conditions in order of priority	Implication for priority or pathways of scaling up
PFM	Geographical proximity of forests to best practice PFM site and similarity in social and biophysical characteristics	• Effective practices more likely to work within a similar social and environmental context, without the need for piloting • Less time and resources required as the scaling up process can be expedited through horizontal scaling up/replication • Most of the required spaces for scaling up are already in place due to the exposure of relevant actors and experiences gained • High priority for scaling up as negative spill-over effects (leakage) of existing projects must be prevented

PFM	Presence of or closeness to existing pilot PFM project, other than best PFM practice site	• Pilot PFM projects are an indicator of ongoing resource depletion or degradation and indicate the relevance of PFM • Expedited initiation/pilot stage is required to introduce effective practices into the area • Horizontal scaling up possible following piloting • Some of the required spaces for scaling up in place due to exposure of relevant actors and experiences gained • High priority for scaling up as negative spillover effects (leakage) of existing projects need to be prevented • Partnership with existing actors for effective scaling up
	Forest or woodlands highly threatened by deforestation and degradation activities; characterized by high rates of conflict between interest groups; no PFM initiatives implemented in the proximity. These forests are characterized by: • rates of deforestation or degradation above the regional average • forest dependent communities whose livelihoods, as well as the ecological health of the forest, are seriously affected by forest conversion, due to resource fragmentation or individualization • High rates of population growth or settlement and visible conflicts (e.g. local vs powerful interest groups, forestry vs other development activities, economic vs conservation goals, etc.)	• Achieving CRGE targets and high relevance for achieving REDD+ objectives: essential drivers for scaling up PFM • Prior assessment and creation of spaces necessary for scaling up (e.g. fiscal, political, cultural, institutional/organizational, etc.) • Both vertical and horizontal pathways might be required. Piloting stages are important to gain social and political support, and buy-in from important national and international partners, most likely through livelihood improvement and sustainable forest management objectives
	Forests or forestlands with considerable local, regional, global values in terms of livelihoods, watersheds, biodiversity, carbon sequestration, and where the immediate, negative, social impacts of PFM are reasonable Forests or forestlands where PFM as an approach is technically and economically viable	• PFM for sustainable forest management and local livelihood improvement is recommended, • A process of legitimization, advocacy and the mobilization of resources is required • A combination of vertical and horizontal pathways for scaling up is necessary

Practice	Conditions in order of priority	Implication for priority or pathways of scaling up
Dryland forest and woodland management	Other common property resources that need to be managed collectively (e.g. area exclosures, watershed areas, rangelands, etc.)	• Research and piloting activities required to adapt effective practices to local contexts • Considerable efforts are required to assess and create fiscal, political, policy, institutional/ organizational, and cultural spaces, etc. • A combination of functional, vertical, and horizontal pathways may be required in the scaling up process
	Areas with relatively high rates of deforestation and degradation (above the regional average); where resources are under threat due to individualizationor investment activities	
	Areas where these types of forests exist	
Agroforestry	Areas of the region where coffee based, fruit based, and enset-based AF systems are practiced, such as the Hararghe Highlands, Arsi, Wolega, Southwest Shoa, Jima, and Ilu Aba Bor.	
	Areas in the region with suitable agro-ecological conditions for AF	
Small holder plantations	Most peri-urban areas in the region or those that are relatively accessible	
	Areas close to large-scale plantations run by OFWE, or other private forest developers, that are suitable for out grower schemes	
	Areas where woodlots and smallholder planting activities are expanding	
Exclosure	Steep and highly degraded areas frequently affected by flooding and landslides and mismanagement	

With regard to mechanisms, a wide repertoire of practices can be used in each scaling up pathway. Most of these mechanisms have been applied in the region.

Table 5. Mechanisms to implement respective pathways of scaling up.

Pathways	Mechanisms
Horizontal	• Farmer to farmer peer /experience sharing • Community to community exchanges • Community level training; forest extension • PFM events/exhibitions
Vertical	• Awareness creation campaigns • Linking PFM and forestry with national developmental goals and setting targets • PFM Piloting to test effectiveness and efficiency • Inter-regional experience-sharing visits
Functional	• Research to identify and assess potential livelihood options • Feasibility studies for each option • Exhibition of potential livelihood options • Identification of business groups and training • Revolving fund and credit options

4.5.3. Filling gaps before scaling up

The scaling up process presumes the availability of effective forest management practices that have been tested and selected as examples of best practice, within or outside the region. However, field assessments have also shown important gaps that need to be addressed before embarking on the scaling up process. The following improvement measures are recommended before scaling up PFM. (Table 6)

Table 6. Suggested improvement measures against key indicators.

Criteria/Indicators	Improvement measures/actions
Participation and empowerment	Establish proper understanding of the long-term nature of scaling up PFM among participants and facilitators of PFM Employ a sequential approach in scaling up, including: initiation, piloting, and scaling up stages, in areas where participatory approaches are new Establish incentives for facilitators based on the quality of the participatory process, with respect to the empowerment of communities(e.g. type, channels/form, duration, scope of local people's participation, and the composition of participants)rather than focusing on cost/time efficiency, scale of coverage, or the number of participants in user groups Identify local champions and an adequate number of local facilitators at the initiation stage, to ensure access to all members of the community and other local stakeholders Build local capacity through training of trainers to improve the effectiveness of the establishment process

Participation and empowerment	Ensure the proper use of various participatory techniques during planning, in order to help participants make better informed decisions, develop strategies, form forest management agreements, and install proper institutional mechanisms to discourage elite capture of forest resources Establish regular joint consultative forums between the government and local actors at all levels, to ensure mutual accountability, control, and implement a learning mechanism
Institutional and organizational settings	Put in place a legal framework to ensure the effectiveness of forest-based CBOs in the context of PFM, through legal provisions that: Articulate principles and visions for collective forest management through PFM arrangements that uphold both better forest management and sustainable livelihoods Chart out the organization of forest governance under PFM arrangements as a multi-stakeholder activity, and stipulate clear boundaries, and the roles and responsibilities of major actors including: Local government (administration, police, judiciary and other law enforcement bodies) Sectoral offices at different levels (agriculture, land administration, energy, water environment and forestry, etc.) Forest user group organizations Set up joint committees and modalities for interaction at different levels in order to integrate and facilitate: Forest rehabilitation, development, management, and protection efforts Planning and implementation of proactive measures towards enhancing and capturing all forest-based benefits including management for environmental services Joint efforts towards increasing economic, social, and environmental values of forests managed using PFM, towards achieving broad developmental goals such as poverty alleviation, employment generation, biodiversity conservation, etc.
Equity: Engagement of disadvantaged groups	The PFM initiation and establishment process should identify, through a participatory process, winners and losers among local community members following the changes brought about by PFM. Short and long-term strategies should be devised that are locally perceived as legitimate, to compensate for losses or mitigate negative impacts A participatory initiation process should be carried out to create awareness among local community members of the nature and principles of PFM as a neutral, productive and economic activity; and as an institutional arrangement that is non-antagonistic towards existing social systems or practices Institutional arrangements should be devised in a participatory manner to empower, and enable the equitable involvement of, women and minority groups (e.g. forest dependent groups), while avoiding serious social resistance. Examples of such arrangements include: quotas for various leadership roles, & special saving/credit or marketing groups for women & minorities.

Impact on livelihoods	Secure use rights to all components of the forest resource that are valued by the local community, under the condition that they are sustainably used and managed Recognize heterogeneity of interests among members of local communities, with regard to forest use and management when we devise mechanisms in a participatory manner, to link use rights with management rights and responsibilities to ensure responsible forest management In cases where local demands for forest-based benefits cannot be adequately or sustainably supplied by the forest resource, devise short and long-term strategies to diversify livelihoods and income sources, and implement equitable benefit sharing mechanisms(i.e. make a concerted effort to mitigate the immediate, negative impacts of PFM)
Impact on forest conditions	Facilitate and support the training of instructors within the local community, to improve local skills in the assessment, establishment, management planning, utilization, and monitoring of forest resources, and build local capacity to continuously develop skills. Enforce joint M&E of activities to follow-up and enforce the implementation of annual operational targets set in the PFM plan
Conflict management or resolution	Policy and legal frameworks should facilitate the issuance of communal use rights, and management certificates for forest areas, to organized user groups under PFM Duet the nature of common property, as well as the multiple stakeholders and interests involved in the management of forest resources, forest user groups must be adequately empowered to control, adjudicate and resolve PFM related conflicts, in an effective and timely manner. Joint forums should be established to develop strategies to reduce/control conflicts, and to ensure co-learning among all stakeholders in PFM, and continuously improve and adapt conflict resolution mechanisms

4.5.4 Addressing organizational, human resources and financial requirements

A number of recent events have the potential to add momentum to the scaling up of PFM and other forest management practices. These include: renewed focus on the forestry sector in the country's development strategies (e.g. GTP and CRGE); the global relevance ofsustainable forest management in combating climate change (e.g. REDD+ initiatives); donors' emphasis on participatory approaches and equity; and increased awareness of the role of forest resources in poverty alleviation. According to Hartmann and Linn (2008), successful scaling up of an intervention often requires creating a conducive space with respect to seven areas: (1) fiscal space; (2) political space; (3) policy space (4) organizational/ capacity space; (5) cultural space; (6) partnership space; and (7) learning space. Oromia has already established policy, legal, organizational, and institutional frameworks to enable the introduction and implementation of PFM pilot projects. However, a number of gaps have been identified in these areas, which require further worktop facilitate the scaling up process. Moreover, most pilot PFM projects so far have been established through NGOs (i.e. with substantial donor input and highly skilled human resources). Therefore, substantial preparatory work is required before future government-based scaling up initiatives are launched.

(**a**) **Fiscal space.** Scaling up is a long process, which in the case of PFM may require 10 to 15 years. Therefore, a realistic assessment should be carried out to explore the costs of scaling up, potential for cost recovery, affordability, and resource availability at the planning stage (Hartmann and Linn 2008). The extent to which financial resources are available, to sustain and scale up successful

interventions tested at project level, must be addressed from the outset. Financial resources must be mobilized to effectively scale up the proposed effective forest management practices. The following strategies could minimize the costs of scaling up:

- mainstreaming and aligning the scaling up operations of PFM(or another selected forest management practice)with relevant, established development activities with complementary goals, such as sustainable land management, soil and water conservation, food security, biodiversity conservation, etc.
- recruiting and training large numbers of low-cost community specialists to facilitate community engagement, and meet the need for skilled human resources
- cost sharing with major beneficiaries of PFM or forest resource management, by training community nominated individuals; introducing private businesses and forest related enterprises as beneficiaries (e.g. wood-based factories, pulp mills, large furniture producers, etc.); and implementingmechanisms for sharing appropriate roles and functions, such as improving market linkages, capacity building in processing, etc. These efforts should be informed by the experiences of countries such as India and South Africa.
- creating special funds to support the scaling up process, using revenues from forest-based activities (e.g. royalty fees) and payments from major, forest sector stakeholders, through programs for environmental services.

(b) **Political and policy space**. Considerable progress has been made with respect to ensuring political and policy spaces, particularly in the area of PFM implementation, both nationally and regionally. However, implementation at a larger scale requires additional efforts, particularly in view of the gaps and constraints observed in the implementation of existing pilot PFM projects. Also, it is important to update the existing Regional Forestry Proclamation, in accordance with the recently revised Federal Forest Law. Efforts to create political and policy spaces for scaling up should focus on achieving the following outcomes:

- identify and recognize the vision and principles of PFM (or other forest management approaches) in regional forest policies and strategies
- define and characterize forest resources, and set appropriate developmental goals and targets for each type of forest management practice in regional/ national developmental goals such as the GTP and CRGE
- identify relevant governmental actors and articulate their respective roles and responsibilities in legislation on modalities of interaction (e.g. between PFM actors for equitable partnership through PFM).

(c) **Institutional/organizational capacity.** With regard to scaling up community development, Gillespie (2004) suggests that capacity relates to more than just resources, and includes attitudes, values, and motivation on the part of both community members and government personnel. For instance, various pilot PFM projects have faced similar issues, suggesting that there may be capacity problems in scaling up. In this regard, the following strategies, based on experiences of scaling up worldwide, should be considered:

- The capacity of allrelevant actors should be developed. With regard to

PFM, a number of manuals, procedures, and toolkits for PFM have been produced, based on nationally and globally tested practices,which couldbe used to support capacity building. These materials can be further improved in the light of new experiences gained during piloting activities in various contexts. In addition to this, a manual on all dimensions of the scaling up process should be produced as a living document to be modified over time.

- In addition to maintaining positive attitudes, motivation and trust among all actors, experiences indicate that success in scaling up depends on training communities to execute and manage projects and accounts. Power and responsibility should be devolved to the lowest level possible, or to those who will ultimately benefit.

- The political and policy environment should support community empowerment by specifying the particular roles and responsibilities of variousstakeholders at different levels, for the sake of clarity, transparency, efficiency and accountability.

- Rules and procedures must be carefully designed so that they are simple and transparent, for easy and rapid adoption by communities, to promote community empowerment and capacity development.

(d) **Learning space.** The scaling up process should not simply engage in the wholesale application of best practices based on the experiences of pilot projects, but rather, should implement a cautious, learning by doing approach. Scaling up strategies should be adopted through a long process of learning by doing, proceeding through the stages of improved effectiveness, efficiency, and expansion (Gillespie 2004). PFM should be viewed as an evolving process towards building better capacity (in terms of institutions, organizational setup, conflict management, collective forest protection and management), and towards equitable benefit sharing arrangements, and the improved integration of forest production and local livelihood activities. Therefore, monitoring and evaluation M&E are critical for effective scaling up, both during the innovation/piloting stages, and during the scaling up process. To this effect, it is recommended that the following are undertaken:

- action research and piloting to improve effectiveness and efficiency in various contexts,in terms of:
    - institutional/organizational set up for PFM,
    - collective action for sustainable forest management and protection
    - equitable benefit sharing mechanisms
    - forest value generation and improved market linkages
    - creating synergy and integration between forest activities and other livelihood activities
    - integration of PFM with the local economy and development efforts
- regular M&E and feedback from stakeholders to consolidate and speed up the scaling up process (for further information see section 4.4.7)

(e) **Partnership space**. Sustainable forest management through PFM should be conceived as a multi-sectoral endeavor that engages all relevant actors. Partners have the potential to support the drivers of scaling up, and provide financial and technical support throughout the process. It is important to identify the comparative advantages (e.g. the technical capacity or specialized expertise) that could be provided by the stakeholders to support the effective scaling up of selected interventions. It is vital to identify regional, as well as national, partners who have a stake in the forestry sector (e.g. NGOs and donors), and define their roles and responsibilities in the scaling up process. This minimizes duplication of efforts and maximizes synergy.

4.5.5 Implementation arrangements and coordination: identifying key actors and negotiating roles

The regional strategy for scaling up effective forest management practices is likely to involve a wide range of actors: national, regional and local governments; non-governmental organizations (NGOs); members of the private sector; donors; and communities engaged in forestry and agricultural activities. Therefore, to ensure the effective scaling-up of the recommended strategies, the development of multi-stakeholder alliances is crucial, and effective coordination is essential. To ensure that these actors work for the common good, and deliver services in a complementary manner and without duplication, OFWE and the MEF should be responsible for coordinating, and cooperating with, all institutions that have a stake in the promotion and development of the forestry sector, both at regional and national levels. Table 7 presents a list of stakeholders involved in the implementation of Oromia National Regional State's scaling up strategy, as well as their respective responsibilities.

Table 7. Stakeholder mapping for the forestry sector in Oromia.

Institutions	Role and Responsibilities
Ministry of Envirnment and Foreosts	Overall policy oversight: institutional support; resource mobilization, allocation and monitoring; promotion of forestry sector at national and international levels; setting environmental standards; and monitoring of rehabilitation of degraded lands and forests
Ministry of Agriculture	Promotion of AF and tree planting on farm and grazing lands; sensitization of farmers to the role of forests in soil erosion control when integrated with watershed development activities, and encouraging them to plant trees in homesteads; policy oversight, focusing on land tenure regulation; creation of a land cadastral system for agricultural lands, including forest lands
Ministry of Finance and Economic Development	Mobilization of funds for the implementation of forestry policy; collection and analysis of forestry related statistics
Ministry of Science and Technology	Help the national and regional governments to gain access to appropriate processing technologies for timber and NTFPs
Ministry of Foreign Affairs	Promotion of bilateral and multilateral cooperation in the field of forestry, and the dissemination of forestry policy and strategies in Ethiopia's diplomatic exchanges abroad and with foreign diplomats in Addis Ababa
Ministry of Water, Irrigation and Energy	Policy support to promote the concept of Payment for Ecosystem Services, (e.g. for the role forests play in hydrological cycles and stream/river flows);and to promote alternative energy sources such as biogas, briquettes made from residue (e.g. sawdust, rice husks, wheat and barley straws) and solar energy, etc.
Ministry of Mines	Collaboration with the regional Bureau of Agriculture and OFWE in the management of mining activities in forest areas
Oromia Regional Government	Sensitization and ensuring the involvement of decentralized structures and communities in the rational management and development of existing forests and woodlands
Oromia Bureau of Agriculture	Promotion of region specific AF and tree planting activities on farm and grazing lands; sensitization of farmers to the role of forests in soil erosion control integrated with watershed development activities; encouraging farmers to plant trees in homesteads, road sides etc
Oromia Forest and Wildlife Enterprise	Promotion of region specific AF and tree planting activities on farm and grazing lands; sensitization of farmers to the role of forests in soil erosion control integrated with watershed development activities; encouraging farmers to plant trees in homesteads, road sides etc
Oromia Bureau of Environment and Rural Land Administration	Promotion of region specific AF and tree planting activities on farm and grazing lands; sensitization of farmers to the role of forests in soil erosion control integrated with watershed development activities; encouraging farmers to plant trees in homesteads, road sides etc
Oromia Regional Agricultural Research Institute	Setting of environmental standards; monitoring of the rehabilitation of degraded lands within the region; and ensuring land administration and land tenure security through registration and land use planning
Oromia Bureau of Food Security and Disaster Risk Management	Collaboration in setting the forestry and AF research agenda; sharing of research outputs and capacity building; taking part in assessing impacts of government interventions
National Land and Water Resource Centre	Coordination of all activities related to resettlement and disaster management, including wild fires, floods and others hazards
Ethiopian Road Authority	Collaboration in data sharing on issues related to water and land
Oromia Bureau of Revenue Authority	Construction of access roads to forests
Oromia Bureau of Investment	Setting of appropriate taxes and royalties for forest products
Central Statistical Agency	Promotion of investment in the forestry sector, taking into account its peculiarities
	Collaboration in the collection of forestry statics

Institutions	Role and Responsibilities
Banks & Microfinance Institutions	Provision of forestry and budget spending statistics and development of financial products to promote investment in forestry
Donors and Funding Organizations	Provide funding and backstopping for large forestry development projects such as REDD+ and carbon trading schemes; forestry research and development; capacity building and support of higher education institutions
Local and International Non-Governmental Organizations	Implementation of localized projects on forestry or natural resources management, including: PFM, rural development and food security, promotion of tree planting, nursery management, watershed management, and biodiversity conservation
Private sector	Investment in forest management and the processing, utilization, value addition and commercialization of forest products; tree nursery management for trade
Oromia Cooperative Bureau	Provision of support for the establishment and legalization of forest-based cooperatives; development of agribusiness; capacity building support for forest uses and management
Ethiopian Wildlife Conservation Authority	Promotion of conservation and sustainable utilization of wildlife in Ethiopia; working closely with national and international stakeholders on wildlife conservation in national parks and sanctuaries
Oromia Bureau of Justice	Taking legislative and judicial measures against illegal actors and the misuse of forest resources
Oromia Rural Road Construction	Cooperation in developing mechanisms to estimate compensation for forest resources lost due to rural infrastructure development, or any other investment that leads to land use change
Oromia Livestock Development Agency	Integration of fodder development program with forest development and introduction of controlled grazing in forests and rehabilitation areas

4.5.6. Identify potential risks and propose mitigation measures

Table 8 lists some of the potential risks and problems that we may face in scaling up processes and the respective mitigation measures proposed.

Table 8. Potential risks and mitigation measures in scaling up

Potential Risks	Mitigation Measures
Inadequate infrastructure development hindering access and transport of forest resources	Strengthen infrastructure development, including access roads to rural areas
Weak market linkages for both timber and NTFPs	Provide support to improve market linkages for both timber and NTFPs
Lack of equity in resource access and use	Promote equity based interventions to benefit resource poor households
Increased incidence of disease, insect pests, and forest fires, which contribute to the increased loss of forest resources	Strengthen disease and pest assessment capacity and control. Implement forest management plans including for forest fire management
Limited support for forest development endeavors	Establish forest fund to self-finance the forestry sector; encourage private investment by setting conducive policies and legal instruments.

4.5.7. MERI (Monitoring, Evaluation, Reporting and Improvements) of strategy

The M&E framework should include: key activities and performance indicators; means of verification; the frequency of data collection; and who is responsible for data collection and analysis, including reporting and documentation.

(a) **Institutional responsibility**. It is the duty of OFWE/BoA to continuously assess the progress of various monitoring indicators of the scaling up strategies. The monitoring process requires the collection and analysis of data which serves as a guide to either continue the pace and direction of implementation, or take corrective action if the strategy has diverted from its original path. It is therefore necessary that OFWE/BoA/ Office for Pastoral Development Commission (OPDC) coordinate all of their activities, to ensure that various departments share information and experiences, towards creating a shared vision. However, it is likely that detailed roles and responsibilities will be defined when there is greater clarity on institutional arrangements at regional level.

(b) **Objective of M&E framework.** The objective of OFWE/BoA and OPDC in implementing the M&E framework, is to gradually gather the required information on the evolution of activities under this strategy. The gathered information will be analyzed, which allows the leading implementing institution, in close collaboration with key stakeholders, to measure achievements/impacts in relation to the stated objectives. It is essential to disseminate this information to various stakeholders involved in the sector, for the purposes of effective coordination.

(c) **Users and Parties involved in the M&E framework.** The following parties will use the M&E information:

- government (Supervising Authority: BoFED) and donors
- leaders of OFWE/BoA/OPDC
- other development partners involved in the forestry sector
- primary beneficiaries: the private sector and decentralized entities.

(d) **Data collection and reporting**. Information will be collected and analyzed for two reasons:to regularly monitor progress at activity level. This will be done to monitor the progress of the achievement of financial and technical targets. This is an internal process that will be carried out primarily by the staff of the implementing institutions at all levels to monitor and evaluate the outcomes and impacts of the operations of the various implementing institutions. This will be an external process and data will mainly come from external sources, such as national surveys.

Reporting will be managed by the lead implementing institution. If certain activities are implemented by key stakeholders, quarterly reports should be prepared by the respective stakeholders, and communicated to the lead implementing institution for consolidation. The consolidated progress report will be communicated to the regional key stakeholders, who have a critical stake in assessing overall performance, and allocating the necessary financial resources for implementation. The MEF should

provide feedback and technical support for planning, implementation, and M&E activities, particularly focusing on areas where the region is lacking in capacity. In addition to this, the MEF will be responsible for providing overall guidance and supervision, securing and channeling financial resources from donors and development partners, facilitating cross-regional experience sharing events, and managing and coordinating cross-regional matters.

5. THE WAY FORWARD

This regional strategy for scaling up effective forest management practices focuses on selected thematic areas. It is therefore expected that a full-fledged, regional forest sector review will also be undertaken. The regional strategy should also be based on, and informed by, a national forest sector development plan and strategy. The sections below propose some areas that should be addressed.

1. In scaling up PFM at national level, the following issues should be considered:
    - PFM is essentially an institutional arrangement to promotesustainable forest management. Therefore, its success is dependent on the overall legal and policy framework such as tenure governing access. Tenure security is an important element ofPFM, which entails the issuance of certificates for forestlands managed under PFM.
    - Most of the requirements and features of community driven development activities also apply tothe context of PFM implementation. As such, lessons can be drawn from national experiences to inform the scaling up of PFM arrangements. In particular, efforts related to decentralization, community empowerment, and participation are relevant experiences that support the scaling up of PFM practices.
    - To make PFM an effective an institutional arrangement to involve communities in responsibly managing and using forests, it is helpful to develop guiding principles that stipulate the why, where, how, and who of PFM arrangements at national level.
    - Forests and forestlands where PFM could be practiced should be identifiedat the national level. Comprehensive assessments should be undertaken and resources should be characterized to develop fundamental typologies, which could expedite the selection of potential areas, as well as the planning of the scaling up process. The literature identifies four factors which should be identified in this process:
        - ◊ **Biophysical features of the resource:** Whether it is forest proper(i.e. natural forests, woodlands vs plantations, forestlands) or non-forest proper(i.e. exclosures, watershed areas, rangelands, etc.)
        - ◊ **Local community/users of resource**: community members vary in their use of forests depending on their forest-based or non-forest based livelihood strategies. This needs to be understood.
        - ◊ **Institutional/organizational setting**: including whether a PFM approach is in place in the area; the presence of customary institutions on resource access and use; presence of customary institutions on collective action for the management of a common property resource (CPR) presence of participatory management in some CPRs, etc.
        - ◊ **Resource - community setting:** the degree of mismanagement or overexploitation due to de facto open access or weak tenure; the level of conflict due to multiple uses/interests; homogeneity in terms of high levels of dependence on a particularresource; the degree of resource

degradation; the potential for rehabilitation through PFM; and the potential to provide carbon/environmental benefits.

- Forests under PFM can contribute to local livelihoods, biodiversity conservation, carbon sequestration, and the forest industry. Therefore, functions andtargets should be specifically identified andset for PFM managed forests in REDD+ strategies andother forestry-related components of the CRGE strategy.

2. Consider the following points in the scaling up of other effective forest management practices at national level:
   - Effective practices should be identifiedfrom all regional states.
   - Identify gaps in the component of the national forestry sector strategy, and identify and gaps and strengths.
   - Forest management, as a constituent ofthe country's development strategy, should identify and set targets and identify action areas for each forest management practice.
   - Lessons should be drawn from regional experiences to inform: thescaling up of forest management practices, and the development of guidelines and manuals for scaling up at national level. These lessons should be adapted to specific cases.

3. Steps towards developing a full-fledged forest sector strategy at regional level include:
   - augmenting the potential of forests (e.g. economic/financial, environmental services) to reduce poverty (i.e. improve forest productivity and efficient use of the resource)
   - registering forests in the region under certain property/tenure entitlements: no investment of time oreffort shouldbe made unless the resource is under clear ownership
   - enhancing large-scale, state; small and medium size, private; and community forests with attractive incentives (e.g. land grants, interest free loans, technical and administrative support)
   - legally establishing a unit responsible for forest data administration
   - protecting critical biodiversity and environmental service areas by law
   - scaling up PFM practices with the medium-term aim of empowering communities to become owners of forests, providing certain criteria are met
   - improving wood technologies (e.g. in lumbering [pit-sawing], charcoal production, honey, spice extraction and value addition) address disconnect between policy and practices and inadequacies in laws and regulations.

4. Steps towards developing anational level forestry sector strategic plan include:
   - expediting work on land use planning, with periodic implementation of its components
   - deciding on the proportion of land that is to remain permanent forest
   - predicting the type and quantity of wood requiredfor a minimum of 25 years,based on scientific projections

- integrating and aligning forest development plans with the country's development road-map
- defining the ownership of each piece of land, particularly forest lands
- decentralizing resource administration to the lowest level of government, by building capacity and granting decision making power actively implement policies that have sufficient political backing, and conducting periodic evaluations of the policies and frameworks of relevant sectors, including the forest sector, to reflect changes
- building financial resources to invest in the forestry sector
- establishing a national forest database center with a long-term forest vision setting wood technology standards
- providing policy guidance on the type and quality of forestry research and education required

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