# ETHIOPIAN FORESTRY DEVELOPMENT

# ETHIOPIA'S CLIMATE INVESTMENT FUND/CIF NATURE PEOPLE AND CLIMATE/NPC INVESTMENT PLAN

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# ABBREVIATIONS

| | |
|---|---|
| AfDB | African Development Bank |
| AFIRR | Access to Finance for Economic Recovery and Resilience Project |
| AFOLU | Agriculture, Forestry, and Other Land Use |
| AFS | Africa Food Systems |
| AGENT | Advancing Gender in the Environment |
| ALIS | Agricultural Land Information System |
| AR6 | Sixth Assessment Report of the United Nations Framework Convention on Climate Change |
| AWF | African Wildlife Foundation |
| BAU | Business-as-Usual |
| BDF | Business Development Fund |
| BfW | Buy from Women |
| BMUV | German Federal Ministry for Environment, Nature Conservation, Nuclear Safety & Consumer Protection |
| BMZ | German Ministry for Economic Cooperation and Development |
| BN | Billion |
| EDB | Ethiopian Development Bank |
| CAF | Community Adaptation Facility |
| CBO | Community–Based Organization |
| CCDR | Country Climate and Development Report |
| CCGAP | Climate Change Gender Action Plan |
| CCKP | Climate Change Knowledge Portal |
| CI | Confidence Interval (relative CI in % - e.g. 90% confidence interval, there is a 10% chance of being wrong) |
| CIF | Climate Investment Funds |
| CMIP | Coupled Model Inter-comparison Project |
| CMS | Convention on the Conservation of Migratory Species of Wild Animals |
| CNFA | Cultivating New Frontiers in Agriculture |
| CO2 | Carbon Dioxide |
| COP | Conference of the Parties |
| COVID | Corona Virus |
| CPCIC | Cleaner Production and Climate Innovation Centre |
| CPI | Consumer Price Index |
| CSA | Climate-Smart Agriculture |
| CSO | Civil Society Organization |
| CTF | Clean Technology Fund |
| DEG | Deutsche Investitions und Entwicklungsgesellschaft |
| DGM | Dedicated Grant Mechanism |
| E&CC | Environment and Climate Change |
| EDPRS | Economic Development and Poverty Reduction Strategy |
| EFD | Ethiopian Forestry Development |

| | |
|---|---|
| EICV | Integrated Household Living Conditions Survey |
| ENR | Environment and Natural Resource |
| EoI | Expression of Interest |
| EU | European Union |
| EUR | Euro |
| FAO | Food and Agriculture Organization |
| FDI | Foreign Direct Investment |
| FLR | Forest Landscape Restoration |
| FMU | Forest Management Units |
| FOA | Forest Owners Associations |
| FPIC | Free, prior and informed consent |
| GAP | Gender Action Plan |
| GBS | Gender Budget Statements |
| GCAP | Global Climate Action Program |
| GCCASP | Gender, Climate Change and Agriculture Support Program |
| GCF | Green Climate Fund |
| GDP | Gross Domestic Product |
| GEF | Global Environment Facility |
| GESI | Gender, Equality, and Social Inclusion |
| GGCRS | Green Growth and Climate Resilience Strategy |
| GHG | Green House Gas |
| GIS | Geographic Information System |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| GoE | Government of Ethiopia |
| HDI | Human Development Index |
| HH | Households |
| HWC | Human-Wildlife Conflict |
| IDA | International Development Association |
| IFAD | International Fund for Agricultural Development |
| IFC | International Finance Corporation |
| IFRC | International Federation of Red Cross |
| IISD | International Institute for Sustainable Development |
| IKI | International Climate Initiative |
| IMF | International Monetary Fund |
| IP | Investment Plan |
| IP&LC's | Indigenous People and Local Communities |
| IPCC | Intergovernmental Panel on Climate Change |
| IPM | Integrated Pest Management |
| IPTCs | Indigenous People and Traditional Communities |
| IRF | Integrated Results Framework |
| IUCN | International Union for Conservation of Nature |

| | |
|---|---|
| IWRM | Integrated Water Resources Management |
| KfW | Kreditanstalt für Wiederaufbau |
| LAFREC | Landscape Approach to Forests Restoration and Conservation Project |
| LDCF | Least Developed Countries Fund |
| LDN TSP | Land Degradation Neutrality Target Setting Program |
| LWH | Land Husbandry and Water Harvesting and Hillside irrigation |
| MAP | Mean Annual Precipitation |
| MDBs | Multi-lateral Development Banks |
| MoA | Ministry of Agriculture |
| MinFED | Ministry of Finance and Economic Development |
| M&R | Monitoring and Reporting |
| MRV | Measurement, Reporting, and Verification |
| MSMEs | Micro, Small, and Medium Enterprises |
| NAEB | National Agricultural Export Development Board |
| NAP | National Action Plan |
| NAPA | National Adaptation Programs of Action |
| NbS | Nature-based Solutions |
| NBSAP | National Biodiversity Strategies and Action Plan |
| NBT | Nature-Based Tourism |
| NDC | Nationally Determined Contribution |
| NEPAD | New Partnership for Africa's Development |
| NGO | Non-Governmental Organization |
| NPC | Nature People Climate |
| NRM | Natural Resources Management |
| NST | National Strategy for Transformation |
| NTFP | Non-Timber Forest Products |
| NUP | National Urbanization Policy |
| NWC | National Women’s Council |
| ODA | Overseas Development Assistance |
| ODI | Overseas Development Institute |
| PA | Protected Area |
| PCB | Polychlorinated Biphenyls |
| PES | Payment-for-Ecosystem Services |
| PIMA | Public Investment Management Assessment |
| PLUP | Participatory Land Use Planning |
| POAs | Programs of Actions |
| PPCR | Pilot Program for Climate Resilience |
| PPI | Producers Price Index |
| PPP | Public-Private Partnerships |
| PSF | Private Sector Federation |
| PWDs | Persons With Disabilities |

| | |
|---|---|
| RISE | Resilient, Inclusive, and Sustainable Environment |
| RLI | Red List Index |
| ROI | Return on Investment |
| SACCos | Village Saving and Credit Cooperatives |
| SAPMP | Sustainable Agricultural Productivity and Market Linkages |
| SCF | Strategic Climate Fund |
| SDG | Sustainable Development Goal |
| SEI | Stockholm Environment Institute |
| SEP | Stakeholder Engagement Plan |
| SGBV | Sexual and Gender Based Violence |
| SI | Strategic Interventions |
| SIDA | Swedish International Development Cooperation Agency |
| SLB | Sustainability-Linked Bond |
| SLM | Sustainable Landscape Management |
| SME | Small and Medium-Sized Enterprises |
| SPCR | Strategic Program for Climate Resilience |
| SREP | Scaling Up Renewable Energy in Low Income Countries |
| TAF | Technical Assistance Facility |
| TCLP | Transformational Change Learning Partnership |
| ToC | Theory of Change |
| TREPA | Transforming the Eastern Province through Adaptation |
| TRSP | Tourism Revenue Sharing Program |
| UN | United Nations |
| UNDP | United Nations Development Program |
| UNEP | United Nations Environment Program |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNFCC | United Nations Framework Convention on Climate Change |
| UNFPA | United Nations Population Fund |
| UNIDO | United Nations Industrial Development Organization |
| US | United States |
| USA | United States of America |
| USAID | United States Agency for International Development |
| US$ | United States Dollar |
| WASH | Water, Sanitation and Hygiene |
| WB | World Bank |
| WBL | Women, Business and the Law |
| WCEEs | Women-Centered Ecotourism Enterprises |
| WCMC | World Conservation Monitoring Centre |
| WCS | Wildlife Conservation Society |
| WFP | World Food Program |
| WIR | World Resources Institute |

# 1. PROGRAM SUMMARY

## 1.1 Introduction

Ethiopia is the 8th largest country in Africa and 25th largest in the World, occupying a significant part of the Horn of Africa. The country has a land area of approximately 1,112,000 square kilometres (472,000 square miles) and with a diverse agro ecology ranging from 126 meters below sea level in the east to 4620 meters above sea level in the north. With its more than 132 million people, Ethiopia is the second most populous country in the region, where over 70% of the population live in rural areas. The population is growing fast at an average growing rate of about 2.7% and estimated to reach 250 million by 2050 according to United Nations Population Division. Ethiopia has experienced significant economic growth over the past decades. The country is one of the five biggest economies in Africa with Gross Domestic Product (GDP) of Birr 6.9 trillion (USD127 billion) in 2023[1]. The real GDP is also growing fast and reached 2.35 trillion Birr (USD 43,518,518,518.52 19,284,069,450) in FY 2021/22, increasing from 9,776.20 Birr per person in FY 2007/08 to 22,542.2 Birr per person in FY 2021/22[2]. Positive trends were registered in poverty reduction in both urban and rural areas due to consistently high economic growth over the last decade. The fast-growing economy has been driven by increased investment in infrastructure, manufacturing, agriculture and natural resources management, as well as growing domestic markets. Agriculture has been the major economy of the country, absorbs more than three quarters of employment, accounts for 32% of GDP in 2023, and some 80% of export revenues.

Ethiopia's economic development is deeply rooted in its natural capital, particularly land, forests, and water resources. Land provides the foundation for various sectors, including agriculture, livestock, forestry, and tourism. Renowned for its biodiversity, Ethiopia ranks among the top five countries in Africa and 25 globally. The country has an estimated 26.7 million hectares of forest, about 23.6% of the total land area. Forest resources in addition to preserving most of the country's plant and animal biodiversity, it has also a significant socio-economic contribution. For instance, it constituted about 12.86% (USD16.7 billion) of the 2012/2013 GDP[3] of the country. Ethiopia's forests are home to Arabica Coffea. Forests also constitute an estimated 10.1 billion tCO2eq total stored carbon, 1/5th of the global annual emission. The forest sector and land use combined are expected to contribute more than 85% of the emission reduction target stated in the Nationally Determined Contribution/NDC and the Long-Term Low Emission Development/LT-LED strategy of the country. Forest ecosystem in Ethiopia also provide services that extend beyond the country's borders, i.e., forests are the birth places of most of the Transboundary Rivers including the Abay/Nile River, implying the significance of sustainably managing these versatile resources.

## 1.2 Vulnerability context: An overview of environmental and socio-economic challenges in Ethiopia

Despite the remarkable positive socio-economic developments achieved over the past years, Ethiopia has become highly vulnerable to environmental challenges, more specifically to climate change. Existing vulnerability is exacerbated among others by the country's geographic location, socio-economic conditions, and heavy dependence on climate-sensitive sectors such as agriculture. Geo-graphically Ethiopia is in an area exposed to a range of climate hazards such as droughts, floods, and heatwaves. The country has experienced recurring droughts over the past decades, with significant impacts on its population and economy. These

[1] Trading Economics. 2023. GDP Africa.

[2] NBE. 2023. Annual Report 2021/22. National Bank of Ethiopia

[3] UNEP. 2016. *The contribution of forests to national income in Ethiopia and linkages with REDD+*. United Nations Environment Programme: Nairobi

droughts are primarily caused by El Niño, a climate pattern that can lead to below-average rainfall in the Horn of Africa. Average temperatures have increased by 0.5°C–1°C since 1950, where mean annual temperature increased from 22.80°C between 1971 and 2000 to 23.37°C between 1991 and 2020[4]. Higher rates of warming have been observed from July through September[5] which is the main crop growing season. Intergovernmental Panel on Climate Change (IPCC) projection under a mid-range emissions scenario [6] suggest increasing mean annual temperature by 0.9 to 1.1°C by 2030 and by 2.7 to 3.4°C by 2080. Similarly, rainfall variability could increase by 25%, and in some regions, this figure could reach up to 50%[7]. Changes in temperature and precipitation patterns have already been affecting availability of surface and groundwater resources for agricultural and natural resources management practices, undermining the livelihoods of millions of smallholder farmers and pastoral communities. Increasing severity and recurrence of drought and flood and uncertainty of rainfall patterns have already been displacing more and more people from rural areas. In the history of modern Ethiopia, the past three cades are where the country witnessed one of the largest outward migration of youths as a response to environment and socio-economic challenges.

Climate change has also been causing a long-term effect on the country's economy as it started to affect the productivity of key commodities such as Arabica Coffee. Coffee production, a major economic activity for five to seven million smallholder farmers has shown growing susceptibility to changing climate, with a rough estimation scenario of around 40% genetic erosion if there are no mitigation interventions[8]. Several other economic species such as these that bear marketable Non-Timber Forest Products/NTFPs are also showing poor natural regeneration, putting additional pressure on million more farmers and pastoral communities, particularly the poor households, and women and children. In pastoral areas in particular, recent droughts forced several more households to drop off their ancestral practices of livestock keeping, and more and more people becoming refugees.

Lade degradation is another serious challenge undermining the livelihood of millions of people in Ethiopia. According to World Bank, land degradation could reduce agricultural productivity by 5-10 percent by 2030 and GDP by up to 10 percent by 2045[9], where soil erosion alone costs the economy about US$305 million annually[10]. A study by World Resources Institute[11] show that more than half of the country's landmass (over 54 million hectares of land) show different level of degradation, about 11 million hectares will turn into desert without urgent implementation of Nature based Solution/NbS. Wetlands, critical ecosystems in Ethiopia, are under increasing pressure from climate change, land degradation, and land use changes. Despite the recent gains due to implementing Nature based Solutions, Ethiopia is still losing a significant proportion of its forest cover due to deforestation, potentially pushing millions more citizens into poverty trap and unfolding the already accumulating impacts of climate change. According to FAO, between 2000 and 2012, Ethiopia lost about 92,000 hectares of its forest, with a net loss of 72,000 hectares, a 0.5 percent deforestation rate[12], compared to Kenya's 0.03 percent deforestation rate[13]. In Ethiopia, there is unsustainable

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[4] The World Bank. 2021. Country: Ethiopia.

[5] The World Bank. 2021. Climate Risk Profile of Ethiopia.

[6] National Meteorological Agency. 2007. Climate Change National Adaptation Programme of Action (NAPA) of Ethiopia. Addis Ababa, Ethiopia

[7] *Ibid*

[8] Daba Etana, Dawit Merga. (2023). The Current Climate Change Impacts in Arabica Coffee Production and Mitigation Option in Case of Ethiopia: A Review. *International Journal of Environmental Monitoring and Analysis*, *11*(4), 80-88. https://doi.org/10.11648/j.ijema.20231104.11

[9] Global Assessment of Land Degradation - Identification Using Remote Sensing, ISRIC, 2008

[10] Economics of Land Degradation and Improvement in Ethiopia, Gebresilassie et.al., 2016

[11] Ministry of Environment, Forest and Climate Change (MEFCC). 2018. National Potential and Priority Maps for Tree- Based Landscape Restoration in Ethiopia (version 0.0): Technical Report. Addis Ababa: Ministry of Environment, Forest and Climate Change.

[12] National Forest Inventory (NFI), EFCCC, 2018

wood fuel harvest, exceeding 100 million cubic meters annually, with a third of this comes from remaining natural forests[14], meaning, if current trends continue, large proportion of Ethiopia's forests could degrade by 2030[15], with wood fuel consumption rising by 65 percent[16]. Growing occurrence of forest fire and expansion of invasive species due to combined impacts of changing climate and land degradation have also been deteriorating forest and rangeland ecosystems and other critical ecosystems outside forests.

The above-mentioned environmental challenges are further exacerbated by socio-economic challenges such as growing income inequality across the nation, for instance the Gini Index[17] grew from 33.2 in 2010 to 35 in 2015[18]. Most of the poor people, mainly women and girls live in rural areas, are burdened by rising inflation disproportionately, pushing them deep in poverty trap. Ethiopia has a rapidly growing population, resulting in increasing unemployment that exacerbate conflicts over scarce resources and adding pressure on land and natural resources. These environmental and socio-economic challenges call for building human and institutional capacities and capabilities and to mobilize financial resources to design and implement integrated Nature-based Solutions, preferably at landscape approach, and thereby, build resilience.

## 1.3 Responses to environmental and socio-economic challenges and lessons learnt

With vulnerable smallholders and pastoral communities at the center of policies and strategies, the Government of Ethiopia (GoE) has undertaken sustained efforts over the past years to address environmental and socio-economic challenges. Different policies and strategies strongly aligned with global agenda have been enacted over the past decades. The major includes the Climate Resilient Green Economy strategy, the National Adaptation Plan, the Nationally Determined Contribution and the Long-Term Low Emission Development strategy. There are also sectoral policies and strategies such as Forest Policy and Strategy, Environmental Policy, the REDD+ strategy and Sustainable Land Management Expenditure Framework, to mention some. These policies and strategies set an ambitious target, for instance, the NDC aims to reduce emission by 68% by 2030. Other pledges include restoring 22 million hectares of degraded land and forests as part of the contribution to the AFR100, the Bonn Challenge, the New York Declaration on Forests and the Pan Agrican Great Green Wall. The IP will also directly contribute to achieve targets in some other regional and global strategies, such as the "Agenda 2063: The Africa we want" and the SDG goals, mainly, these related to environmental sustainability, but also economic and social development. Also, the COP28 UAE Framework on Global Climate Resilience framework, which aims to accelerate adaptation efforts, reduce vulnerability, and build climate resilience at global scale, particularly the resilience of most vulnerable communities.

Several initiatives are going on to translate these above-mentioned targets and pledges. The major NbS flagship programs include the Green Legacy Initiative (GLI), Sustainable Land Management Program (SLMP), REED Investment Program (RIP), Climate Action through Landscape Management (CALM), Build Resilience for Food and Nutrition Security in the Horn of Africa (BREFONS) and Building Climate Resilience for Food and Livelihoods in the Horn of Africa (BREFOL). These programs are supported by resources from government of Ethiopia, development partners including the World Bank, African Development Bank, and countries and agencies through bilateral agreement. The scope and diversity of the

[13] FAO. 2020. Global Forest Resource Assessment, https://www.fao.org/forest-resources-assessment/en/

[14] MEFCC,2017 – Ethiopian Forest Sector Review (FSR)

[15] Climate Resilient and Green Economy (CRGE) strategy, 2011

[16] National Forest Sector Development Program, Ethiopia, MEFCC, 2018

[17] The Gini index measures the extent to which the distribution of income or consumption among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.

[18] World Bank. (2023). Ethiopia: Overview.

ongoing and pipeline NbS initiatives show Government's vested interest to address climate change challenges through investments in the land and natural resources sector management.

Encouraging results have been achieved due to implementing NbS in Ethiopia. The Green Legacy Initiative/GLI, a flagship program launched back in 2019 and aiming at planting 50 billion seedlings to contribute to restoring the 22 million hectares of degraded landscapes has achieved a considerable milestone. The initiative has planted about 40 billion seedlings of different species so far and this massive achievement is the result of the mobilization of millions of citizens. The REDD+ Investment Program supported by the Government of Norway has restored about one million ha of degraded landscapes since its inception in 2018. Similarly, the SLMP and CALM programs supported by WB have achieved restoring 2.4 million ha of landscapes. Ethiopia has also able to put about 2.5 million ha of its biodiversity and carbon rich forests under participatory forest management. The various NbS initiatives have significantly reduced soil erosion and enhanced soil fertility. Similarly, the deforestation rate has been significantly reduced to less than 30,000 ha per year over recent years compared to the 92,000 annual losses early 2000. These results together have brought positive impacts on land productivity and income of millions of smallholder farmers and pastoral communities. Significant improvements were also achieved in the areas of food and nutrition security and the overall socio-economic development of the country. Additional information on the ongoing NbS in Ethiopia is presented in Annex 2.

Despite these positive strides made in planning and implementing NbS and their socio-economic and environmental contributions, several challenges persist. Vulnerability to frequent drought, flood, landslide, and rainfall variability and uncertainty is still a widespread challenge in Ethiopia. Degradation is not reversed and there are still millions of hectares of already degraded land. The deforestation rate remains one of the highest compared to other countries in East Africa. Similarly, socio-economic challenges such as inequality, unemployment and insufficient financial resources are hindering scaling up and scaling out best NbS practices.

## 1.4 Objectives of the CIF NPC IP

The objective of this IP is hence to support the Government of Ethiopia to implement integrated Nature based Solutions to:

- ensure the long-term conservation and sustainable use of natural forests and biodiversity resources,
- restore degraded landscapes and ecosystems and enhance their capacity to provide essential services, and
- promote agricultural practices that are resilient to climate change and contribute to sustainable food, nutrition and wood security.

By building on previous positive lessons gained in implementing NbS over the past years, the IP seeks to transform land and natural resources management practices toward sustainable, just and equitable rural development.

## 1.5 Ethiopia's CIF NPC IP Development Processes

Given the substantial competing demands for financial and other resources, Ethiopia must mobilize funding from diverse sources, including from the private sector to design and implement NbS to achieve ambitious climate and sustainable development goals. In August 2022, the Climate Investment Fund (CIF) Secretariat has launched a call for expression of interest (EoI) on Nature, People and Climate (NPC) thematic area. The Government of Ethiopian, through Ethiopian Forestry Development submitted an Expression of Interest/EoI aiming at halting deforestation and forest degradation through participatory forest management; restoring degraded landscapes through integrated afforestation and reforestation, agroforestry and assisted natural

regeneration practices and soil and water conservation; promoting value added livelihood options involving women and youths; and building capacities and capabilities at strategic and operational levels to be able to plan and implement NbS. At its Intercessional Meeting held in October 2022, the CIF Global Climate Action Program (GCAP) Sub-Committee invited nine countries including Ethiopia and one regional group to prepare an Investment Plan (IP) under the NPC Program, in collaboration with the relevant MDBs.

Ethiopia has received funding from CIF in the form of Investment Plan Preparation Grants (IPPGs) to prepare a comprehensive Nature based Solutions (NbS) Investment Plan (IP). The IP has been prepared in collaboration with African Development Bank (AfDB), the lead Multilateral Development Bank/MDB, and World Bank (WB) and International Financing Corporation (IFC), the co-lead MDBs. By fostering strategic partnerships between GoE, the MDBs and other stakeholders, the CIF NPC program aims to support multi-sectoral solutions, including the creation of enabling environments, and direct investments for improved use of land and natural resources. The program is premised on a landscape approach to enable Ethiopia to contribute to climate change mitigation and adaptation goal of the Paris Agreement. This IP also seeks to address ongoing large-scale deforestation and land degradation including critical ecosystems such as wetlands and pastoral rangelands and hence enhance biodiversity conservation, disaster risk reduction, and ensure progress toward sustainable, just and equitable rural development in Ethiopia. The IP is prepared in such a way that, it will build on previous positive lessons gained in implementing NbS, as this will facilitate reinforcing and deepen understandings, progressions, efficiency and fast track of results.

A Partnership Agreement was signed between Ministry of Finance on behalf of Ethiopian Forestry Development and the AfDB to facilitate the preparation of the IP. A Scoping Mission was held from 05 to 09 June 2023 to launch formal partnership between the government and MDBs and set the next steps. Following this, multiprofessional individual consultants were put in place to undertake strategic studies and prepare the IP. A first Joint Mission was organized between 03 and 05 June 2024 to further scrutinize thematic areas of the IP, where direction was given to EFD to widen the scope of the IP to also integrate climate smart agriculture to build the resilience of smallholder farmers and pastoral communities in the highland, midland and lowlands. Both missions gave emphasis on the need to identify, prioritize and integrate into the IP gender and private sector responsive measures. The two missions were followed by regional stakeholders' consultation which involved key federal and regional stakeholders. This consultation workshop has further facilitated the IP preparation by way of refining challenges to be addressed first and interventions to be implemented to address these. It enhanced prioritization of context specific NbS interventions. A second Joint Mission was also held on 18th September 2024, where various comments and ideas were raised to enrich the IP.

## 1.6 Prioritization of Nature-Based Solutions Intervention Actions

Based on the results of the integrated GIS and Remote Sensing and socio-economic assessment made at national level and in consultation with stakeholders, four regions, namely Amhara, Oromia, South Ethiopia and Somali were proposed as suitable regions to implement this CIF NPC IP. A total of 25 districts representing highland, midland and lowland and different farming systems, notably, smallholder farmers and pastoral communities are selected from the four regions to implement the program. The idea is to use the 25 districts as demo and or model sites where integrated NbS interventions will be implemented, tested, best practices and lessons refined and packaged to be scaled up and scaled out to the adjacent regions, districts and landscapes as more resources will be mobilized. The CIF resources will be leveraging mobilization of additional resources through co-finance from the MDBs, the private sector, development partners and the government of Ethiopia, meaning. Hence, for the time being the prioritized NbS interventions in the IP are categorized as funded and unfunded activities.

## 1.7 Proposed Nature-Based Solutions Intervention Actions

By considering the approved pillars in the EoI and based on the results of the Scoping, first and second Joint Missions and consultation with regional stakeholders, three interlinked pillars, also called programs, are identified and prioritized as core part of the CIF NPC IP. These are;

- Pillar 1– Sustainable Management of Natural Forests and Biodiversity Resources
- Pillar 2– Integrated Landscape and Ecosystem Services Restoration, and
- Pillar 3– Climate Resilient Agricultural Practices.

The first Pillar focuses on transforming the management of natural forests in the selected CIF NPC districts. Despite their significant environmental and socio-economic benefits (i.e, they host diverse plant and animal species, rich in carbon, sources of rivers, including transboundary rivers, sources of food and wood), these natural forests in the beneficiary districts are facing environmental and human challenges, resulting in their degradation and fragmentation. Pillar 1 hence aims to put these forests under a sustainable management system, while also contributing to the socio-economic development of the communities living around these forests. The second Pillar targets restoring and sustainably managing the vast degraded forest and landscapes outside forests. Some of these degraded landscapes are adjacent to the natural forests. Whereas Pillar 3 supports smallholder farmers and pastoral communities to implement climate smart agricultural practices on farm and range landscapes.

The three pillars encompass different agro-ecologies and landscapes, different farming systems, such as forest, crop and range management, and different communities, notably, smallholder farmers and pastoralists and agro-pastoralists. Each pillar has multiple components and respective activities. Note that private sector engagement, gender and social inclusion (GESI), and capacity development are considered as cross-cutting components in all the pillars. Summary of each pillar is presented as follow:

**Pillar 1 - Sustainable Management of Natural Forests and Biodiversity Resources**

Despite the immense ecological and socio-economic contributions, Ethiopia's natural forests face numerous challenges, primarily due to human activities. Driven by expanding agriculture, overgrazing, illegal logging, and increasing demand for fuelwood and construction wood, deforestation and forest degradation are significantly undermining the perpetuation of these biodiversity and carbon rich forests of the country. Additionally, forest fires, pests and disease and invasive species have been threatening these forest resources. Existing inadequate forest management practices exacerbate the challenges facing these vital ecosystems. Deforestation and forest degradation significantly contribute to loss of biodiversity, vulnerability to soil erosion, drought, flood and landslide challenges, among others. The challenges facing forests have far-reaching consequences, including loss of ecosystem services on which communities in and around forests depend on, leading to food insecurity and poverty. Loss of forests also causes ecological instability locally and beyond. This pillar aims to enhance the sustainable management of natural forests and the biodiversity thereof by promoting Participatory Forest Management (PFM) practices and by adopting suitable interventions that reduce pressure on forest habitats. It will build on lessons learnt from implementing REDD+ Investment Program, the Oromia Forest Landscaping Program, and others related programs in the country. This approach will accelerate various interventions such as community organizations, forest assessments and establishment of decentralized joint management systems to manage the targeted forests. PFM groups will be established in such a way that, they will ensure the protection of forests, through engagement of the private sector in forest product value chains development to provide options to diversify livelihoods and income of local communities with a focus on poor men and women and youths. Pillar I will also support review and adjustments of policies, strategies and regulations to strengthen participatory approaches such as in areas of land use plans, benefit sharing, accountability, empowering local communities and establishment of functional partnership and capacity to equally manage their resources in sustainable way and equally share benefits.

Pillar I has five components, and these are:

- Support Implementation of Participatory Forest Management and Protection of Natural Forests
- Promote the Use of Improve Renewable Energy (biomass based)

- Support Private Sector Engagement and Value Chain Development
- Enhance Gender Equity, Social Inclusion and Livelihood Development, and
- Capacity Development and Knowledge Management.

The first component focuses on establishing PFM scheme to protect selected natural forests at the selected districts. PFM is a tested approach in Ethiopia for over 25 years and used as vehicle to achieve ambitious forest protection goals. The second component envisages reducing unsustainable wood fuel harvest from natural forests by providing alternatives such as improved Cock Stove and establishing fast growing woodlots as buffer around the core forest reserves. The rest three components support developing value chains, with a focus on low hanging fruits, to facilitate engagement of the private sector and enhance gender equality and social inclusion. The fifth component creates enabling environment to efficiently plan, implement, monitor and report the proposed interventions under each component.

**Proposed Budget**: An estimated total budget of US$74,914,750 (US$7,170,000 CIF resources and US$67,749,500 co-finance to be mobilized from the MDBs and other sources) is expected for the various activities in Pillar I.

**Expected Outcome**: About 84,000 hectares (15,000 hectares with CIF resources) of fragmented and poorly managed biodiversity and carbon rich natural forests will be put under sustainable and participatory management regime. To ensure this, a decentralized and inclusive management system will be introduced, and communities will be organized into different beneficiary groups to manage their resources and benefit from them. See Annex 1 for additional information on the pillars.

**Pillar 2 - Integrated Landscape and Ecosystem Services Restoration**

Forest and land degradation in Ethiopia is a pressing development challenge caused by population growth, unsustainable agricultural practices, overgrazing, climate change, inappropriate land uses, week institutional capacity to enforce laws and the widespread poverty. Millions of hectares of land are characterized by severe soil erosion, salinity and acidification and poor fertility. Desertification has been in the making in different places including in highlands where traditional agriculture is an age-old land management practice. Major impacts include reduced agricultural production and land productivity, water scarcity, increased emission of soil carbon and loss of biodiversity. Degradation of forests and other land has increased the vulnerability of millions of farmers and pastoralists. Pillar 2 hence aims to reverse forest and land degradation and reduce the vulnerability of communities to multifaceted crises including climate change. It supports restoration of ecosystem services both in forest and community lands outside forests, improve land productivity, create alternative livelihoods and thereby build environmental and community resilience.

Pillar 2 has five components:

- Afforestation and reforestation to enhance forest products supply chain
- Restoration of degraded community landscapes
- Support private sector engagement and value chain development
- Enhance gender equity, social inclusion and livelihood development, and
- Capacity development and knowledge management.

The first component aims to establish plantations to enhance the supply chain of forest products. Investment in production forests is crucial to reduce growing pressure on remaining natural forests for forest products. The afforestation reforestation component targets adjacent areas/buffers to fragmented natural forests and corridors between two or more fragmented natural forests. Smallholder farmers will be organized as out growers to establish cluster plantations using high value tree crops. The component in addition to establishing production forests, it also targets restoring degraded forests and forest habitats. The second component is Restoration of Degraded Community Landscapes. The major NbS interventions to be implemented by component 2 include Assisted Natural Regeneration/ANR and Farmers Managed Natural Regeneration and Soil and Water Conservation. These interventions target restoring degraded community

landscapes and watersheds outside forests. Communities will be organized into different forms of groups to jointly and or privately restore and sustainably manage their lands.

Component 3 aims to develop natural resources-based value chains with a focus on high value wood and non-wood and other products. This component will give priority for low hanging fruits, for instance, bamboo and fruits-based value chains. It supports the engagement of private firms in areas of building the capacity of suppliers and land managers by sourcing out technologies and innovations such as seeds and other inputs. Private sector engagement will also involve linking tree growers and land manager to firms, in value chain development processes based on inclusive business models, with the establishment of platforms for the promotion of public-private partnerships and the engagement of financial services providers. Given the risk and uncertainty inherent in NbS, there is an important role for the MDBs in supporting domestic banks to expand lending, through de-risking, risk-sharing instruments and guarantees, as well as advisory services. All the MDBs involved in this IP have implemented related innovative and impactful interventions and this IP draws on these successful experiences. The fourth component focuses on promotion of gender responsive and inclusive livelihood means, whereas component five aims to build capacities and capabilities at different levels to implement the different interventions of the pillars. The fifth component supports interventions that will organize and empower stakeholders, mainly local communities to fully participate in planning, implementing, monitoring, evaluating and reporting of the various integrated landscape restoration interventions under the pillar. Special focus will be given in building the capacities of women, youths and disadvantaged social groups to be able to make decisions and negotiate for their benefits.

By integrating restoration intervention with production of products including creating access to carbon credits, Pillar 2 seeks to provide tangible benefits to communities, reverse pressure on land, natural forests, improve conservation of biodiversity and critical ecosystems and enhance food security. Lessons will be drawn from completed and ongoing NbS programs and integrated to enhance efficiency and effectiveness of the implementation of the IP.

**Proposed Budget**: A total of US$245,697,500 (US$17,060,000 CIF resources and additional $238,910,000 co-finance from the MDBs and other sources) is needed to achieve the different targets set in this pillar.

**Expected Outcomes**: With CIF resources, about 322,276 hectares of degraded landscapes and ecosystems (forest, farm and rangelands) will be restored. An additional 3,857,364 hectares of degraded landscape and critical ecosystems will be restored through mobilizing additional resources as a co-finance from MDBs and other partners. Detail description of the pillar and components is presented in Annex 1.

**Pillar 3 - Promoting Climate Resilient Agricultural Practices**

Ethiopia’s agriculture sector has been facing multiple threats including from climate change, severe soil erosion, acidification and loss of fertility, rangeland degradation, limited access to improved inputs, and limited access to markets, hindering the overall productivity and income of millions of smallholder farmers and pastoral communities. Further, pests and disease are becoming serious challenges as climatic conditions change. Pillar three supports context-specific and tailored climate smart agriculture practices across the three agro-ecologies, highland, midland and lowland. While building the resilience of smallholder farmers and pastoral communities is the center of Pillar 3, it also aims to reduce GHG emissions from farming and livestock production.

Pillar three six components:

- Enhancement of Soil Heath on Farmlands
- Improving Farm Productivity through Climate Smart Agricultural Practices
- Livestock and Rangeland Management
- Support Private Sector Engagement and Value Chain Development
- Enhance Gender Equity, Social Inclusion and Livelihood Development, and
- Capacity Development and Knowledge Management.

The first component focuses on soil health improvement, whereas the send and third will focus on farm productivity enhancement and improvement of the livestock and rangeland management system. Other components involve agriculture product-based value chains development. A further assessment will be made during the implementation of the IP to come up with farming system/community specific commodities for which value chain will be developed and promoted. Examples include Coffea and fruit tree-based value chains. Also, vegetable, cereal and livestock product-based value chains will be supported. The encouragement of the private sector to support the development of these value chains will be crucial, where women, girls, youths and disadvantaged social groups will be empowered to fully engage and benefits from the interventions. The capacity development component will focus on making information and knowledge available to key actors, particularly smallholder farmers and pastoral communities and women and youths. Further, the pillar will employ adaptive planning to make sure GESI related interventions are well aligned, resourced and implemented across and to optimize equality.

**Proposed Budget**: A total of US$124,992,171 ($9,070,000 from CIF NPC resources and additional US$131,420,000 to be mobilized as co-finance from the MDBs and other partners) is allocated to achieve key targets set in pillar three.

**Expected Outcome**: By implementing different NbS interventions pillar three will support sustainable management of 25,730 and 58,520 hectares of farm and rangelands, with CIF and additional co-finance resources, respectively.

## 1.8 The CIF NPC IP budget and the MDB Project Concepts

The CIF NPC Ethiopia IP is prepared to mobilize about US$528.9 million ($37 million from CIF plus US$491.9 million as co-finance from the MDBs and other potential development partners) to implement the different NbS interventions prioritized under the three pillars of the IP (Table 1). Note that, considering the different large scale NbS pipeline program of the MDB, the co-financing resources might be bigger than what is estimated for the IP. With these resources the IP aims to improve the wellbeing and resilience of about 3.75 million direct and indirect beneficiary individuals. The IP will have also a carbon impact of approximately 57,939,425 tCO2 equivalents and this will be achieved through removal and avoided emission over the project lifespan.

Table 1: Summary of the breakdown of the CIF resources and co-finance per pillars

| Pillars | Description | CIF Financing | Co-finance |
|---|---|---|---|
| Total | | $37,000,000 | $491,900,000 |
| Pillar 1 | Sustainable Management of Natural Forests and Biodiversity Resources | $7,170,000 | $67,750,000 |
| Pillar 2 | Integrated Landscape and Ecosystem Services Restoration | $17,060,000 | $238,910,000 |
| Pillar 3 | Climate Resilient Agricultural Practices | $9,070,000 | $133,420,000 |
| 4 | Administration Cost | $3,700,000 | $51,800,000 |
| **G. total** | | | **$528,900** |

Based on the prioritized Pillars of the IP, the MDBs have submitted to EFD potential investment project concepts which are aligned with their programs. Their project concept notes indicate existing opportunities to co-finance the CIF NPC IP of Ethiopia in the short- and long-term. The major MDB NbS programs with potential to co-finance the CIF NPC IP included:

- Second Climate Action through Landscape Management (CALM-2) program (World Bank).
- Building Climate Resilience for Food, Livelihood, and Ecosystem Services in the High-Mid-and-Lowland Areas (BREFOL) (AfDB).
- Promotion of Climate-Smart Agriculture, Climate Resilience, and Post-Harvest Loss Reduction (PCCP) (IFC).

As clearly indicated in the submitted project concept notes, each of these above-mentioned MDB's NbS programs are strongly aligned with the three prioritized CIF NPC pillars and their respective components. For instance, the World Bank's CALM-2 is aligned with Pillar I of the IP, namely, Sustainable Management of Natural Forests and Biodiversity Resources. It is also aligned with other Pillars of the IP and different components, for instance, restoration of forest landscapes through integrated approaches such as aforestation and reforestation, necessary to reduce pressure on remaining natural forests and critical ecosystem on the one hand and build community resilience on the other hand. Similarly, the different activities of BROFEL of the AfDB are aligned with components in Pillar 2: Integrated Landscape and Ecosystem Services Restoration and Pillar 3 - Climate Resilient Agricultural Practices. The IFC's PCCP concept note indicates strong alignment of the PCCP with Pillar 3 - Promoting Climate Resilient Agricultural Practice, notably, private sector engagement and value chain development component. The project also includes activities on capacity building and livelihood improvement. Further discussion and alignment between the IP Pillars and the MDBs' project concept note might be made later during the detaining of the projects. See Figure 1 for the suggested co-finance alignment of pillars and MDBs' project concepts.

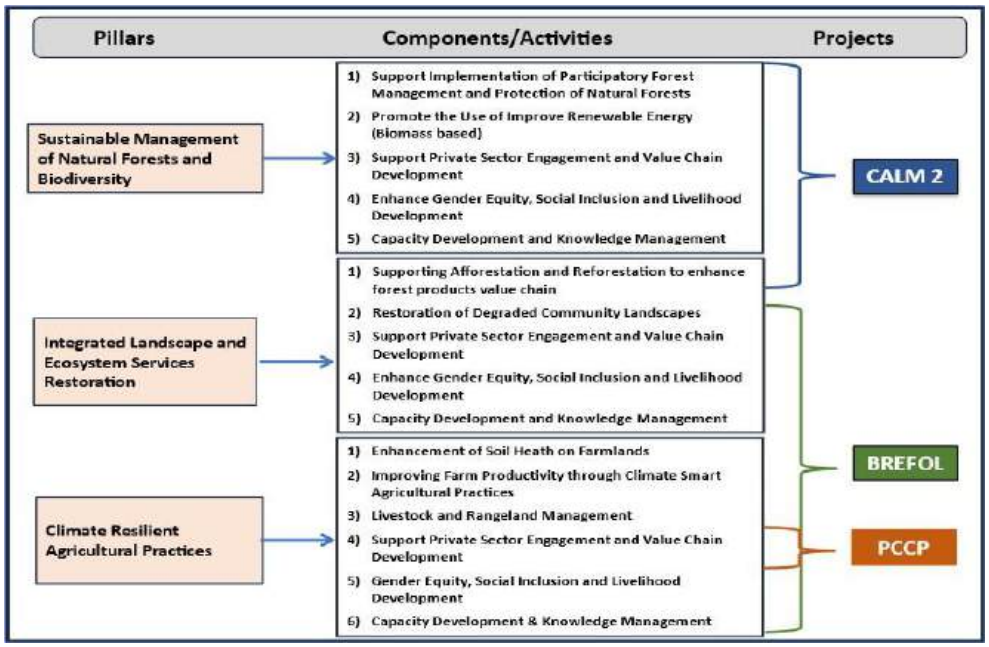


Figure 1: The responsibilities of the MDBs in leading and co-leading the CIF NPC IP pillars

The below table presents an estimate of the breakdown of the CIF NPC finance for the pillars and potential co-finance from the MDBs.

Table 2: The CIF financing and the MDBs co-financing of the three projects (million USD)

| **Project** | **CIF Financing** | **MDB Co-Financing** | **Total** |
|---|---|---|---|
| BREFOL | 22.5 | 193.3 | 215.8 |
| CALM-2 | 11.5 | 500 | 511.5 |
| PCCR | 3 | 60 | 99 |
| **Total** | **37** | **753.2** | **826.3** |

## 1.9 Implementation arrangement

Ethiopian Forestry Development is the main implementing entity of the CIF NPC IP. EFD will implement the IP in collaboration with the MDBs. The MDBs will lead and co-lead different pillars and respective components as suggested in figure 1 above. In addition, UNDP, CIFOR-ICRAF and PENHA will technically support EFD in implementing specific activities. Steering Committee composed of Ministry of Agriculture, Ministry of Finance, Ministry of Planning and Development, EFD, the MDBs and UNDP will be established at federal level to provide guidance and overseas the planning, implementation and reporting of the program. Technical Committee will be mobilized from the SC institutions and from the Technical Assistants/Tas to support technically the implementation of the IP. EFD will establish a Program Management Unit with the responsibility of coordinating and following of the day-to-day activities of the program. By engaging respective sectors, similar SC and TC will be established at regional and district levels.

# 2. COUNTRY CONTEXT

## 2.1 Ethiopia – Country Description

**Location:** With a total area of approximately 1.2 million square kilometres, Ethiopia is the 8th largest country in Africa and 25th in the World. It occupies a significant part of the Horn of Africa region. Astronomically, it is situated between 3oN to 15oN latitudes and 33oE to 48oE longitudes. It stretches about 1,639 kilometres from East to West, and about 1,577 kilometres from North to South. Ethiopia lost its access to the Sea in the early 1990s and became a landlocked country after the separation of Eritrea. About 0.7% of the country is covered by water bodies of inland lakes and rivers. Ethiopia shares borders with Kenya and South Sudan in the South; with Sudan and Eritrea in the West and North; and with Djibouti and Somalia in the East and Southeast.

**Human Population:** The current population as of 2024 is approximately 132.7 million[19]. The population is growing at an annual rate of about 2.7%. If current trends continue, Ethiopia's population is expected to surpass 200 million by 2049. The age structure shows that around 40% of the population is under the age of 15, which means a significant portion of the population is entering the labour market each year, contributing to both opportunities and challenges in terms of employment and economic development[20]. As a result, despite the rapid population growth, Ethiopia remains one of the poorest countries in the world. It may be assumed that a great share of the young people looking for employment in urban centers, unless there is more opportunity for employment and income in rural areas. Investments in rural areas will be needed to create such opportunities.

**Economy and Political System:** Ethiopia's economy grew by approximately 6.1% in 2023, with projections for 2024 indicating a growth rate of around 6.7%12. This growth is driven by the services sector, while manufacturing remains weak[21]. Inflation remains high, though it has slightly decreased to 28.7% in December 2023 from 34.2% in March 2023. The Ethiopian Birr had been significantly overvalued, trading at 110 Birr/USD on the parallel market compared to 56 Birr/USD at the official rate. But recently the exchange rate has been opened to market conditions and banks are applying their market-based exchange rates, which are now close to the former parallel market. The fiscal deficit has reduced to 2.9% of GDP, but the country faces a significant debt burden. Monetary policy has been tightened, with money supply growth slowing down.

[19] https://worldpopulationreview.com/countries/ethiopia

[20] Ethiopia 2030: A Country Transformed?, Options for A Next Generation of Reforms, UNDP Working Paper, December 2022

[21] UNDP Ethiopia Quarterly Economic Profile January 2024

The country's economic development is still affected by severe social and humanitarian issues. Ethiopia continues to face severe social challenges, with over 20 million people needing food aid in 2024. UNICEF estimates that around 33 per cent of the federal budget is allocated to pro-poor sectors (namely education, health, road construction, water and energy, and agriculture), which represents a significant decline from 59 per cent in 2020.

Ethiopia operates as a federal parliamentary republic. The government is structured with a President, who serves as the head of state, and a Prime Minister, who is the head of government. The legislative branch consists of two chambers: the House of Peoples' Representatives and the House of the Federation. Ethiopia's federal system is designed to accommodate its diverse ethnic groups, with 12 administrative regions and two self-governing city administrations.

## 2.2 Sustainability in Management of Natural Resources and Biodiversity

### 2.2.1 Vegetation and Landscape

The landforms of Ethiopia include mountains, plateaus, the Rift Valley, gorges and plains, which were formed during the Tertiary period of the Cenozoic Era and due to a series of orogeny, volcanism, denudation, faulting and deposition over thousands of years.

Ethiopia has a remarkable diversity in climate and landscapes stretching from the Dallo depression, the arid part of the country and 126 meters below sea level at the northern tip of the Rift Valley to the highest Mountain of Ras Dashen with altitude of 4620 meters above sea level in the Western escarpments. A report on natural resources management prepared by UNDP in 2010 provides an overview on the land cover structure in Ethiopia[22]. It shows that a major part of forest tree cover is in drylands and lands with options for climate smart agriculture including improved range management are mor than 50%. The vegetation cover can be stratified into agro-ecological zones determined by altitude and climate as in the table below.

| Land Cover Type | % |
|---|---|
| Cultivated land | 18.6% |
| High forests | 3.56% |
| Plantations | 0.40% |
| Woodlands | 25.8% |
| Shrublands | 23.1% |
| Grasslands | 12.8% |
| Afro alpine | 0.21% |
| Highland bamboo | 0.03% |
| Lowland bamboo | 0.97% |
| Swamp | 0.70% |
| Water | 0.72% |
| Bare rock, soil, etc | 13.4% |

**UNDP report on forest resources from 2010**

[22] Yitebitu Moges, Zewdu Eshetu and Sisay Nune, Ethiopian Forest Resources, UNDP Addis Ababa, October 2010

Table 3: Agro-Ecological Zones, Agriculture Use and Forest Cover

| Agro-Ecological Zone | Altitude | Climate | Agricultural Crops | Forest Types |
|---|---|---|---|---|
| Bereha (Hot Lowlands): | Below 500 m | Arid | production in the east; root crops and maize in the humid west | **Lowland Dry Forests** - Vegetation: Characterized by Acacia species, Commiphora species, and Boswellia papyrifera (frankincense tree).<br>**Riverine Forest** - Includes species such as Ficus sycomorus (sycamore fig), Tamarindus indica (tamarind), and various species of the genus Celtis. |
| Kolla (Lowlands) | 500 - 1500 m | Warm | Sorghum, finger millet, sesame, cowpeas, groundnuts. | **Lowland Dry Forests** - Vegetation: Characterized by Acacia species, Commiphora species, and Boswellia papyrifera (frankincense tree).<br>**Riverine Forest** - Includes species such as Ficus sycomorus (sycamore fig), Tamarindus indica (tamarind), and various species of the genus Celtis.<br>**Lowland Bamboo** -vegetation Oxytenanthera abyssinica, well-adapted to the drylands, poor and shallow soils<br>**Woodlands** - Includes species like Combretum, Terminalia, and various Acacia species |
| Woina Dega (Mic | 1500 - 2300 m | Moderate | Wheat, teff, barley, maize, sorghum, chickpeas, haricot beans. | **Dry Afromontane Forests** - Vegetation: Dominated by species such as Juniperus procera (African pencil cedar), Podocarpus falcatus (East African yellowwood), and Olea europaea subsp. cuspidata (African olive).<br>**Riverine Forest** - Includes species such as Ficus sycomorus (sycamore fig), Tamarindus indica (tamarind), and various species of the genus Celtis.<br>**Woodlands** - Includes species like Combretum, Terminalia, and various Acacia species |
| Dega (Highlands) | 2300 - 3200 m | Cool | Barley, wheat, highland oilseeds, highland pulses. | **Dry Afromontane Forests** - Vegetation: Dominated by species such as Juniperus procera (African pencil cedar), Podocarpus falcatus (East African yellowwood), and Olea europaea subsp. cuspidata (African olive).<br>**Moist Afromontane Forests** - Vegetation: Includes species like Hagenia abyssinica (African redwood), Schefflera abyssinica, and various species of the genus Erica.<br>**Riverine Forest** - Includes species such as Ficus sycomorus (sycamore fig), Tamarindus indica (tamarind), and various species of the genus Celtis.<br>**Montan Bamboo Forest** - Dominated by Arundinaria alpina (highland bamboo). |
| Wurch (Highlands) | 3200 - 3700 m | Cold | Mainly Barley | **Afroalpine and Sub-Afroalpine Vegetation** - Vegetation: Characterized by species such as Lobelia rhynchopetalum and various species of the genus Helichrysum |
| Kur (Highlands) | above 3700 m | very cold | primarily used for grazing | **Afroalpine and Sub-Afroalpine Vegetation** - Vegetation: Characterized by species such as Lobelia rhynchopetalum and various species of the genus Helichrysum |

### 2.2.2 Status of forest resources in Ethiopia

The diverse topography and the wide altitudinal variation have made Ethiopia to be one of the countries known for the diverse flora and fauna. Most of the flora and fauna diversity of the country is housed in the forest ecosystems, implying the massive ecological importances of forest resources in Ethiopia. According to Friis et al. (2010[23]) there are twelve major vegetation types in Ethiopia, ranging from Desert scrub through Acacia and Combretum biomes to high forests in the moist parts of the country. Such diverse vegetation types offer significant opportunity to fight against climate change and desertification and to conserve biodiversity, while also contributing to economic developments.

As far as forest stocking is concerned, the National Forest Inventory from 2018[24] report show that approximately 40.3% of the total growing stock in terms of aboveground biomass (AGB) is found in naturally regenerated forests, followed by planted forests (28.5%). There is a considerable number of trees outside of forests (ToFs), which are an important part of the total growing stock, mainly these at built up areas, implying their sustainable management.

However, the forest cover of the country has diminished over years due to a combination of factors such as conversion of forest land to agriculture (mainly smallholder, but also commercial farming) and livestock grazing, illegal logging and fire and pests, invasive species, among others. Growing vulnerability to climate change, widespread poverty and scarcity of alternative livelihood means, demand for construction material and growing urbanisation re-enforced deforestation, where fuelwood collection has been the major cause of forest degradation in the country. According to a study made by FAO for the period 2000 to 2012, Ethiopia

[23] Ib Friis, Sebsebe Demissew and Paulo van Breugel, Atlas of the Potential Vegetation of Ethiopia, 2010, The Royal Danish Academy of Sciences and Letters

[24] Final Report, Ethiopia's National Forest Inventory, Addis Ababa, 2018, FAO and Ethiopian MEFCC

lost annually about 92,000 ha of its precious forests to deforestation, with a gain of 20,000 ha, making the net loss 72,000 ha for all these years. Loss of forest has been brought down to currently about 28 thousand ha per year. As indicated in the table below.

Table 4: Deforestation trend in Ethiopia over recent years

| **Class** | **2002-2013** | **2014-2020** | **2020-2023** |
|---|---|---|---|
| Forest Loss (ha) | 1,192,559 | 229,163 | 110,814 |
| Forest Loss (deforestation of forests in ha/year) | 91,735 | 38,194 | 27,703 |
| Forest Area at the end of the period (ha) | 17,785,035 | 19,372,865 | 26,754,937 |
| Forest Cover at the end of the period (%) | 15.5 | 17.2 | 23.6 |

An overview on the locations of forest losses is shown in the map produced by global forest watch[25] in the graph below. The government of Ethiopia has been implementing various measures to reverse deforestation and degradation challenges. As indicated in the 3rd National Communication to UNFCCC from December 2022, one of the measures was re-defining of the forest resources of the country as - land spanning at least 0.5 ha covered by trees and bamboo, attaining a height of at least 2m and a canopy cover of at least 20% or trees with the potential to reach these thresholds in situ in due course[26]). According to this definition the forest cover of the country was estimated to be about 17.4 million hectares, covering about 15.7% of the country's total land area in 2016.

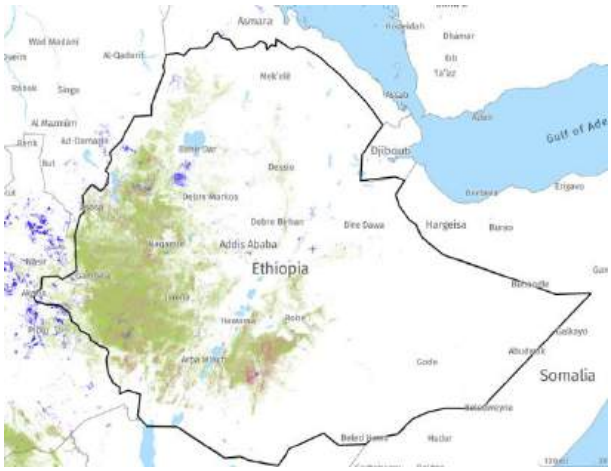


Figure 2: Forest Cover loss in Ethiopia from 2000 to 2023

However, the most recent forest cover report (not yet published), prepared using higher resolution satellite imagery of the period 2019 to 2023, shows higher forest cover of 23.6% of the total landmass of the country, about 113,528,063 ha. To map forestland for the year 2023 high spatial resolution Planet NICFI level 1 imagery covering the boundary of Ethiopia was acquired and used.

[25] https://www.globalforestwatch.org/map/country/ETH

[26] ETHIOPIA'S FOREST REFERENCE LEVEL SUBMISSION TO THE UNFCCC, January 2016

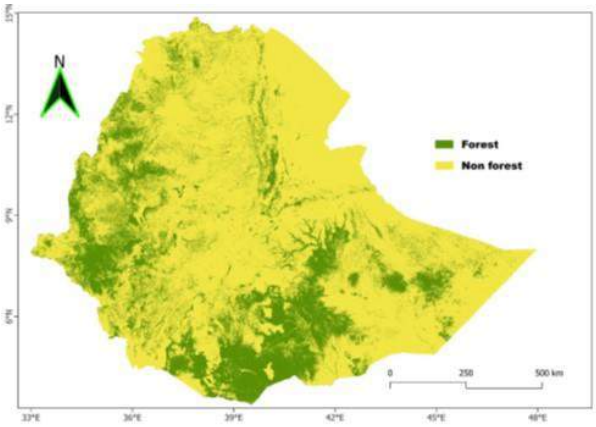


Figure 3: Map showing the 2023 forest cover of the country. The map did not consider agroforest areas which would add to the forest cover of the country.

### 2.2.3 Forest Management in Ethiopia

Forest management in Ethiopia is closely tied to ownership structures. Smallholder farmers typically manage their forests based on personal experience, with minimal technical support from forest extension services due to an underdeveloped extension system for the sector. Meanwhile, a significant portion of production and natural forests are overseen and managed by government-operated regional forest enterprises. The forest enterprises in the two regions are tasked with managing industrial plantations and supplying timber products to local markets. Additionally, they are responsible for parts of the natural forests assigned to them by their respective regional governments, which require sustainable management practices. No sources specifically mention clear figures on ownership shares, yet in discussions there is an understanding that approximately 60% of the forests are state owned, 30% communal and about 10% private owned.
In Ethiopia, forest ownership is legally categorized into four types:

- **State Forests:** These forests are owned exclusively by the Federal Government or Regional States and include both conserved and productive forests managed for public benefit.
- **Private Forests:** These are not state-owned or community-owned and exist in private or institutional holdings, managed by individual landowners or private entities.
- **Community Forests:** These forests are developed, conserved, utilized, and managed by local communities on private or communal lands, guided by community-developed bylaws and management plans.
- **Association Forests:** Managed by associations legally formed for the specific purpose of developing and conserving forest resources, these forests are overseen collectively.

Along with the ownership types, the legal frameworks also classify forests into different management schemes. For instance, the Forest Development, Conservation, and Utilization Proclamation, Proclamation 1065/2018 delineates three types of state forests, each with specific management objectives, Productive State Forests, Protected Forests and Preserved Forests.

In Ethiopia, the implementation of participatory forest management (PFM) initiatives in different parts of the country are resulting in visible reduction in deforestation rates and forest degradation. PFM are serving as driving vehicle to empower communities to own and protect their forests and other critical landscapes. Alongside with PFM, since 2019, the Green Legacy Initiative- a flagship program promoting planting of billions of seedlings every year to restore degraded landscapes and re-enforce forest protection has been significantly contributing to regreen Ethiopia. The Green Legacy Initiative in addition to planting of billions of seedlings since the inception of the initiative, it has also significantly increased awareness, participation of

citizens from all walks, and hence, contributed to minimizing deforestation and forest degradation. The integrated efforts increased the forest cover of the country from 15.5ha in 2013 to 26.7 ha in 2023.

Ethiopia has an encompassing legal framework for forest management, aimed at addressing the challenges of deforestation and forest degradation, and promoting increasing forest cover through integrated landscape restoration. Ethiopia's forest management policies have evolved significantly over the years. Historically, there was limited government control over forestry operations until the 1975 land reform, which nationalized forestland and sawmills. The government has since implemented various policies and legal instruments to promote sustainable forest management and address environmental challenges. These regulations and proclamations collectively aim to promote sustainable forest management, afforestation, and forest land rehabilitation in Ethiopia. They also emphasize the importance of community involvement and the need for effective implementation at the local level.

### 2.2.4 NTFP Production and Management

Ethiopia's forest resources are home to diverse Non-Tember Forest Products. The high forests of the country are known for their **forest coffee**, growing naturally along with other species. Ethiopia is the birthplace of Arabica coffee and remains one of the largest producers globally. Forest coffee, which grows naturally in the country's forests, is a significant part of this production. About 45% of Ethiopia's coffee comes from natural forests, which are also home to some of the country's last remaining old-growth forests. These forests are crucial for biodiversity and carbon management. Coffee production is an important part of the economy, and about one sixth of the population relies on coffee cultivation and trade for a livelihood[27].

However, there are challenges in production, such as inconsistent quality leading to coffee being sold as inferior in grade. The lack of competitiveness, missing or inadequate infrastructure and deficiencies in access to services are other problems,[28] especially for smallholder production. Smallholder farmers often struggle with market access and price instability. Projects like the FOLUR (Food Systems, Land Use and Restoration) initiative aim to integrate sustainability into coffee value chains, promoting forest restoration and sustainable land use practices[29].

Ethiopia has significant potential for **honey production** due to its diverse agroecology. However, the country faces challenges in production systems and market linkages. A study exploring opportunities and constraints in exporting Ethiopian honey to Denmark, highlights the need for improved production capacity, better business communication, and promotion of organic honey[30]. Ethiopia is the largest honey producer in Africa and the 9th largest in the world[31]. Despite its potential, the country struggles with low production/productivity and market access[32].

**Gum and Resin** production in Ethiopia is important for both local use and export. The main species are Acacia for gum arabica, Boswellia known for frankincense, and Commiphora, which produces

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[27] https://www.giz.de/en/worldwide/85075.html

[28] Review on Coffee Production and Quality in Ethiopia, Bealu Girma Adugna, Ethiopian Institute of Agricultural Research, Jimma Research Center, Jimma, Ethiopia, November 17, 2021

[29] https://www.undp.org/ethiopia/press-releases/ethiopia-combat-deforestation-and-boost-coffee-production

[30] Exploring the potential of non-timber forest products: the case of Ethiopian honey export to Denmark Aravindakshan, Sreejith and Janka Negawo, Worku and Humayun Kabir, Mir and Galib, Md. Waliul, University of Copenhagen, MPRA Paper No. 35483, posted 19 Dec 2011

[31] CBI (Centre for the Promotion of Imports from Developing Countries), (2009). CBI market survey: the honey and other bee products market in the EU, CBI, Rotterdam, The Netherlands.

[32] Deffar G. (1998). Non-Wood Forest Production in Ethiopia. Addis Ababa, Ethiopia, 22nd October, 2011.

myrrh[33].Gums and resins are collected from natural forests. In the Ethiopian production areas gums and resins still contribute significantly to the livelihoods of rural communities and the national economy[34]. Sustainable production practices will help in conservation of dry forests and biodiversity.

**Bamboo** is a significant natural resource in Ethiopia, with the country having the largest bamboo cover in Africa, approximately 1.47 million hectares, whereof an estimated 900,000 ha is lowland bamboo[35]. It is considered one of the most promising NTFP products, with the potential to provide opportunities for many forest land managers to generate income from various products. Ethiopia's forest sector has recognized its importance and prepared a Bamboo Development Strategy 2019-2030, which describes proposed interventions, from establishing bamboo plantations through seedlings from nurseries and tissue propagation to supporting marketing and processing structures, even including development of certification schemes. Whilst the current resource base is rather limited in its distribution across Ethiopia, the options for growing more bamboo can be described as much larger, covering wide areas beyond the current locations. Investments in improved bamboo management systems, enhancing marketing options and encouraging private investors to establish processing factories to manufacture high quality products form bamboo can make bamboo a significant factor in the economic growth of the forestry sector[36] and in this way also contribute to resilience of local population through diversified income generation. Finally, bamboo is considered an adequate and natural vegetation cover that enhances carbon sequestration and provides environmental services to create resilience to climate change impacts, such as erosion control and slowing surface water runoff.

The use of **traditional medicinal plants**, mainly roots and leaves, has a long tradition in Ethiopia. The flora of Ethiopia is estimated to contain some 6500–7000 species including medicinal plants; of those, 12–19% are endemic to the country. Medicinal plants have been used for various types of human and animal treatments. In Ethiopia about 80% of the human population and 90% of livestock rely on traditional medicine[37].

Medicinal plants are found in diverse habitats, including riverbanks, cultivated lands, forests, and home gardens. Habitat destruction, urbanization, agricultural expansion, and deforestation pose significant threats to these plants. The economic value of traditional medicinal plants may be concentrated among small groups of traditional healers. Their valuable knowledge about medicinal is typically passed down orally to their eldest sons in their later years[38]

**Wild fruits and fodder** make essential contributions to local diets and to livestock feeding. They are particularly abundant in the eastern parts of the country, but also in other parts of Ethiopia. Climate change poses significant threats to wild food and fodder plants in Ethiopia. Changes in temperature and rainfall

[33] Woldeamanuel, T. (2012). Gum and resin-producing species in the drylands of Ethiopia: productive bricolage footprints on the landscape. In: Arts, B., van Bommel, S., Ros-Tonen, M., Verschoor, G. (eds) Forest-people interfaces. Wageningen Academic Publishers, Wageningen.

[34] Gums and resins of Ethiopia, Mulugeta Lemenih and Habtemariam Kassa, CIFOR, February 2011

[35] Tsinghua University and INBAR 2018, quoted in Ethiopian Bamboo Strategy and Development Plan 2019-2030, EFCCC, Addis Ababa, 2020

[36] Guiding principles for sustainable bamboo forest management planning Benishangul-Gumuz Regional State (BGRS), Manuel Boissière Mengistu Beyessa Stibniati Atmadja Published by FAO and CIFOR, Rome, 2019

[37] Ethiopian Common Medicinal Plants: Their Parts and Uses in Traditional Medicine - Ecology and Quality Control, Admasu Moges and Yohannes Moges, 27 November 2019

[38] Merera Teso, Mesfin Woldearegay, (2023). Medicinal Plants of Ethiopia: Conservation,Traditional Knowledge, and Sustainable Use. Ecological, Insights Debre Berhan University,

patterns affect the growth and availability of these plants[39]. Frequent droughts reduce the availability of wild edible and fodder plants and can have a negative impact on food security and livestock feed[40].

## 2.3 Management of Wetlands

Ethiopia's wetlands are vital ecosystems that provide numerous ecological, economic, and social benefits. However, they face significant challenges due to human activities and environmental changes. Wetlands provide ecosystem services, including water purification, flood control, carbon sequestration, and habitat for biodiversity[41]. Wetlands have an economic aspect as well. They support agriculture, fisheries, and provide resources such as reeds and medicinal plants.

The challenges in wetland conservation and management are degradation, as they are threatened by agricultural expansion, overgrazing, deforestation, and infrastructure development.

One issue here is the drainage for agriculture irrigation. Wetlands are often drained to create more arable land for crop production[42]. Often there is overgrazing, with livestock grazing in and around wetlands leading to soil compaction and vegetation loss. Urban Expansion and industrial activities are another threat. The growth of cities and towns encroaches on wetland areas, leading to habitat loss. Pollution from industrial activities contaminates wetland ecosystems. Dams and irrigation projects alter the natural flow of water, affecting wetland hydrology. Another problem affecting wetlands are invasive species, plant and animal species disrupt native ecosystems and outcompete local flora and fauna.

Wetlands are also suffering from changing precipitation patterns: Altered rainfall patterns and increased temperatures accelerate wetland degradation. Finally, also forest cover and management of forests have an impact on wetlands. Degradation or establishment and sustainable management of forests in a watershed have an impact on the runoff, the hydrology of wetlands and the siltation from erosion. Inadequate policies and weak enforcement mechanisms hinder effective wetland conservation and uncoordinated management, such as poor coordination among stakeholders leads to fragmented and ineffective management efforts [43].

Addressing these threats requires a comprehensive approach that includes community involvement, strong legal frameworks, integrated management practices, and continuous monitoring and evaluation. By tackling these challenges, Ethiopia can work towards the sustainable management and conservation of its valuable wetland ecosystems. Healthy wetlands are contributing to climate change mitigation, through carbon removal from the atmosphere.

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[39] Tadesse Alemu & Alemayehu Mengistu, Impacts of Climate Change on Food Security in Ethiopia: Adaptation and Mitigation Options: A Review

First Online: 25 January 2019

[40] Tofu, D.A., Mekuria, M.M. & Ogato, G.S. Climatic extremes' resilient livelihoods of rural households in the Eastern Ethiopia. Agric & Food Secur 12, 42 (2023)

[41] Wetlands of Ethiopia, Proceedings of a seminar on the resources and status of Ethiopia's wetlands, Editors Yilma D. Abebe and Kim Geheb, IUCN 2003

[42] Identifying Couse and Drivers of Wetland Degradation in Ethiopia: A Review, Diriba Megersa, Leta Hailu & others, Journal of Environment and Earth Science, ISSN 2224-3216 (Paper) ISSN 2225-0948 (Online) Vol.11, No.2, 2021

[43] Local ecological knowledge and wetland management in the Ethiopian Rift Valley, Mesfin Gebrehiwot, February 2022GeoJournal 87(1)

## 2.4 Management of Agricultural Production

For centuries, agriculture has been the primary source of livelihood for the vast majority of Ethiopians. It contributes significantly to the country's GDP, exports, and employment. The sector accounts for a substantial portion of Ethiopia's GDP, making it a crucial driver of economic growth. It provides employment for a large portion of the population, especially in rural areas and play essential for ensuring food security. The major exports commodities such as coffee, are also agricultural products.

Ethiopia's agriculture sector is highly influenced by the agro-ecological zones of the country which follow an altitudinal and temperature gradient. Each of these agro-ecological zones is characterized by specific features of the agricultural production system, crop species, trees and shrub species, livestock type, livelihood framework, soil types and natural resource settings, land use, and land use challenges.

Given these diverse climatic conditions with clearly demarcated agroecological zonation, currently known farming systems are categorized into a combination of 16 mixed farming/production systems. Their distribution is indicated in the Figure below.

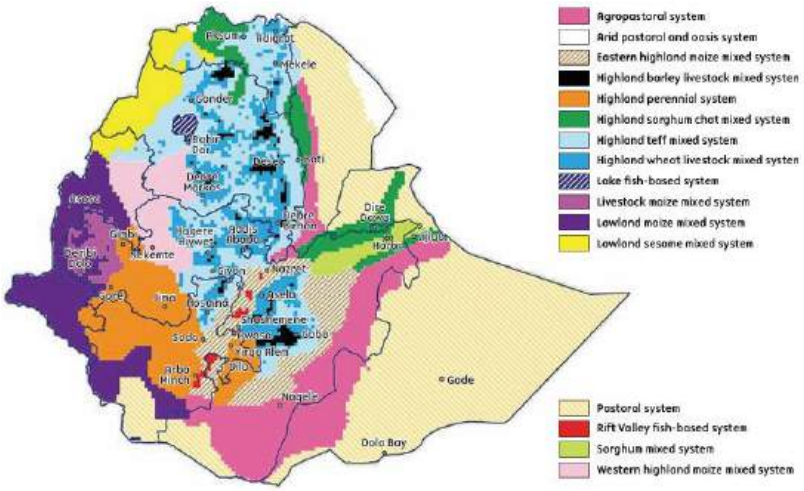



Figure 4: Spatial distribution of Ethiopian farming/production systems (Source: Amede et al 2017

Ethiopia has been and remains a predominantly agrarian country, where more than 82 % of the population live in rural areas, and the country's economic growth has long been anchored in the development of the agriculture sector. The sector absorbs more than three quarters of employment, accounts for 32% of GDP in 2023 (AfDB, AEO, 2024), and some 80% of export revenues. According to Ethiopia's Agricultural Sector Policy and Investment Framework (PIF 2010) the agricultural sector accounts for 43% GDP, and 87% of employment.

Statistics show that cereal production has increased in the country over the past 15 years. The continuous yield increment, however, is not only related to increased use of technologies and intensification such as use of fertilizers, improved varieties and use of best practices, but also due to increased cultivated land. Annually cultivated land area for all crops increased from 10.1 million hectares in 2004/2005 to 13.3 million hectares in 2018/2019; suggesting crop land expansion at a rate of >213,000 hectares of land annually. This expansion happens at the cost of loss of forest lands and other ecosystems. Future enhancement of agricultural production thus needs to be climate smart and environmentally friendly.

The GoE has been designing and implementing various interventions to minimize the expansion of agricultural land into other land uses, among through providing,

- *Improved seeds:* Supporting the promotion of private sector investment in the production and supply of improved seed varieties to farmers/producers.
- *Land certification:* The large-scale land certification program under the WB support aims at stimulation of private investments into perennial crops through tenure security.
- *Credit:* Measures to improve access to credit and other financial services,
- *Post harvest management (PHM*): Improving post-harvest management of agricultural products and food commodities, thereby reducing post-harvest losses (PHL).

## 2.5 Management of Livestock

Livestock production plays a crucial role in the livelihoods of millions of smallholder farmers, agro-pastoralists, and pastoralists in Ethiopia. The production potential and contribution to the national economy is highlighted in ([44] MoA. 2015; [45]CSA 2021). The country is known for having the largest livestock population in Africa, with approximately 70.29 million cattle, 52.46 million goats, 42.92 million sheep, 8.15 million camels, 6.99 million colonies/hives, and 57 million poultry. The livestock population is almost entirely composed of indigenous breeds. The freshwater bodies and natural forests and backyards provide ample opportunities for the promotion of fish farming and honey production.

There are three major livestock production systems or predominant management systems: intensive management, mixed crop-livestock, and pastoral/agro-pastoral (extensive) system. They play a crucial role in supporting women and youth, and thereby reducing inequality in rural landscapes.

**Existing strategies to improve livestock production and productivity**
The current livestock development strategy aims at improving livestock breads, animal feed supply chain, and animal health. To enhance the economic contribution of the livestock sector, while also reducing its GHG emission potential, the different strategies could involve for example

- Reduce the total number of milk cows owned by farmers and pastoralists from 11.5 million to 9 million and replace these with improved breeds to increase the average daily milk yield from 1.45 litres per cow (indigenous breed) to as high as 17 litres per cow for improved breeds.
- Introduce rotational grazing systems.
- Increase pen keeping and home feeding with cut and carry systems.

# 3. CHALLENGES AND RESILIENCE ISSUES TO BE ADDRESSED BY THE CIF NPC IP

## 3.1 Vulnerability to climate change

Ethiopia is one of the most vulnerable countries to climate change and climate variability due to its dependence on rainfed agriculture and natural resources, coupled with limited adaptive capacity. The country faces numerous challenges, including underdeveloped water resources, inadequate health service coverage, high population growth, low economic development, poor road infrastructure in drought-prone and erosion risk areas, weak institutional structures, and the limitation of concerned population in awareness. Negative impacts of changes in climate conditions, especially extreme weather events, cannot be controlled or compensated. Awareness and early warning to prepare are thus essential for the rural population.

[44] Ministry of Agriculture (MoA). 2015; Growth and Transformation Plan, Addis Ababa, Ethiopia

[45] Central Statistics Agency (CSA). 2021. Area and Production for Major Crops (Private Peasant Holdings, Meher Season), Addis Ababa, Ethiopia.

The modelled climate data based on the global climate model compilations of the Coupled Model Inter-comparison Projects (CMIPs), overseen by the World Climate Research Program[46], indicate an increase of temperature. As shown in the figure below and based on Shared Socioeconomic Pathways (SSPs) modeling, mean surface air temperature is projected to increase by about 1°C in the next 20 years. The SSPs are scenarios used in climate modelling to explore how global society, demographics, and economics might change over the next century, where SSP1 is a pathway assuming sustainability in the society development, with low challenges to mitigation and adaptation until SSP5, which assumes a rapid economic growth driven by fossil fuels, with high challenges to mitigation but low challenges to adaptation due to technological advances

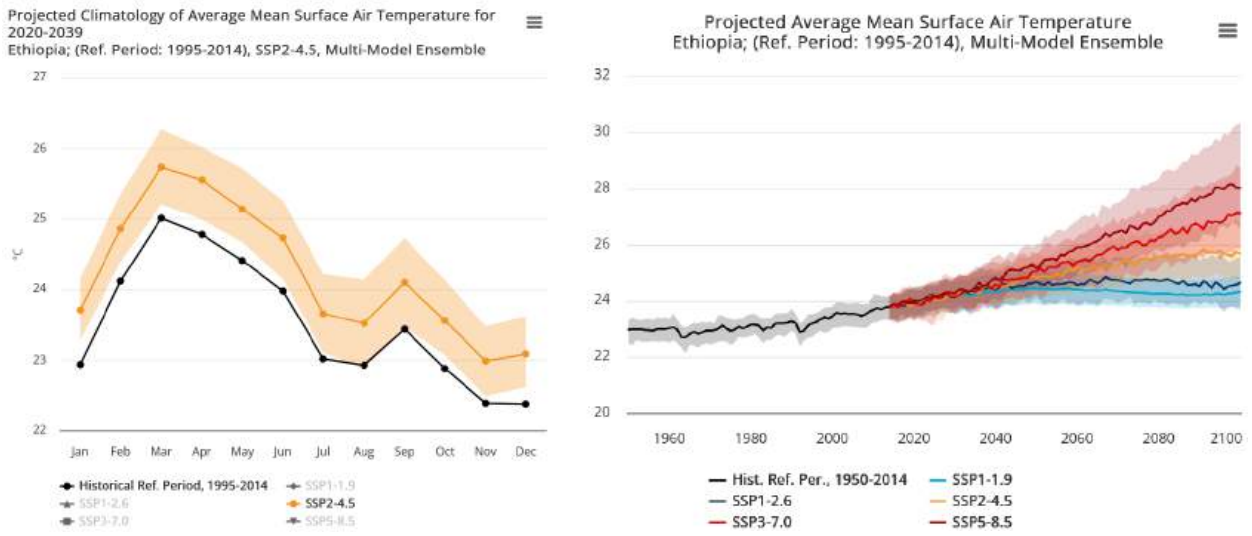
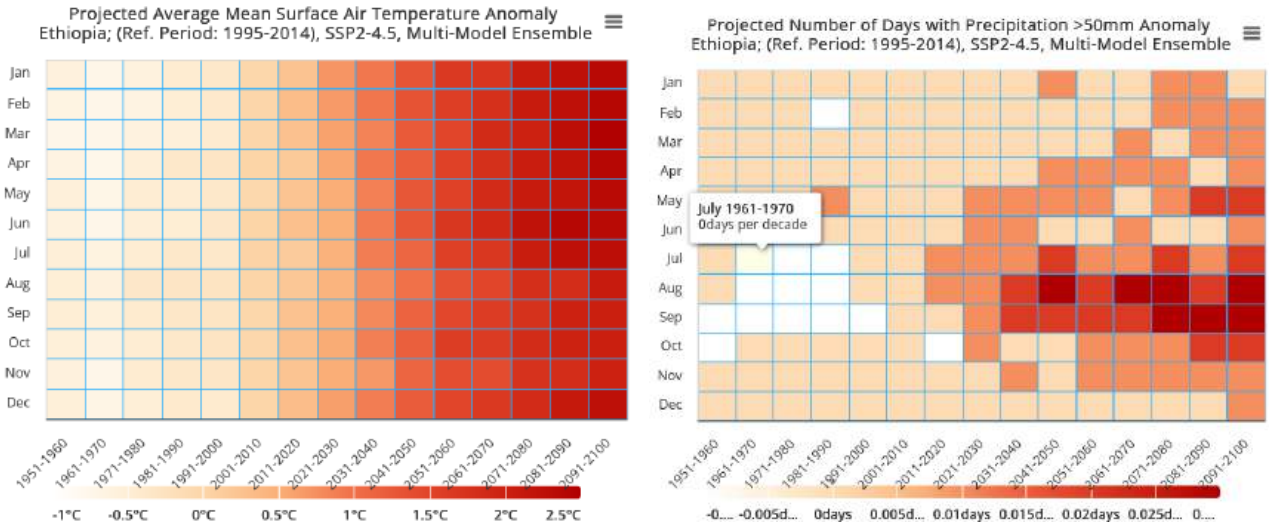



Figure 5: Temperature projections for Ethiopia. The figures show increasing temperature is inevitable, except for the case of the sustainable development pathway.

Another challenge includes the occurrence of anomalies/extreme events, which will occur more often in the next decades and not only directly affect the production of agriculture and other natural resources but also the accompanying effects such as floods or possibilities of sandstorms that would result in substantial losses and damages of household assets.




[46] https://climateknowledgeportal.worldbank.org/country/ethiopia/climate-data-projections

Figure 6: Occurrence and projection of weather anomalies (left temperature, right strong rainfalls) for Ethiopia

Rising temperatures and rainfall variability pose significant threats to Ethiopia's socio-economic development now and in the future. Projections from the Intergovernmental Panel on Climate Change (IPCC)[47] suggest that, under a mid-range emissions scenario, the mean annual temperature in Ethiopia could increase by 0.9 to 1.1°C by 2030, 1.7 to 2.1°C by 2050, and 2.7 to 3.4°C by 2080. Rainfall variability could increase by 25%, and in some regions, this figure could reach up to 50%[48]. These changes in temperature and precipitation patterns are expected to significantly affect the availability of surface and groundwater resources for crop and livestock production, on which most Ethiopians depend for their livelihoods. Consequently, vulnerable households may be driven deeper into poverty as climate change reduces agricultural productivity, particularly production of staple crops. Studies in northern Ethiopia reported altitudinal shift of major cereal crops namely, wheat and barley, to an average elevation of 2893 - 3050 depending on the climate scenarios ([49]Girmay et al. 2021); and in response to climate change currently suitable areas for these crops will be reduced by 16– 100%. This implies future food and nutrition insecurity at such places.

The climate observation data of the past 120 years show that the predictions are not only models, but are already reality. The mean annual surface air temperature has already obviously increased in the last twenty years, whilst the annual precipitation does not show that evident tendency.

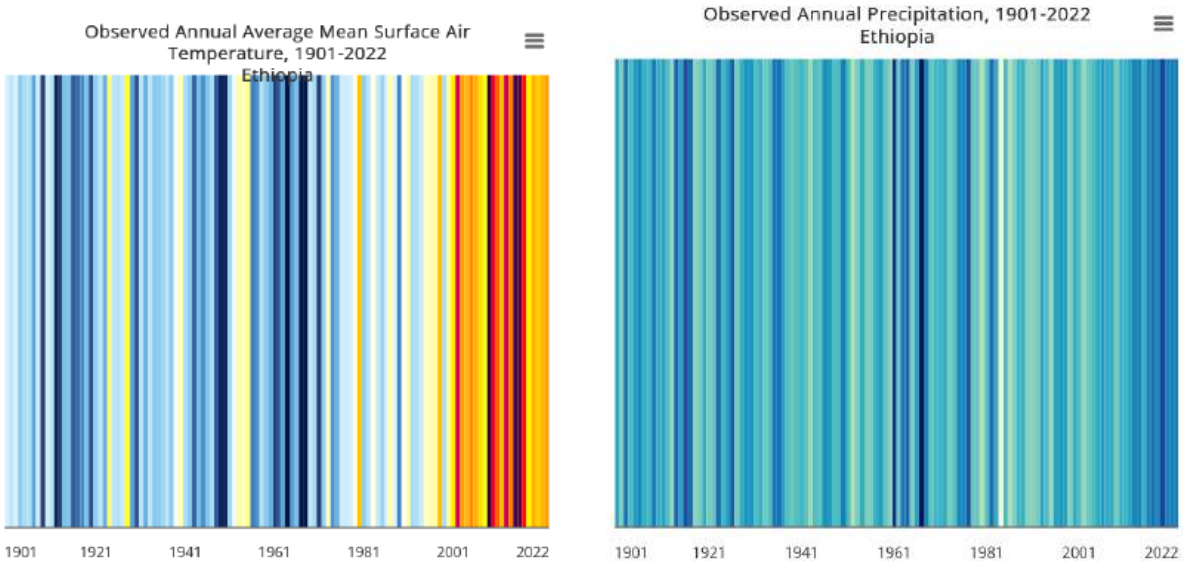



Figure 7: Observations of Mean Surface Air Temperature and Annual Precipitation over the last 120 years

Others climate projection scenarios reported by the [50]USAID (2016) indicated spatial shifts in key climate conditions by 2041–2060 that are manifested by increased temperature, erratic and increased rainfall intensity and frequent and severe dry spells & draughts. These key shifts in climate conditions are anticipated to reduce agricultural productivity and cause significant damage to critical infrastructures and housing, which consequently reduce the national GDP up to 10% by 2045 (USAID 2016).

[47]National Meteorological Agency. (2007). Climate Change National Adaptation Programme of Action (NAPA) of Ethiopia. Addis Ababa, Ethiopia

[48]*Ibid*

[49] Girmay Gebresamuel, Haftu Abrha, Haftom Hagos, Eyasu Elias & Mitiku Haile (2021): Empirical modeling of the impact of climate change on altitudinal shift of major cereal crops in South Tigray, Northern Ethiopia, Journal of Crop Improvement, DOI: 10.1080/15427528.2021.1931608.

In addition to these challenges, climate change has increased the incidence of forest fires, pests, and diseases in Ethiopia. Between 1990 and 2017, the occurrence of forest fires rose by 50%, affecting both plantation and natural forests, particularly in southern regions[51]. Similarly, pests and diseases have increasingly attacked high-value commercial trees, such as eucalyptus and pine species, over time. The degradation of natural resources coupled with economic risks reduces the country's capacity to absorb future climate changes. This degradation exacerbates competition over resources, fueling conflicts and contributing to unemployment, underemployment, internal displacement, and migration. These issues, in turn, undermine peace, security, and stability both within Ethiopia and in the broader region.

Without urgent interventions, the impacts of climate change threaten to reverse significant progress made by the Government of Ethiopia (GoE) in poverty reduction and environmental protection and will continue to hinder the country's efforts to achieve food self-sufficiency and climate resilience. To address these challenges, a concerted effort is required to scale up and link existing NbS interventions, such as the Green Legacy Initiative (GLI) and other NbS land and forest management programs implemented in different parts of the country. This includes enhancing community resilience by conserving natural resources and forests, restoring degraded landscapes, strengthening the climate resilience of agricultural and nature-based livelihoods, creating green jobs, and developing value chains. Additionally, awareness must be raised among vulnerable rural communities, particularly youth, about livelihood diversification mechanisms that can help them engage in different income-generating activities and comprehensive watershed management, thereby increasing their adaptive capacity.

Climate change has particularly significant impacts on women, who often bear the burden of environmental challenges. Addressing the adaptation needs of women requires several targeted interventions. These include integrating gender considerations into drought risk management planning and implementation to ensure efficient drought preparedness and response, supporting community-based coordination mechanisms to strengthen gender-sensitive natural resource conflict management, prioritizing awareness-raising and capacity-building initiatives for women in climate action, disaster risk reduction, and environmental protection, and conducting gender-responsive assessments and surveys to improve understanding of climate impacts on women and girls[52]. Accordingly, the CIF IP pays specific attention to gender issues, within a GESI framework, and outlines supporting interventions.

The GoE's response to climate change, particularly through the proposed Climate Investment Fund (CIF) Investment Plan (IP), aligns with Ethiopia's strategic and policy frameworks. The National Adaptation Plan (NAP), the Nationally Determined Contribution (NDC), the Long-Term Low Emission Economy strategy and the Climate Resilient Green Economy strategy/CRGE underlines that Ethiopia’s vulnerability to climate change is increasing over decades and the need to comprehensively respond to these critical challenges. Additionally, the different NbS interventions in the CIF IP are prioritized based on lessons learned from previous and ongoing projects. A series of stakeholder consultations further supported the prioritization of pillars and interventions. This holistic approach is necessary to effectively address the multifaceted challenges posed by climate change in Ethiopia and to support the country's transition toward a more climate-resilient and sustainable future.

## 3.2 Vulnerability to Land Degradation

The biomass resources in the landscape, the forests, the forest lands, the shrub lands and the grass lands are integral to crop and livestock production, providing essential services that bolster both productivity and resilience. In the face of increasing impacts due to climate change, forest resources and the biodiversity thereof play crucial roles in promoting adaptation and mitigation strategies.

[51] CIFOR (2019). Preliminary report on fires in Pantropical forests. PPP made at workshop in Addis.

[52] UN Women. 2022. Gender Alert on Drought in Ethiopia. Available here.

Despite these multiple roles, biomass in the landscapes of Ethiopia face significant challenges. Ethiopia's diverse forest ecosystems, ranging from mountain forests to dryland forests are under severe threat from human activities. Deforestation, degradation, and fragmentation driven by population growth, agricultural expansion, overgrazing, and unsustainable resource use driven by climate change, poor productivity and widespread poverty are prevalent. Deforestation affects almost all forest types in Ethiopia.

Loss of vegetation cover in combination with the high rainfall amounts result into soil erosion, which is a significant environmental issue in Ethiopia, particularly in the highland areas. Ethiopia experiences severe soil erosion, with an average annual soil loss rate of about 12 tons per hectare per year. In some steep slope areas, this rate can exceed 300 tons per hectare per year[53]. Approximately 43% of the highland areas are highly affected by soil erosion[54].

The primary cause of soil erosion in Ethiopia is water-induced erosion, triggered and aggravated by deforestation (expansion of agricultural lands), overgrazing, and poor agricultural practices. Impacts of the erosion are significant loss of fertile topsoil, reducing agricultural productivity and threatening food security. On the other side erosion also contributes to the siltation of water bodies, and with that not only affects drinking water availability but also the operation of hydro power stations, it aggravates the loss of biodiversity and the degradation of natural habitats.

## 3.3 Challenges Facing Forestry Sector

Ethiopia faces significant challenges in sustainably managing its natural forests and critical landscapes. These challenges include an inability to effectively address the key drivers of deforestation and forest degradation, which threaten livelihoods, food security, and community resilience. The capacity to identify and develop forest and agriculture-based value chains – essential for strengthening resilience and reducing community vulnerability to climate change is also limited. Gaps in enforcing legal frameworks, coupled with inadequate skills and the absence of knowledge management systems, further hinder the implementation of Nature-based Solutions (NbS) with lasting impact.

Additionally, limited private sector engagement constrains the scaling-up of NbS initiatives, while the inadequate integration of gender and social equity into their planning, execution, and monitoring exacerbates the situation. Ethiopia’s efforts to place existing forests under sustainable management schemes and rehabilitate degraded landscapes have been constrained by various institutional, technical, financial, and policy barriers. Addressing these barriers should be a priority for projects aimed at tackling food security, biodiversity, and livelihood challenges caused by climate change.

**Technical constraints:** The restoration of degraded landscapes in Ethiopia faces significant technical barriers. Limited use of modern restoration technologies like tissue culture and clonal nurseries reduces the options of fast-growing tree species in highly productive forests. Insufficient tools for prioritizing intervention areas and documenting the locations and extent of forest restoration and rehabilitation activities add to technical constraints in forestry. These challenges are further exacerbated by a shortage of skilled experts, high staff turnover, and inadequate training in species-site matching, propagation techniques, and post-planting care. Additionally, poorly defined management goals, weak benefit-sharing arrangements, and

[53] SOIL EROSION IN ETHIOPIA: EXTENT, CONSERVATION EFFORTS AND ISSUES OF SUSTAINABILITY, Temesgen Gashaw, Center for Environmental Science, College of Natural Sciences, Addis Ababa University, Ethiopia, March 2015

[54] Review of Soil Erosion Risk for Soil and Water Conservation Planning under Ethiopian Condition, Kedir Jemal, Wondo Genet Agricultural research Center, PO box 198 Shashemene, Ethiopia, 2021

suboptimal silvicultural practices contribute to inefficiencies. These issues are compounded by inadequate species selection and management approaches that do not align with long-term objectives, emphasizing the need for clear management plans, equitable benefit-sharing, and proper training to ensure the success of reforestation efforts.

**Financial constraints:** Financial constraints also pose a significant challenge, limiting the resources available for large-scale restoration initiatives and hindering overall progress. Despite the Ethiopian government efforts and allocation of budget, the huge task of forest restoration in Ethiopia requires more funds than the ones that can actually be allocated by the government.

**Institutional constraints:** Institutional barriers further complicate restoration efforts in Ethiopia. The absence of a robust coordination mechanism among stakeholders leads to inefficiencies and duplication of efforts. Frequent restructuring of government agencies disrupts project continuity, resulting in the loss of institutional knowledge and instability in securing resources. To overcome these challenges, a comprehensive strategy that fosters collaboration, transparency, and accountability is necessary. Establishing a central coordination unit, a multi-sector platform for stakeholder engagement, and a knowledge management system could enhance coordination and resource sharing, thereby improving the effectiveness of restoration initiatives.

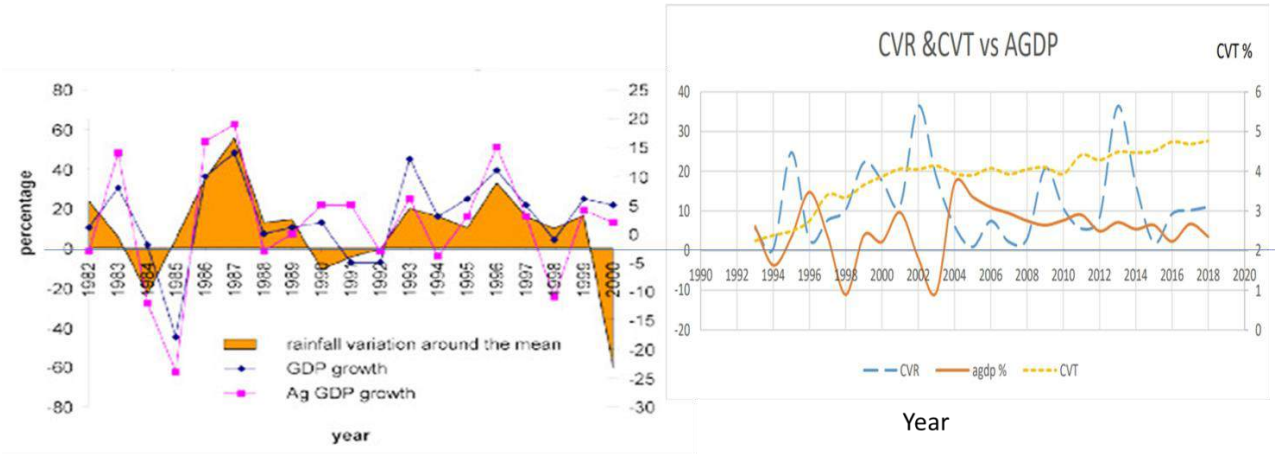
**Policy issues:** Although Ethiopia has implemented commendable policy measures to promote the sustainable management of natural resources, financial, technical, and technological limitations hinder the effective enforcement of these policies. Moreover, policies are rarely reviewed and updated based on monitoring, evaluation, and learning outcomes. That is resulting in governance instruments that are not sufficiently respond to change and miss opportunities for adaptive learning. The policy formulation process often lacks sufficient engagement from all relevant sectors, leading to misalignment and a lack of coherence between agricultural, environmental, and restoration objectives. The focus on food security tends to overlook the potential to achieve it through restoration pathways, which also provide the added benefits of biodiversity conservation and resilient development. Furthermore, the fragmented and isolated approach to planning and implementing policies complicates the negotiation of trade-offs and the identification of synergies between different sectoral objectives. Forest sector policies intended to encourage private sector engagement are not effectively integrated with financial institutions, customs offices, land administration bureaus, and investment offices. Addressing these gaps and reducing the siloed approach is crucial for achieving meaningful progress. A more integrated and adaptive approach with a focus on the long-term implementation and less on short term effects to policy implementation, with stronger linkages across sectors and enhanced coherence in policy objectives, is essential.

**Monitoring Evaluation and Learning** systems are crucial for tracking the success of ecosystem restoration projects. However, in Ethiopia, MEL practices are limited and inefficient, resulting in poor traceability of results and inadequate feedback for corrective actions. Challenges include skill gaps in data analysis, insufficient budgets, and technical limitations such as the lack of high-resolution imagery and interactive maps. Addressing these issues requires investment in capacity-building programs, improvements in information technology infrastructure, and fostering a culture that values MEL as a vital tool for adaptive management and accountability in restoration efforts.

## 3.4 Challenges Facing Agriculture Sector

Ethiopia’s agricultural sector development is suffering from several challenges, including extreme weather events, limited access to finance and technology, poor infrastructure, inefficient market systems, lack of research, and environmental challenges. The productivity is also constrained by the structure of the sector with huge numbers of farmers with small holds in steep mountainous areas, which require huge amounts of labour input. Climate change, notably droughts and floods, has severely affected food security, disproportionately impacting women, who are key to food production. Droughts in 1984/85, 1994, 1998, 2002/03, and 2022 resulted in significant economic losses and population displacement. As reported in

several studies ([55] Mikko et al. 2009 and other references cited therein; ([56]Crick & Dougherty. 2006; 57World Bank. 2006) the country's GDP is strongly correlated with temperature and rainfall patterns.




a. Crick & Dougherty. 2006: 1

b. Behailu, 2022)

Figure 8: Rainfall and temperature variability impacts on Ethiopian Agricultural GDP (Sources: a. Crick & Dougherty. 2006: 1; and b. Behailu, 2022)

Environmental issues, such as land degradation due to deforestation and soil erosion, contribute to agricultural challenges. Annual soil losses are particularly high, threatening crop production and leading to USD 1 billion in losses. Poor alignment between policies aggravates these issues, such as conflicting strategies between agriculture and environmental protection, or between urban development and agricultural land use. Market disruptions caused by conflict, infrastructure damage, and climate extremes further weaken production, poor storage facilities at local level weaken the farmer position in the market and allow middlemen to exploit market chains, reducing profits for farmers and limiting waste management innovation.

The cumulative result is a degraded agricultural landscape marked by biodiversity loss, deforestation, soil degradation, water scarcity, and increased vulnerability to climate extremes.

Development policy and strategy related constraints include poor alignment between sectoral development strategies/polices on land use. These conflicting development strategies are highly aggravating land degradation and hence adversely affecting the production and productivity of the agriculture sector. For example, the agriculture development strategy promoted wetland delineation for boosting rice production while the environment, water, and forest policies focus and promote the protection and buffering of wetlands for water resource regulation and habitat conservation.

The **livestock sector** faces similar challenges, including extreme weather, poor infrastructure, limited access to technology, and high post-harvest losses. Around 40% of red meat and milk production is lost due to inefficient post-harvest practices. These losses pose a critical challenge in sustainability of livestock management, because the losses call for higher production to satisfy the market demand. The increased

[55] Mikko Halonen, Jussi Nikula, Alina Pathan, Pasi Rinne Gaia Consulting Oy. 2009. Climate Risk Management

in Finnish Development Cooperation Ethiopia Adapting to Climate Change Climate Screening Assessment. Final report September 2009.

[56] Crick & Dougherty (2006: 1)

[57] World Bank (2006).

production needs result in unnecessary degradation of grazing lands, forests and woodlands used for pasturing.

Livestock productivity is further hampered by feed shortages, inadequate veterinary services, disease outbreaks, and insufficient credit services. The livestock market is also inefficient, with long market chains and a lack of market-oriented production. Informal cross-border trade and poor linkages between producers and slaughterhouses further reduce productivity.

**Agroforestry**, which integrates trees into farming systems, offers significant benefits, such as improved yields, soil fertility, and biodiversity. However, adoption is limited due to farmers' lack of awareness and sometimes even misconceptions about agroforestry in some regions. Small land sizes make it difficult to integrate trees with crops (Djimma University[58]), and inadequate training hinders implementation. Market challenges, such as poor transport, lack of storage, and seasonal price fluctuations, further affect agroforestry practices. Women play a prominent role in agroforestry, particularly in managing crops like enset (false banana), although men dominate decision-making in coffee production. A major challenge in agroforestry is the lack of awareness of farmers is a challenge as it leads to farmers not willing to apply the agroforestry techniques[59:] Lack of awareness and misconceptions about trees leads to underutilization of agroforestry practices[60]. Another issue identified is the small size of land plots the individual farmer has available for farming; thus, they have limited options to apply agroforestry.

**Food security issues in Ethiopia** may be related for some part to conflicts, insecurity and displacement inside the country but also outside the country with larger numbers of refugees which require food aid and are disrupting the agricultural production. The climate change, causing increased droughts and erratic rainfall patterns that severely impact agricultural productivity, as explained above lead to poor harvests and livestock losses, which in turn lead to food security problems not only in rural areas but also in the urban areas, where the reduced productivity leads to increased prices for food and consequently to food security problems. As a result, there are high rates of malnutrition, especially among children observed as a critical issue. Chronic malnutrition (stunting) affects a significant portion of the population[61].

## 3.5 Challenges Hindering Private Sector Engagement

Given the undercapitalization of NbS, with limited financing and supportive funding options, it is vitally important to make the business case for NbS, based on solid sectoral feasibility studies. A fundamental challenge is the inherent riskiness of NbS investments, which are subject to climate change impacts, drought and price volatility. A common set of challenges affects private sector engagement in all the sectors addressed. There are also challenges that are particular to individual sectors and activities, as well differences across regions and agro-ecological zones. The private sector is defined in Ethiopian policies, laws & regulations to include smallholders, those who are commercially oriented and seeking to enhance productivity and increase output and incomes. Thus, the private sector encompasses smallholders, organized in cooperatives & unions (exploiting economies of scale, and enhancing access to markets, inputs and equipment); MSMEs (medium and small-scale enterprises; and larger firms and international investors operating at scale.

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[58] Agroforestry Practices, Benefits and Challenges in Gimbo District Kafa Zone Southwestern Ethiopia, Andenet Hailu; Kiressa H.; Tamene B., 2021, Djimma University

[59] Agroforestry in Ethiopia: using trees on farms to boost crop productivity and strengthen food security, Policy Brief No 30, 2015, World Agroforestry Center, CGIAR

[60] Climate Smart Landscape, Multifunctionality in practice, Hassan M. et al. 2016, World Agroforestry Center

[61] UN World Food Program, Ethiopia country strategic plan (2020–2025), WFP Executive Board Annual session, Rome, 29 June–3 July 2020

NbS value chains involve relationships between these different market actors. Government policy aims to promote and strengthen out-grower models, in which smallholders and cooperatives are suppliers to MSMEs and larger firms that are processors and marketers. Larger domestic and international firms/investors can be important sources of technical capacity and innovation, helping to upgrade value chains, enhancing quality, at the same time as working with smallholders to introduce climate-smart approaches. An expanding range of finance providers are also key market actors. Private sector engagement must involve and link these different market actors. There has been significant progress in the areas considered here, including in agricultural productivity as well as in forest management and the development of forest products. Still, major gaps and barriers remain. GoE and development partners are actively taking steps to address these gaps and barriers.

**Limited access to finance:** High start-up costs are a significant barrier, particularly for processing and agribusiness. High levels of risk in NbS are not addressed by underdeveloped insurance markets. SMEs often lack sufficient collateral[62]. There is a lack of specialized lenders and tailored financial products and services for NbS market actors. These are often long-term projects with long payback times – for example Bamboo takes seven years to mature. These challenges can be addressed through de-risking measures, guarantees through development banks for commercial lenders and first-loss guarantees where there is limited collateral. Access to finance can be expanded in several ways. Government, MDBS and other actors can work with banks to develop tailored financial products/services that support investments in NbS. Support for commercial banks to expand their green portfolios and develop new loan products for climate-smart and agroforestry-related investments can be complemented by support for the expansion of mobile banking to promote social and financial inclusion. There is also a lack of knowledge among smaller market actors about available financial services. This can be addressed through awareness raising and public forums with regional and commercial banks.

**Land & forest tenure uncertainty**

Land tenure insecurity undermines smallholders' incentives to invest. Individual investors and firms often face difficulty securing adequate parcels of land for viable investments. GoE has taken important steps to address these issues. Land certification has laid down solid foundations, including with provisions that strengthen women's land rights. The revised Forest Policy (2018) is supportive of private investment and sustainable timber harvesting and the new Forest Regulation (2024) includes strengthened provisions for the leasing of productive forest; tax incentives and facilitated access to credit, with land holding certificates), enabling the sale of wood-based products, bamboo and charcoal based on approved forest management plans). This new regulation directly addresses identified barriers to private sector engagement (land/credit). However, Federal laws and regulations are not necessarily translated swiftly into practice at the regional level. Unlike agricultural lands, the certification of forest lands with detailed survey and certificates has not yet progressed far. It will be important to engage with regional and local authorities on this, as well as on the demarcation of forests and land, and land use planning that provides clarity on where investments of a particular kind can be made.

**Specific challenges in NbS value chains related to agriculture & landscape restoration**

Value chains are underdeveloped, with a failure to take advantage of opportunities for investment in value addition and processing with higher margins/profitability. Knowledge and awareness gaps lie at the heart of this. Inadequate market and agricultural information systems need to be strengthened, with the development of an innovation ecosystem, linking producers, research institutions, agriculture & environment bureaus, the private sector and (digital) media. At the local level, there is limited technical knowledge for climate-smart, regenerative agriculture and agroforestry, and a lack of skills and training. The development of out-grower

[62] GIZ. Barriers to Agricultural Finance in Ethiopia. Dr Oliver Schmidt & Christopher Engelhardt. Field Study - January 2022

models is often hindered by the inadequate volume and reliability of smallholder and cooperative production. Storage capacity, product handling and post-harvest management are also inadequate. All of this despite the existence of effective and inclusive models developed under programs such as that of SNV Netherlands Development Organization, with the involvement of private actors and research institutions, alongside smallholders and domestic firms.

## 3.6 Gender related Issues and Challenges

The EFCCC's 2019 analysis of gender in Ethiopia's NAP revealed significant gender disparities in vulnerability, adaptive capacity, and priorities for adaptation. Women and men have different roles in households and communities, leading to varying levels of exposure to climate change impacts. For example, women are often engaged in informal work and subsistence agriculture, making them more vulnerable to climate-related shocks. The study showed that gender shapes vulnerability and adaptive capacity, highlighting the importance of understanding these dynamics for effective adaptation planning and implementation. The limited capacity of institutions has hindered gender-responsive planning, accountability, monitoring, coordination, and decision-making on climate change issues in Ethiopia.

Similarly, the CRGE Coordination Office's 2020 gender analysis identified three overarching gender gaps in Ethiopia, when it comes to adaptation: gender differences in adaptation needs, opportunities, and capacities; equitable participation and influence in adaptation decision-making processes; and equitable access to financial resources and benefits from adaptation investments. Additionally, attitudinal barriers, lack of understanding of institutionalized gender integration in climate change policies and programs, absence of a gender expert in institutions, if exist capacity limitations within the gender departments have constrained the institutionalization and integration of gender issues into climate change policies and programs.

Integrating gender issues into Ethiopia’s climate policy framework requires addressing various gaps and barriers that hinder the equitable participation of women and vulnerable groups in Nature-Based Solutions (NbS). These solutions, which leverage natural processes to combat climate change, are more effective when inclusive. However, women and vulnerable groups are often underrepresented in decision-making, with their indigenous knowledge undervalued. Economic, educational, and social barriers, such as limited access to land, credit, and training, further restrict their involvement. Cultural norms and gender-based violence also impede their participation, while policy frameworks often lack gender sensitivity. Additionally, inadequate gender-disaggregated data and monitoring systems weaken the ability to track progress and ensure inclusivity. Addressing these barriers through equitable resource access, tailored education, and inclusive planning can empower women and marginalized communities, enhancing the effectiveness of NbS while promoting social justice and gender equality.

## 3.7 Land Use Planning Related Challenges

Participatory land use planning (PLUP) is essential for sustainable landscape and forest rehabilitation but faces challenges in Ethiopia. The country's land use regulations lack clarity, and discrepancies between national and regional levels hinder effective implementation. Moreover, planning processes are often not inclusive, neglecting vulnerable groups such as women and ethnic minorities. Issues such as illegal settlements, corruption, poor data management, and a lack of coordination further complicate land use planning efforts.

PLUP aims to empower local communities by securing land rights and involving them in decision-making. Strengthening land tenure security is crucial for promoting sustainable land management (SLM) practices, with initiatives like Ethiopia’s level 2 land right certification program working towards this goal. Successful PLUP models emphasize community ownership, participation in policy dialogues, and the protection of land rights against external actors. Ultimately, these efforts foster sustainable land use, prevent land grabs, and support long-term social and economic resilience for local communities.

# 4. THE CONTEXT OF NBS IN ETHIOPIA

## 4.1 Implementation of NBS

Ethiopia has been at the forefront of implementing NbS to address societal challenges and foster sustainable development. In the natural resource and agricultural sectors, these solutions are pivotal for enhancing environmental resilience and improving livelihoods. A flagship initiative is the Green Legacy Initiative (GLI), which aims to restore ecosystems through extensive tree planting and landscape management. This initiative aligns with Ethiopia's objectives of conserving biodiversity and enhancing ecosystem services. Ethiopia has also undertaken large-scale landscape restoration under the Sustainable Land Management (SLM) program, supported by the World Bank. This program has rehabilitated degraded areas, mitigated climate change impacts, and improved the livelihoods of vulnerable communities. Techniques such as enclosures, assisted natural regeneration, and afforestation/reforestation have been crucial in restoring ecosystem services and boosting landscape productivity. Rural land certification is another key intervention within the SLM framework, contributing to the success of land restoration programs. Another significant program is the Participatory Forest Management (PFM), which has successfully managed over 2 million hectares of forest. PFM engages local communities and the government in joint forest management. It has helped local communities recognize the tangible benefits of sustainable forest management, particularly in enhancing ecosystem services. Additionally, it serves as a model for climate finance programs like REDD+, which aim to reduce emissions through sustainable forest management practices, highlighting its significance in Ethiopia's NbS efforts.

In the agriculture sector, NbS addresses critical issues like declining productivity, soil degradation, water scarcity, and biodiversity loss. Traditional practices such as agroforestry, crop rotation, and water harvesting align with NbS principles, making them integral to future climate resilience efforts. In the context of Ethiopian agriculture and natural resources, NbS hold significant promise in addressing the challenges of declining productivity, soil degradation, water scarcity, and biodiversity loss ([63]Tadesse et al., 2021; 64Terefe et al., 2020). Many traditional practices such as agroforestry, crop rotation, water harvesting, soil conservation, reforestation, afforestation and restorations already align with the principles of NbS (65Sintayehu et al., 2023; 66Zerssa et al., 2021). Although these practices often face barriers to adoption and scaling due to various technological, economic, institutional, and socio-cultural factors ([67]Biratu et al.,

[63] Tadesse, M., Simane, B., Abera, W., Tamene, L., Ambaw, G., Recha, J. W., Mekonnen, K., Demeke, G., Nigussie, A., & Solomon, D. (2021). The effect of climate-smart agriculture on soil fertility, crop yield, and soil carbon in southern ethiopia. Sustainability (Switzerland), 13(8), 4515. https://doi.org/10.3390/su13084515

[64] Terefe, H., Argaw, M., Tamene, L., Mekonnen, K., Recha, J., & Solomon, D. (2020). Effects of sustainable land management interventions on selected soil properties in Geda watershed, central highlands of Ethiopia. Ecological Processes, 9(1), 14. https://doi.org/10.1186/s13717-020-0216-2

[65] Sintayehu, D. W., Kassa, A. K., Tessema, N., Girma, B., Alemayehu, S., & Hassen, J. Y. (2023). Drought Characterization and Potential of Nature-Based Solutions for Drought Risk Mitigation in Eastern Ethiopia. Sustainability (Switzerland), 15(15). https://doi.org/10.3390/su151511613

[66] Zerssa, G., Feyssa, D., Kim, D. G., & Eichler-Löbermann, B. (2021). Challenges of smallholder farming in Ethiopia and opportunities by adopting climate-smart agriculture. Agriculture (Switzerland), 11(3), 1–26. https://doi.org/10.3390/agriculture11030192

[67] Biratu, A. A., Bedadi, B., Gebrehiwot, S. G., & Asmamaw, D. K. (2023b). Tempo-spatial ecosystem service delivery variations of landscape restoration practices in Ethiopia. The Seventh Africa Higher Education Week and RUFORUM Triennial Conference, June.

2023a,b; [68]Erekalo & Yadda, 2023; 69Kassie et al., 2015; 70Robert & Ouko, 2021); they have been implemented at smallholder farms to community-level and adopted Nationwide with a focus on moisture-stressed and degraded areas. Implementing NPC CIF IP would offer an opportunity to build the tested NbS upon the traditional practices while integrating modern scientific knowledge and technological advancements to enhance their effectiveness and scalability. The implementation of these NbS initiatives generated valuable lessons, raised community awareness, and influenced policy dialogues. These lessons inform project design and implementation, ensuring continuous improvement and adaptation. Ethiopia's proposed NbS IP builds on these valuable lessons and complements existing efforts to tackle the interconnected challenges of nature, people, and climate. A detailed description of key NbS implemented in Ethiopia is provided in the next section.

## 4.2 Major NBS implemented in Ethiopia

As highlighted in the previous section, Ethiopia has been implementing several NbS interventions to address challenges in the natural resource sector. Although the scale, context, and methods of these NbS vary, they all aim to address the complex challenges impacting nature, people, and climate. These initiatives adopt natural methods to tackle both natural and human drivers of societal and environmental impacts, using a watershed and landscape approach. Comprehensive list of NbS practices implemented in Ethiopia across agricultural production systems are presented in Table 3. These initiatives adopt natural methods to tackle both natural and human drivers of societal and environmental impacts, using a watershed and landscape approach. Likewise, Table 4 presents some of the flagship programs/projects that have NbS components to showcase the experiences acquired through the journey of implementing these solutions by many of national programs and flagship projects.

Table 5: Selected NbS practices for crop production, livestock management and natural resources

| **NBS Practices** | **Description** |
|---|---|
| Conservation Agriculture (Minimum tillage, permanent soil cover, crop associations) | Reducing or eliminating soil disturbance and maintaining a protective layer of organic matter on the soil surface, promoting soil conservation and moisture retention. |
| Crop Rotation and Intercropping | Rotating different crops in a planned sequence or growing two or more crops together, improving soil fertility, disrupting pest cycles, diversifying production, and improving nutrient use efficiency. |
| Agroforestry Systems (Home gardens, Parklands, Alley cropping) | Integration of trees, crops, and livestock on the same land, providing food, fuelwood, income diversification, shade, fodder, and ecosystem services. |
| Water Harvesting and Management (Micro-basins, Contour bunds) | Capturing and storing rainwater for crop production, reducing erosion, and promoting infiltration. |
| Integrated Nutrient Management (Composting, Incorporation of legumes, Combining organic and inorganic fertilizers) | Decomposing organic materials and planting leguminous crops or trees to improve soil fertility and reduce reliance on synthetic fertilizers. |

[68] Erekalo, K. T., & Yadda, T. A. (2023). Climate-smart agriculture in Ethiopia: Adoption of multiple crop production practices as a sustainable adaptation and mitigation strategies. World Development Sustainability, 3(January), 100099. https://doi.org/10.1016/j.wds.2023.100099

[69] Kassie, M., Teklewold, H., Jaleta, M., Marenya, P., & Erenstein, O. (2015). Understanding the adoption of a portfolio of sustainable intensification practices in eastern and southern Africa. Land Use Policy, 42, 400–411. https://doi.org/10.1016/j.landusepol.2014.08.016

[70] Robert, O., & Ouko, J. (2021). Climate Resilient Agriculture and Food Systems in Ethiopia Climate Resilient Agriculture and Food Systems in Ethiopia

| NBS Practices | Description |
|---|---|
| Drought-Tolerant Crop Varieties | Developing and promoting the cultivation of crop varieties that are more resilient to drought conditions, improving productivity and food security in water-stressed areas. |
| Organic Farming | Avoiding the use of synthetic inputs (fertilizers, pesticides) and relying on organic sources and practices for nutrient management and pest control. |
| Integrated Pest Management (Biological control, Trap cropping, Push-pull systems) | Using natural enemies and trap crops to control pests, reducing reliance on chemical pesticides. |
| Silvopastoral Systems | Integration of trees, forage crops, and livestock on the same land, providing shade, fodder, and ecosystem services. |
| Rangeland Management (Rotational Grazing, Controlled Burning) | Dividing rangelands into paddocks and periodically rotating livestock or using prescribed burning to manage vegetation. |
| Fodder Production and Management (Improved Pasture Establishment, Fodder Banks, Supplementary feeding with crop residues and agro-industrial by-products) | Planting and managing high-yielding forage species and conserving surplus fodder for use during dry seasons or droughts. |
| Manure Management (Composting, Biogas Production) | Decomposing livestock manure to produce nutrient-rich compost or biogas for energy and soil amendment. |
| Livestock Breed Improvement | Selection and breeding of well-adapted and productive livestock breeds, improving productivity, disease resistance, and climate resilience. |

Table 6: Examples of Programs in Ethiopia incorporating NbS components

| **Project/program** | **Major NBS interventions and descriptions** | **Project size and duration** | **Location** | **Donor** |
|---|---|---|---|---|
| The Green Legacy Initiative (GLI) | The Green Legacy Initiative (GLI), spearheaded by the Prime Minister, is a bold and visionary program aimed at transforming Ethiopia's degraded landscapes and sustainably managing its natural resources. Beyond planting millions of seedlings, GLI is a comprehensive effort to boost forest cover, protect biodiversity and carbon-rich forests, safeguard critical ecosystems, and contribute to food security and green job creation. Since its launch in 2019, the initiative has planted an astounding 32.5 billion seedlings, with 60% dedicated to agro-forestry species, including high-value fruit trees. GLI is not just about trees—it's about reshaping Ethiopia's future, coordinating efforts from national to local levels, and inspiring a nationwide movement for regreening. Its success in raising public awareness and fostering behavioral change has made GLI a cornerstone of Ethiopia's environmental and economic resilience. | The program is funded by the government since 2019 | Across the country | The government of Ethiopia. Note that, the Council of Ministers already approved the Green Legacy and Land Restoration Special Fund, about 0.5 to 1% of the Annual Budget. The Regulation is awaiting approval by the Parliament of the country. |
| Climate Action through Land Scape Management Program for Result (CALM-P4R) | Interventions in the project targets to increase adoption of sustainable land management practices and to expand access to secure land tenure in non-rangeland rural areas. It anticipates increasing the adoption of sustainable land management practices on 6200 community watersheds. | $500M 2019-2024 | The project is being implemented in Tigray, Amhara, Oromia, B/Gumuz, Gambella, Southwest Ethiopia, South Ethiopia, Central Ethiopia, Sidama, Dire Dawa, Hareri | The World Bank |
| Rural Productive Safety Net Program (RPNSP) | The program takes a holistic landscape approach to rehabilitate natural resources, integrating social infrastructure with watershed and rangeland management. Public work (PW) sub-projects, planned annually in over 11,000 community watersheds, include soil and water conservation, land reclamation, rangeland management, afforestation, rural roads, schools, health posts, water supply, and small-scale irrigation. Activities are identified through a bottom-up, community-driven, and needs-based planning process. | $2.381 bil 2020 -2025 | Tigray, Amhara, Oromia, Southwest Ethiopia, South Ethiopia, Central Ethiopia, Sidama, Dire Dawa, Hareri, Afar, Somale | The World Bank and consortium |
| Participatory Agriculture and Climate Transformation Program (PACT) | The project is implemented in 90 food-insecure woredas across nine regions, targeting 150,000 households affected by food insecurity, climate change, and resource degradation. It addresses land degradation and builds resilience through practices such as soil and water conservation, improved cookstoves, climate-smart agriculture, biogas use and carbon market participation, efficient water technologies, and better market access for produce. | $149.025mil 2023-2029 | Amhara, Oromia, Sidama, South Ethiopia, Central Ethiopia, Southwest Ethiopia, Somali | IFAD |
| SLMP I and II | The Sustainable Land Management Project (SLMP), supported by the World Bank and other partners, aimed to reduce land degradation and boost agricultural productivity through | 2008–2019 **$123.59 mil** | Amhara, B/Gumuz, Gambella, Oromia, Sidama, South Ethiopia, | The World Bank and consortium |

| | | | | |
|---|---|---|---|---|
| | community-based interventions, land certification, and capacity building. Initially planned from 2008–19, it closed in 2018. SLMP I restored degraded areas in 45 watersheds, while SLMP II expanded to 135 watersheds, addressing poor land management, vegetation loss, and land tenure insecurity. Together, they treated over 860,000 hectares, achieving 95-98% of targets. Key activities included soil and water conservation, agroforestry, and area closures, leading to a 5.2% increase in vegetation cover. The projects also issued landholding certificates and supported livelihoods through improved livestock production, poultry, and beekeeping. | | Central Ethiopia, Southwest Ethiopia, Tigray | |
| REDD+ Investment program (RIP) | The REDD+ Investment Program is a flagship sustainable forest management and restoration program that includes nature-based solutions (NbS). The program was designed to achieve five key goals: establishing community forests, protecting carbon-rich, high-biodiversity areas, building forest sector capacity, strengthening partnerships, and promoting forest-based livelihoods. Over five years, the program restored 892,000 hectares through natural regeneration, afforested/reforested 58,000 hectares, and placed 852,000 hectares under Participatory Forest Management (PFM). As a flagship NbS, it has enhanced institutional coordination across regions and provided valuable experience for future biodiversity restoration and climate change initiatives. | 2017-2023 $75 mil | Amhara, Oromia, SNNPR, Tigray, Gambella, Central Ethiopia, Somali, Southern Ethiopia, Sidama, Dire Dawa City Administration | Norwegian Ministry of Foreign Affairs |
| Ethiopia Resilient Landscapes and Livelihoods Project (RLLP I) | The RLLP aimed to enhance climate resilience, land productivity, carbon storage, and access to diversified livelihoods in selected rural watersheds. By June 2024, 1.44 million hectares were under sustainable land management (SLM), including 244,619 hectares restored or afforested. Additionally, 51 major watersheds began implementing Multiyear Development Plans. Climate-Smart Agriculture (CSA) practices covered 106,540 hectares, with 3,007 CSA farmer groups established, benefiting 87,010 households (16,502 female-headed). CSA practices improved yields and soil-water conditions. Furthermore, 1.24 million households received Second-Level Landholding Certificates, with women accounting for 67% of the recipients. | USD 142 mil 2018-2024 | | The World Bank and consortium |
| Conservation and Sustainable Use of Biodiversity and Forests (CSUBF) PHASE I and Phase II | Phase I of CSUBF aimed to ensure effective management of afforested communal areas and forest resources by local communities, contributing to income generation, diversified livelihoods, and biodiversity conservation, with a target of 10,000 hectares. Phase II focuses on promoting forest value chains, specifically supporting timber value chain development by providing necessary equipment and machinery through leasing. This phase targets an additional 2,500 hectares. | Phase I (2019-2025), Euro 20 million Phase II 2022-2027, Euro 17 million | In six woredas of Amhara Regional State (Borena, Legambo, Mehal Sayint, Mekdela, and Sayint and Tenta) | Germany BMZ / KfW |
| Build Resilience for Food and Nutrition Security in the Horn of Africa | The two projects implement NbS aiming at improving agropastoral productivity and enhancing populations' adaptive capacity. The newly approved GCF BREFOL project continues BREFONS, focusing on 30 Woredas in five pastoral and agro-pastoral regions where the activities are aligned with the Ethiopia CIF NPC IP Priority Project 3: Integrated Landscape and Ecosystem Services Restoration and Project 3: Supporting Resilient | USD 103.27 million | The program has been implemented six ditsricts in Afara (Addar Elida, Erebti, Afdera, Hadelella, Gelealo); eight districts in Oromia region | AfDB |

| | | | | |
|---|---|---|---|---|
| (BREFONS) and Building Climate Resilience for Food and Livelihoods in the Horn of Africa (BREFOL) | Agricultural practices | | (Dhas, Dugda Dawa, Melika Soda, Liben, Seba Boru, Girja Arero and Goro), and nine districts in Somali region (Birkot, Ararso, Kebridehar, Mersine, Hadigala, Mubarek, Qubi, Goljano and Rasso) | |
| Scaling up best practices of climate-smart agriculture and nature-based solutions to build the resilience of smallholder farmers and pastoral communities in Ethiopia | The overall objective of the project is to improve food security of smallholder farmers and pastoral communities in Amhara and Oromia Regional States through promoting climate-smart agriculture, nature-based solutions and gender-inclusive development interventions. Specific objectives include: enhancing agricultural productivity and food and nutrition security of smallholder farmers and pastoral communities through adoption of climate-smart agricultural practices; revitalizing degraded landscapes and ecosystem services through promoting innovative nature-based solutions to improve the adaptive capacity of smallholder farmers and pastoral communities; developing integrated value chains and financial inclusion mechanisms to enhance and sustain livelihoods of smallholder farmers and pastoral communities; and building capacities at different levels and fostering gender and private sector inclusion to ensure equalities, tap into innovative solutions and market forces and leverage technology adoption including use of climate information. | USD70 million (USD15 million from AfDB and 55 million co-finance) | The project will be implemented in 6 districts in Amhara and Oromia regions | AFDB/CAW-Adaptation |

## 4.3 Policy and institutional Framework supporting implementation of NbS in Ethiopia

Ethiopia is at the forefront of integrating NbS into its national strategies to address environmental, social, and economic challenges. The country's commitment to sustainable development is reflected in its comprehensive policies, legal frameworks, and strategic plans aimed at promoting sustainable land management, forest conservation, and climate resilience. This section outlines the policy and institutional environment that supports the implementation of NbS in Ethiopia, highlighting key initiatives, legal provisions, and strategic frameworks that collectively foster a conducive environment for NbS.

### 4.3.1 The policy landscape

Ethiopia has enacted various policies, strategies, and programs to guide and ensure the effective and coordinated implementation of natural resource management and agricultural development initiatives within the NbS framework. The draft Ethiopia's Strategic Investment Framework II for Sustainable Land Management (ESIF-II-SLM) 2024-2038 presents a comprehensive initiative aimed at promoting sustainable land management with NbS practices throughout the country. This framework, with a 15-year implementation timeline, targets the coverage of 60,000 community watersheds across three five-year phases. To support these efforts, the program incorporates innovative funding mechanisms, including Payment for Ecosystem Services (PES), to finance emission reduction and carbon sequestration initiatives. The ESIF-II-SLM serves as a long-term strategy that cultivates a conducive environment for implementing NbS, specifically addressing challenges that affect natural resource management and ecosystem health in Ethiopia. Furthermore, Proclamation No. 1223/2020 on the Development, Management, and Utilization of Community Watersheds is a key legal framework that facilitates the implementation of NBS. It aims to reduce vulnerability to drought and enhance resilience by preventing environmental degradation, protecting biodiversity, managing water resources, and reducing greenhouse gas emissions. It seeks to improve land productivity, increase agricultural output, ensure food security, and create jobs through sustainable watershed management. The proclamation also establishes a system that empowers community watershed users to protect, develop, and manage natural resources with a sense of ownership, enhancing their capacity for sustainable resource use.

The Rural Land Administration and Land Use Proclamations No. 89/1997, revised in 2005 as No. 456/2005, is an important legal provision pertaining to land ownership and security. The primary objective is to ensure land tenure security among farmers, fostering the responsible use of land and ensuring the use of landholding for an indefinite period, including the right to pass it to offspring. By ensuring a strong legal basis, the proclamation offers a conducive environment for the unrestricted implementation of NbS. Additionally, the Forest Development, Conservation and Utilization Proclamation No. 1065/2018 and the Forest development, protection and utilization regulation No 544/2024 establish clear guidelines for forest development, conservation, and utilization. The recent regulation builds on the 2018 proclamation by clarifying provisions related to carbon rights, ownership, concessions, benefit-sharing, and the use of forest products. This creates a supportive legal framework for NbS actors managing forests for carbon benefits.

Moreover, Ethiopia has articulated various green growth development plans that provide strategic frameworks for NbS implementation. The Long-Term Low Emission Development Strategy (LT-LEDS) 2020-2025 prioritizes restoring forests through activities such as tree planting and afforestation, aiming to increase national forest coverage. Ethiopia's commitment to restoring degraded landscapes, exemplified by its goals under the Bonn Challenge and the AFR100 initiative, seeks to rehabilitate 22 million hectares of land by 2030. The NDC, updated in 2021 and integrated into the Ten-Year Perspective Development Plan, sets a bold emission reduction target of 68.8%. Additionally, the National Adaptation Plan (NAP-ETH) 2019 focuses on transforming Ethiopia's resilience to climate change impacts, particularly in agriculture and

forestry, while the REDD+ Strategy 2008 emphasizes sustainable forest management and addresses deforestation through initiatives like PFM and afforestation efforts.

Likewise, the National Forest Sector Development Program (NFSDP) 2016-2025 is a 10-year, country-driven initiative aimed at promoting sustainable forest management. Key targets of the program include reducing emissions by 147 Mt $CO_{2eq}$ through REDD+ and afforestation programs, restoring 15 million hectares of degraded land, sustainably managing 400,000 hectares of bamboo forests, establishing 200,000 hectares of new bamboo plantations, and scaling up PFM. These frameworks underscore Ethiopia's commitment to integrating NbS into its broader environmental and development strategies. Ethiopia's comprehensive strategies, programs, and legal frameworks in forest management, sustainable land management, livelihood improvement, and climate change adaptation and mitigation showcase its preparedness for the successful implementation of NbS. This approach aims to address the intertwined challenges of nature, people, and climate effectively.

### 4.3.2 The institutional set-up

Ethiopia follows a federal system that involves a federal government with sectoral institutions that have counterparts at the Regional States. The sector offices at the regional level are not identical, as regions have the autonomy to establish institutions that reflect their respective development priorities. Most development-related decisions are made by the Regional Governments. At the federal level, the Ethiopian Forestry Development and the Ministry of Agriculture play pivotal roles in driving the NbS agenda, collaborating closely with subnational entities that execute and monitor the initiatives on the ground. The exclusive power and decision-making authority of Regional States allow them to tailor NbS strategies to the unique needs and priorities of their local populations and environments. This decentralized governance structure has enabled these states to effectively manage significant NbS projects valued at several million dollars. Ethiopia's institutional arrangement involves strong Federal to Regional linkage that includes joint planning and monitoring of operational and long-term plans. Such strong vertical institutional communication and linkage facilitate a successful implementation of NbS. The presence of program and project coordination units within federal and regional offices significantly contributed to the successful implementation of NbS.

## 4.4 Challenges in implementing NbS effectively and efficiently

Ethiopia's ambitious efforts to implement NbS in response to pressing societal and environmental challenges face significant barriers. As a nation striving for development while supporting a population of over 132 million, the barriers to achieving its NbS objectives are substantial. These challenges are detailed in Sections 3.1 to 3.5.

The impacts of climate change continue to exacerbate the challenges of successfully implementing NBS in Ethiopia. Scarce resources are frequently diverted to address urgent and recurrent emergencies, driven by both human-induced and climate caused disasters. With an economy heavily dependent on rain-fed agriculture, even minor climate fluctuations have devastating effects. Moreover, widespread land degradation—impacting more than half of the country's total land area—demands restoration efforts far exceeding the current technical, technological, and financial capacities of the government. Existing financial resources are often allocated to the most immediate development priorities, leaving critical NbS initiatives underfunded. While climate finance presents an opportunity to address some of these capacity-related challenges, the window for borrowing has narrowed significantly, with Ethiopia nearing its loan threshold. This leaves grant funding as a crucial and perhaps the only remaining viable option.

Private sector engagement, which could serve as a key driver of NbS financing, remains constrained by numerous barriers, further impeding Ethiopia's ability to leverage private investment. As a result, the

country's limited financial capacity exacerbates the risks to nature, people, and the climate. The land use sector continues to emit $CO_2$, biodiversity resources continue to be lost, and climate-induced hazards inflict severe damage on communities, livestock, and the environment. The degradation of both natural and human capital intensifies the vulnerabilities of Ethiopia's most at-risk populations, weakening their adaptive capacities and threatening institutional resilience.

To sustain and scale the commendable efforts already in progress, Ethiopia's NbS initiatives need strengthened support, particularly in financial, technical, and technological capacities. Overcoming these barriers will enable the government to expand successful NbS models, accelerate progress, and achieve the sustainable management of existing forests, restore degraded landscapes, and promote climate-smart agriculture. The proposed IP focuses on addressing key gaps in these intervention areas, setting the stage for transformational changes that will positively impact nature, people, and the climate. Without proactive measures to resolve systemic challenges, the ongoing crisis will continue to risk the livelihoods of Ethiopia's most vulnerable communities and the health of its ecosystems. The CIF NPC IP is hence carefully designed to tackle these issues. The IP aims to enhance learning, scale up and scale out best practices, foster private sector engagement, reinforce NbS through the integration of GESI, unlock value chains to leverage finance, and create opportunities that link NbS with markets and business ventures.

# 5. ETHIOPIA'S CIF NPC - INVESTMENT PLAN

## 5.1 Introduction to the IP

It is recalled that, the Government of Ethiopia has submitted to the CIF Secretariate an Expression of Interest (EOI) which have four pillars. These pillars are:

- Halting deforestation and forest/biodiversity degradation
- Integrated landscape and ecosystem services restoration
- Creating resilient communities and livelihoods, and
- Building capacity and knowledge management systems both at operational and strategic levels.

These above-mentioned pillars are the basis to prepare the IP. This IP will assist the Government of Ethiopia (GoE) to translate into practice the different policies and strategies enacted to sustainably mange land and natural resources, fight against climate change and build community resilience. Ethiopia has set ambitious climate and land management goals, including reducing emissions by 68% by 2030, achieving net zero emissions by 2050, restoring 22 million hectares of degraded landscapes, halting deforestation, and thereby, enhance food security and gender equity and equality. The different NBS to be implemented will reduce conflict over scarce resources and consequent mass migration, empower women and youths and enhance access to market through private sector engagement.

Key areas of support include strengthening institutional, human, technical and financial capacities to effectively implement selected NbS interventions. In addition, by building partnership, the proposed IP aims to improve coordination among sectors. The IP is strongly aligned with global policies and strategies including that of the CIF and the MDBs. It will be implemented following landscape approach. The IP through the support of the MDBs will use the CIF resources to mobilize up to half billion USD as co-finance to scale up and scale out the planning and implementation of NbS.

A landscape approach is a set of concepts and principles used to guide resource management when multiple stakeholders are involved. Its goals include diverse and sustainable social, environmental, and economic outcomes. Key points in landscape approached for implementing NbS include:

- **Holistic Perspective**: Landscape approaches consider the entire landscape, rather than focusing on individual components (e.g., forests or agriculture). They recognize that different land uses (forestry, agriculture, conservation, settlements) are interconnected in one landscape.
- **Integrated Management**: These approaches integrate various strategies and methods for sustainable natural resource management. Examples include forest landscape restoration, integrated landscape management, sustainable land management, and agroforestry.
- **Stakeholder Engagement**: Landscape approaches involve collaboration among local, national, and global stakeholders. They address conflicts arising from competing demands on natural resources.
- **Ecosystem Services**: Intact landscapes provide essential ecosystem services like clean water, air, food, energy, and carbon storage. Managing landscapes sustainably contributes to climate change mitigation.
- **Adaptive and Multiscale**: Successful landscape approaches adapt to local contexts, recognize local knowledge, and embrace complexity. They operate at multiple scales, considering both people and biodiversity

The IP also employs the Sustainable Livelihood Framework (SLF) as a tool to understand the various components and actors contributing to improved livelihoods. When applied to GESI in NbS, the SLF becomes an important analytical framework to assess the distribution of benefits and burdens, ensuring that interventions do not exacerbate existing inequalities, instead promote equity and inclusion, empowering men and women, as well as vulnerable groups. To achieve these positive outcomes the IP prioritised three interlinked pillars/programs with their respective components. See table 7 for the details.

Table 7: Summary of the Pillars and their respective components of the IP

| | |
|---|---|
| **Pillar 1** | Sustainable Management of Natural Forests and Biodiversity Resources |
| Component 1 | Support Implementation of Participatory Forest Management to Protect Natural Forests |
| Component 2 | Promote the Use of Renewable Energy (Biomass based) |
| Component 3 | Support Private Sector Engagement and Value Chain Development |
| Component 4 | Enhance Gender Equity, Social Inclusion and Livelihood Development |
| Component 5 | Capacity Development and Knowledge Management |
| **Pillar 2** | Integrated Landscape and Ecosystem Services Restoration |
| Component 1 | Afforestation and Reforestation to Increase Forest Product Supply Chains |
| Component 2 | Support Integrated Restoration of Degraded Community Landscapes |
| Component 3 | Support Private Sector Engagement and Value Chain Development |
| Component 4 | Enhance Gender Equity, Social Inclusion and Livelihood Development |
| Component 5 | Capacity Development and Knowledge Management |
| Pillar 3 | Climate Resilient Agricultural Practices |
| Component 1 | Enhancement of Soil Heath on Farmlands |
| Component 2 | Improving Farm Productivity through Climate Smart Agricultural Practices |
| Component 3 | Livestock and Rangeland Management |
| Component 4 | Support Private Sector Engagement and Value Chain Development |
| Component 5 | Enhance Gender Equity, Social Inclusion and Livelihood Development |
| Component 6 | Capacity Development and Knowledge Management |

## 5.2 Pillar 1– Sustainable Management of Natural Forests and Biodiversity Resources

### 5.2.1 Problem Statement, Contribution to Transformation, Readiness and Rational for CIF Investment

**Problem Statement**

Ethiopia hosts some of the most biodiverse and carbon-rich forests in the Horn of Africa, which are home to endemic species and vital national parks that shelter unique wildlife like the Simen Fox and Walia Ibex. These forests are crucial for rural communities, providing essential services for agriculture and livestock while contributing approximately 12.9% of the nation's GDP as of 2012-2013. However, they face significant threats from deforestation, degradation, and fragmentation, driven by population growth, agricultural expansion, and overgrazing, resulting in the loss of about 27,703 hectares of forest annually. Despite government initiatives such as the Green Legacy Initiative aimed at increasing forest cover through large-scale tree planting, substantial challenges remain that increased environmental degradation and vulnerability of the local community to climate change, necessitating a more robust response to halt the ongoing deforestation trend.

To tackle these issues, the Ethiopian government is increasingly focusing on nature-based solutions (NbS) that emphasize sustainable management of existing forests and ecosystems. Key challenges include the rapid expansion of agriculture, forest fires, weak policy enforcement, and a lack of financial and technological support. The private sector has potential in enhancing sustainable forest management through improved value chains for forest products, which can provide income opportunities for local communities. Gender and social equity (GSE) are also critical yet often overlooked elements that must be integrated to ensure inclusive access to forest resources and foster community engagement in sustainable practices. Government efforts to address these challenges were hindered by institutional, policy, technical, technological barriers. Addressing these challenges will result in sustainable forest management practices, thereby contributing to climate resilience, poverty reduction, food security and overall economic growth in Ethiopia.

**Proposed Contributions to Transformation**

Pillar 1 aims to initiate transformational changes in the sustainable management of Ethiopia's remaining forest resources by implementing integrated nature-based solutions (NbS). Its primary goals are to enhance biodiversity conservation, carbon sequestration, and the livelihoods and environmental integrity of selected landscapes. To combat the main drivers of forest degradation and deforestation, pillar one will focus on strengthening forest governance by improving the implementation of forest management policies and comprehensive land use plans that harmonize conservation with development needs. It emphasizes equal participation and accountability of stakeholders in decision-making, particularly empowering local communities and addressing gender and social inequalities to ensure that women, youth, and vulnerable groups benefit from forest management.

Additionally, the pillar will promote alternative livelihood options and capacity building, encouraging local stakeholders to prioritize conservation over unsustainable land use. It seeks to engage the private sector through the development of forest product value chains and improving enabling conditions for their participation. By focusing on institutional capacity-building through skill development, policy and governance support, and robust knowledge management systems, the pillar aims to address the root causes of deforestation and forest degradation. A holistic approach to implementation ensures that both human and natural dimensions are considered, ultimately fostering sustainable forest management and biodiversity conservation in Ethiopia.

**Implementation Readiness**

Ethiopia is well-prepared to implement sustainable forest management programs, such as Participatory Forest Management (PFM), thanks to extensive past experience and successes, including the management of over 2.8 million hectares of natural forests through PFM. The evolution of PFM, coupled with the implementation of the REDD+ program, has enhanced the country's capacity to design and report large-scale forest management initiatives, supported by financial incentives that make these strategies appealing for biodiversity conservation. Community involvement in programs like the Green Legacy Initiative and recent regulatory frameworks, particularly Regulation No. 544/2024, further facilitate the execution of sustainable practices by clarifying ownership rights to carbon and ecosystem services. Additionally, Ethiopia's emphasis on job creation and aligning with governmental priorities for economic development and environmental integrity underscores its readiness for implementing nature-based solutions (NbS) that promote livelihoods while ensuring sustainable forest resource management. Although some gaps remain in legal frameworks and knowledge management, the government's commitment, community acceptance, and involvement from experienced organizations position Ethiopia to effectively combat deforestation and forest degradation through its existing and emerging sustainable management systems.

**Rationale for NPC Financing**

Securing financing from the NPC window of the Climate Investment Fund (CIF) is essential for the successful execution of a program in Ethiopia that addresses urgent challenges of deforestation, forest degradation, climate change, and poverty, while aligning with the core objectives of NPC. By promoting sustainable forest management, the pillar aims to drive socio-economic transformation through significant benefits in carbon sequestration, biodiversity conservation, and livelihood enhancement, ultimately supporting Ethiopia's sustainable development goals. Despite being one of the world's least developed countries facing substantial resource and capacity constraints, Ethiopia is committed to global environmental responsibilities and actively engages in international initiatives for landscape restoration. This pillar emphasizes private sector involvement and knowledge enhancement among local communities and stakeholders, critical for expanding financial flows towards climate mitigation and adaptation efforts. Support from CIF will not only strengthen institutional frameworks and governance but also attract additional funding from various sources, amplifying the impact of sustainable practices and creating economic opportunities, particularly for women, youth, and vulnerable groups. Overall, the objectives of pillar one resonates with CIF priorities, making NPC financing highly relevant for fostering inclusive and sustainable development in Ethiopia.

### 5.2.2 GESI and Private Sector Involvement Options

Different policies in Ethiopia are designed to encourage private investment in the country. For instance, the forest policy states sustainable timber harvesting through provisions such as land leasing arrangements, income tax exemptions, and improved access to credit. These reforms facilitate direct investments and partnerships between private investors, community forestry management (PFM) groups, and cooperatives, promoting the development of nature-based solutions (NbS) and small-scale enterprises that diversify livelihoods for local communities. The government has introduced initiatives like the REDD+ Investment Program, which focuses on value chain development while addressing the economic trade-offs of forest conservation. There are also opportunities abound non-timber forest products (NTFP), particularly beekeeping, where women and youth-led groups can engage in profitable market activities. By fostering collaboration among various stakeholders, including the private sector to engage in market and non-market areas and local communities, the pillar aims to bolster sustainable livelihoods, increase participation in forest management, and ensure equitable benefits from forest resources.

PFM and biodiversity conservation are crucial strategies that directly contribute to improving community livelihoods, especially in areas dependent on forest resources. PFM and biodiversity conservation are interconnected in the way they support community livelihoods. Sustainable forest management ensures that biodiversity is preserved, while biodiversity-rich forests provide resources and services that sustain local

economies. These approaches emphasize inclusive decision-making, sustainable resource use, and biodiversity protection, which benefit local communities economically, socially, and environmentally. Here is a detailed breakdown of how this pillar will support Participatory Forest Management and Conservation of Biodiversity and contribute to community well-being:

**Empowerment and Local Ownership**
PFM empowers local communities by giving them a stake in forest management. By promoting PFM, this pillar allows communities to play an active role in managing forests, which enhances their sense of ownership and responsibility. This shift from passive beneficiaries to active managers motivates local people to protect and conserve forest resources and build their social livelihood capital.

**Sustainable Resource Use**
By involving local communities in forest management, the different components of the pillar, for instance, promotion of PFM will enhance sustainable harvesting practices that ensure the long-term availability of forest products. Communities can derive resources such as fuel wood, medicinal plants, and fruits without depleting the forest, ensuring their livelihood are sustained over time.

**Income Generation**
Our PFM introduces alternative income-generating activities, such as eco-tourism, non-timber forest products (NTFPs) like honey and mushrooms, and agroforestry. These activities provide new streams of income for communities, helping to reduce poverty while maintaining forest integrity. Furthermore, community-based enterprises associated with forest products can contribute significantly to local economies.

**Conflict Resolution**
Involving local communities in forest governance helps reduce conflicts over land and resources. NbS interventions such as PFM fosters collaboration among different stakeholders and ensures equitable resource distribution, minimizing disputes and reduces communities' involvement in illegal logging which all help the community to build inclusive and sustainable livelihood system.

**Enhanced Governance and Capacity Building**
PFM encourages transparent governance structures at the local level. Training and capacity-building initiatives help communities develop the skills needed for sustainable forest management, including monitoring, resource mapping, and forest regeneration techniques which in turn enhances community resilience and equips them to deal with challenges such as climate change or overexploitation.

**Ecosystem Services**
Biodiversity-rich forests offer numerous ecosystem services that benefit communities. These include water purification, flood control, and carbon sequestration. These services are essential for agriculture, water supply, and overall environmental stability. By conserving biodiversity, this pillar helps communities maintain the health of the ecosystems they rely on for their livelihood.

**Food Security and Medicinal Resources**
Forests with high biodiversity provide a variety of plant and animal species that contribute to food security. Many communities depend on forest products like fruits, nuts, bush meat, and fish to meet their nutritional needs. Moreover, many medicinal plants used in traditional and modern medicine are found in biodiverse forests. By promoting the conserving these ecosystems, this project help communities preserve an essential source of both food and healthcare.

**Sustainable Livelihoods through Eco-Tourism**
This pillar through supporting conservation of biodiversity, it can boost local economies through eco-tourism. This form of tourism creates jobs in guiding, hospitality, and crafts, providing an alternative livelihood for local people. Additionally, eco-tourism promotes awareness and funding for conservation efforts, creating a positive feedback loop.

**Climate Change Mitigation**
Biodiverse forests play a critical role in regulating the climate by absorbing and storing carbon dioxide. Protecting these forests helps mitigate the effects of climate change, which disproportionately affect rural and vulnerable communities. By preserving biodiversity, the program helps communities stabilize local climate conditions, protect water sources, and reduce the risk of natural disasters like floods and droughts, all of which have direct implications for their livelihoods.

**Cultural and Spiritual Value**
Many communities, especially indigenous ones, have a deep cultural and spiritual connection with forests and their biodiversity. Sacred groves, traditional rituals, and folklore often center on specific plants and animals. So, by promoting the conserving these ecosystems, the project helps preserve cultural heritage, strengthening community identity and social cohesion.

In general, PFM and biodiversity conservation are vital tools for improving community livelihoods. They offer a framework for sustainable resource use, income diversification, and empowerment, ensuring that communities benefit from forests while actively contributing to their preservation. By fostering collaboration and encouraging sustainable practices, this project creates a harmonious balance between ecological health and economic prosperity, improving the quality of life for forest-dependent communities.

### 5.2.3 Components of Pillar 1

Pillar one is structured around five interlinked components. The first component focuses on supporting the implementation PFM, which empowers local communities by involving them directly in the sustainable management and protection of forest resources. The second component seeks to promote the use of renewable energy alternatives, thereby reducing reliance on unsustainable fuelwood harvesting and mitigating deforestation pressures. The third component aims to stimulate private sector engagement and develop value chains for forest products, creating sustainable economic opportunities that align with conservation goals. The fourth component emphasizes enhancing gender equity, social inclusion, and livelihood development, ensuring that all community members, particularly women and vulnerable groups, benefit from and contribute to forest management initiatives. Finally, the fifth component focuses on capacity development and knowledge management, providing the necessary skills, tools, and information systems to support effective and sustained forest management practices over the long term.

**Component 1– Support Implementation of Participatory Forest Management and Protection of Natural Forests**

PFM in Ethiopia represents a decentralized approach aimed at involving local communities in decision-making and resource management, shifting power from central authorities and fostering a sense of ownership over forest conservation. Since its introduction in the mid-1990s with NGO support, PFM has led to positive outcomes, such as reduced deforestation rates and improved forest conditions through enhanced community management practices. Although PFM has empowered communities and diversified income, challenges remain, including inadequate regeneration of key forest species and insufficient short-term incentives to maintain community support. To address these issues, this component aims to strengthen PFM by enhancing incentives through livelihood diversification, community organization, training, access to financial resources, and improved market access. In addition, the component emphasizes the management of threats like forest fires and invasive species by involving local knowledge systems, promoting sustainable practices, and creating awareness among various stakeholders, including policymakers and community organizations. Through these comprehensive strategies, the component seeks to ensure sustainable forest management, biodiversity conservation, and improved livelihoods for forest-dependent communities, thereby mitigating the environmental challenges currently facing Ethiopia’s forests.

**Component 2– Promoting the Use of Improved Cook Stove as Renewable Energy**

The adoption of renewable energy sources and efficient cook stoves in Ethiopia plays a crucial role in combating deforestation and land degradation while simultaneously contributing to climate change mitigation and adaptation through NbS. These interventions, such as solar energy and bio-digesters, offer significant economic benefits and support women's participation by providing alternative energy sources that reduce fuelwood dependency—critical in a country where 70-80% of rural households rely on it. Solar energy incurs minimal recurring costs, while bio-digesters not only generate biogas for energy but also produce nutrient-rich slurry as a sustainable fertilizer. The use of efficient cook stoves helps decrease health issues related to smoke exposure and cuts household costs. Over the long term, these shifts towards sustainable energy sources are expected to enhance sustainable forest management, empower communities—especially women—by freeing their time from fuelwood collection, and ultimately lead to improved vegetation cover and resilience in ecosystems and local economies.

**Component 3– Support Private Sector Engagement and Value Chain Development**

Ethiopia's significant investment in hydropower is supporting electricity exports and generating positive environmental impacts, while the renewable energy sector holds substantial opportunities for private sector engagement, particularly through programs like the AfDB-supported green mini-grids initiative that integrates irrigation with energy production. The Ethiopia Distributed Renewable Agriculture-Energy Modalities (DREAM) Programme aims to build public-private capacity for developing a national mini-grid strategy, with considerable potential at the community level for promoting alternative energy sources and efficient cookstoves. Furthermore, the production of Non-Timber Forest Products (NTFPs) offers avenues for private sector involvement throughout-grower relationships that connect firms with smallholders and cooperatives, promoting sustainable forest management and improving the livelihoods of vulnerable communities, especially women and youth. By developing markets for NTFPs and providing training in business management and market linkages, the initiative seeks to empower communities by offering alternative income sources, thereby reducing reliance on unsustainable practices like illegal logging and charcoal production. Ultimately, this comprehensive approach integrates community-based production, value chain development, and sustainable resource management to foster resilient livelihoods, enhance biodiversity, and support sustainable development for Ethiopia's most vulnerable populations.

**Component 4– Enhance Gender Equity, Social Inclusion and Livelihood Development**

Mainstreaming gender and social equity in the sustainable management of natural resources, involves integrating the perspectives and contributions of all genders and social groups into policies and practices. This inclusive approach enhances conservation outcomes by leveraging diverse knowledge and experiences, fostering responsible use of forest resources, and reducing over-exploitation. It also enables equitable access to resources, allowing women and vulnerable groups to participate in income-generating activities like ecotourism, which can improve economic stability and reduce reliance on unsustainable practices. However, various barriers, such as unclear gender roles and limited awareness among policymakers, hinder these efforts. To tackle these challenges, this component aims to enhance institutional capacities, empower local communities, expand access to livelihood options and resources, promote policy advocacy, and strengthen networking and alliances. The combined implementation of these measures not only improves conservation outcomes but also promotes social justice, inclusive economic development, and community resilience, ensuring a sustainable future for all through the sustainable management of natural forests. Key activities under the gender component include:

**Strengthening Institutional Capacities**

To establish gender-sensitive and socially inclusive forest management scheme, this component will implement training programs for different stakeholders. This will equip stakeholders with the knowledge and skills to integrate gender and social equity into their work. Additionally, toolkits and guidelines will be

developed to assist in incorporating these principles into forest management plans. Dedicated gender and social equity units will be established to oversee the implementation of inclusive strategies. Educational institutions will also be encouraged to integrate gender and social equity topics into their environmental education programs.

**Enhancing Community Capacities and Participation**

The component will organize workshops and training sessions for local communities to raise awareness about the importance of gender and social equity in sustainable forest management. Vocational training and entrepreneurial support will be provided to women and vulnerable communities, empowering them with the skills and resources to engage in income-generating activities. Knowledge exchange programs will facilitate the sharing of best practices among communities, fostering learning and collaboration. Community forums will be established to ensure the active participation of women, youth, and vulnerable groups in decision-making processes. A participatory approach will be adopted to involve these groups in project planning, monitoring, and evaluation.

**Promote livelihood options and Gender-Equitable Access to Resources**

The gender component will identify and remove barriers that limit women's and vulnerable groups' access to natural resources, in this case forests. It will support the creation of cooperatives and associations to empower these groups to engage in sustainable income-generating activities. Equitable access to financial services, markets, and technologies will be ensured to enhance sustainable livelihoods. Alternative livelihood options, such as tree nursery, beekeeping, and ecotourism, will be introduced and promoted to ensure accessibility for all social groups.

**Policy advocacy and Alliances and Networks**

Multi-stakeholder consultations, including gender and social equity experts, will be organized to review and propose necessary amendments to existing policies. The IP through the gender component will facilitate the adoption and implementation of these policies through government bodies and institutions, ensuring effective monitoring and evaluation. Gender-disaggregated data will be collected and analyzed to monitor progress and inform policy adjustments. Partnerships will be fostered between government, NGOs, the private sector, and local communities to advance gender and social equity in forest management. National and regional networks focused on gender and social equity in environmental conservation will be supported, strengthening collaboration and knowledge sharing.

**Component 5– Capacity Development and Knowledge Management**

The successful promotion of sustainable management of natural forests and biodiversity in Ethiopia hinges on effective capacity development, robust knowledge management systems, and a coherent policy framework that supports Nature-based Solutions (NbS). Despite the existence of multiple policies aimed at enhancing forest management, challenges such as weak enforcement and lack of intersectoral harmonization persist. Addressing these issues is crucial for balancing ecological integrity with food security and ensuring transformational change. Critical skill gaps in forest management, exacerbated by high staff turnover and inadequate training, must be addressed to improve implementation. Moreover, establishing a comprehensive knowledge management system is essential for informed decision-making, ensuring transparency, and supporting effective monitoring, reporting, and verification processes. This component directly addresses key policy and strategy barriers, as well as knowledge and skill gaps, and aims to strengthen knowledge management, learning, and monitoring systems. The transformative impact of these interventions will build lasting capacities, ensuring the sustainability of the CIF NPC program outcomes.

### 5.2.4 Objectives and Expected Results

The overarching goal of this pillar is to enhance the sustainable management of forests and natural resources in Ethiopia by integrating participatory approaches, renewable energy solutions, private sector engagement, gender equity, social inclusion, and capacity development. Each component of the pillar is designed to address specific challenges and optimize opportunities within these focus areas, contributing to the long-term resilience of forest landscapes, the empowerment of local communities, and the creation of sustainable livelihoods. The objectives of each component are aligned with local, national and global commitments and programs for forest conservation and climate change mitigation. By promoting PFM, advancing the adoption of renewable energy technologies, engaging the private sector in forest product value chains, enhancing gender equity and social inclusion, and strengthening capacity development and knowledge management systems, this pillar aims to deliver significant and measurable outcomes. The pillar involves five components that lead to specific results. Collectively, these results will contribute to the sustainable management and effective protection of Ethiopia's forest and biodiversity resources, while also supporting the livelihoods and well-being of the communities that depend on them. Objectives and results of the five components of pillar one is highlighted in the table below:

Table 8: Objectives and results of pillar 1

| Components | Objectives | Key Results |
|---|---|---|
| Support Implementation of Participatory Forest Management and Protection of Natural Forests | To implement and support Participatory Forest Management and protect natural forests in Ethiopia. | Participatory Forest Management (PFM) successfully implemented in 36 groups. |
| | | Community-based fire and invasive species management and control effectively supported in 5 woredas. |
| | | Enhanced awareness and advocacy on sustainable management of natural resources achieved in 5 woredas. |
| Promoting the Use of Improved Cook Stoves as Alternative Sources of Energy | To advocate for and enhance the use of renewable energy sources among communities living around degraded forest areas | Expansion of improved cookstoves effectively advocated in 5 community groups. |
| | | Cooperation with private sector suppliers and NGO programs strengthened, with a GESI (Gender Equality and Social Inclusion) focus, resulting in increased uptake by women as household managers in 4 community groups. |
| Support Private Sector Engagement and Value Chain Development | To develop sustainable forest product value chains and promote private sector engagement in forest-based enterprises | A model for sustainable charcoal production developed, disseminated, and adopted by 2 community groups. |
| | | Fruit-based home garden management models developed and successfully disseminated in 2 community groups. |
| | | Youth- and women-led tree and fruit nursery businesses supported in 2 community groups. |
| | | Private sector engagement promoted in the development of bamboo and wood products, linking smallholders, firms, and local banks in 2 community groups. |
| | | Training and awareness on forest-based business opportunities conducted in 2 community groups. |

| | | |
|---|---|---|
| | | Access to technology and innovations promoted in 2 community groups. |
| | | Access to finance and market linkages facilitated in 2 community groups. |
| | | Advocacy and awareness raised for policymakers, private actors, CBOs, media, and others, leading to a paradigm shift in forest resource conservation, development, and utilization in 2 community groups. |
| | | Private sector engagement with PFM groups and cooperatives strengthened through multi-stakeholder platforms to develop NTFPs (non-timber forest products such as gum, resin, honey, bamboo, spices, coffee, and essential oils) and control invasive species through commercial utilization in 2 community groups. |
| Enhance Gender Equity, Social Inclusion and Livelihood Development | To strengthen gender equity, social inclusion, and livelihood development in forest-dependent communities. | Community capacities in Gender, Equity, and Social Inclusion enhanced in 20 community groups. |
| | | Gender-equitable access to resources promoted through diversified livelihood options in 20 community groups. |
| | | Policy advocacy on Gender, Equity, and Social Inclusion successfully undertaken in two Regional States. |
| | | Alliances and networks established to strengthen Gender, Equity, and Social Inclusion in two Regional States. |
| | | Institutional capacities in Gender, Equity, and Social Inclusion strengthened in 10 woredas. |
| | | Entrepreneurship models established and networks of youth, women, and community-based organizations created to lead the restoration movement in 2 community groups. |
| Capacity Development and Knowledge Management | To enhance capacity development and knowledge management systems for sustainable forest management | Laws, regulations, and directives on Participatory Forest Management (PFM) thoroughly reviewed. |
| | | Laws, regulations, and directives on invasive species control comprehensively reviewed. |
| | | Laws, regulations, and directives on forest fire control effectively reviewed. |
| | | Policies and strategies governing the promotion and processing of forest products reviewed and updated. |
| | | Stakeholder coordination promoted, and regular policy dialogues established. |
| | | Mechanism for mainstreaming gender and social equity in the sustainable management of forests successfully established. |
| | | Work standards, manuals, and guidelines established and made accessible to users. |
| | | Sustainable forest management training academies established for community members, development agents, forest owners, and junior experts. |

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| | | Regular short-term training and peer-to-peer learning exchange programs established and launched. |
| | | Infrastructure established and human capacity built for a robust knowledge management system. |
| | | Capacity-building training provided on knowledge management systems. |
| | | IT-based networking and communication channels established for horizontal and vertical flow of information and data. |
| | | Climate data and early warning information dissemination system established. |
| | | Web-based national forest registry system established for forests under a sustainable management system. |
| | | Robust National Forest Monitoring System established and harmonized for adoption at sub-national, landscape, and project levels. |

## 5.3 Pillar 2 – Integrated Landscape and Ecosystem Service Restoration

### 5.3.1 Problem Statement, Contribution to Transformation, Readiness and Rational for CIF Investment

**Problem Statement**

Ethiopia, despite its substantial socioeconomic progress over the past decades as measured by GDP per capita growth ([71]Macrotrends Ethiopia GDP 1960-2024) is facing a severe landscape degradation manifested by huge amount of soil loss, large land mass of deforestation as well as declines in the size of several waterbodies and wetlands etc (section 2.2.2.; 3.2). All these led to increases in desertification which made the country's dry land areas to increase. A WRI study ([72]MEFCC 2018) highlights that nearly half of Ethiopia's landmass (54 million hectares) shows various levels of degradation, with 11 million hectares severely affected and at risk of turning into desert if the necessary interventions measures are not taken urgently. The primary drivers include agricultural expansion to meet increased demand for food and nutrition security, unsustainable wood harvesting, illegal logging, and overgrazing, and these lead to total annual loss of approximately 28,000 hectares of forest between 2020 and 2023. This widespread forest resource degradation adversely affects Ethiopia's economic stability, agricultural productivity, and overall ecosystem resilience, as details are discussed in section 3.2.

The consequences of this degradation are far-reaching, creating a vicious cycle where land degradation reduces agricultural yields, forcing more people to cultivate unsuitable marginal lands, which in turn accelerates further land resource degradation. Soil erosion in Ethiopia with billions of tons of fertile topsoil

71 Macrotrends Ethiopia GDP 1960-2024: https://www.macrotrends.net/global-metrics/countries/ETH/ethiopia/gdp-gross-domestic-product)
72 MEFCC. 2018. Ministry of Environment, Forest and Climate Change. National Potential and Priority Maps for Tree-Based Landscape Restoration in Ethiopia (version 0.0): Technical Report. Addis Ababa.

lost annually ([73]Temesgen Gashaw 2015) is particularly acute and crippling the agricultural sector that is the backbone of Ethiopia's economy. This cycle also contributes to the loss of biodiversity, decreased ecosystem services and goods, and increased communities' vulnerability to climate change, which is further jeopardizing food and nutrition security and livelihoods for millions of households. Without effective nature-based restoration interventions, the situation is poised to worsen, threatening the sustainability of Ethiopia's socioeconomic achievements.

Ethiopia's forest resources are vital for the country's environmental stability, biodiversity, and increasingly also become an important economy development factor. Although many efforts on forest development have substantially reduced the deforestation rate from 97000 to 28000 ha/yr, the remnant natural high forests and woodlands are still threatened by an alarmingly high magnitude of deforestation and degradation due to unsustainable management of both plantations and natural high forests and woodlands as well as due to spatially unplanned agricultural expansions. The good example to be noted in this regard is 190,000 hectares of old growth industrial plantations that have never been sustainably managed on the basis of balancing the stands' growth rate and wood demand/supply ([74]MEFCCC. 2018). This made Ethiopia to relay on wood imports, which cost approximately USD 124 million in 2018 and depletes foreign exchange that could had been used for other essential development sectors. To meet the growing demand for forest products, the strategy (MEFCCC 2018) projected that an additional 300,000 hectares of productive forestland would be needed to be established with sustainable management and utilization over the next decades.

Furthermore, the rapid loss of these forests contributes to enhanced vulnerability to adverse effects of climate extreme events, namely recurrent droughts, floods, landslides etc. The country's forest potentials to serve as essential carbon sinks, water towers, biodiversity and habitat hotspots are being rapidly depleted leading to loss of payments for ecosystem services.

Additionally, landscape degradation in Ethiopia has led to a critical disruption in the connectivity between ecosystems, severely hindering the natural flow of germplasm and impacting biodiversity. The widespread loss of forest vegetation cover, particularly in upstream catchments (midlands and highlands), has drastically reduced the quality and quantity of available water at downstream landscapes (lowlands/ low laying plains). This has created significant challenges for smallholder farmers and pastoralists who rely on small-scale irrigation, undermining their agricultural and range land productivity, and food and nutrition security. Moreover, the degradation has had a profound impact on Ethiopia's efforts to transition to renewable energy, particularly the huge investments on expansion of hydroelectric dams. The increased sedimentation load in these dams, caused by upstream erosion, not only reduces their efficiency of power generation but also shortens significantly their operational lifespan, posing a major obstacle to the country's renewable energy goals, which is also part of the mitigation goals of the Paris Agreement and SDGs.

Land degradation due to invasive species and bush encroachment is a severe issue for Ethiopia's pastoral communities and to cereal-livestock mixed farming systems of sedentary farmers in the highlands. This encroachment has particularly reduced the availability of grazing/range lands, and directly impacting the herds that the livelihoods of these communities depend on. The situation is further exacerbated by the high vulnerability of pastoral and semi-pastoral communities to drought and floods, making the loss and damage of productive pasture- and rangelands even more critical. Addressing the spread of invasive species and controlling bush encroachment is essential not only to reduce the vulnerability of these communities but also to enhance environmental resilience by restoring native species composition and biodiversity in the affected areas. There are proven NbS measures practiced across the country towards accelerating integrated landscape

73 Temesgen Gashaw 2015. Soil erosion in Ethiopia: Extent, conservation, efforts and issues of sustainability. Center for Environmental Science, College of Natural Sciences, Addis Ababa University, Ethiopia, March 2015

74 MEFCCC. 2018. National Forest Sector Development Program, Ethiopia

management and ecosystem service restoration, that have at the same time supported community livelihoods. Such widely practiced NbS in the areas of ecosystem restoration include among others assisted natural regeneration, afforestation and reforestation interventions implemented for decades across the highland and lowland landscapes.

**Proposed Contribution to Initiating Transformation**

The second pillar "Integrated Landscape and Ecosystem Services Restoration" seeks to tackle the challenges by promoting sustainable practices that enhance restoration of forest ecosystems on degraded landscapes and improve vulnerable communities' livelihoods. One primary focus of this pillar is the establishment of production forests to reduce pressure on natural forests, enhance ecosystem services, and stabilize the supply of forest products, while at the same time expanding the resource bases for ecosystem services and goods both on forested and agricultural landscapes. This aligns with Ethiopia's carbon-neutral economic development goals by mitigating poor agricultural practice- and deforestation-related emissions.

The program emphasizes linking forest restoration with immediate livelihood options to ensure tangible benefits for local populations. By fostering income generations through forest-land restoration integrated interventions along the landscapes, the pillar enhances resilience to climate shocks. It also aims to attract private sector investment in NbS, contributing to both environmental sustainability and economic growth.

Key activities of NbS under pillar 2 include establishment of plantations of fast-growing native and exotic trees with ecologically balanced mix, providing legal alternatives and well scheduled sustainable management and utilization operations to avoid illegal wood harvesting for construction, furniture, and fuel. The pillar also emphasizes equitable benefit-sharing, addressing governance gaps to ensure fair distribution of resources, it promotes smallholder plantations by empowering farmers to integrate tree cultivation into their land, thus enhancing smallholders' incomes not only from timbers but also from carbon trading that encourages consideration of carbon sequestration into the forest management planning. Additionally, the pillar optimizes the management of community land and natural resources thereof. To maintain sustainable supply of forest products towards meeting increasing needs for construction and furniture-raw-materials, the establishment of bamboo is proposed as one afforestation activities for the landscapes to which highland and lowland bamboo varieties are most suitable.

Strengthening land and forest governance, developing balanced land use plans, and promoting stakeholders' participation are crucial components of this pillar. By involving women, youth, and vulnerable groups in the land and forest management planning and preparations of afforestation and reforestation and restoration activities like seedling raising, planting site selection, demarcation and land preparation, seedling planting and post planting management, etc.; the pillar addresses gender and social inequality, offering alternative livelihoods and capacity-building interventions. The pillar also emphasizes restoring degraded community lands to regain ecosystem services, to improve land productivity, carbon sequestration, biodiversity gain, and improved water infiltration and reduced soil loss, floods and landslides risks. By doing so, pillar 2 creates opportunities for small-scale private sectors to invest in NbS which is crucial to further strengthen climate adaptation and mitigation capacity. Additionally, the pillar supports the sustainable use of non-timber forest products (NTFPs) like bamboo, spices, honey and coffee, diversifying local economies while fostering access to sustainable markets. This pillar is prepared to significantly contribute to transformational changes in the country's land and forest management.

**Implementation Readiness:**

Ethiopia is ready to implement the type of interventions in pillar 2 and that of the IP at large. The major interventions in this pillar include afforestation reforestation to enhance the supply chain of forest products, restore degraded community landscapes through integrated ANR, FMNR, SWC and other related practices. Several ongoing flagship program, namely REDD Investment Programs, Oromia Forested Landscape Program (OFLP), SLMP, CALM and etc supported by multiple development partners and Banks show

presence of strong government commitment to support NbS programs, implying the readiness of the country to implement the CIF NPC IP at large and specifically interventions in pillar 2. The establishment of a special fund sourced from public expenditure, managed by the Ministry of Finance, exemplifies Ethiopia's readiness to implement NBS flagship program such as this IP.

Ethiopia is well-positioned to establish production forests with strong institutional capacity and supportive legal frameworks. Community engagement through commercial plantations and smallholder woodlots establishment is critical to secure sustainable forest product supply and ensure sustainability of restored degraded landscapes. Pillar 2 promotes alternative livelihoods, such as bamboo production, honeybee farming, and forest coffee cultivation, fodder production that foster sustainable development while addressing unemployment, reducing poverty and food and nutrition insecurity. The project balances environmental integrity with human needs to build enhanced community resilience to adverse impacts of climate change. Despite Ethiopia's achievements in landscape restoration, challenges remain in data management and institutional coordination, however. There is limitation in establishing standardized data management systems at EFD and other institutions implementing NbS, though there are efforts underway to improve capacity in these areas, including the use of Geographic Information Systems (GIS) for better decision-making, and climate service provision for early warning preparedness to avoid climate anomaly induced hazards and save human lives. The NPC CIF IP aims at strengthening such ongoing capacity building efforts in collaboration with other relevant sectors.

**Rationale for NPC Financing:**

The "Restoring Integrated Landscape and Ecosystem Services" project seeks funding from the Climate Investment Funds' (CIF) Nature, People, and Climate (NPC) Investment Program, aligning with CIF's objectives of improving natural resource management, adopting proven NbS and CSA practices in the forest and agriculture, sectors, and hence enhancing socio-economic and environmental benefits for communities.

The project promotes sustainable land use practices, which include land use type-land feature matching and species-stie matching during implementing afforestation, reforestation, and natural regeneration interventions for restoring degraded landscapes and biodiversity effectively; and hence enhancing ecosystem services and goods which could generate additional household/ community level incomes from PES. Furthermore, the NPC CIF IP fosters sustainable value chains in the forest and agriculture sectors and mobilizes capital for sustainable land and land-use management, creating opportunities for local communities to access climate finance. Strengthening the policy and institutional framework ensures sustainable land use planning, reducing deforestation and improving livelihoods.

The project aligns with Ethiopia's commitments to global environmental conventions, supporting efforts to combat deforestation, enhance biodiversity, and foster climate resilience. It integrates sustainable forest management with other economic activities, creating long-term socio-economic and environmental benefits. The promotion of sustainable alternatives incomes, such as efficient charcoal production and NTFPs, addresses major drivers of deforestation while attracting private sector investment. The project emphasizes community-led approaches to forest management, empowering local communities and building their capacity to manage forest resources. It also focuses on women's empowerment in the forestry sector, enhancing their participation in decision-making and contributing to better outcomes for forest restoration and management.

Ethiopia's involvement in the global carbon certificate market requires the development of a legal framework and a forest land cadastre to ensure generating income for forest land owned private and public sectors with simultaneously having positive environmental impacts. Experiences and legal frameworks carbon certification and rural land cadastre is already in place, and NPC CIF IP supports strengthening the existing efforts in this respect. The project's focus on capacity building, continuous monitoring, and knowledge sharing between research institutions and field operations will be essential for scaling out successful interventions and for improving higher education and research systems.

Tenure of afforestation areas is to be secured, especially when the afforestation and tree plantings are done by small holders. They need to have tenure rights to use and assume responsibility for tending and management of these forests. The required field works for survey and mapping should lead to issue of detailed (level 2) land certificates. The land management bureaus will need capacity building support for this activity, which is supported by NPC CIF as part of this IP's activities.

### 5.3.2 GESI and Private Sector Involvement Options

**Summary of Private Sector Engagement Options in Landscape Restoration:** The private sector has numerous opportunities to engage in forest, woodland, and degraded land restoration. Key areas include the establishment of smallholder plantations, sustainable wood supply production forests, rangeland improvement, and bamboo plantation management. These efforts not only attract investment but also link smallholder farmers to wood industries such as fibreboard, plywood, and other wood-based production sectors. By connecting smallholder farmers with private firms, marketing opportunities for woodlot products can improve significantly.

Private sector roles also extend to promoting alternative energy sources that reduce reliance on unsustainable energy like animal dung, which in turn enhances soil health. The integrated landscape approach promotes rural-urban linkages, emphasizing that activities beyond the landscape, such as energy supply and input provision, are equally crucial to restoration. For instance, private investment in bamboo plantation development can enhance tree cover, soil conditions, and carbon credits, while also reducing environmental pressure on degraded lands and promoting sustainable agriculture.

Production forests and smallholder plantations are market-driven activities with substantial potential for expansion. The government plays an enabling role by providing planting materials, land demarcation, and technical support, while private firms drive market-oriented production. Ethiopia's success in on-farm production has significantly increased local incomes, and inclusive business models have supported the growth of domestic firms producing wood products. The current project aims to strengthen these models by linking finance providers to wood-processing firms, promoting value chain development, and building smallholder capacity through training.

The project emphasizes inclusive value chain development, involving smallholders and local producers in eco-tourism and forest product industries. Private finance, with support from international financial institutions for risk mitigation, plays a critical role in these efforts. Ecotourism presents a unique opportunity for the private sector to support community participation and environmental sustainability. Ethiopia's ecological diversity and rich cultural heritage offer significant potential to attract tourists, with eco-tourism expected to generate considerable economic growth in the medium to long term.

The project also highlights opportunities in sustainable charcoal production and the management of invasive species like *Prosopis juliflora* in the drylands. Gums, resins, and coffee offer additional avenues for private sector engagement. Ethiopia's coffee industry, a key economic sector, can benefit from private sector partnerships to address new international regulations, such as the EU's zero-deforestation standards, while improving smallholder agroforestry practices and coffee quality.

Landscape and ecosystem restoration play a crucial role in enhancing community livelihoods, particularly in rural and forest-dependent regions. These restoration activities focus on rehabilitating degraded lands, replenishing natural resources, and reviving ecosystem services that directly support the well-being of local populations. The relationship between healthy ecosystems and human prosperity is well-established: ecosystems provide resources like food, water, and raw materials, and their restoration can lead to improved

resilience, economic opportunities, and long-term sustainability for communities. Below is a detailed description of how this project can contribute to community livelihoods.

**Restored Ecosystem Services**
Healthy ecosystems provide a wide array of services essential for human survival and economic activities. For example, restored landscapes improve water catchment areas, regulate water flow, and maintain the water table. This ensures the availability of clean water for drinking, irrigation, and livestock. Restoring landscapes supports the recovery of pollinator species, such as bees, which are vital for crop production and food security. By restoring ecosystems such as forests, wetlands, riverbanks and lakeshores communities benefit from increased carbon sequestration, which helps mitigate the impacts of climate change and stabilizes local weather patterns.

**Increased Agricultural Productivity**
Restoration of degraded lands leads to more fertile soils, improved water retention, and reduced erosion, all of which are essential for sustainable agriculture. When landscapes are restored, previously unusable lands can be transformed into productive fields, supporting both subsistence and commercial agriculture. This has a direct impact on food security, as healthier ecosystems, produce higher crop yields, reduce the need for artificial inputs (like fertilizers), and sustain long-term farming which in turn contributes for resilient community livelihood.

**Improved Income and Livelihood Diversification**
Restored ecosystems create multiple opportunities for communities to diversify their income sources. Some of the ways in which this restoration project supports livelihood diversification include:

- Non-Timber Forest Products (NTFPs): Restoring forests and woodlands can provide communities with NTFPs such as fruits, nuts, medicinal plants, honey, and fibers. These resources can be harvested sustainably and sold in local or international markets, generating income for households.
- Eco-tourism: Well-managed, restored landscapes attract eco-tourists interested in wildlife, hiking, bird watching, and cultural experiences. Eco-tourism can bring income to communities through guiding services, accommodation, and the sale of local crafts.
- Sustainable Forestry and Fisheries: Forest restoration can lead to sustainable timber harvesting, and wetland and especially riverbank and lakeshore restoration can support healthier fisheries, offering long-term, sustainable sources of income for communities dependent on these sectors.

**Job Creation**
Restoration projects themselves create jobs and livelihood opportunities. For example, the project's restoration activities may require labour for tasks such as planting trees, building terraces, managing nurseries, monitoring biodiversity, and creating infrastructure to prevent soil erosion which all can be source of income for the community. In addition, training and capacity-building initiatives associated with the restoration activity help local people develop skills in conservation, natural resource management, and sustainable agriculture, increasing their employability.

Moreover, the economic activity generated through restoration can stimulate local economies, as workers spend their earnings in the community, supporting local markets and services.

**Resilience to Climate Change and Natural Disasters**
One of the significant benefits of ecosystem and landscape restoration is the increased resilience of communities to climate change and natural disasters. Degraded landscapes are often more vulnerable to extreme weather events such as floods, droughts, and landslides. So, through ecosystem restoration, this project can help communities become better equipped to adapt to climate variability, ensuring that their livelihoods are protected from the impacts of a changing climate.

**Enhanced Social Cohesion and Community Empowerment**

By employing a Participatory approach, this project involves local communities in planning, implementation, and management. This engagement fosters a sense of ownership and stewardship over local resources, strengthening community ties and enhancing cooperation. When communities collaborate to restore their landscapes, they develop stronger social bonds, which contribute to long-term sustainability.

Furthermore, by involving local knowledge and traditional practices in restoration, the project empowers the communities to manage their resources in a way that respects cultural heritage and promotes self-reliance. Women, indigenous people, and vulnerable groups often play central roles in restoration efforts, leading to increased gender equity, social inclusion and sustainable livelihood.

**Improved Health and Well-being**
This project intends to provide healthy ecosystems which contribute directly to the health and well-being of communities. Access to clean water, improved air quality, and a diverse range of food sources all result from functional ecosystems. Additionally, green spaces and restored landscapes provide psychological and recreational benefits, enhancing mental health and well-being. These factors are essential for improving the overall livelihood and quality of life in rural and urban areas alike.

**Long-term Sustainability and Intergenerational Equity**
Ecosystem and landscape restoration efforts are fundamentally linked to long-term sustainability. By rehabilitating natural systems, this project can help communities ensure that future generations will have access to the same resources they depend on today. This focus on intergenerational equity is key to reducing poverty, improving health, and fostering a more sustainable economic model.

In summary, landscape and ecosystem restoration which is the focus of pillar 2 is vital for improving community livelihoods. By restoring degraded environments, communities can access essential ecosystem services, increase agricultural productivity, diversify their incomes, and build resilience to climate change and natural disasters. Furthermore, it provides opportunities for job creation, social cohesion, and empowerment, leading to long-term sustainability and intergenerational equity.

### 5.3.3 Components of Pillar 2

**Component 1– Support Afforestation and Reforestation to Increase Forest Product Supply**

This component focuses on establishing and expanding production forests through participatory approaches involving local communities, government stakeholders, and private landholders. The objective is to increase the supply of forest products by promoting sustainable forest management, plantation of diverse tree species, and supporting smallholder plantations. The activities are designed to designate responsible use of forest land and to promote planting trees to enhance the supply chain of forest products in a sustainable and equitable manner.

Management Consultation & Participatory Land Use Planning: Engage local communities and stakeholders through participatory approaches to agree on the establishment of production forests is the first and important step for successful afforestation. Thus, participatory land use planning will be conducted in close collaboration with community members, kebele administrations, and other concerned actors at all levels. Surveys and mapping will utilize Geographic Information Systems (GIS) and GPS techniques to ensure accurate demarcation and sustainable management of forest lands. Continuous monitoring will ensure adherence to the agreed land use plan.

Production Forest Plantation: Under this component the project will establish production forests by planting fast-growing tree species, exotic trees with long rotation, and indigenous trees on both communal and private

lands. Using GIS, suitable sites will be surveyed and mapped, followed by the preparation of afforestation and management plans. Ownership of the afforestation plots will be ensured through appropriate mapping and certification, and high-quality seedlings will be produced using certified seed material.

Production Bamboo Plantation: Bamboo plantations will be established in both highland and lowland areas using site-adapted bamboo species. The project will promote bamboo planting by smallholders, utilizing GIS for site selection and management planning. The preparation of high-quality bamboo seedlings from site-specific seed materials will be prioritized, and land tenure will be ensured through proper certification and mapping.

Smallholder Tree Plantations: Suitable land areas for smallholder tree plantations will be identified and georeferenced in consultation with local communities and woreda/kebele officials. The project will support smallholder plantations by providing planting materials, ensuring land tenure through certification, and assisting in the establishment of tree nurseries. The plantations will include both exotic and indigenous tree species, with ongoing support for sustainable management.

Improving Existing Production Forests: The project will support the sustainable management of existing community forests by identifying overmature and unmanaged plantations. A sustainable forest management plan will be developed and endorsed by the local community and administration. The community will be organized and supported in managing these forests according to the agreed-upon management plan, ensuring the long-term productivity and sustainability of the forest resources.

**Component 2– Support Integrated Restoration of Degraded Community Landscapes**

This component focuses on restoring open and degraded forest lands through a series of strategic activities aimed at increasing forest vegetation cover, enhancing carbon stocks in forest lands, fostering sustainable land use, enhancing biodiversity, and improving livelihoods. The following key actions will be implemented under this component:

Local-Level Forest Landscape Use Planning: This initiative involves working closely with local communities to create forest landscape use plans, where activity areas will be identified in a participatory approach. Planning will involve also survey and mapping of the areas using modern technologies such as GPS and GIS. These plans will guide sustainable natural resource management, ensuring that land use practices are optimized for both conservation and productivity.

Support for Community-Based Restoration Projects: Competitive calls for proposals will be issued to encourage local communities to submit restoration project ideas. Selected projects will receive funding and technical support to implement innovative and impactful restoration activities.

Assistance to Restoration Champions: Individuals or groups who have demonstrated exceptional abilities in forest restoration will be identified and supported. By recognizing and assisting these restoration champions, the program seeks to inspire and scale up successful practices.

Catalysing Innovative Finance Models: The activity will also explore and promote new financial mechanisms to support restoration efforts. Leveraging the existing "Restoration Fund," the initiative will aim to attract additional resources and scale up successful restoration projects across the region.

Promotion of Restoration-Based Enterprises: Active engagement with private sector actors and community forest management groups will be encouraged to develop restoration-based enterprises. These enterprises are then expected to generate sustainable economic activities and further incentivize forest rehabilitation efforts.

Restoring Catchments Around Water Bodies: The project will prioritize the restoration of catchments around and along water bodies such as rivers and creeks but also along the coastline of lakes. The implementation will create a green corridor along the waterbody and will protect the water body from erosion and will

provide shade to maintain a constant water temperature. This approach will improve water quality, stabilize ecosystems, and enhance resilience against climate change impacts.

Habitat Connectivity: The component will focus on restoring degraded forest lands in a way that connects fragmented habitats, establishing ecological corridors. This will strengthen biodiversity by enabling wildlife to move freely between rehabilitated sites, creating a more resilient ecosystem.

**Component 3– Support Private Sector Engagement and Value Chain Development**

Under this component the program will develop value chains for selected forest products and NTFPS - forest and non-forest timber, gums and resins, fruit trees, honey, medicinal plants, alongside the development of agricultural value chains, fodder and coffee (integrated into agroforestry systems, with steps to meet zero-deforestation standards). There is considerable scope to develop forest-based value chains, in ways that enhance welfare as well as environmental outcomes, increase local incomes through inclusive business models and provide the incentives for local communities to sustain conservation efforts and develop NbS.

Landscape restoration involves and supports the production of numerous marketable forest products. By enhancing ecosystem services, it also supports agricultural production, as well as the integration of crops, trees and livestock under agroforestry systems and agro-silvo-pastoralism. Agricultural value chains are addressed separately, but it is important to understand their relatedness in an integrated approach to landscape management.

Value chains involve multiple market actors and steps in the harvesting, collecting, processing, transporting, and distribution of forest products. Related markets also include those for nonconsumptive forest benefits - recreation, tourism, and watershed protection. Government supports and promotes private sector involvement and forest value chain development in several ways, which include efforts solving land, forest, tree and resource tenure, encompassing private ownership and certification, communal tenure (under customary law and regulations enforced by modern and traditional institutions). GoE's massive tree planting efforts also support the development of forest related value chains, building related capabilities, as well as the availability of seeds and seedlings for "economic trees". To ensure better engagement of private sector in pillar 2 and ensure equal share of women and youths, forest value chains can be supported considering low hanging fruits, examples, supporting plantation and use of fast-growing species such as Eucalyptus, Bamboo, fruit trees and etc.

As the current program develops, EFD will promote and develop platforms for private sector engagement, by inviting participation in established multi-stakeholder platforms, trade fairs, making use of the strong viewership of influential TV stations such as EBS and Kana TV, and digital platforms.

The activities implemented under this component are:

- Catalyse innovative Finance Models and leveraging the "Restoration Fund" for Scaling up restoration efforts
- Promote restoration-based enterprises through active engagement of private actors and community forest management groups
- Pilot youth and women lead tree and fruit nursery businesses through startup funding
- Promote community-based gum and resin production, linking with private sector for quality improvement and marketing
- Support value chain development for spices, coffee, essential oil and other NTFP
- Pilot integration of ecotourism in restored landscapes building on experiences
- Promote private sector engagement in the development of bamboo and wood products, linking smallholders, firms and local banks
- Promote access to technology/innovations through market linkages and private sector involvement

**Component 4– Enhance Gender Equity, Social Inclusion and Livelihood Development**

Integrated landscape and ecosystem services restoration is a holistic approach that seeks to rehabilitate degraded lands, enhance biodiversity, and improve the livelihoods of local communities. In Ethiopia, where environmental degradation and deforestation are pressing issues, restoring landscapes is crucial for achieving sustainable development. However, to ensure the effectiveness and sustainability of these restoration efforts, it is essential to incorporate gender and social equity considerations. This approach ensures that the benefits of restoration are shared equitably among all members of society, particularly those who are most vulnerable, such as women, indigenous peoples, and vulnerable communities.

In Ethiopia, men and women often have distinct roles in the use and management of natural resources. For example, women are typically responsible for gathering firewood, water, and medicinal plants, while men may engage in activities like farming and timber harvesting. These roles shape their interactions with the environment and influence their knowledge of local ecosystems. Environmental degradation disproportionately affects women and vulnerable communities. For instance, as resources become scarcer due to deforestation or soil erosion, women may need to travel longer distances to collect water and firewood, increasing their workload and exposure to risks. Similarly, vulnerable communities may lose access to the land and resources they depend on, exacerbating poverty and inequality. So, restoration projects that do not consider gender and social equity risk perpetuating or even exacerbating existing inequalities.

Involving women and vulnerable communities in the planning and implementation of restoration projects ensures that diverse perspectives are considered. This inclusivity leads to more comprehensive and context-specific strategies that are likely to be more effective and sustainable. Furthermore, inclusive decision-making processes help to ensure that the governance of restored landscapes is fair and transparent. This can prevent conflicts over resource use and ensure that all stakeholders have a voice in how restored lands are managed. In addition, ensuring equitable access to restored resources, such as water, land, and non-timber forest products, empowers women and vulnerable groups, enabling them to improve their economic status and contribute more effectively to their communities. This component therefore aims to build on strategies to ensure active participation of women, youth and other vulnerable groups in landscape and ecosystem restoration activities. Major activities need to be done include building capacities and capabilities of community, with a focus on women, youths and disadvantaged social groups, and capacity development among others include, organising then into different forms of beneficiary groups, provide skill trainings such as in implementing climate smart NbS interventions, ensure equal participation of women and youths in decisions making process, from the panning to reporting and benefit sharing which demands developing strategies, guidelines and etc. The component will also support creation and development of green enterprises like organic fertilizers, natural cosmetics, and crafts from sustainable materials, support business development and market access for products derived from restoration activities. Women and youth will be supported to establish fruit and fast-growing tree-based gardens, crucial steps to ensure income diversification and food security. It also supports advocating on GESI related issues through organizing platforms, partnerships and networks.

**Component 5– Capacity Development and Knowledge Management**

Capacity building is essential for the successful and sustainable management of forest resources, especially as global practices evolve, and new technologies emerge. One of the core objectives of the project is to support the regular review of policies related to forest management and the establishment of laws and regulations governing the harvesting of forest resources. This ongoing review process is vital, as both practices and techniques in forest management, as well as organizational structures in the marketing and management of forest products, will naturally change over time. Innovations in technology, the emergence of new market demands, and environmental challenges all necessitate updated regulations that can cope with these shifts. Therefore, it is crucial for governments and stakeholders to remain adaptive and proactive in their regulatory approaches.

In addition to policy review, the dissemination of knowledge and best practices is another key component of the project. Numerous manuals and guidelines on forest management, rehabilitation, and the use of non-timber forest products (NTFPs) have been developed by various initiatives. These resources provide valuable insights into efficient and sustainable forest management practices and organizational concepts. The project aims to centralize this knowledge and make it widely accessible through an internet-based platform designed for forest owners and managers, regardless of whether they hold large or small forest estates. By utilizing digital tools such as social media systems, the platform will enhance the ease of access to critical information. Furthermore, the system will require regular updates to ensure that new developments in forest management are continuously reflected and that forest owner and managers from large to small holdings remain informed of the latest innovations.

One of the most ambitious undertakings of the project will be the creation of a national forest land registry. This registry will utilize Geographic Information Systems (GIS) and databases to compile attributed data for each forest plot, covering protected, managed, rehabilitated, and restored forests, as well as plantation forests. This centralized registry will not only aid in the monitoring of forest establishment and management activities but also offer several broader benefits. For instance, it will help support the certification of origin for forest products, offering transparency and traceability in the marketplace. Additionally, the registry will serve as a foundational element in Ethiopia's planned entry into the carbon certificate market. By providing verifiable data on forest conservation and management efforts, the registry can serve as evidence for carbon offsetting initiatives, allowing the country to participate in global carbon trading schemes.

The activities implemented under this component are:

- Review of policies and strategies for promotion of in-country processing of products from forests and promote stakeholder coordination and regular policy dialogues
- Collect and review existing guides and manuals on sustainable forest management and effective forest rehabilitation, and establishment of forests for production and ecological purpose and making work standards, manuals and guidelines available on an internet platform
- Creation of an internet based national forest land registry for protected, managed, rehabilitated and restored forests or plantation forests.

### 5.3.4 Objectives and Expected Results

The main objective of pillar two is to reverse land and forest degradation, which is at the moment at an alarming rate. The main activities include establishing plantation to produce forest products for local consumption and for marketing and to restore degraded landscapes. The different interventions including afforestation and reforestation, soil and water conservation assisted natural regeneration and farmers managed natural regeneration and overall watershed management in addition to providing livelihood means, they also contribute to creation of habitats to enhance biodiversity and sequestration of carbon from the atmosphere. Carbon removal will generate additional income for the local communities. The integrated interventions will rehabilitate forests and other community land ecosystem services, reduce soil erosion and improve soil fertility and availability of water resources and quality. This is especially intended with the corridor plantations along water bodies, where shading trees will keep the water temperature lower and, in that way, contribute to higher oxygen content and enhance the water quality. All activities should be well documented and information on locations and sizes need to be made available in a database at central level for monitoring and reporting.

Table 9: Key activities and targets set for pillar 2

| **Activity in Integrated Landscape and Ecosystem Services Restoration** | **Target** | **Unit** | **Technique Applied** |
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| | | | |
|---|---|---|---|
| Local level forest landscape use planning to ensure sustainable natural resources management | 170,000 | ha | Participatory Land Use Planning |
| Support community-based restoration through calls for competitive restoration projects | 6,000 | ha | Assisted Natural Regeneration |
| Restoring catchments around and along water bodies (lakes, rivers creeks) | 30,000 | ha | Assisted Natural Regeneration |
| | 4,500 | ha | Afforestation and Reforestation |
| Establish rehabilitated sites to connect fragmented habitats by restoring degraded forest lands | 70,000 | ha | Assisted Natural Regeneration |
| Plantation of fast-growing tree species, exotic trees with long rotation and indigenous trees on communal and private lands | 2,000 | ha | Afforestation and Reforestation |
| Establishment of bamboo plantations in highland and lowlands with the site adapted species | 2,000 | ha | Afforestation and Reforestation |
| Promoting smallholder plantations | 2,000 | ha | Afforestation and Reforestation |
| Sustainable management of existing community forests | 2,000 | ha | Afforestation and Reforestation |
| Capacity building and education for women, youth and other vulnerable groups on landscape restoration | 20 | Community | Training, workshops, peer learnings |
| Involving women, youth and other social groups in ground restoration activities | 25 | Community | Participatory approach starting from the planning upto the implementation |
| Supporting Sustainable Livelihoods and Economic Empowerment of women youth and other social groups | 20 | Community | Provision of technical and financial backup |
| Promoting Use of technology and digital communication by women and Youth | 10 | Woreda | Training |
| Policy advocacy and networking for gender equity and social inclusion | 4 | Region | Establishing platforms and institutional linkage, organizing workshops |

## 5.4 Pillar 3 – Climate Resilient Agricultural Practices

### 5.4.1 Problem Statement, Contribution to Transformation, Readiness and Rational for CIF Investment

**Problem statement:**

The agriculture sector absorbs more than three quarters of employment, accounts for 36 percent of output, and the bulk of total exports, which are dominated by coffee. It accounts for 43% of GDP, and 87% of employment. Domestic agricultural production is dominated by cereals, with livestock production contributing 32% of agricultural GDP. A gradual structural transformation has seen a shift towards the service sector. Still, the agriculture sector is growing at around 6% p.a., making a very strong contribution to

overall economic growth. However, the sector is increasingly vulnerable to climate change, with shifts in rainfall patterns, rainfall variability, droughts and floods, as well as rising temperatures. Ethiopia's GDP is strongly correlated with rainfall patterns, with significant losses in export earnings in drought years. The 2022 drought was the worst in 40 years, severely affecting seven million people in the southern and eastern parts of the country alone – an indication of the growing impacts of climate change. Projections indicate climate change may reduce the country's GDP by up to 10% by 2045, largely through drought-induced impacts on agricultural productivity. Adverse climate change impacts are exacerbated by widespread land degradation and soil nutrient depletion, as well as pests and diseases. All of these, together with decreased soil moisture retention and biodiversity losses, tend to reduce agricultural production and productivity. A low level of agricultural inputs, a critical lack of access to finance, weak institutional and human capacities and limited access to technology and markets contribute to low agricultural productivity. With limited private sector engagement, the agriculture sector is dominated by smallholders. Farmland highly fragmented, land use planning is weak and there is little value addition at farm level. Policies and strategies aim to transform agriculture and build climate resilience, with an integrated set of interventions that boost productivity and bolster sustainability.

**Proposed Contribution to Initiating Transformation:**

This pillar aims for transformational change, with large-scale positive impacts, building resilience and reducing GHG emissions in farming and livestock production, while increasing productivity and promoting social inclusion and equity. It will target issues at the interface of crop and livestock production, and forest, soil and water resources management. Through the careful design of climate smart agricultural practices, the project aims to promote the harmonious development of the agriculture, natural resources and water and energy sectors, tackling the challenges that undermine agricultural productivity, as well as issues related to the sustainable management of natural resources/forests including soils and water resources across different agro-ecological zones. These CSA interventions offer an opportunity to address the needs of both smallholder farmers and pastoral communities, who are the most vulnerable to climate change. An example is the scaling up of biogas installation at household level. The use of animal manure as an input in meeting household energy demand will in turn reduce pressure on forests, while the bio slurry provides organic fertilizer to improve soil fertility, reducing expenditures on inorganic fertilizer as well as soil GHG emissions related to the use of urea fertilizer. Increased biomass from crop residues enhances livestock feeding, so that the project helps to build a circular economy along the agriculture and forest sectors value chains.

Transformative interventions under this pillar include:

- Addressing knowledge and policy barriers
- Promoting policy coherence/alignment
- Enhancing institutional and human capacity to implement CSA and NbS
- Promoting integrated project management at landscape, watershed level
- Generating broader economic, social and ecosystem services gains from the recovery of degraded landscapes,
- Reducing gender disparities and ensuring social inclusiveness and equity
- Strengthening and diversifying sustainable livelihoods and economic opportunities, while building resilience and adaptive and mitigation capacity, and promoting food and nutrition security.
- Identifying context-specific project interventions at landscape level, for the different, with a documented set of proven CSA and NbS practices for the different production systems across agro-ecologies.
- Making use of MoA's Community-based Participatory Watershed Development Guidelines in accelerating implementation of prioritized project interventions.

**Implementation Readiness**:

Ethiopia's readiness to implement the NPC CIF IP is demonstrated the successful implementation of flagship programs supported by MDBs and development partners. Completed and on-going CSA projects have produced tested practices, confirmed in assessments that indicate the complementarity of the CIF NPC IP

and these closely related development projects, which have shown positive outcomes in agriculture and natural resource development across the country. These projects include: ii) Climate Action through Land Scape Management Program for Result (CALM-P4R), ii) Rural Productive Safety Net Program (RPNSP), iii) Sustainable Land Management program (SLMP), iv) Participatory Agriculture and Climate Transformation Program (PACT), v) Smallholder Irrigation Development & Expansion Project /SHIDEP/, vi) Development Response to Displacement Impact Project-II, vii) De-risking, Inclusion and Value Enhancement of Pastoral Economies (DRIVE) (DRDIP II), viii) Drought Resilience and Sustainable Livelihoods Programme - II (DRSLP II), ix) Livestock and Fisheries Sector Development Project (LFSDP), x) Ethiopia Emergency Locust Response Project (EELRP), xi) Establishing Agricultural Mechanization Center of Excellence (AMCE), xii) REDD+ Investment Program (RIP). Ethiopia has developed a solid knowledge base on the implementation of NbS and CSA practices. More than 18 NbS measures have been implemented under flagship programs in more than 16 production systems across the different agro-ecologies. Moreover, the preparation of this CIF IP has been need-based, considering local contexts. The diagnostic assessment identified the NbS measures and CSA practices best suited to the different production systems, as well as related constraints. With existing knowledge on widely implemented NbS and CSA practices, and with the experience gained in managing flagship programs, the country is well positioned to effectively and efficiently implement the CIF NPC IP. Implementation of the CIF NPC IP will benefit from existing institutional arrangements and governance structures, including those for procurement, financial management, contract management and the operation of Project Coordination Units. There are different Steering Committees and Technical Advisory Committees established at national and regional levels which will serve as building blocks of the institutional arrangements for the management of the IP. Various guidelines and manuals provide practical guidance on *inter alia* the selection of technologies and planning of interventions, including stakeholder engagement and the selection of project areas and beneficiaries, and are further evidence of Ethiopia's preparedness of Ethiopia to implement the CIF NPC IP.

**Rationale for NPC Financing**:

There is a strong case for the CIF to financially support the Ethiopian CIF NPC IP. Ethiopia's IP intends to implement NbS and climate smart agricultural practices to tackle, in an integrated manner, the multiple drivers of deforestation and land degradation, while reducing GHG emissions. Ethiopia as a nation and its millions of people, largely smallholder farmers and pastoralists, are increasingly vulnerable to climate change, so this IP will directly serve millions of people in vulnerable communities. The investment will help millions of smallholders to transform their land management and livelihood practices, adopting climate smart and sustainable practices. The IP will also help the country to achieve its GHG emission reduction targets as set out in the NDC, and those of the LT-LEDs. The identified NBS and CSA practices will have positive biodiversity conservation and disaster risk reduction/management impacts across landscapes, benefiting smallholder farmers and pastoral communities. Participants in the joint mission meeting were actively engaged and identified key NbS measures and CSA practices for this IP. It is also important to note that the investment will help the GoE to support the engagement of the private sector, encouraging investment in NbS and helping to accelerate the circular economy, while also empowering women and youth in decision making processes in land and natural resources management, thereby helping to reduce inequalities. NPC financing will support a coherent set of interventions that are aligned with government policy, building on and complementing multiple related interventions, and will also address CIF priorities. This financing is urgently needed, given the severity of the environmental challenges faced, but the prospects for generating impact and success are correspondingly good. NPC financing also offers good prospects for leveraging additional resources and scaling up on the basis of successful implementation.

### 5.4.2 GESI and Private Sector Involvement Options

**Private Sector Engagement Options**

Agriculture accounts for 32% of Ethiopia's GDP (in 2023) and 62.8% of employment (in 2022)[75] [1]. There is, thus, great potential for CSA to contribute to climate change action, at the same time as meeting pressing economic and social goals. The private sector is expected to make a substantial contribution to increased production and productivity, with an important role to play in transferring and developing technology and new techniques, building on smallholders' traditional knowledge, in improved agricultural knowledge systems that utilize digital technology and enhanced telecommunications. Government plays important roles, in direct interventions, as well as in coordinating and facilitating the engagement of smallholders, agribusiness and the private sector, which plays a vital role supplying a widening range of inputs and services. CSA and agroforestry will make substantial positive contributions to climate change adaptation and mitigation. Production will increase over time, to meet growing domestic demand for fruits, agricultural and livestock products, with an expanding role for the private sector, in marketing smallholder produce, as well as in the development of related processing and value addition. While agribusiness holds the prospect of increased production and the deployment of productivity-enhancing technologies, the cooperation of smallholders and firms can help to meet social and climate goals. Linking smallholders to upstream market actors will help to increase access to finance, training and new technologies. Product collection centres can help to improve service provision and quality improvement. Nurseries managed by local cooperatives can be commercially sustainable. Private firms can enhance input supply and the provision of veterinary and other services. As elsewhere, private sector engagement in CSA involves linking local producers to firms, in value chain development processes based on inclusive business models, with the establishment of platforms for the promotion of public-private partnerships and the engagement of financial services providers. But there are issues to be addressed in agriculture. Risk and uncertainty are pervasive and exacerbated by climate change. De-risking, risk-sharing instruments and guarantees, as deployed by IFC, are vital to encourage lending by local banks, for whom agriculture represents a very small share of loan portfolios. There is also a need to establish participatory agricultural knowledge systems, providing platforms for smallholders, research institutions, development programs and the private sector to engage in co-learning and develop productivity-enhancing techniques.

It is critical to expand the agriculture sector's access to finance, with factoring, warehouse receipts and leasing, as well as access to insurance. Climate sensitive sectors need tailored financial instruments. But greater access to finance must be accompanied by other forms of targeted support. The private sector can promote the uptake of productivity-enhancing CSA innovations. In addition to interventions that promote lending through domestic banks, MDBs can provide more direct support to private sector development, with expanded advisory services. IFC supported access to improved seeds and CSA training for smallholders supplying malt barley to Soufflet Malt Ethiopia. Recently, AfDB approved a grant of $42.86 million for the Agri-MSMEs Development for Jobs Program [1], which aims to boost the growth and productivity of youth and women-led MSMEs. Additional funding comes from the Development Bank of Ethiopia and GoE. The program improves access to finance and business development services, while strengthening the entrepreneurship enabling environment. This initiative directly supports the kinds of GESI measures advanced in this IP, promoting financial inclusion and enhanced service provision. A Youth Entrepreneurship Bank will be backed by a national Public Credit Guarantee Scheme to incentivize lending. This integrated program exemplifies the way in which MDB support can amplify GoE action, in collaboration with domestic banks, to promote private sector development related to NbS. Under this IP, MDB participation in multi-stakeholder platforms alongside domestic banks, government and NbS-related market actors can deepen relationships and shared understanding, as well as foster new initiatives.

**Gender Equality and Social Inclusion**

[75] https://www.afdb.org/en/news-and-events/press-releases/ethiopia-african-development-fund-approves-ne...3-million-boost-access-finance-and-non-financial-services-ethiopian-youth-and-women-led-msmes-71026

Climate change poses significant threats to agricultural productivity, food security, and the overall well-being of communities, particularly in regions where farming is the primary livelihood. A climate-resilient agricultural system is designed to adapt to the impacts of climate change, ensuring that communities can maintain and enhance their livelihoods even in the face of erratic weather patterns, extreme climate events, and environmental degradation. This approach integrates sustainable practices, improved technology, and adaptive strategies to create a system that is both productive and resilient to climate stressors. Accordingly, our project on Promoting Climate Resilient Agriculture System can contribute to community livelihood in the following manner.

**Enhanced Food Security**
Our project on Climate-resilient agriculture ensures stable food production despite the increasing frequency and intensity of climate-related disruptions. Communities that adopt the system can continue to produce sufficient food for their needs, reducing the risk of hunger and malnutrition through the use of drought tolerant crops, diversification of crops and efficient water utilization:

**Income Stability and Diversification**
Our project on climate-resilient agricultural systems helps stabilize and even increase household incomes by reducing vulnerability to crop losses. It also provides opportunities for income diversification through the introduction of various livelihood options:

- Agroforestry: Combining trees with crops and livestock offers multiple income sources. Trees provide timber, fruits, nuts, and fuel wood, while also improving soil fertility and reducing erosion. This additional income stream makes households less reliant on a single crop, buffering them from market volatility or climate-induced losses.
- Livestock management: Resilient systems incorporate sustainable livestock practices, such as rotational grazing, which prevent overgrazing and land degradation while improving livestock productivity. Healthy livestock provide dairy, meat, and other products that contribute to household income and nutrition.
- Value-added products: Through climate-resilient practices, farmers can also engage in processing their products, such as turning raw crops into jams, oils, or other marketable goods. These processed goods can command higher prices, increasing household earnings.

**Reduced Vulnerability to Climate Change and Extreme Weather Events**
Our project on climate-resilient agriculture better equips communities to cope with climate-related stocks, such as extreme weather events, prolonged droughts, or floods. It integrates practices like soil conservation, integrated pest management and drought tolerant seeds that enhance the resilience of the land and farming operations which are vital for building resilient community livelihood which enable communities to mitigate and/or quickly recover from the adverse effect of climate shock.

**Sustainable Use of Natural Resources**
Our project on climate-resilient agricultural systems emphasizes the sustainable use and management of natural resources, which benefits both the environment and the livelihoods of the communities that depend on these resources. For example, Climate-resilient practices like agroforestry, cover cropping, and reduced tillage help sequester carbon in soils and vegetation. This improves the fertility and structure of soils, which benefits crop yields and in turn livelihood.

**Capacity building and knowledge sharing**
Our project on Climate-resilient agricultural systems involves capacity building and knowledge-sharing initiatives within communities. These initiatives equip farmers with the skills and knowledge needed to implement sustainable farming practices as important livelihood option and adapt to changing conditions.

**Improved Health and Nutrition**

The project on climate-resilient agriculture can improve community health and nutrition by providing diverse and nutritious diets via crop diversification, improving access to clean water using water conservation practices and reducing exposure to harmful chemicals by adopting integrated pest management and organic farming techniques. The improved health and nutrition have a direct positive impact on the productivity of labour and hence livelihood of the community.

**Strengthened Social Networks and Community Resilience**
Our project on climate-resilient agricultural practices proposes collective action and community involvement, strengthening social networks. For instance, communities may form cooperatives to pool resources, share knowledge, and collectively manage risks. These cooperatives can improve access to markets, credit, and technical assistance, which helps members improve their livelihoods.

In general, a climate-resilient agricultural system is essential for communities facing the challenges posed by climate change. To this end, this project helps to safeguard and improve livelihoods by enhancing food security, diversifying incomes, reducing vulnerability to climate shocks, promoting sustainable resource use, and improving health outcomes.

### 5.4.3 Components of Pillar three

**Component 1– Enhancement of Soil Heath on Farmlands**

Ethiopian farmlands rely on a traditional cereal-livestock mixed farming system using oxen ploughs, which excludes trees and involves removing crop residues for livestock feed and fuel. This practice leads to overgrazing, soil acidity in highlands, and salinity in lowlands, causing significant soil erosion and economic losses. Current soil fertility methods, like inorganic fertilizers, are not sustainable and increase emissions.

Land degradation and climate change reduce agricultural productivity and disrupt value chains, allowing middlemen to manipulate markets. To address these issues, climate-smart agriculture (CSA) and nature-based solutions (NbS) are being promoted. These include agroforestry, silvopastoral systems, and sustainable land management to improve soil health, enhance resilience, and support global climate action. Activities focus on conservation agriculture, crop rotation with trees, and using organic fertilizers.

**Component 2– Improving Farm Productivity through Climate Smart Agricultural Practices**

The agriculture policies and local implementation to increase productivity are resulting into application of artificial fertilizer and agricultural land expansion. The annually cultivated land area for all crops increased from 10.1 million hectares in 2004/2005 to 13.3 million hectares in 2018/2019 - implying crop land expansion at a rate of >213,000 hectares of land annually.

From the viewpoint of climate change adaptation and mitigation, arable land expansion and increased fertilizer application are not climate smart practices and do not represent nature-based solutions measures. Accordingly, this IP will focus on productivity-enhancing CSA practices and the establishment of supportive systems.

Focus for improved CSA in agricultural practices in Lowlands thus have to introduce different practices and will include

- Drought-Resistant Crops: Planting drought-tolerant crop varieties such as sorghum and millet to withstand prolonged dry periods.

- Water Harvesting: Implementing water harvesting techniques like ponds and check dams to capture and store rainwater for irrigation during dry spells.
- Agroforestry: Integrating trees with crops and livestock to provide shade, reduce soil erosion, and improve soil fertility.

Focus for improved CSA in agricultural practices in Midlands will include

- Conservation Agriculture: Practices such as minimum tillage, crop rotation, and cover cropping to maintain soil structure and fertility.
- Integrated Pest Management (IPM): Using biological pest control methods and resistant crop varieties to reduce reliance on chemical pesticides.
- Efficient Irrigation Systems: Drip and sprinkler irrigation systems to optimize water use and reduce wastage.
- Soil Fertility Management: Applying organic fertilizers like compost and manure to enhance soil health and reduce dependency on chemical fertilizers.
- Terracing: Constructing terraces on slopes to reduce soil erosion and increase water infiltration.
- Agroforestry: Planting trees and shrubs alongside crops to improve biodiversity, soil fertility, and carbon sequestration.
- Improved Crop Varieties: Using high-yield and disease-resistant crop varieties to increase productivity and resilience to climate change.

**Component 3– Livestock and Rangeland Management**

Livestock production plays a crucial role in the livelihoods of millions of smallholder farmers, agro-pastoralists, and pastoralists in Ethiopia. Several production constraints contribute to the low supply of livestock products which need to be addressed by the IP interventions to make livestock and rangeland management climate resilient:

- Shortage of feed, both in quantity and quality,
- Insufficient and inefficient artificial insemination and veterinary services,
- Limited access to credit service,
- Lack of awareness about productivity improving technologies,
- Lack of motivation and insufficient attention to its economic and nutrition importance,
- Long market chains:
- Lack of market-oriented production:

To enhance livestock production and productivity practices in livestock keeping will have to include

- Improved Grazing Management: Rotational grazing and controlled grazing periods to prevent overgrazing and maintain pasture health.
- Integrated Crop-Livestock Systems: Combining crop and livestock farming to optimize resource use and enhance nutrient cycling.
- Production of high nutrition fodder on separate lands to allow keeping animals in feed lots.

**Component 4– Private Sector Engagement and Value Chain Development**

Ethiopia has the largest livestock population in Africa, largely under traditional management by pastoralists in the drylands. EFD has developed a National Drylands Restoration Strategy[76], endorsed by the Ministry of Agriculture, which emphasises participation, the integration of crops, trees, livestock production and water management, underpinned by the development of key value chains. Value chains that offer scope to enhance productivity and marketing include those for meat, milk, skins and hides.

Interventions need to be tailored to the distinct production systems – extensive livestock keeping in the pastoral lowlands and smallholder animal husbandry in the highlands and midlands. Veterinary services are a priority, with private provision playing a major role. With only a small number of large commercial dairy farms and meat producers, pastoralists and smallholders are the dominant players, supplying consumers and firms. Public-private cooperation is important in meat marketing, in the zoning and establishment of holding grounds, abattoirs and meat marketing facilities, as well as in the establishment of dairy processing hubs. In the lowlands, there has been a growth of peri-urban milk supply, led by individual entrepreneurs, with investments in the necessary water supply and improved feed. The productivity of dairy production, with large volumes in the highlands and in Oromia, is much lower than in comparable Sub-Saharan countries. Increasing productivity here can do much to reduce GHG emissions. Value chain development involves linking smallholders and firms, with different forms of support. The World Bank's BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL)[77], in collaboration with an international NGO, is piloting and testing a new business model in Oromia based on dairy service hubs. These are commercial operations that link smallholders to processing firms and facilitate access to inputs, services and high-quality animal feed, as well as training, at the same time as promoting climate-smart practices. This program also aims to generate evidence and demonstrate the business case for dairy service hubs, thereby supporting scaling out by private actors. This is an important aspect of the approach to knowledge management in this IP.

Activities will include:

- Promote value chain development, linking smallholders to upstream market actors, with enhanced access to finance and training, alongside technology and skills transfer
- Promote climate smart cattle and shoats fattening
- Support dairy goods production from cows, goats, and camels
- Enhance honey production from bee keeping
- Promote sustainable fishing and marketing of fish
- Support climate smart broiler production and marketing
- Support enhancement of specialized commercial post-harvest storage facility

**Component 5– Enhance Gender Equity, Social Inclusion and Livelihood Development**

In promoting climate-resilient agricultural practice, effective programs must mainstream gender and social equity, recognizing the different roles, vulnerabilities, and capacities of various social groups in the agricultural landscape. In Ethiopia, women play a crucial role in agriculture, particularly in small-scale

[76] https://blogs.worldbank.org/en/africacan/green-milk-sounds-good-ethiopias-dairy-industry

[77] Ministry of Agriculture and PENHA, 2022. Ethiopian National Drylands Restoration Strategy. Ministry of Agriculture, Federal Democratic Republic of Ethiopia, and the Pastoral and Environmental Network in the Horn of Africa, Addis Ababa, Ethiopia

farming. They are often responsible for food production, seed selection, water management, and post-harvest activities. Yet, women frequently have limited access to resources such as land, credit, and extension services.

Women and vulnerable groups often possess valuable traditional knowledge related to sustainable agriculture. Their knowledge is critical in developing climate-resilient practices that are locally adapted and sustainable. On the other hand, climate change disproportionately affects women and vulnerable communities. These groups are often more vulnerable due to existing inequalities in access to resources, decision-making power, and opportunities for adaptation. So, mainstreaming gender and social equity ensures that women and vulnerable groups have equitable access to the resources needed for CSA. This access is crucial for enhancing food security and reducing poverty. Apart from improving agricultural outcomes, this holistic approach also enhances social cohesion and resilience to future shocks. This component will therefore aim to point out strategic options to enhance the mainstreaming of gender and social equity in building a climate resilient agriculture system.

Activities will include:

Climate Education and Awareness for women and vulnerable groups

- Offer training on sustainable farming practices such as agro-ecology, organic farming, and conservation agriculture.
- Provide training on efficient water use, rainwater harvesting, and irrigation management to ensure water availability during droughts
- Organize workshops to educate women, youth, and vulnerable groups about climate change, its impacts on agriculture, and adaptation strategies.
- Document successful climate-resilient practices and share them with women and vulnerable groups through local networks
- Organize Peer learning exchanges where women and vulnerable members can visit other farms in their nearby areas to learn about successful climate-resilient practices.

Involving women and vulnerable groups in the project planning and Implementation of Climate-Resilient Practices

- Facilitate a participatory approach where women, youth and other vulnerable groups can participate in the planning of climate resilient agriculture project
- Promote the use of drought-tolerant, flood-resistant, and heat-tolerant crop varieties among women and vulnerable groups.
- Encourage intercropping, crop rotation, and the integration of livestock among women and vulnerable groups. to reduce risk and improve resilience.
- -Engage women and vulnerable groups in practices like cover cropping, composting, and reduced tillage to enhance soil health and resilience.
- -Involve women and vulnerable groups in constructing and maintaining water conservation Document successful climate-resilient practices and share them with women and vulnerable groups through local networks
- Engage women and vulnerable groups in reforesting degraded lands, which can help stabilize the environment and provide resources for the community.

Supporting Sustainable Livelihoods and Economic Empowerment

- Support the creation of value-added agricultural products such as processed foods, organic fertilizers, and natural pest repellents for women and other vulnerable groups.
- Facilitate access to markets and finance through training in business development, financial literacy, and the use of digital platforms for marketing.

- Encourage women and other vulnerable groups for alternative income-generating activities such as beekeeping, poultry farming, or handicrafts to reduce dependence on climate-sensitive agriculture.
- Support the formation of cooperatives among women, youth, and vulnerable groups to enhance collective bargaining power and resource sharing.
- Promote group farming practices that allow participants to share resources, reduce risks, and increase productivity through collaboration

Technological Innovation and Digital Engagement

- Provide training for youths in the use of digital tools such as mobile apps for weather forecasting, soil testing kits, and farm management software.
- Facilitate access to online platforms that offer agricultural advice, market information, and climate adaptation strategies.
- Train youths in using social media to raise awareness about climate-resilient agriculture and advocate for policy changes.
- Encourage the formation of online communities where women, youth, and vulnerable groups can share experiences, challenges, and solutions related to climate-resilient agriculture.

Advocacy and Policy Influence

- -Equip women, youth, and vulnerable groups with advocacy skills to influence local and national policies related to climate-resilient agriculture.
- Encourage active participation in local governance structures, such as village councils or agricultural boards, to ensure their voices are heard in decision-making processes.
- Partner with NGOs and civil society organizations to amplify advocacy efforts and bring the concerns of women, youth, and vulnerable groups to the forefront.

**Component 6– Capacity Development and Knowledge Management**

The transformation of Ethiopia's agricultural production systems from traditional practices to intensive commercial methods requires substantial investment in capacity development and robust knowledge management systems. This shift emphasizes the adoption of Climate-Smart Agriculture (CSA) practices and Nature-based Solutions (NbS). Achieving this will necessitate the development of a coherent policy and legal framework that supports CSA and NbS for sustainable farm and livestock production. Such policies must ensure food and nutrition security, enhance export earnings, and build climate resilience while promoting environmentally friendly agriculture. Ethiopia has enacted various agricultural policies, but a lack of coordinated implementation across sectors hampers efforts to build institutional and human capacity, provide effective CSA practices, and apply NbS measures. To overcome these challenges, it's crucial to address capacity gaps, enhance knowledge and information systems, and align climate services with local climate conditions, promoting sustainable agricultural practices that balance food security, climate change mitigation, and environmental integrity. Currently existing key gaps in skill, knowledge and information management include among others:

- Limited technical capacity to provide local level climate services and climate proven technology,
- Lack of technology at required level
- Presence of community’s reluctance to adopt climate proven technology and practices
- Lack of well-established information flow system both horizontally and vertically
- Limited finance to support provision of comprehensive set of climate proven technology and practices,

Addressing these and other capacity gaps are considered in the details of the IP as described in terms of capacity building activities. Activities will include

- Establish infrastructure and build human capacity for robust knowledge management system
- Provide capacity building training on knowledge management systems
- Establish IT based networking and communication channels for horizontal and vertical flow of information and data
- Establishment of a climate data, climate service and early warning information dissemination system
- Establish Climate Disaster Risk Reduction Committee for effective early warning preparedness and disaster response.
- Creation of an internet based national farmland registry for tracking changes in land use fertility in response to CSA practices and NBS measures
- Expand digital platforms for agricultural knowledge systems and financial services (linked to recently established, innovative private sector and governmental programs.
- Collect and review existing polices, namely: land use, land tenure, wate, forest environment and other policies, and regulations and directives as well as watershed management guidelines and manuals to guide sustainable land use planning and bylaws interfacing up-and low stream farming and pastoral communities
- Strengthening farmer training centres to provide harmonized hands-on trainings supported with on farm activities.

### 5.4.4 Objectives and Expected Results

Pilar 3 aims at reaching out to 62 communities, user groups or local organisation and want to initiate 5 processes and 1 system to be set up. The processes are focussing on

- Trainings for Concerned federal, regional and woreda offices and woreda project coordination offices.
- Support to horizontal and vertical exchange of information and data
- Support woreda level disaster risk reduction committee (DRRC)
- Internet based land use registry
- Digital platforms linking the private sector and financial services are in place.
- Review report with findings what is to be done.
- On farm station trainings services are provided

The project is intending to support the establishment of a climate early warning information system, which will provide farmers with information to prepare for extreme weather events that will affect their farming and assist them in protecting their livestock against the impacts of these events.

The intended results in GESI will include that women and vulnerable groups involved in various climate resilient agricultural practices, climate smart agricultural practices adopted by women and vulnerable groups, agricultural processing/value adding activities tailored to women and vulnerable groups are introduced and scaled up and market access is enhanced for climate smart products of women and youth. Digital tools for farm management activities and information access are to be introduced with this project.

The value chain development and private sector involvement relies on the provision of technical trainings in the various activities proposed as alternative income and livelihood activities, from bee keeping foddering production for livestock. The development of business concepts and related trainings should result into enhanced knowledge level and increased income from these management activities for the local population

The objectives of the climate smart agriculture and livestock management activities are focussing on the change from practices that have a negative impact on environment and climate to increased application of

practices with positive impacts on the environment without losing options for increased productivity. This shall be achieved by provision of technical trainings and advisory services.

Summary of project activities and expected targets are presented in the Table below.

Table 10: Activities and Targets of pillar 3

| **Activity description** | **Targets** |
|---|---|
| Advocacy and awareness raised for policymakers, private actors, CBOs, media, and others, leading to a paradigm shift in NBs and CSA practices applications, rangeland management, postharvest management, and value chain development; 200 participants trained | Promotion and enhancement of 150 biogas-groups/community achieved in 25 project woredas; 500 households benefitted, |
| Enhanced community awareness and advocacy on sustainable rangeland management achieved in 12 project districts; 14440 households participated. | Small holder farmers and pastoralists supported, successfully established 25 community groups engaged in livestock fattening and poultry farming; 3000 households benefited |
| Solar energy adoption for postharvest storage, collection and onfarm processing facilities successfully in placed in 25 project districts, 3000 households benefited, | climate smart agricultural practices on 3600 ha of rangeland management implemented; benefitting 1400 households of 12 project districts |
| Capacity-building training provided on CSA and NBS; 150 experts trained | |
| Access to finance and market linkages facilitated for 25 post-harvest collection and processing sites in 25 project districts; 9300 households benefitted. | Infrastructure established and human capacity built for a robust knowledge management system on NBs/CSA at higher and operational level; benefitted 2 federal, 8 regional and 25 woreda institutions benefitted. |
| Private sectors successfully engaged in postharvest collection and processing (e.g. dairy, fish, egg, vegetables, fruit) in 25 project woredas; 3000 households benefitted | Work standards, manuals, and guidelines for CSA/NBs implementation established and made accessible to users |
| Small scale irrigation schemes to irrigate 2000 ha in 25 project districts supported; 3000 households benefitted. | Small holder farmers and pastoralists engaged in small ruminant livestock fattening in 25 project districts; 3000 households benefitted |
| Climate service system for climate data dissemination and early warning preparedness successfully established/strengthened in 25 woredas and 1 federal institute; > 9300 farmers and pastoralist households benefited with early warning systems. | Infrastructure established and human capacity built for a robust knowledge management system at higher and operational level; 2 federal, 8 regional and 25 woreda institutions benefitted. |
| 6000 ha of degraded riverine areas and wetlands restored; 3000 households engaged/ benefitted as part of climate smart water resource management and flood risk reduction | Web-based national rangeland and riverine forest registry system aligned with woreda level land cadastre successfully established for forest and range lands under private, public and community management system in 25 woredas. > 9300 households benefitted. |
| Access to finance and market linkages facilitated for 25 post harvest collection and processing sites in 25 project districts; 9300 households benefitted. | Infrastructure established and human capacity built for a robust knowledge management system on NBs/CSA at higher and operational level; benefitted 2 federal, 8 regional and 25 woreda institutions benefitted. |
| Private sectors successfully engaged in postharvest collection and processing (e.g. dairy, fish, egg, vegetables, fruit) in 25 project woredas; 3000 households | Work standards, manuals, and guidelines for CSA/NBs implementation established and made accessible to users |

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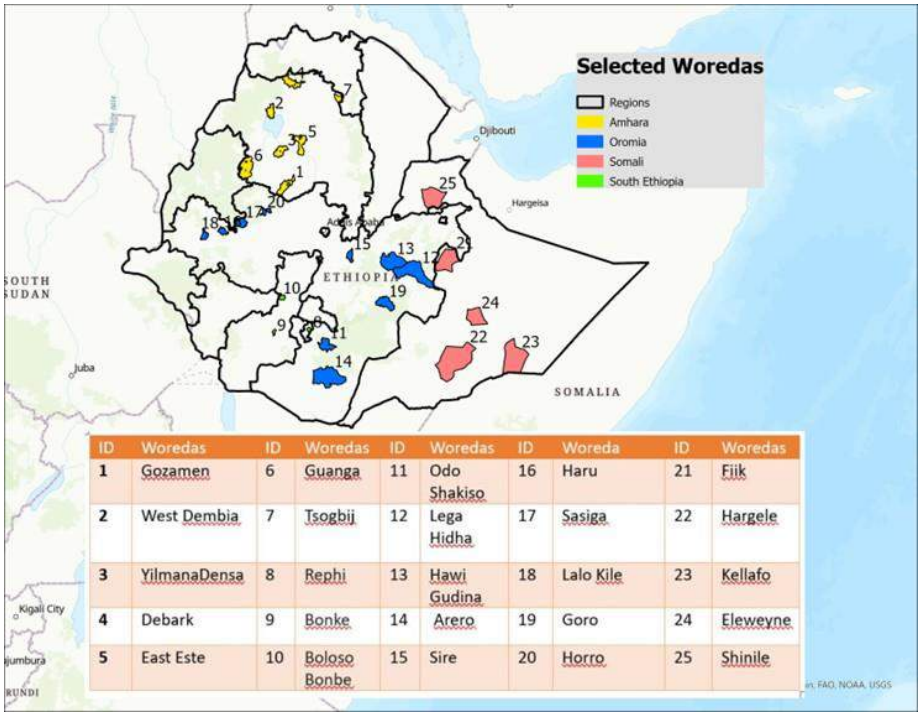
# 6. PROGRAM IMPLEMENTATION ARRANGEMENTS

## 6.1 Locations of the IP Implementation

The CIF NPC financing grant guides that project implementing sites should be located following landscape approach that enables to easily integrate natural resources and climate conditions with human land use activities and livelihoods. In this respect, the geographical setting of Ethiopia allows to identify suitable districts that are well representing the different climate regions, natural resources bases and human activities/livelihood sources. In the Ethiopian landscape context, there are three major climatic zones demarcated by altitude and climate gradient along the landscape. These are: i) Low land with altitude below 1500 m, annual rainfall below 900 mm, temperature > 20°C; ii) Mid highlands with altitude 1500 – 2400 m, rainfall 900 >1400 mm, temperature 20 - 17°C and iii) Highlands with altitude above 2400 m, rainfall 900-1400 mm, temperature < 17°C. Since the three landscapes (lowlands, mid-highlands and highlands) have distinguished set of land resources (forest and water), livelihoods, climate induced disaster risks, agriculture production and land use systems, deforestation and soil degradation as well as investment potentials and challenges; the Joint mission workshop (June 3-5, 2024) suggests that the districts to be selected for CIF NPC IP implementation should represent each of three AEZ following the landscape/ basin approach.

1. With this in mind, 25 districts were selected from 4 administration regions (Figure 8); Namely: 1. Amhara (1. Gozamen, 2. West-Dembia, 3. YilmanaDensa, 4. Debark, 5. EastEste, 6. Guanga, 7. Tsogbij);
2. South Ethiopia (8. Rephi, 9. Bonke, 10. Boloso Bonbe);
3. Oromia (11. Odo Shakiso, 12. Lega Hidha, 13. Hawi Gudina 14. Arero, 15. Sire, 16. Haru, 17. Sasiga, 18. Lalo Kile, 19. Goro, 20. Horro);
4. Somali (21. Fiik, 22. Hargele, 23. Kellafo, 24. Elweyne, 25. Shinile).

The selected districts represent the three landscapes. The selection process involved spatial mapping of AEZ, agricultural, rangelands, forest/wood lands, and water bodies, climate risk hotspots, restoration and conservation potentials, and suitability for NBs & CSA practices in order to draw comprehensive understanding of specific problems and potentials. This process has helped to propose project ideas that fit to the CIF NPC objectives while at the same time addressing locally existing problems. Furthermore, respective regional and woreda officials as well representatives of federal experts presented district specific climate induced problems and solutions during the stakeholders' consultations, which have facilitated prioritization of the NBS intervention areas for this NPC IP.




| ID | Woredas | ID | Woredas | ID | Woredas | ID | Woreda | ID | Woredas |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Gozamen | 6 | Guanga | 11 | Odo Shakiso | 16 | Haru | 21 | Fiik |
| 2 | West Dembia | 7 | Tsogbij | 12 | Lega Hidha | 17 | Sasiga | 22 | Hargele |
| 3 | YilmanaDensa | 8 | Rephi | 13 | Hawi Gudina | 18 | Lalo Kile | 23 | Kellafo |
| 4 | Debark | 9 | Bonke | 14 | Arero | 19 | Goro | 24 | Eleweyne |
| 5 | East Este | 10 | Boloso Bonbe | 15 | Sire | 20 | Horro | 25 | Shinile |

Figure 9: Location of CIF NPC IP implementation districts in Ethiopia

As discussed in above, Ethiopia's economic development activities face climate change and land degradation challenges; and such challenges are very acute across the three landscapes with different degree of vulnerability.

**Lowlands:** Eleven districts were selected from lowlands, namely, Boloso Bonbe, Lega Hidha, Hawi Gudina, Arero, Sasiga, Lalo Kile, Fiik, Hargele, Kellafo, Elweyne, Shinile. Most of the population in the selected lowland woredas are exercising pastoralist or agro-pastoralist lifestyle for which livestock: camel, cattle, sheep, and goats, are the top livelihood sources. Natural resources such as water resources/water bodies (lakes, rivers and streams), range- and forage lands, crop lands, wetlands, woodlands, riverine forests are key environmental assets supporting the livelihoods sources and served as source of household income. The lowlands are located at a geographic position where larger rivers and streams flow into the low-lying flood plain that receives fertile alluvial soils, which is important natural resource base food and fodder production. In this area, siltation through soil deposition process forces the course of the river to cause flush flooding at the event of heavy rainfall in the adjacent mountain landscapes. For decades there is a general public concern for the adverse effect of climate change and addressing recurrent drought risks to protect the communities and save human lives of pastoral and agropastoral livelihoods in lowlands. Reports on historical disaster damages confirmed that over 97% of the people impacted by natural disasters in Ethiopia are linked/associated to to droughts (78EM-DAT.2020). Studies on economics of climate adaptation (79UNU-EHS. 2021) conducted in Afar and Somali lowlands reported that draught plays a major role in the fragmentation of natural resource bases, because the natural resources bases are highly linked to the spatial and temporal changes in precipitation patterns. And yet, such fragmentation of resource bases closes off the mobility and flexibility needed by pastoral communities to manage climate risks. This further confirms enhancement of communities' vulnerability to the effect of the changing climate. UNU-EHS (2021) developed damage functions that identifies levels of vulnerability of livelihoods, natural resources and environment assets to climate change effects. In this respect, cattle are most vulnerable with Mean Damage

[78] EM-DAT. (2020). EM-DAT Data Base. Retrieved on 10.12.2020 from EM-DAT: https://www.emdat.be/.

[79] UNU-EHS. 2021. Economics of Climate Adaptation, Vulnerability Report Ethiopia, Draught Risk. Ethiopia.

Degree (MDD) of 17% as compared to camel and shoat that reach to MDD of 9% and 12%, respectively. Likewise, crops are most vulnerable with MDD as high as 50%. In the contrary, grassland / rangeland, wood- and shrub land, and un- or sparsely vegetated areas are less vulnerable. Furthermore, increased lack of rainfall and severe draught reduce water level and this in turn can have substantial effect on the existence of fragile ecosystems that are highly relying on the availability of water (e.g fish). Decreases in water level results washouts of high concentration of pollutants from agricultural and animal farming fields that further cause microbiological pollution and soil alkalinity. Additionally, warming of water during severe draught decreases level of oxygen concentration in water bodies and this would have effect on human and livestock health. Deforestation of riverine forests for agriculture and fuel wood and farmland expansion to range lands enhances vulnerability of communities and environmental asset to adverse effects of climate risks.

**Midlands and highlands:** These landscapes are most populated and characterized by intensive cereal-livestock mixed farming system that had been taking place for millennia. Eleven and three districts were selected to implement NPC IP in midlands and highlands, respectively. [80]Amede et al identified sixteen farming systems with investment potentials and challenges specific to local resources. These also include commercial perennial crops (namely coffee, chat) fruit and tuber crops as well as urban and peri-urban dairy. These landscapes are most producers/suppliers of food and are most contributors to the nation's food security and export earnings, but never meet local and national demands. Following extensive deforestation for expansion of farm and grazing lands, these landscapes face severe soil erosion, frequent forest fire, overgrazing, soil acidity, forested landscape degradation, siltation and declines of water bodies, fuel wood shortage, low biomass accumulation, erratic rainfall, mountain slope landslides etc. For example, of those land degradation and erratic rainfall effects currently occurred landslides causing severe human life losses during this year's summer rainfall. Furthermore, estimates of deforestation rate indicate that annual forest loss ranging between 62,000 ha and 150,000 are from the mid-and highlands ([81]Ethiopian forestry action plan; [82]World Bank 2001). Following these, heavy summer rainfall causes average annual soil erosion of 130 tons/ha for cropland and 35 tons/ha for all lands in the highlands. These magnitudes of forest-and soil resource losses led to loss of agriculture values between USD 139 million per year and over USD 1 billion a year ([83]Sonneveld. 2002). Draught, floods and landslides are critical environmental and climate shocks that break resource base links and market-production links by which most highlander rural communities are affected at most.

**Adaptation and mitigation measures have been done thus far:** In order to address the underlined climate risks and livelihood problems encountered across the three landscapes, studies recommend several NBs to be implemented across the landscapes from lowlands to highland (UNU-EHS.2021; [84]Bayle & Muluye. 2023; [85]MoA. 2020.; [86]Lakew et al. 2005). The government allocates substantial public expenditures and obtains

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[80] Amede T., Auricht C., Boffa J.-M., Dixon J., Mallawaarachchi T., Rukuni M., TeklewoldDeneke T. 2017. A farming system framework for investment planning and priority setting in Ethiopia. ACIAR Technical Reports Series No. 90. Australian Centre for International Agricultural Research: Canberra. 52pp.

[81] Ethiopia, Ministry of Natural Resources Development and Environmental Protection, 1993. Ethiopia Forestry Action Program. Vol. II.

[82] World Bank. 2001. African Development Indicators. Washington.

[83] Sonneveld, B. G. J. S. & M. A. Keyzer. 2002. Land Under Pressure; Soil Conservation Concerns and Opportunities for Ethiopia in Land Degradation & Development. Wiley Inter Science. www.interscience.wiley.com.

[84] Bayle & Muluye. Review on successful soil conservation methods

in Ethiopia. Cogent Food & Agriculture (2023), 9: 2274171 https://doi.org/10.1080/23311932.2023.2274171.

[85] MoA. 2020. Community Based Participatory Watershed and Rangeland Development: A Guideline. Ministry of Agriculture, Addis Ababa, Ethiopia.....Lakew Desta, Carucci, V., Asrat Wendem-Ageňehu and

financial, and capacity supports from multilateral development partners, UN agencies and MDBs and developed multi-sectoral flagship programs/projects; and has executed NbS as part of adaptation and mitigation measures for building climate resilient livelihoods. The following among others is proven NbS and CSA practices that are widely being implemented by government sectors and development partners across the landscape. These include wetland and riverbank restoration and rehabilitation, intercropping of trees with crops (Agroforestry), replanting of indigenous and improved fodder trees and grass species (Fodder Banks development), management of protected environmental areas, conservation agriculture, integrated watershed management though soil and water conservation schemes, sustainable water management, integrated nutrient management and establishment and rehabilitation of small- & medium sized irrigation systems, among others.

Yitayew Abebe (eds). 2005. Community Based Participatory Watershed Development: A Guideline. Ministry of Agriculture and Rural Development, Addis Ababa, Ethiopia.

[86] Lakew Desta, Carucci, V., Asrat Wendem-Ageňehu and Yitayew Abebe (eds). 2005. Community Based Participatory Watershed Development: A Guideline. Ministry of Agriculture and Rural Development, Addis Ababa, Ethiopia.

## 6.2 Institutional Arrangements

Ethiopian Forestry Development/EFD is the major implementor of the CIF NPC IP. Answerable to the Ministry of Agriculture, Ethiopian Forestry Development is an autonomous federal institution established by Proclamation No. 1263/2021 on January 25th, as referred to in Article 81-No. 8 and the Federal Government of Ethiopia Council of Ministers Regulation No. 505/2022. EFD is tasked with planning, implementing, monitoring, and reporting different Nature-based Solutions, including sustainable management and protection of forests and biodiversity resources, restoration of degraded landscapes and ecosystem services, monitoring and assessing forest and forest land changes and carbon balance, creating green jobs for the youth and women to alleviate poverty in Ethiopia. In collaboration with development partners, EFD is also empowered to raise additional funds for designing and implementing nature-based solutions, establish a forest fund, and make it functional upon approval. Through implementing different policies, strategies, and initiatives that conserve, restore, and develop land, forests and ecosystems, the EFD is responsible for playing a crucial role in achieving the ambitious targets set in the Nationally Determined Contribution (NDCs), the Long-Term Low Emission Economy strategy (i.e., forest and land use are expected to contribute more than 85% of the emission reduction), among others.

As far as this IP is concerned and as it involves agricultural interventions, EFD will closely work with MoA and its regional counterparts to implement the identified NbS interventions in the selected districts. EFD will be responsible to prepare an annual plan to be presented to the SC for approval and when approved will share the plan with regional counter parts for its implementation. EFD will also be responsible to plan and implement periodical M&E in collaboration with the rest of the IP stakeholders. It organises and execute capacity development interventions to key stakeholders, while also supporting partnership platforms to facilitate knowledge exchange and additional resources mobilization to ensure sustainability of the program. Equally important, EFD will serve as a chair of the Steering Committee and Technical Task Force at Federal level. EFD will also establish vibrant Program Management Unit, a vital component of the program, providing the necessary oversight, coordination, and control to ensure its successful delivery. The PMU will prepare adaptive plan, manage the day-to-day reporting and communication of the program, manage human and financial resources, build capacity, manage platforms, mobilize resources, among others.

Regional stakeholders including regional environment and forestry bureaus, and these related offices at district level are the one implementing the NbS interventions on the ground. Regional stakeholders in consultation with communities will select sites, implement, monitor and report the program interventions. Particularly, the district level PMU in collaboration with the national level PMU is responsible to closely follow/monitor, coordinate and report the interventions and overall program achievement.

In addition to EFD, UNDP, CIFOR-ICRAF and PENHA will be part of the implementing entities, with a focus on developing innovation, technology and model, building capacity, supporting exchanges, procurement and resources mobilization. The partners will also support EFD developing demand driven policy and strategy advice and compiling, packaging and reporting lessons. They also engage in designing and implementing M&E at strategic and grassroots levels. In addition, UNDP, CIFOR-ICRAF and PENHA will support government in quality assurance.

The overall planning, implementation, and delivery of the CIF NPC IP will be overseen and guided by a strong Steering Committee (SC) composed of EFD, MoA, MoF, MoPD, WBG, AfDB, IFC, and UNDP. The SC will prepare a comprehensive guideline to facilitate closer follow up, guidance and support of the IP implementation. The presence of the MDBs in particular not only strengthen delivery of high-quality results, but also to mobilize co-finances and promote engagement of the private sector to invest in NbS, among others. Similar structure composed of Environment/Forestry Agencies, Bureau of Agriculture, Land Administration Office, Finance, and other related offices will be established at regional level where the project implementing district will be part of the regional level Steering Committee, where the regional level SC will be chaired by the Environment/Forestry Authority. The SCs at federal and regional and district levels

will be supported by Technical Committees composed of technical experts mobilized from the SC institutions, but also involve regions and district representatives. The TC will provide on the ground technical support to ensure quality delivery of the planned interventions. A stringent and well-organized financial administration system will be established at all levels to ensure effective management of financial resources.

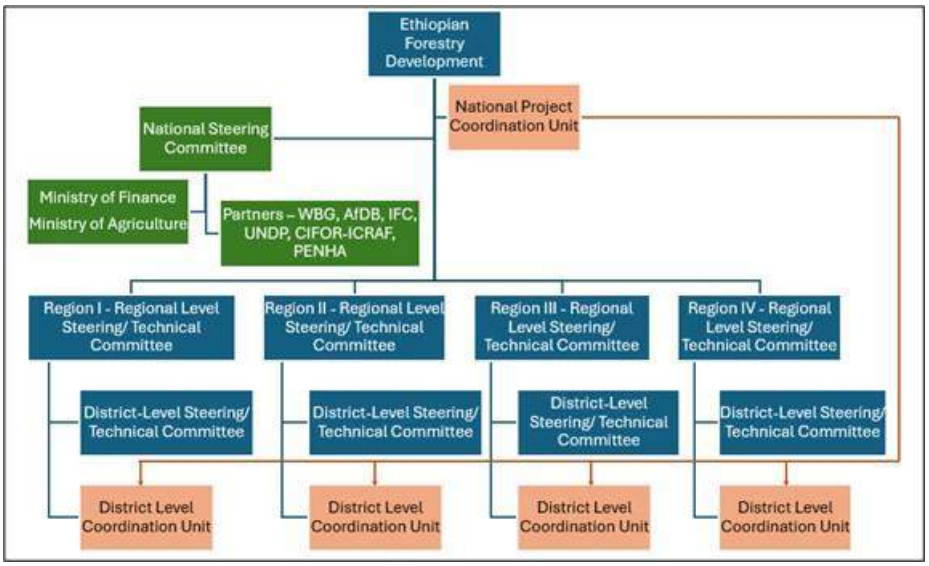


Figure 10: Schematic presentation of the institutional arrangement of the CIF NPC IP coordination

## 6.3 The MDB Investment Projects

The three pillars and their respective components are aligned with the pipeline NbS flagship programs of the MDBs, implying which MDB might co-finance which pillar and component. As stated in different parts, the IP is prepared in a way that the CIF NPC resource will leverage additional resources from the MDBs and other partners working with EFD and the MDBs. The co-finance is critical, because the CIF NPC finance is incomparable to the ambitious climate, biodiversity, restoration and livelihood targets of the country. Ethiopia has no time to wait, for instance, the WRI study mentioned that, without urgent NbS interventions, about 11 million ha of land will desertify in short term, calling for the support of all development partners to implement NbS.

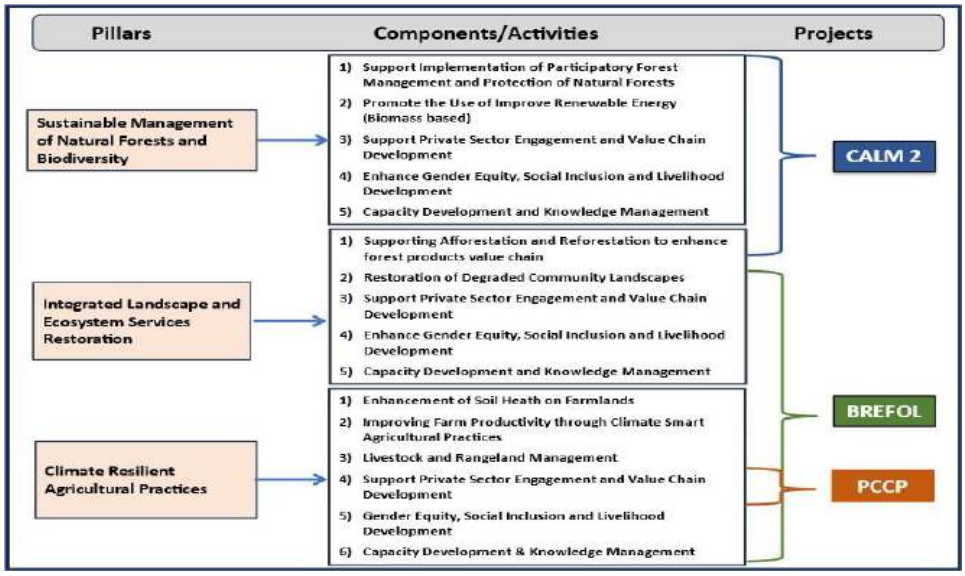


Figure 11: Schematic presentation of the alignment of the CIF NPC IP Pillars and Components with the pipeline flagship programs of the MDBs

As shown in Figure 11, the MDBs have identified three potential investment projects aligned with the Ethiopia's CIF NPC IP. These include;

- Second phase Climate Action through Landscape Management (CALM-2) program
- Building Climate Resilience for Food, Livelihood, and Ecosystem Services in the High-Mid-and-Lowland Areas (BREFOL), and
- Promotion of Climate-Smart Agriculture, Climate Resilience, and Post-Harvest Loss Reduction (PCCP).

### 6.3.1 Second phase Climate Action through Landscape Management (CALM-2) program

The Second Climate Action through Landscape Management (CALM-2) program builds upon the successes of its predecessor, CALM, with a particular focus on certifying communal forest land to secure tenure and address land degradation. By promoting long-term, community-based sustainable land use planning and management practices, CALM-2 aims to contribute significantly to natural resource management, restoration, and economic benefits. The program will employ a Program for Results (P4R) approach, which ensures that funding is only released upon the generation, reporting, and verification of tangible results. This mechanism aligns with the program's commitment to accountability and effectiveness. CALM-2 is closely aligned with Pillars I (Sustainable Management of Natural Forests and Biodiversity) and Pillar II (Integrated Landscape and Ecosystem Services Restoration) of Ethiopia's CIF-NPC Investment Plan. The program will support the different NbS interventions in these areas, contributing to the management of natural forests and restoration of landscapes, while strengthening of tenure for land and natural forests. The program under its **Result Area 1** will support restoration and management of land, natural resources and natural forests including priority natural forests outside. Under its **Result Area 2**, it supports issuance of Second Level Landholding Certificates for communal land with natural resources. CALM-2 will also support PFM groups in developing and expanding forest-based livelihood activities, contributing to community resilience and economic well-being. By combining sustainable land management with livelihood opportunities, the program aims to create a more equitable and sustainable future for Ethiopia's communities. CALM-2 also address gender constraints in access to economic assets, jobs and services. In line with government priorities, this operation will focus on targeting gender priorities to advance resilient livelihoods at multiple scales.

**Expected Outcome**: The expected outcome of the CALM-2 shall follow the core outcomes described in the respective components of Pilar I and II of the IP and this shall be more elaborated in the project concept during the feasibility study.

### 6.3.2 Building Climate Resilience for Food, Livelihood, and Ecosystem Services in the High-Mid-and-Lowland Areas (BREFOL)

The Building Climate Resilience for Food, Livelihood, and Ecosystem Services in the High-Mid-and-Lowland Areas (BREFOL) is a newly approved Green Climate Fund (GCF) project that builds on the success of the AfDB-funded Build Resilience for Food and Nutrition Security in the Horn of Africa (BREFONS) project. The BREFOLs also constitute Climate Window Action (CWA) - Scaling up best practices of climate-smart agriculture and nature-based solutions to build the resilience of smallholder farmers and pastoral communities in Ethiopia project. As such, the focus of the BREFOL investment project is on improving sustainable landscape management practices, increasing the adoption of climate-smart innovations and agricultural practices, supporting resilient development of agribusiness to improve their livelihoods, and strengthening climate change adaptation and livelihood development. The activities of BROFEL are aligned with Ethiopia's NPC IP Pillar II: Integrated Landscape and Ecosystem Services Restoration and Pillar III - Climate Resilient Agricultural Practices. The project activities aligned with the IP Pillars include, **improving sustainable landscape management practices and ecosystem services** with a focus on restoring degraded landscapes in agricultural areas through strategic activities to increase tree cover to enhance carbon stocks, foster sustainable land use, enhance biodiversity, improve agricultural productivity, and improve livelihoods; **increasing adoption of climate-smart innovations and agricultural practices** with a focus on sustainable land management to improve soil health, adoption of climate-smart innovations drought-resistant crops, water harvesting, agroforestry, conservation agriculture, integrated pest management (IPM), soil fertility management, terracing, and introduction of improved crop varieties; **supporting resilient development of agribusiness** to increase access to digital advisory services and markets, developed inclusive MSMEs and cooperatives with access to climate financing to improve livelihoods and **strengthening climate change adaptation and livelihood development** to build human, and institutional capacities and capabilities. As such, the BREFOL project activities shall adopt the priority activities identified in the respective components of the pillars in the IP, which shall be more elaborated during the feasibility study.

**Expected Outcome**: The expected outcome of the BREFOL project is the outcomes described in the respective pillars and components of the IP shall be more elaborated during the feasibility study.

### 6.3.3 Promotion of Climate-Smart Agriculture, Climate Resilience, and Post-Harvest Loss Reduction (PCCP)

Introducing climate-smart farm production through innovative, inclusive private sector engagement models (such as share farming and out-grower models) can build resilience in the agriculture sector, increase sequestration of GHG, scale up outputs to help increase yields, and reduce wastage. As such, intervention actions proposed in Ethiopia's Nature People Climate (NPC) Investment Plan (IP) on climate-smart practices in agriculture align with IFC's strategy to promote practices and business models that can help reduce emissions and build resilience. IFC's strategy in Ethiopia aims to address food insecurity and climate change through three pillars: 1) improving resistance to climate impacts, 2) reducing greenhouse emissions, and 3) increasing farm productivity. The program is designed to build upon IFC's existing and planned initiatives. The PCCP project is focused on providing investments, technical advisory, and project development support across three pillars of climate-smart agriculture. The PCCP project extends the existing investment and advisory projects, focusing on the Somali, Oromia, South Ethiopia, and Amhara regions. The project activities of PCCP are aligned with Ethiopia's NPC IP Pillar 3 - Climate Resilient Agricultural Practices. The

main activities of the PCCP aligned with Pillar 3 include capacity building for farmers, capacity building for direct investments/financial institutions (FI), climate mitigation outcomes, climate adaptation outcomes, access to capital, and improvement of livelihoods. These above core activities shall be implemented as per the detailed activities indicated in the respective components of Pillars 3 mainly private sector engagement and value chain development and capacity building.

**Expected Outcome**: The expected outcome of the PCCP shall follow the core outcomes described in the respective components of the IP and the project briefs that shall be more elaborated during

## 7. FINANCING PLAN AND INSTRUMENTS

### 7.1 Costs Covered from CIF NPC Resource and from co-finance by MDBs and other development partners

The total estimated budget for the CIF NPC IP is US$528,900,000. Thise include the CIF US$37 million as direct funding and the additional fund to be mobilized as co-financed by the MDBs and other development partners. The IP also considers mobilizing additional finance from the GoE by supporting the approval of the Green Legacy and Landscape Restoration Special Grant by the Parliament. The Special Grant is already approved by the Council of Ministers and waiting for final approval by Parliament. The co-finance is critical because full translation of this IP into practice is highly dependent on the amount of additional finance to be mobilized as co-finance.

As shown in table 10 below, a significant proportion of the budget (26.2% CIF NPC and 28% of the co-finance) is assigned for the GESI and private sector related activities. This implies the serious attention the IP has given to gender inclusion and livelihood resilience, notably of women, youth and disadvantaged people. This will be ensured, among others, through the support of the private sector to invest in NbS and to facilitate access to credit etc. The cost for program administration (about 10% of the investment) includes office operations, transport and other important costs.

Table 11: Overview of CIF NPC resources and co-finance are distributed by pillars

| Pillars | Component | Description | CIF Financing | MDB Financing |
|---|---|---|---|---|
| Pillar 1 | | Promoting Sustainable Management of Natural Forests and Biodiversity Resources | $7,165,250 | $67,749,500 |
| | Component 1 | Support Implementation of Participatory Forest Management and Protection of Natural Forests | $516,250 | $7,227,500 |
| | Component 2 | Promote the Use of Renewable Energy | $671,000 | $14,330,000 |
| | Component 3 | Support Private Sector Engagement and Value Chain Development | $1,200,000 | $16,800,000 |
| | Component 4 | Enhance Gender Equity, Social Inclusion and Livelihood Development | $1,328,000 | $18,592,000 |
| | Component 5 | Capacity Development and Knowledge Management | $3,450,000 | $10,800,000 |
| Pillar 2 | | Integrated Landscape and Ecosystem Services Restoration | $17,064,833 | $238,907,667 |
| | Component 1 | Establishing Production Forests to Increase Forest Product Supply | $3,537,500 | $49,525,000 |
| | Component 2 | Landscape Restoration Through Assisted Natural Regeneration (ANR) | $5,577,833 | $78,089,667 |
| | Component 3 | Support Private Sector Engagement and Value Chain Development | $1,547,000 | $21,658,000 |
| | Component 4 | Enhance Gender Equity, Social Inclusion and Livelihood Development | $2,022,500 | $28,315,000 |
| | Component 5 | Capacity Development and Knowledge Management | $4,380,000 | $61,320,000 |
| Pillar 3 | | Climate Resilient Agricultural Practices | $9,067,418 | $133,420,168 |
| | Component 1 | Enhancement of Soil Heath on Farmlands | $592,857 | $8,300,000 |
| | Component 2 | Improving Farm Productivity through Climate Smart Agricultural Practices | $900,000 | $12,600,000 |
| | Component 3 | Livestock and Rangeland Management | $2,740,200 | $38,362,800 |
| | Component 4 | Support Private Sector Engagement and Value Chain Development | $2,561,361 | $35,859,054 |
| | Component 5 | Enhance Gender Equity, Social Inclusion and Livelihood Development | $1,023,000 | $14,322,000 |
| | Component 6 | Capacity Development and Knowledge Management | $1,250,000 | $23,976,314 |
| 4 | | Administration Cost | $3,700,000 | $51,800,000 |
| | | Administration of the IP Implementation | $3,700,000 | $51,800,000 |
| | | **Total** | **$36,997,501** | **$491,877,335** |

## 7.2 MDB Co-Financing Investment Projects

As indicated above, the three potential investment projects aligned with Ethiopia's NPC IP (Table 11) include BREFOL, CALM-2) and PCCP.

Table 12: Budgetary allocations between the three investment projects of MDBs (US Millions)

| Project | CIF Financing | MDB Co-Financing | Total |
|---|---|---|---|
| BREFOL | 22.5 | 193.3 | 215.8 |
| CALM-2 | 11.5 | 500 | 511.5 |
| PCCP | 3 | 6 | 9 |
| Total | **37** | **699.3** | **737.3** |

## 7.3 Cost estimation and cost calculations

"Unit costs" were determined based on experience from existing programs and consultations with regional stakeholders. We collected cost data for labor, inputs (including seeds), training, data management, and reporting. Administrative and operational expenses, such as office equipment, staff fieldwork, and office maintenance, are separate from unit costs. Additionally, costs for organizational travel and administration related to intervention planning, monitoring, and follow-up are not included in workshop or training costs.

## 7.4 Dedicated Grant Mechanism (DGM) (USD$4MM)

Although the cost the Dedicated Grant Mechanism (DGM) for local communities is not included in the budget breakdown of the IP, a due consideration was given this grant which will increase the total budget for the NbS and better engagement of local communities and community organization to sustainably manage their environment. As advised by the MDBs, the detailed documentation will be made later as the DGM template will be available to EFD. However, the approach to design and implement the DGM resources was discussed during the various consultation, where key notes were taken, for instance, the need to carefully chose beneficiary communities and groups, the need to organize them into functional groups, the need to map and account their resources, and based on the results to design NbS interventions and building the capacities of local communities to plan, implement, monitor and report NbS interventions. The DGM resources will also empower disadvantaged social groups by providing tailored skill trainings such as on climate policy and action and by providing them with direct access to funds to translate these policies into practices. The potential NbS projects and interventions to be supported by the DGM resources must be strongly aligned with the three priority Pillars identified in the IP. That means, emphasis will be given to vulnerable communities in the selected 25 districts identified to implement the CIF NPC IP. The organized communities and other key stakeholders will design projects in cooperation in a participatory manner. Strong alignment will be made to revitalize the traditional and cultural knowledge management system of the beneficiary communities. A designated entity will execute the DGM resources, yet to be identified and implemented as per the CIF framework operational guidelines for the DGM.

# 8. IMPLEMENTATION POTENTIAL WITH RISK ASSESSMENT

## 8.1 Country/Regional Risk Assessment for Project Implementation

The overarching goal of the CIF IP for Ethiopia is to address the drivers and impacts of climate change resulting from the degradation of ecosystems and the vital services they provide, such as regulating nature incidents, provisioning, and cultural benefits. Specifically, it aims to promote the restoration of degraded landscapes, enhance the ecosystem services they offer, and ensure the sustainable management and use of land and other natural resources. This includes protecting healthy and productive ecosystems to strengthen the resilience of landscapes and reduce the vulnerability of Ethiopian communities to the effects of climate change.

Achieving the intended results of the IP requires an integrated and inclusive approach to natural resource management that tackles the direct causes of ecosystem degradation, including over-exploitation, land use changes, pollution, and climate change. It also addresses the underlying factors linked to Ethiopia's growing population, increasing demands for food, energy, and natural resources, as well as poverty and the heavy dependence of rural livelihoods on natural resources. Furthermore, the IP acknowledges the barriers to adopting and investing in sustainable land management practices, such as limited financing, weak or absent incentives, capacity constraints, and limited awareness of the value of ecosystem services.

Challenges in restoration of degraded landscapes in Ethiopia vary in the different ecosystem regions and with that also the project risks are different in high and mid lands steep slopes, though unsuitable for commercial reforestation, hold potential for public investment due to their environmental and social benefits, such as erosion control and local employment. Community engagement through Participatory Forest Management (PFM) is critical for success, with economic incentives needed to encourage local participation. The government recognizes PFM as a cost-effective and sustainable forest management approach. Yet organizing communities to involve in PFM to sustainably manage forest lands, especially where direct financial benefits take long time to realize require continuous and long-term support in advisory and guidance services, which are a challenge for the thinly staffed forest and NRM service offices at woreda level.

Restoration of afro-alpine and higher mountain areas may be less financially viable for short term benefits if tree species proposed are focusing on native species. But these areas provide significant ecosystem benefits, such as biodiversity and watershed protection. Local population preferences may be planting fast growing species, such as Eucalyptus. The IP projects focus should be on diversifying tree species, especially reducing reliance on Eucalyptus. To mitigate the risk of reducing intended positive impacts of rehabilitation on all ecosystem services it is of ultimate importance to involve local population early and well informed in planning and decision making. Participatory land use and management planning thus are a needed first step in rehabilitation and afforestation activities to reduce these risks.

In low and mid land eco system regions woodland management combined with investments in Non-Timber Forest Products (NTFPs), like gum and frankincense, can yield significant economic returns. Despite challenges related to limited resources and institutional capacity, the transition can have a high Internal Rate of Return (IRR), which could attract investment if suitable business models are developed. Risks here are related to uninformed and not well-planned harvesting of NTFPs leading to overutilization and ultimately to damage of existing tree cover. Well managed NTFP utilization requires continuous and long-term support in advisory and guidance services, which are a challenge for the thinly staffed forest and NRM service offices at woreda level.

Efforts of Ethiopia in Forest Landscape Restoration (FLR) are not always leading to the expected success. For example, introduction of PFM in the Bale area did not help increase forest cover[87]. In Yayu Forest, we can observe that PFM has helped increase forest cover. The comparative effectiveness of PFM in Yayu and Bale could be related to demographic and policy orientation of the government. Population growth, followed by expansion of farm or grazing land and settlement area, has been mentioned as major drivers of deforestation in Bale ecoregion. Choosing the right approach from the proposed IP projects for each intervention location is crucial to ensure the success of the investment in each rehabilitation intervention.

Another major component in this IP is the introduction and application of CSA in restoring ecosystem services in degraded landscapes. For improving CSA adoption through extension services, these extension services should be strengthened to reduce information gaps and increase awareness of CSA's benefits88. Risks in implementation of the IP interventions are here that the government services are not completely well informed on the advantages and implications of CSA. The services should be inclusive, tailored to meet the diverse needs of farmers, and emphasize partnerships between small and medium enterprises and extension agents. Prioritizing CSA skill development will improve adoption and make initiatives more effective.

Relying on government services facilitation of the change to CSA may be another risk for the success of the IP interventions. Thus, facilitating CSA Adoption through Farmers' Organizations: Farmers' organizations, such as cooperatives and self-help groups, are vital for disseminating CSA information and empowering rural women is vital. Regional and woreda government should support the establishment and development of these organizations, whilst the IP implementation can offer financial and technical aid and collaborate with them through the proposed digital advisory services (DAS) that will promote CSA. Establishing digital hubs and demonstration centres in rural areas is part of the proposed activities and will further facilitate CSA adoption.

Access and updates to technical for local farmers are another risk of successful IP implementation. Social networks play an increasing crucial role in accessing information in Ethiopia and maybe also in CSA adoption. Incentivizing CSA adopters to advocate for these practices and raising awareness of social responsibility among family farms are important strategies. Governments can introduce rewards, integrate social responsibility into recognition programs, and combine traditional incentives with innovative community-driven approaches. Policies should also focus on leveraging modern technologies and integrating them with nature-based strategies, ensuring relevance across different agricultural landscapes. The IP implementation includes components to provide financial incentives to create an enabling environment for CSA adoption social networks-based information platforms.

## 8.2 Risk Assessment in 5 CIF Risk Areas

The CIF guidelines refer to a risk assessment with regards to the 5 areas of project implementation. The description of risks together with planned actions for mitigation, monitoring and reporting of the risks is summarised in the table below.

[87] Kassa H, Abiyu A, Hagazi N, Mokria M, Kassawmar T and Gitz V (2022) Forest landscape restoration in Ethiopia: Progress and challenges. Front. For. Glob. Change 5:796106.doi: 10.3389/ffgc.2022.796106

[88] Ma, W., Rahut, D.B. Climate-smart agriculture: adoption, impacts, and implications for sustainable development. Mitig Adapt Strateg Glob Change 29, 44 (2024). https://doi.org/10.1007/s11027-024-10139-z

Table 13: Risk assessment and suggested mitigation measures

| Implementation Field | Risk | Risk Mitigation / Control Measures |
|---|---|---|
| Institutional | Organizational Capacities may be limited | Investments in capacity building for local government staff and setting up of IT based management stems to enhance their ability to manage project activities is foreseen |
| | Lack of experience | Capacity building and appropriate human resource management is essential |
| | Lack of Coordination between Government Institutions and other implementers | Engage local communities in the planning and implementation phases to ensure their needs and concerns are addressed. |
| | Weak Community engagement | Engage local communities in the planning and implementation phases to ensure their needs and concerns are addressed. |
| | Weak engagement of government institutions/ officers | Investments in capacity building for local communities and government staff to enhance their ability to manage and benefit from the rehabilitation projects is foreseen<br><br>Provide continuous support and training to ensure sustainable management practices. |
| | Non-compliance with policy and legal obligations | Periodic evaluation of compliance to policies, laws and regulations. Setting up a social and environmental safeguard management system |
| Technical Capacity | Limited knowledge on new technology– internet-based data management | Training and support from international expertise needs to be included in the IP implementation |
| | Organizational structure insufficient for operation of internet-based data management system and GIS | The IP implementation needs to include structural capacity building for operation of internet-based data management systems. Government of ET needs to commit to allocation of sufficient and capacitated staff for operation of the system |
| Technology | Limited access to technology | The IP implementation should foresee provision of technology at situations where limited access is expected |
| | Limited usage options for technology, power and internet cuts | Assess options for technical solutions to overcome these problems |
| | Coordination issues between different organizational | Establish technical and organisational steering committees for guiding the IP intervention |

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| | structures and levels | implementation |
| Environmental | Non-compliance with National and International Environmental policies and legal obligations | Regular review of implementation of the IP activities by the EPA should be foreseen |
| | Rehabilitation activities might inadvertently lead to the loss of local biodiversity, especially if non-native species are introduced. | Including the use native species for rehabilitation to preserve local biodiversity and ecosystems<br><br>Ensure in the design of the rehabilitation measures the survival of native species at implementation sites |
| | Changes in land use can disrupt existing eco-systems and habitats | Conduct environmental impact assessments to identify and mitigate potential biodiversity risks at locations where such change might happen |
| Social | Communities and beneficiaries have limited understanding of project concepts and benefits | Awareness raising and participatory decision-making procedures are essential and foreseen |
| | Unequal benefits distribution in local society | Setting up a social and environmental safeguard management system including a complaint and mediation procedure |
| | Conflicts of interest within the beneficiary society. Benefits from rehabilitation projects may not be equitably distributed, leading to social tensions. | Developing mechanisms to ensure that benefits are distributed fairly among all community members, including women and other vulnerable groups.<br><br>Including gender-specific indicators and goals to promote equitable participation and benefit sharing. |
| | Unclear or insecure land tenure can lead to conflicts over land ownership and usage rights | Work with local authorities to clarify and secure land tenure rights for participants needs to be considered.<br><br>Design and implement land use agreements that respect traditional land rights and practices. |
| | Rehabilitation activities might restrict access to resources that communities depend on for their livelihoods, such as grazing lands or forest products. | Providing alternative livelihood options and training to communities affected by the rehabilitation activities are part of the programs and need to be selected according to local conditions and options.<br><br>Implementing income-generating activities that are compatible with the rehabilitation goals. |
| | Resistance to change | Respect and integrate local cultural practices and |

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| | behaviour or traditional land use techniques | knowledge into the project design.<br><br>Conduct cultural impact assessments to identify and mitigate potential disruptions. |
| | Women and vulnerable groups do not participate in, or benefit from project. | Women and vulnerable groups will be specifically targeted in awareness raising, capacity development, employment opportunities and demonstration works. The results framework includes gender disaggregated indicators and targets to ensure the equitable distribution of benefits. The project will invest in capacity strengthening for Federal and Local Government staff and communities to achieve a gender balance in the value chain. All implementation arrangements and contracts will require suitable facilities for women and vulnerable groups. Complementary activities – which would further enable women and youth participation – but sit beyond the scope of this IP will be raised with relevant Government and development partners. |
| | Limited Representation and Participation of women in decision making processes, workforce, and leadership positions | Participatory planning procedures have to be designed in a way that ensures participation of women and other vulnerable groups |
| | Political and social stability are currently affected by a number of internal conflicts, particularly in the Tigray, Amhara and Oromia regions, which have impacted economic stability and growth. | Political stability is part of Government responsibility |
| Financial | Foreign Exchange fluctuation risks, such as unfavourable changes in the exchange rate | Ethiopia has experienced a substantial decrease of ETB value over the last years. Replenishment schedule of project funds and maintaining foreign currency accounts for project funds should be considered |
| | Limited private finance (value chain) | Project activities which consider engaging private finance sector are planned. Linking to banks and small credit institutions is foreseen |
| | Insufficient time to prove benefits from interventions | For investments involving private sector and smallholders' preparation of business plans is imperative |
| | Fiduciary risks | Implement effective and transparent finance administration system for monitoring and tracking |

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| | | expenditures |

## 8.3 Program Impact and Alignment to CIF NPC Investment Criteria

The program impact and alignment related issues are presented in the table below.

Table 14: CIF criteria for project idea selection and support

| CIF Criteria | The context in Ethiopia's CIF IP |
|---|---|
| **1. Potential for transformational change** | |
| Relevance | Ethiopia has implemented several long-term policies and strategies aimed at addressing the impacts of climate change through both mitigation and adaptation measures. The country is also among the leading nations in setting ambitious targets in response to global initiatives such as the Bonn Challenge and the New York Declaration on Forests. The proposed Climate Investment Fund (CIF) Investment Plan (IP) for Ethiopia aligns with the following key national policies and strategies:<br><br>• **Ten-Year Development Plan: A Pathway to Prosperity 2021–2030 (10YDP)-** This plan emphasizes transforming agriculture by reducing its dependency on rainfall through enhanced irrigation capacity, expanding mechanization services, and boosting the productivity of smallholder farmers. Additionally, it focuses on developing animal resources, healthy fodder, horticulture, and promoting climate-resilient, sustainable agriculture. The environmental component of the 10YDP prioritizes climate-resilient green economic growth by managing, conserving, and sustainably utilizing forests, wildlife, and biodiversity, thereby ensuring a healthy ecological balance.<br>• **Ethiopia's Updated Nationally Determined Contribution (NDC) 2021-** Ethiopia's updated NDC aims to reduce economy-wide greenhouse gas (GHG) emissions to 125.8 $MtCO_2e$ by 2030 under both conditional and unconditional scenarios. This represents a 68.8% reduction (-277.7 $MtCO_2e$) compared to the 2010 baseline of 404 $MtCO_2e$ under the business-as-usual (BAU) scenario.<br>• **Long-Term Low Emission Development Strategy of Ethiopia (LT-LEDS) 2020-2050-**The LT-LEDS acknowledges that while the forestry and agricultural sectors are significant emitters, the forestry sector has the potential to offset its emissions and contribute to Ethiopia's goal of carbon neutrality. The strategy estimates that measures to combat deforestation and restore degraded landscapes could lead to total decarbonization interventions amounting to 1,674.58 $MtCO_2e$. These efforts, along with other removals, could result in net emissions of -8,237.55 $MtCO_2e$ over the 30-year period.<br>• The proposed CIF IP aims to sustainably manage 7012500 hectares of forests through Participatory Forest Management (PFM) and restore 6628700 hectares of degraded forests and forest lands through various restoration interventions. These targets will sequester about 1319850200 tons of $CO_2$ eq, and significantly contribute to Ethiopia's national ambition of achieving a climate-neutral pathway and supporting sustainable development. |
| Systemic change | A cornerstone of this Investment Plan's systemic change approach is the strategic linkage between sustainable forest management and improved livelihoods. Program Three explicitly targets this by cultivating economic opportunities within agriculture and forest product value chains. By channelling financial benefits directly to households, the project addresses poverty and inequality while fostering a sustainable economic base for communities. This interdependence of forest health, agricultural practices, and community well-being is pivotal for long-term landscape restoration success. Extensive stakeholder consultations have ensured a comprehensive |

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| | understanding of community needs and perspectives, allowing for a holistic approach to resolving land-use conflicts. The plan incentivizes sustainable practices by creating value chains that generate direct income for local communities, thereby promoting both agricultural productivity and forest conservation. Moreover, it empowers vulnerable groups through participatory decision-making, ensuring their active involvement and equitable benefit-sharing. By prioritizing the needs of these communities, the project aims to achieve a just transition to sustainable forest management and landscape restoration. |
| Speed | The urgency of climate change requires accelerated implementation of Nature Solutions, balanced with inclusivity in sustainable land use. The proposed IP targets key areas for rapid climate benefits, such as expanding renewable energy access under Program One, which reduces reliance on unsustainable fuelwood – a primary source of deforestation and emissions. The IP includes a clear roadmap with milestones for renewable energy expansion and climate-smart agriculture, ensuring timely and adaptive progress with an emission reduction that can be achieved in annual basis. Robust safeguards and impact assessments will mitigate potential negative effects and ensure inclusive stakeholder engagement, particularly for vulnerable groups. |
| Scale | The IP is designed to generate large-scale impacts that extend beyond the immediate project geographies. The sustainable forest management interventions under Program One, targeting the central, northern, and eastern highlands, are expected to significantly improve the quality and quantity of water flowing downstream. This enhancement of water resources ensures water security for downstream communities, supporting domestic use and small-scale irrigation farming, thereby contributing to food security.<br><br>The IP also integrates forest and agriculture-based value chains, including the expansion of fruit production, to create strong market linkages between the agriculture and forestry sectors. These value chains foster the growth of small-scale enterprises, which in turn attract private sector investment NbS, catalyzing further economic development.<br><br>Lessons learned from the IP, particularly in linking upstream and downstream communities, provide a model for scaling up to other regions in Ethiopia with similar topographic features. The IP also includes tailored policy shifts and evidence-based recommendations to accelerate NbS adoption at a national level. Furthermore, technical, and technological support mechanisms are embedded within the IP to catalyze the implementation of NbS at scale, ensuring that these interventions are not only impactful but also replicable across diverse contexts. |
| Adaptive sustainability | The IP is designed to ensure the long-term sustainability and adaptability of its impacts, even after concessional financing ends. Program Four plays a pivotal role in this by building the technical capacities of stakeholders and institutions, which are essential for maintaining and advancing NbS and broader sustainable development goals. This capacity-building effort addresses critical technical, policy, and institutional barriers that might otherwise hinder the practice and sustainability of NbS.<br><br>By linking NbS with income-generating activities through robust value chains and market linkages, the IP ensures the financial sustainability of these solutions, making them resilient to economic pressures and safeguards against potential backsliding. This protects the NbS both from internal and external pressures and can recover and continue to thrive even in the face of shocks. The intervention also supports adaptive sustainability by fostering a culture of continuous learning and improvement. This is achieved through a strengthened monitoring, evaluation, and learning (MEL) |

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| | framework that is central to adaptive learning, enabling the project to course-correct and respond to evolving challenges and opportunities. Furthermore, Program Four targets the establishment and enhancement of a knowledge management system that supports the ongoing adaptation and refinement of sustainable development practices. This system not only facilitates the sharing of best practices and lessons learned but also ensures that stakeholders can experiment with new policies, business models, and technologies, adapting them as needed to changing contexts. |

**2. Potential to enhance resilience to climate risks contribute to lower emission and climate resilient development**

The proposed IP is built on three core pillars: sustainable forest management, landscape restoration, and the promotion of climate-smart agriculture, each of which significantly contributes to enhancing resilience to climate risks and lowering emissions through funded and unfunded project activity targets.

| $CO_2$ sequestration targets of natural forest management through PFM and restoration of degraded lands with AR/ANR | | | | |
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| | **Funded project Target** | | **Unfunded project target** | |
| **Interventions** | **Area (ha)** | **$CO_2$ seq (tons)** | **Area** | **$CO_2$ seq (tons)** |
| AR | 12,500 | 1,651,500 | 175,000 | 23,121,500 |
| ANR | 106,000 | 991,500 | 1,484,000 | 13,881,104 |
| PFM | 15,000 | 1,493,571 | 84,000 | 8,364,000 |
| CO2 emission reduction targets of CSA/NBS practices of farmland and livestock managements | | | | |
| | **Funded project Target** | | **Unfunded project target** | |
| **Interventions** | **Area (ha)** | **CO2 seq (Sons)** | **Area** | **CO2 reduced (tons)** |
| CSA Livestock | 25,000 | 1,334,500 | 100,000 | 5,338,000 |
| CSA farmland | 25,000 | 352,750 | 100,000 | 1,411,000 |
| Overall total emissions reduction Target over the project lifetime is (tons) | | | | 57,939,425 |

The proposed IP is built on three core pillars: sustainable forest management, landscape restoration, and the promotion of climate-smart agriculture, each of which significantly contributes to enhancing resilience to climate risks and lowering emissions.

- Enhancing Community and Environmental Resilience- The increase in vegetation cover and biodiversity through these interventions reduces the vulnerability of rural communities to climate risks, such as floods and droughts. This vegetative buffer decreases flood risks, stabilizes soil, and improves water retention in the landscape, thereby sustaining stream and river flows and reducing water stress during dry periods. The restoration and increased biodiversity also enhance ecosystem resilience, ensuring that natural systems can better withstand and recover from climate-related shocks. Gender-sensitive and socially inclusive interventions included in the IP address the gender-disaggregated impacts of climate change and their effects on vulnerable groups.

- Building Adaptive Capacities- By linking agricultural and forest value chains, the IP diversifies income sources for households, enhancing their adaptive capacities to cope with climate shocks. The additional income earned through these activities provides financial resilience, allowing communities to invest in further climate adaptation measures. The investment plan also emphasizes skill development and knowledge management, ensuring that stakeholders have access to climate information that enables them to understand and effectively respond to climate risks.

3. Potential to significantly contribute to the principles of just transition

- The IP is strategically designed to contribute to a just transition by ensuring that the benefits of transitioning to a low-carbon, climate-resilient economy are equitably distributed across society, particularly among vulnerable groups. By addressing the structural causes of inequality and providing targeted support to the most vulnerable, the IP lays the foundation for a just transition that is inclusive,

equitable, and resilient.

- E**mployment Creation and Economic Empowerment-**the IP focuses on creating employment opportunities specifically for unemployed women and youth, who are among the most vulnerable in the target areas. By creating direct jobs through landscape restoration activities, such as nursery management and tree planting, as well as through value chain processes, the investment plan addresses the root causes of unemployment, particularly the lack of land ownership in rural areas, which disproportionately impacts the youth and women. Economic empowerment of women is a key focus of the IP, with targeted efforts to enhance their decision-making power within households. By increasing their economic capacities, the IP helps to shift the traditional power dynamics, promoting greater gender equality and social inclusion. This ensures that the voices of those most affected by the transition are heard and considered.

- **Addressing Distributional Impacts-** the IP ensures that the economic gains from the transition are distributed equitably among all community members, with a particular focus on those who are typically left behind. By prioritizing poor and vulnerable groups in its livelihood support components, the IP ensures that these groups can benefit from the opportunities created by the transition. Beyond direct employment, the IP benefits the broader community through enhanced ecosystem services. Improvements in hydrology, biodiversity, and agricultural productivity, resulting from sustainable land management and restoration efforts, indirectly support the livelihoods of a wide range of community members, further spreading the benefits of the transition.

**4. Financial effectiveness**

The proposed Investment Plan (IP) is designed to deliver significant value for money, particularly using concessional financing in the form of a grant. Given Ethiopia's status as one of the least developed countries, with limited financial resources and a high level of debt, the choice of a grant as the financial instrument is both strategic and necessary. The grant funding from CIF is critical to addressing Ethiopia's urgent climate and development challenges while ensuring minimal financial burden on the country's already strained budget.

- **Need for Grant-** Ethiopia's financial capacity is severely constrained by multiple demands, including addressing the impacts of climate change (such as droughts, floods, and landslides) and managing the social and economic fallout from internal conflicts. These challenges have absorbed a significant portion of the country's financial resources, leaving little room for new debt-financed projects. In this context, concessional financing through a grant is essential to enable the implementation of climate action projects that would otherwise be unattainable.

- **Value for money**-The grant from CIF offers exceptional value for money by enabling the restoration of biodiversity, mitigation of climate change, and enhancement of adaptive capacities among vulnerable communities. Former cost-benefit analysis reveals that the economic benefits of the ecosystem services regained through investments in landscape restoration far exceed the costs involved. These benefits include improved water security, increased agricultural productivity, and reduced vulnerability to climate-related risks, all of which contribute to long-term socio-economic stability.

- **Project Additionality**-The IP is designed to provide additionality by addressing gaps not currently covered by existing initiatives. Without CIF funding, these critical interventions could not be implemented due to Ethiopia's financial constraints and competing priorities. The CIF grant leverages Ethiopia's limited internal resources and enables the implementation of high-impact nature-based solutions that are essential for sustainable development.

**5. Implementation potential**

The proposed Investment Plan (IP) demonstrates strong implementation potential, underpinned by Ethiopia's robust institutional frameworks, extensive experience in managing nature-based solutions (NbS), and high-level political commitment to green development.

- **Political Commitment and Public Mobilization-**Ethiopia's Green Legacy Initiative, spearheaded by the Prime Minister's Office, has significantly heightened national awareness and commitment to green development. This high-level endorsement has elevated NbS to a national priority and mobilized public support at an unprecedented scale. The initiative, now central to political discourse at all levels, ensures that NbS projects are planned and implemented in a highly coordinated and effective manner. The momentum generated by the Green Legacy Initiative provides a solid foundation for the successful implementation of the IP by aligning political will with public action, thereby enhancing Ethiopia's readiness to address deforestation, forest degradation, and other environmental challenges.

- **Institutional Capacity-**The Ethiopian Forestry Development (EFD) is the federal institution responsible for leading forestry sector activities nationwide. EFD plays a central role in coordinating forest management and NbS efforts among various governmental and non-governmental organizations. Its established organizational channels and reporting procedures offer a clear structure for implementing and monitoring IP activities at both federal and regional levels. Similarly, the Ministry of Agriculture (MoA), with over a decade of experience in leading sustainable land management programs, has developed substantial expertise in promoting sustainable land use. These programs, implemented across regional states and woredas, have laid the groundwork for effective NbS interventions by building local capacity and fostering collaboration among stakeholders.

- **Proven Experience in NbS-**Ethiopia has a proven track record in implementing NbS to combat deforestation and forest degradation. The Flagship REDD+ Implementation Plan (RIP), particularly in the southwestern and central regions, has successfully employed Participatory Forest Management (PFM) to manage large tracts of natural forest. This experience is invaluable for the IP, providing a tested model for engaging local communities in sustainable forest management. Additionally, the Oromia Forest and Landscape Program has been instrumental in reducing deforestation and lowering greenhouse gas emissions through improved forest and land use management. The program's focus on sustainable forest management, value chain development, and improved herd management in the livestock sector serves as a model for integrating NbS with broader land use strategies.

- **Coordination and Synergy-**Ethiopia has established several platforms, steering committees, and technical committees to enhance coordination and maintain synergy among various NbS initiatives. These structures foster collaboration across sectors and regions, ensuring alignment with the national vision for sustainable land use and climate resilience. However, the IP acknowledges the need to further strengthen these coordination mechanisms to maximize their effectiveness and ensure that all stakeholders work toward a shared sustainable vision. This approach guarantees not only the successful implementation of the IP but also the delivery of long-term, sustainable outcomes.

**6. Gender equality and social inclusion impact**

The Investment Plan (IP) has been carefully designed to integrate strong gender equality and social inclusion components, ensuring that the benefits of the investment are widely and equitably shared among all segments of society, particularly those who are most vulnerable. During the initial consultations conducted in the first joint mission, the urgent need to prioritize women, unemployed youth, and vulnerable communities was clearly identified. These consultations, which involved a diverse range of women's organizations, gender related CSOs, and representatives of vulnerable groups, have significantly informed the IP's focus.

Youth unemployment, particularly in rural areas, poses a significant challenge in Ethiopia. With land scarcity exacerbating rural-urban migration, the IP addresses this issue by creating sustainable income opportunities for youth through agriculture and forest-based value chains. This approach not only enhances economic inclusion but also tackles a core societal challenge, making the IP more inclusive and responsive to the needs of this critical demographic.

In many parts of Ethiopia, women face limited decision-making opportunities, often due to a lack of access

to and ownership of resources. This imbalance in household power dynamics is a key issue that the IP seeks to address. The plan includes targeted support for organized women and youth groups through technical capacity building and entrepreneurship training programs, empowering them to actively participate in and benefit from the IP's interventions. The IP implementers will work closely with local government officials to identify unemployed youth, women, and poor community members, ensuring they are direct beneficiaries of the program.

**7. Development impact potential**

This Investment Proposal (IP) is fundamentally designed to drive significant socio-economic and environmental changes, aligning with multiple Sustainable Development Goals (SDGs).

**Socioeconomic Potential**

The IP aims to restore ecosystems and sustainably manage forests, thereby enhancing ecosystem services that ultimately boost landscape production and productivity, increasing the supply of food, feed, fiber, fuel, and water (SDG 2: Zero Hunger; SDG 6: Clean Water and Sanitation). The most vulnerable members of the local community, particularly unemployed youth and women will benefit from employment opportunities created through restoration interventions such as nursery management and tree planting (SDG 1: No Poverty; SDG 5: Gender Equality; SDG 8: Decent Work and Economic Growth). These direct employment opportunities, coupled with increased agricultural and forest production, will significantly strengthen the resilience of local communities against climate-related shocks and stressors as well as other economic, social, and environmental challenges (SDG 13: Climate Action). By focusing on value chains for agriculture and forest products, the IP will generate income sources for the most vulnerable populations, particularly women and unemployed youth, addressing gender inequalities and empowering women to make critical household decisions (SDG 5: Gender Equality). These diverse livelihood opportunities and economic incentives will reduce the exposure and vulnerability of local communities, diminishing the pressure on natural ecosystems caused by unsustainable practices (SDG 15: Life on Land). Moreover, the expansion of climate-smart agriculture will further boost production and productivity, thereby alleviating the strain on local ecosystems as communities seek alternatives to compensate for losses.

**Environmental Potential**

The core focus of the IP is on the sustainable management of natural forests, the restoration of forest ecosystem services, and the promotion of climate-smart agriculture (SDG 15: Life on Land). These interventions are anticipated to significantly reduce net carbon emissions, increase biodiversity, and enhance both social and environmental resilience (SDG 13: Climate Action; SDG 15: Life on Land). By mitigating climate risks such as floods and landslides—common in Ethiopia due to widespread land degradation—these actions will directly contribute to global commitments to address climate change and other environmental challenges.

# 9. MONITORING, EVALUATION AND LEARNING

## 9.1 Theory of Change

The Theory of Change (ToC) outlined herein presents a structured and holistic approach to combat deforestation and degradation of natural resources, restore degraded landscapes and promote climate smart agricultural practices to enhance socio-economic and environmental resilience of local populations. The uniqueness of this IP is also embedded in its approach, i.e., it integrates different land uses, agro-ecologies, farming systems, and diverse NbS. Its design has given due attention to ensuring sustainable funding such as through involving key stakeholders including the MDBs, following robust stakeholder mapping and engagement, including local communities, government institutions, and the private sector. Strengthening policy frameworks, building capacities at strategic and operational levels, facilitating private sector engagement by unlocking opportunities through value-added forest and agriculture products linked to sustainable land management are among the core areas of the IP. The IP gives particular focus to integrating GESI in the planning, implementation, and monitoring and reporting the IP activities. These activities will yield specific outputs, including improved management practices, enhanced local governance, enhanced

inclusivity in resource management, and diversification of economic opportunities through sustainable product value chains. GESI and value chain interventions will also consider provisioning of access to alternative energy sources such as efficient cooking stoves. The emphasis on establishment of robust M&E systems will serve as foundational elements that ensure the sustainability and scalability of project outcomes. Short-term outcomes anticipated from these efforts include increased forest cover, reduced deforestation and forest degradation, improved ecosystem services and land productivity, diversified and strengthened livelihoods of local communities, improved synergy and coordination of programs, and efficient use of resources. Over the longer term, such activities are expected to lead to significant improvements in biodiversity gains, climate change mitigation, food security and poverty reduction, enhancing equality, building partnership, among others. The successful realization of this Theory of Change is contingent upon the continuous provision of financial resources, sustained political stability, and unwavering commitment from stakeholders. An overview on the Goals (CIF Impact), program impact, expected outcomes and outputs, the related programs and projects and the planned activities thereunder and the input for the IP is present in the project matrix below.

Table 15: CIF NPC IP Theory of Change

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|---|---|---|---|---|---|---|---|---|---|---|
| **Goal (CIF Impact)** | Accelerated transformational change towards reducing deforestation and degradation of natural resource base and accelerated restoration of landscape and biodiversity for sustainable proviosion of environmental services and increased resilience of local population | | | | | | | | | |
| **Program Impact** | Improved use and management of land scape and natural resources for low carbon and climate resilient livelihood and businesses | | | | | | | | | |
| **Outcomes** | Carbon sequestered | Resilient food production | Energy supply gaps narrowed, deforestation reduced, emissions reduced | Biodiversity enhanced | Timber stocks and forest production increased | Resilient communities generate income from forest management | Resilient households generate income from agricultural production | Framework for NbS established | Decisions in forest and agriculture management based on up-to-date information | Technical Capacity, Strategies and Monitoring based on updated forest information/data |
| **Outputs** | More Forest sustainably managed and protected | Climate smart Agriculture techniques made known and application guided | Fuel saving techniques made known and application guided | More landscapes rehabilitated for increased provision of services | More forest established to increase production of wood | More communities enabled to produce and market wood and NTFPs | More households enabled to sustainably produce and market agriculture products | Legal and strategy framework enhanced for NbS implementation | Knowledge on NbS in forestry and agriculture made available | Data on forestry and agriculture made available NbS application & monitoring |
| **Thematic Areas** | Halting deforestation and forest/biodiversity degradation | | | Integrated landscape and ecosystem services | | Creating resilient communities and livelihoods | | Building capacity and knowledge management system both at operational | | |
| **Pillars** | Sustainable Management of Natural Forests and Biodiversity | | | Integrated Landscape and Ecosystem Services Restoration | | | Climate Resilient Agricultural Practices | | | |
| **Components/Activities** | *Support Implementation of Participatory Forest Management and Protection of Natural Forests* | | | *Supporting Afforestation and Reforestation to enhance forest products value chain* | | | Enhancement of Soil Heath on Farmlands | | | |
| | *Promote the Use of Improve Renewable Energy (Biomass based)* | | | *Restoration of Degraded Community Landscapes* | | | Improving Farm Productivity through Climate Smart Agricultural Practices | | | |
| | *Support Private Sector Engagement and Value Chain Development* | | | *Support Private Sector Engagement and Value Chain Development* | | | Livestock and Rangeland Management | | | |
| | *Enhance Gender Equity, Social Inclusion and Livelihood Development* | | | *Enhance Gender Equity, Social Inclusion and Livelihood Development* | | | Support Private Sector Engagement and Value Chain Development | | | |
| | *Capacity Development and Knowledge Management* | | | *Capacity Development and Knowledge Management* | | | Enhance Gender Equity, Social Inclusion and Livelihood Development | | | |
| | | | | | | | Capacity Development and Knowledge Management | | | |
| **Inputs** | Country led programmatic participatory approach | Large scale coherent intervention packages | Multi MDB technical expertise and coordinated climate action | Participatory land use planning with local communities | National and international expertise on production forestry | Eco tourism and conservation expertise for forest lansdscape | Scaled up flexible and concessional finance for public and private sector interventions | Gender improvements in forest and environment legislation | Knowledge upgrade and improved availability | Forest land management and monitoring expertise |

## 9.2 Program Targets

The funded part of the IP, financed by CIF with a total of US$37 million is planned to be used to achieve the below listed target with the above-described projects and components and reach out to 325,320 persons as beneficiaries of the IP and 4,567,920 individuals with unfunded activities combined. Approximately 256 communities, cooperatives, and PFM groups will be engaged through activities focused on livelihood enhancement, value chain development, GESI initiatives, awareness-raising, and strengthening existing forest management groups. The specific composition of these groups varies depending on the nature of the activity. PFM groups, naturally, are only formed in areas where PFM is a designated component of the project, while other groups consist of communities, including cooperatives. It is estimated that each group comprises between 120 and 180 households. Assuming an average household size of five individuals, the total number of beneficiaries from activities not directly resulting in restored or reforested areas is approximately 246,000 people.

In addition to these beneficiaries, it is projected that reforestation and intensive tree planting (afforestation/reforestation, or AR) will directly benefit three to five households per hectare. With a planned AR area of 12,500 hectares, an estimated 50,000 households, or 250,000 individuals, will benefit directly. Furthermore, it is assumed that ANR will directly benefit one household per three hectares. Thus, the planned 106,000 hectares of ANR will benefit approximately 35,000 households, or 176,000 individuals.

The information management systems and related processes—planned to include four systems for information exchange and 26 processes for updating and adjusting regulations or procedures at regional, woreda, and some federal levels—are expected to benefit even more people. However, at this stage, it is not feasible to calculate the number of direct beneficiaries from these systems and processes, and therefore, only the systems and procedures can be listed at this time.

Table 16: Results overview of CIF funded component

| | |
|---|---|
| Total individual beneficiaries | 747,467 |
| Beneficiary households | 149,495 |
| Beneficiary groups | 283 |
| Systems to be established | 4 |
| Processes to be supported to ensure efficiency | 26 |

The table below provides an overview of the areas targeted by various activities, ranging from forest and wetland restoration to climate-smart agriculture and improved rangeland management.

Table 17: Detailed Area Targets for activities of the CIF funded component

| | |
|---|---|
| PFM (ha) | 15,000 |
| Fire control (ha) | 150,000 |
| Agro-forestry (fruit-based garden) (ha) | 304 |
| Landscape restoration including riverine, wetland and corridors (ha) | 120,700 |
| Production including small holder and community forest (ha) | 7,700 |
| Establishing bamboo forest (ha) | 2,500 |
| NTFP production (ha) | 342 |
| Supporting CSA practies (farmland) (ha) | 12,950 |
| Improved fodder and rangeland Mgmt (ha) | 10,500 |

| | |
|---|---|
| Climate smart livestock mgmt (ha) | 2,280 |
| **Total (ha)** | **322,276** |

The carbon dioxide ($CO_2$) removals and that of avoided emission for the project's activities can be estimated using standard calculations for carbon stock and biomass, employing the stock change method and an estimation of growth rates. The preliminary computation of sequestration and emission reduction of different activities (both funded and unfunded activities combined) will have an emission reduction of 57,939,425 tCO2eq.

By preserving and expanding forested areas, Ethiopia can sequester substantial amounts of $CO_2$, generating carbon credits that can be traded on international markets. These credits offer financial incentives for sustainable forest management and afforestation initiatives, economically benefiting local communities while also conserving biodiversity. Furthermore, carbon credit programs can attract international investment and bolster Ethiopia's commitment to environmental sustainability and climate resilience. This approach not only contributes to mitigating global warming but also fosters sustainable development within the country.

Similar methodologies can be applied to the yet unfunded components of the IP to estimate the number of beneficiaries. With sufficient resources mobilized as co-finance from MDBs and other sources, an estimated more than 4.5 million people will benefit due to the implementation of this IP.

Table 18: Results overview of un-funded activities

| | |
|---|---|
| Total individuals beneficiaries | 3,750,000 |
| Total beneficiry households | 750,000 |
| Beneficiery groups | 5,730 |
| Systems to be developed | 4 |
| Processes to be supported | 238 |

A detailed overview of the areas targeted by various activities, ranging from forest and wetland restoration to climate-smart agriculture and improved rangeland management for the unfunded component, is provided below.

Table 19: Detailed Area Targets for activities of the un-funded component

| | |
|---|---|
| PFM (ha) | 84,000 |
| Fire control (ha) | 2,100,000 |
| Agro-forestry (fruit-based garden) (ha) | 4,256 |
| Landscape restoration including riverine, wetland and corridors (ha) | 1,463,000 |
| Production including small holder and community forest (ha) | 107,800 |
| Bamboo forest (ha) | 35,000 |
| NTFP production (ha) | 4,788 |
| Supporting CSA practices (farmland) (ha) | 13,300 |
| Improved fodder and rangeland Mgmt (ha) | 13,300 |
| Climate smart livestock mgmt (ha) | 31,920 |
| **Total (ha)** | **3,857,364** |

## 9.3 Co-benefits

By integrating sustainable forest management, landscape restoration, and climate-smart agriculture interventions, the IP aims to enhance ecosystem services, contribute to climate resilience, and support sustainable livelihoods. Beyond the primary goal of reducing greenhouse gas emissions or enhancing climate resilience, the IP also brings about several co-benefits. These co-benefits reflect the transformative potential of landscape restoration to address multiple challenges simultaneously. As Ethiopia embarks on this ambitious restoration program, the anticipated co-benefits will be a driving force in achieving sustainable development, climate resilience, and ecological integrity. The anticipated co-benefits are outlined below.

**Improved Livelihoods**

One of the primary expected outcomes of the CIF IP-funded landscape restoration program is the enhancement of livelihoods for local communities. The restoration of degraded lands will lead to improved soil health, water availability, and agricultural productivity. Farmers will be able to cultivate more resilient crops, which will in turn increase yields and improve food security. The introduction of sustainable agricultural practices, agroforestry, and other income-generating activities will diversify income sources, helping to reduce poverty levels and create economic stability. These livelihood improvements will empower communities, enabling them to invest in their own development and contribute to the long-term sustainability of the restored landscapes. As a result, the program is expected to uplift rural communities and provide a foundation for sustainable economic growth.

**Health Benefits**

Improved livelihoods and food security will have direct implications for public health in the areas targeted by the restoration program. Increased agricultural productivity and higher incomes will enable families to access affordable healthcare services, improving overall health outcomes. The program is expected to contribute to better nutrition through the availability of diverse and nutritious crops, reducing the incidence of malnutrition-related illnesses. Furthermore, as communities experience greater economic stability, they will be better positioned to invest in preventive healthcare and education, leading to healthier, more resilient populations. The restoration of natural landscapes will also contribute to improved air and water quality, reducing health risks associated with environmental degradation. The health benefits of the program will, therefore, extend beyond individual households to strengthen the well-being of entire communities.

**Biodiversity Conservation**

The planned landscape restoration program is expected to play a critical role in biodiversity conservation. By reintroducing native species and reducing the pressures that lead to land degradation, the program will restore ecological balance and protect vital ecosystems. Efforts to reconnect fragmented habitats will allow wildlife populations to recover, ensuring the preservation of Ethiopia's rich biodiversity. These conservation efforts will have cascading benefits for the environment, including the restoration of ecosystem services such as pollination, water purification, and soil regeneration. By fostering biodiversity, the program will contribute to the sustainability of agricultural practices, enhance ecosystem resilience, and provide long-term ecological stability. This focus on biodiversity conservation will ensure that restoration efforts are not only about land recovery but also about safeguarding the natural heritage of Ethiopia for future generations.

**Climate Resilience**

The landscape restoration program will be a key component of Ethiopia's efforts to build climate resilience. Restoration activities, such as reforestation and the implementation of sustainable land management practices, are expected to contribute to climate change mitigation by enhancing carbon sequestration. Restored forests and vegetation will act as carbon sinks, helping to offset greenhouse gas emissions and reduce the impacts of climate change. Additionally, improved vegetation cover and water retention will enhance water security in areas prone to drought and flooding, making communities more resilient to climate extremes. By integrating climate adaptation strategies into restoration efforts, the program will help local

communities cope with the impacts of climate change, while simultaneously contributing to global climate mitigation goals. The restoration of degraded landscapes is expected to be a cornerstone of Ethiopia's climate resilience strategy, offering both environmental and socio-economic benefits.

## 9.4 Integrated Result Framework

In line with the CIF Guide on NPC Investment Monitoring and Reporting Toolkit for March 2024, the progress of a CIF program, such as the NPC program, is measured using a range of indicators across several categories, which include:

1. **CIF Impact Indicators (Category 1):** These indicators focus on the broad impacts of CIF programs across all its components. They generally measure the overarching goals and outcomes that are expected from CIF interventions.

2. **NPC Country Impact Indicators (Category 2):** These indicators are specific to the NPC program's impact within the participating countries. They gauge how well the program's goals are being met at the national level.

3. **NPC Core Indicators (Category 3):** These are the primary indicators that track the progress and outcomes directly related to the NPC program. Examples include:

    - **Mitigation:** Measures reduction in greenhouse gas emissions.
    - Land Area: Monitors the amount of land area that is positively impacted by the program, such as through restoration or improved management practices.
    - S**ustainable Supply Chains:** Tracks the number of firms, enterprises, associations, or community groups adopting sustainable practices.
    - **Livelihoods:** Assesses improvements in community livelihoods, particularly in terms of climate resilience and sustainability.
    - **Innovation:** Monitors the introduction and scale of innovative practices that contribute to climate resilience and mitigation.
4. **NPC Co-Benefit Indicators (Category 4):** These indicators capture the additional benefits of the NPC program that go beyond the core objectives. These might include green growth, just transitions, improved governance, land tenure, biodiversity, and others.

5. **NPC Optional Indicators (Category 5):** These indicators are not mandatory but provide additional insights into specific aspects of the NPC program. For example, they might track the value of ecosystem services or other relevant metrics that are not covered by the core indicators.
6. **NPC-Project-Specific Indicators (Category 6):** These are tailored indicators for individual projects under the NPC program. They allow for flexibility in monitoring specific aspects of a project that may not be captured by the broader indicators

The integrated results framework for the proposed IP is outlined in the table below, in accordance with the instructions and guidelines provided by the CIF.

Table 20: Integrated Result Framework

| Statement | Indicators | Unit | Baseline | Target | Means of Verification | Frequency | Respon-sibility | Assumptions and SDG Alignment | Evaluation and Learning Approach Key Areas |
|---|---|---|---|---|---|---|---|---|---|
| **CIF LEVEL IMPACTS** | | | | | | | | | |
| Accelerated transformational change and climate financing that enable progress toward net-zero emissions and adaptive, climate-resilient development pathways, in a just and socially inclusive manner | CIF 1. Mitigation: GHG emissions reduced or avoided (mt CO2 eq) | Annual emission (mt CO2 eq) | 400 million | Achieving 57,939,425 tCO2 eq by implementing the IP, and hence contributing to reduce the NDC 400 million tCO2e to target 342,060,575 tCO2 eq | Annual and lifetime reporting by projects and/or countries | annual | EPA, Min of Planning, EFD MRV system | Ethiopia's aim is net zero emissions by 2050, total CO2e emissions reach around 118.5 Mt by 2030 before declining to 61.9 Mt per year in 2040, Average annual net emissions aimed at (tCO2e/yr) -2,964,967 | Transformational Change: CIF aims to drive transformational change9 across all funded programs and activities. Broadly defined, transformational change is a deep and fundamental change in a system's form, function, or processes. In the context of the climate crisis, this refers to the many profound, rapid changes in social, economic, and technical systems needed to achieve net zero greenhouse gas emissions, increase social inclusion, manage distributional impacts, enhance resilience and adaptation to climate change, and reduce stress on finite natural systems. Signals of transformational change will be assessed through both evaluative and learning-based approaches across dimensions.10 Unlike indicators, signals recognize multiple levels of complex systems dynamics to identify and support progress from emerging to advanced transformational change. As these signals are highly context-specific, they will be proposed, defined, tracked, and reported on according to each IP's unique context analysis and theory of change, and using a range of methodological approaches. Disaggregated data collection to capture impacts on women, youth, migrants, Indigenous Peoples, and local communities, as well as persons with disabilities is encouraged. Ongoing learning and adaptive approaches, including the identification and tracking of new and emerging signals as programs and contexts evolve, is also encouraged.<br>This impact area will be measured through CIF-driven evaluation and learning activities, which will not be the direct responsibility of MDBs for annual reporting. |
| | CIF 2. Adaptation: Strengthened climate resilience of land (ha), people (#), and physical assets ($) through a CIF-supported adaptation mechanism | ha, No of household | 0 | Land: 322,276 ha this will add up to 3,857,364 ha with the unfunded interventions<br><br>People: 747,467 (30% women) this will add up to 3,750,000 with the unfunded interventions | Annual and and project closure report by projects and/or countries | annual | MoA, EFD | Introduction of CSA and forest landscape restoration aim at 54 million ha by 2050 | |
| | CIF 3. Beneficiaries: Number of women and men benefiting from CIF investments | | 0 | 747,467 (30% women) this will add up to 3,750,000 with the unfunded interventions | Annual and and project closure report by projects and/or countries | | Ministry of Planning, MoA, EFD | This is a CIF impact-level indicator that must be reported on at mid-term and completion of each investment. Total beneficiaries should accumulate from more granular indicators lower in the results framework, which measure specific types of benefits (e.g., climate-related vs. socio-economic, etc.)<br>Disaggregation: Direct vs. indirect beneficiaries (to be defined by CIF and MDBs)<br>By gender (mandatory)<br>Whenever possible, by age demographic and vulnerability (i.e., historically excluded or disadvantaged groups, ethnic, religious, and racial minorities, female-headed households, Indigenous People and local communities, migrants, youth, and persons with disabilities). Qualifying groups as identified within each IP/project.<br>Proportion of which receiving direct climate vs. socio-economic benefits | Gender-Transformative Impacts: The CIF Gender Program outlines: (i) improved asset position, (ii) voice, and (iii) resilient livelihoods of women through gender-responsive institutions and markets as its key impact objective. These aspects are to be assessed through evaluative and learning-based approaches, as relevant to the NPC program, and in combination with other monitoring data. |
| | CIF 4. Co-Finance: Volume of co-finance leveraged (USD) | | | Total: 491.8 USD m<br>AfDB: USD 193.3 m<br>World Bank: USD 20 m<br>IFC: USD 6 m<br>Others: USD 272.58 m | Financial reporting by projects and/or countries | Annual and project completion | Ministry of Planning, MoA, EFD | Total non-CIF resources leveraged in NPC projects. NPC CORE 5 below will feed into this indicator for NPC.<br>Disaggregation: Source of co-financing (MDB, Government, Private Sector, Bilateral, and Other)<br>Mitigation vs. Adaptation | New and additional climate finance mobilized: Beyond the immediate co-financing CIF leverages, CIF aims to plays a role as a market catalyst by contributing to the creation of markets and driving non-concessional financing through replication of CIF investments, technologies and innovations, regulatory improvements, and other areas. Evaluation and/or learning approaches may be employed to better understand CIF's contributing role in market systems transformation and volumes of follow-on green financing in CIF-supported markets. Data might also be sourced through national/local market reports and other third-party data aggregators in AFOLU and related sectors. |

| Statement | Indicators | Unit | Baseline | Target | Means of Verification | Frequency | Respon-sibility | Assumptions and SDG Alignment | Evaluation and Learning Approach Key Areas |
|---|---|---|---|---|---|---|---|---|---|
| **NPC PROGRAM-LEVEL IMPACTS** | | | | | | | | | |
| Improved use and management of land and other natural resources for low-carbon and climate-resilient livelihoods and businesses | Restored degraded landscapes | ha | 10 million | 13.8 million | National Statistics Rep | annual | National office of statistics, EFD, MoA, EPA | IP programs are especially in line with Ethiopia's SDG 1,2,5,6,7,12, 13, 15 | Evaluation and learning activities will seek to measure how well the NPC program has addressed key barriers to effective climate-responsive landuse planning and management within and across stakeholder groups through, for example, assessing the level of participation / involvement in decisionmaking processes and changes in relative benefits/ vulnerabilities among groups. |
| | Natural forests put under PFM | ha | 2.4 million | 2.484 million | EFD / MRV Reports | 3-5 years | | | |
| | Rate of deforestation | ha/yr | 27,703 | 13,850 | EFD / MRV Reports | 3-5 years | | | |
| | Climate smart agriculture (farm and rangeland mangment) practiced | ha | TBD | 58,520 | MoA reports | 3-5 years | | | |
| **NPC PROGRAM-LEVEL Outcomes** | | | | | | | | | |
| A. Improved management of natural resources | NPC CORE 1 GHG removals or avoided emissions in the LULUCF sector | mt CO2 eq | 0 | Cumulative (2030): 57,939,425 tCO2 eq | Mid-term and lifetime estimates by projects | annual | EPA, EFD MRV system | Avoided GHGs will need to be calculated using an agreed methodology using the land area from the various initiatives incorporated under NPC CORE2 | |
| | NPC CORE 2. Land Area: *Area of land or other physical environments covered by climate-responsive natural resource management practices* | ha | TBD | Total: 3,857,364<br>Sustainbale forest management: 2,184,000<br>Landscape Restoration: 1,614,844<br>CSA practices: 19,507 | MDB project results data | annual | EPA, EFD MRV system | CIF IP results data obtained via remote sensing reports, and other available spatial data, see also CIF IP project 10 | The evaluation and learning function complements core indicators by filling strategic knowledge gaps. Evaluation and learning activities will be designed and integrated into projects under the IP to respond to stakeholder demand, evidence gaps, and cross-learning opportunities. |
| B. Increased adoption of sustainable supply chains or value chain approach | NPC CORE 3. Sustainable Supply Chains: Number of firms, enterprises, cooperatives, or community groups that have adopted a sustainable value chain approach (#) | # of community groups | to be determined | 5,730 | MDB project results data | annual | PCU | IP program reports, value chain analysis are part of the projects in agriculture and forestry value chain development. The number of enterprises or cooperatives newly engaged in agriculture and forestry value chains compared to baseline analysis is reported | Reporting and analysis will also examine the extent to which supply chains are gender responsive, e.g. through the adoption of policies to ensure gender equity in value chains.<br><br>Special attention may also be given to how vulnerable communities and households with limited access to productive assets management activities gain or lose in the process.<br><br>Involvement of the private sector in the value chains will have to be evaluated regulary to ensure equity in margin shares from marketing natural resources products. |
| C. Strengthened enabling environment for sustainable uses of land and other natural resources | NPC CORE 4. Policies: Number of policies, regulations, strategies amended: | # processes supported # systems developed | 0 | 238 processes developed and 4 systems supported | MDB project results data | annual | EFD | The planned regular policy and strategy may not allways conclude that amendments are needed. Review should be reported | Practival application of policies, strategies and laws in IP areas through investment activities will reveal if there is need for adjustments |
| E. Mobilized public and private capital | NPC CORE 5 (= CIF 4). Co-Finance: Volume of co-finance leveraged | US$ | 0 | Total: 491.9 USD m<br>AfDB: USD 193.3 m<br>World Bank: USD 20 m<br>IFC: USD 6 m<br>Others: USD 272.58 m | MDB project results data | annual | PCU, woreda/region bureau of economic development | Increased investments in NbS activities suggested and supported by the IP | |
| F. Rural communities and Indigenous Peoples' sources of livelihoods improved | NPC CORE 6. Livelihoods: Number of people receiving livelihood benefits | No of households | 0 | 747,467 (30% women) this will add up to 3,750,000 with the unfunded interventions | MDB project results data | annual | PCU, | data will be disaggregated by gender | Number of communities targeted and average number of households per community as involved in the project activities |
| | NPC CORE 7. Jobs: Number of jobs created – direct and indirect | # of individuals | 0 | Total: 672,000 (30% women)<br><br>Direct: 672,000 (30% women)<br>Indirect: 0<br><br>Permanent: 246,000 (30% women)<br>Temporary: 426,000 (30% women) | EFD, PCU reports | annual | PCU | | depending on the investments in production and processesing of products from natural resource mgmt supported by the MDB, jobs may be created in these estblished facilities |
| | OPTIONAL: Reduction in moderate or severe food insecurity | % | | | | | | | Results here are part of the SDGs |

| Statement | Indicators | Unit | Baseline | Target | Means of Verification | Frequency | Respon-sibility | Assumptions and SDG Alignment | Evaluation and Learning Approach Key Areas |
|---|---|---|---|---|---|---|---|---|---|
| G. Business case for private sector investments demonstrated | NPC CORE 8. Private Sector Investments: Number (#) and value ($) of CIF-supported private sector investments in sustainable land or natural resource management – mitigation/ adaptation | US$ | 0 | TBD- amount in business investments including small holders in production or processing of wood, NTFPs (including bamboo, honey, resins) and agricultural products (here including storage facilities) | EFD, PCU reports | annual | PCU, | Data will be disaggregated by gender, the project facilitates the investments of the private sector, the possible financial support of MDBs into credit schemes is not included here, | The project activities concentrate on the facilitation of private sector investments, it will remain a task to observe and report on the actual investments of private sector and the improvement of access to credit through credit schemes form the MDBs |
| H. Fostered innovation | NPC CORE 9 (= CCV 1). Number of innovative businesses, entrepreneurs, technologies, and other ventures demonstrating a strengthened climate-responsive business model | # beneficiary group | 0 | 5,730 | EFD, PCU reports | annual | PCU, | The planned activities are to facilitate production and processing of NTFPs and agricultural products in an innovative way. | Introduced or facilitated technology applications are not new to the world but may be new to Ethiopia, at least in the way and scale they will be applied to generate products for the national and international market and at the same time income and employment in rural areas. Their progress and success need to be monitored and repurted to expand to new areas outsiede the selected project woredas |
| | OPTIONAL (=CCV 2): Number of innovative products, services, technologies, and processes that have entered a new market context | | | | | | | | |
| **NPC PROGRAM-LEVEL CO-BENEFITS - Social, Economic, and Environmental Development Co-Benefits** | | | | | | | | | |
| G.Social,Economic, andEnvironmental Development Co-Benefits | CO-BENEFIT 1. Green Growth: Economic growth of targeted sectors or industries within the landscape or ecosystem (Average household income increase) | % | 0 | (+)15% | Woreda statistics | annual | PCU | IP program reports, value chain analysis are part of the projects in agriculture and forestry value chain development. The number of enterprises or cooperatives newly engaged in agriculture and forestry value chains compared to baseline analysis is reported | Reporting and analysis will also examine the extent to which supply chains are gender responsive, e.g. through the adoption of policies to ensure gender equity in value chains.<br><br>Special attention may also be given to how vulnerable communities and households with limited access to productive assets management activities gain or lose in the process.<br><br>Involvement of the private sector in the value chains will have to be evaluated regulary to ensure equity in margin shares from marketing natural resources products. |
| | CO-BENEFIT 2. Just Transition: Social Inclusion and Distributional Impacts: Number of local community members involved in AR and ANR activities | # | 0 | 30% of participants: 1719 (30% women) | MDB project results data | annual | PCU | Project reporting should reveal the number of females as members in forest management groups supported by the IP, the number of female recipients of funding for individual or group investments in household or SME enterprises applying NbS | Here we fill in the key area targeted, or the impact expected, and the link to SDGs |
| | CO-BENEFIT 3. Governance, Policy, and Planning: | # | 0 | | Policy meeting report | annual | EFD | The planned regular policy and strategy may not allways conclude that amendments are needed. Review should be reported | Practival application of policies, strategies and laws in IP areas through investment activities will reveal if there is need for adjustments |
| | CO-BENEFIT 4. Land Tenure, Rights, and Access | # | to be determined | All AR/ANR areas will be certified=1,673,364 | Bureau of Land Mgmt Reports | annual | EFD, Bureau of Land Mgmt | Number newly issued Land Right Certificates for forest plots will reveal the progress in access security | The afforestation and rehabilitation of forest lands need to go together with use rights for those doing the works and taking responsibility of protecting and maintaining the forest |
| | CO-BENEFIT 5. Biodiversity: number of indigenous trees planted | # | 0 | 52 920 000 in AR plus 76 000 000 in ANR | GIS maps with implemen-tation area and attributed models applied | 3 year period | EFD, Woreda Offices | Areas supported by IP with Implementation activities requiring or supporting several use types, such as agro-forestry, tree orchards, planting trees for timber and NTFP production, afforestation concepts with obligations for indigenous tree share should be reported | Intensive production of forest products or agricultural products does not necessarily indicate an increase of biodiversity. High production areas may be often a monculture. Thus only areas with multiple use should be accounted for biodiversity, it may ba assued that diverse use of the same area will require also higher diversity in vegetation and thus lead to higher biodiversity |

| Statement | Indicators | Unit | Baseline | Target | Means of Verification | Frequency | Respon-sibility | Assumptions and SDG Alignment | Evaluation and Learning Approach Key Areas |
|---|---|---|---|---|---|---|---|---|---|
| **NPC PROGRAM-LEVEL OUTPUTS - Investment Implementation and Monitoring:** | | | | | | | | | |
| (A) Integrated sustainable land and natural resource investments implemented | OPTIONAL: Number and type of solutions deployed in agriculture and food systems | # | 0 | 4 | MDB Monitoring Reports | Project Life time | Implementing Agency | Climate Smart Agriculture<br>Climate adapted rangeland management and live stock keeping<br>Climate early warning system<br>Agriculture knowledge information system | Evaluation and learning activities will seek to measure how well the NPC program has addressed key barriers to effective climate-responsive landuse planning and management within and across stakeholder groups through, for example, assessing the level of private sector involvement and the participation of women and other underrepresented groups in the society. The analysis results of the monitoring will be used for improving IP components or for adjustment of the plan.<br><br>Trainings and awareness raising event will be assessed and reviewed for adjustment of designs and contents to further improve project performances. |
| (B) Enhanced access/availability of climate solutions | OPTIONAL: Number and type of solutions deployed in forests and other ecosystems | # | 0 | 3 | MDB Monitoring Reports | Project Life time | Implementing Agency | Advance forest rehabilitation and restoration models, including organisational models for involvement of local population and land tenure ensuring procedures | |
| (C) New climate finance instruments piloted | OPTIONAL: Number and type of solutions deployed in forests and other ecosystems | # | 0 | 1 | MDB Monitoring Reports | Project Life time | Implementing Agency | increased carbon sequestration may be used for participation in carbon certificatin schemes, area included in new carbon credit schemes will be reported | |
| (D) Indigenous People, women, and local communities provided direct access to finance to develop their own projects | OPTIONAL: Number and type of solutions deployed in forests and other ecosystems | # | 0 | 1 | MDB Monitoring Reports | Project Life time | Implementing Agency | Specific consideration of women and other underrepresented groups, such as un-employed youth in implementation or financing of forest restoration activities should be considered here | |
| | OPTIONAL: Number of policies, regulations, codes, standards, or community-led plans related to climate-responsive land and ecosystem management that have been supported (#) | # | to be determined | 238 | MDB Monitoring Reports | Project Life time | Implementing Agency | The envisaged participatory land use planning results for the forest rehabilitation and restoration areas are to be community lead, or at least communities are part of the decision making process | |
| | OPTIONAL: Number of private-sector and/or community-based business models or financing modalities piloted (#) | # | to be determined | to be determined | MDB Monitoring Reports | Project Life time | Implementing Agency | The processing and storage of products from natural resources can be operated as private or cooperative business | |
| | OPTIONAL: Number of people provided with direct access to finance for project development | # | to be determined | to be determined | MDB Monitoring Reports | Project Life time | Implementing Agency | investment and credit schemes related to private sector involvement are foreseen | |
| **NPC PROGRAM-LEVEL OUTPUTS - Investment Implementation and Monitoring:** | | | | | | | | | |
| **Phase 3 Outputs Investment Implementation and monitoring** | | | | | | | | | |
| (A) Integrated sustainable land and natural resource investments implemented | Number and type of solutions deployed in agriculture and food systems | # | 0 | 3 | MDB Monitoring Reports | | Implementing Agency | The IP is focussing in this context on developing climate smart agricultural solutions, which include the identification and use of adapted seeds, solil conservation measures and soil health enhancement activities, such as mulching and improved topsoil humus management. the IP also includes early an warning system for extreme weather events which should help to avoid especially losses of livstock. To avoid losses along | The results of improved storage and processing as well as the impact of the early warning system on the losses of products and livestock needs to be monitored closely to serve on regional and national level as decision making basis for more investment and as encouragement for more private sector investments.<br><br>The establishment of wood and bamboo processing facilities will contribute further to this goal and should be monitored not only for the establishment but also for the supply chain of raw material to guide higher level governments for support further investments and to attract more private sector investments. |
| (B) Enhanced access/availability of climate solutions | | # | 0 | 1 | MDB Monitoring Reports | | Implementing Agency | | |
| (C) New climate finance instruments piloted | | # | 0 | 1 | MDB Monitoring Reports | | Implementing Agency | | |
| (D) Indigenous People, women, and local communities provided direct access to finance to develop their own projects | | # | 0 | to be determined | MDB Monitoring Reports | | Implementing Agency | Especially women but also young people are to be a target for direct access to funds und this IP for their own project, as they have limited access to funding on the free market with standard commercial banks. | the participation as well and the repayment rates need to be monitored to either adjust conditions of the access or to encourage more projects and institutions to apply similar methods for access to finances. |
| **Phase 2 Outputs Investment Plan** | | | | | | | | | |
| (A) Investment action plan developed or enhanced | N/A | N/A | N/A | to be determined | MDB Monitoring Reports | | Implementing Agency | Appropriate planning procedures have to be applied to further develop detailed investment and activity plans for the implementaiton of the IP under the lead of EFD | |
| (B)Public and private priority investments identified and prepared | N/A | N/A | N/A | to be determined | MDB Monitoring Reports | | Implementing Agency | | |

## 9.5 Monitoring and Reporting

This monitoring framework for the CIF IP in Ethiopia seeks to ensure the effective restoration of ecosystem services across targeted landscapes by leveraging NbS. By prioritizing sustainable approaches that harness natural processes, the framework aims to enhance biodiversity, improve land productivity, and strengthen climate resilience while delivering long-term benefits to local communities. This framework is based on the CIF's NPC guidelines, which emphasize the integration of environmental, social, and economic considerations in monitoring and evaluation (M&E), as well as the Integrated Results Framework (IRF) which provides specific metrics and indicators to track progress and outcomes.

The IP implementation will employ a systematic M&E framework designed to capture real-time data on the restoration efforts, measure their impact on ecosystem services, and assess the benefits to local communities. The monitoring process will be participatory, inclusive, and adaptive, ensuring it remains relevant throughout the project lifecycle.

## 9.6 Objectives of the Monitoring & Monitoring Framework

The monitoring framework for the CIF IP encompassing three projects aimed at combating deforestation, forest and land degradation, and enhancing agricultural productivity in Ethiopian landscapes is designed to offer a comprehensive approach to tracking, evaluating, and optimizing project outcomes. The M&E framework seeks to ensure alignment with CIF's strategic goals, facilitate adaptive management, and deliver long-term benefits to both the environment and local communities.

**1. Tracking Progress of Project Activities**

The primary objective of the Monitoring and Evaluation (M&E) framework is to systematically track the progress of sustainable forest management, forest and landscape restoration, and climate-smart agriculture activities across the targeted landscapes. This entails measuring the implementation of NbS against established milestones and timelines. The monitoring process should encompass the following:

- **Baseline Assessment:** Establishing a baseline for key environmental and socioeconomic indicators before the project's initiation to measure progress over time.
- **Ongoing Monitoring:** Regular collection of data to track the implementation of project activities, such as reafforestation, ANR, PFM, CSA, soil conservation, and watershed management. This will include the extent of land restored, the number of trees planted, and the area under sustainable management and climate smart agriculture practices.
- **Performance Metrics:** Utilizing the IRF's predefined performance metrics to assess whether the project is meeting its objectives in terms of restoring ecosystem services, enhancing agricultural production and productivity and improving community resilience. Key performance metrics include changes in land cover, improvements in soil health and crop and livestock productivity and increases in biodiversity.
- **Progress Reports:** Providing timely and accurate reports to CIF and other stakeholders, detailing the progress of project activities, any deviations from the plan, and corrective actions taken.

**2. Assessing the Environmental Impact**

A core objective of the M&E framework is to evaluate the environmental impact of NbS on ecosystem services. This includes:

- **Monitoring changes in biodiversity**, such as species richness and abundance in the restored areas. The framework will assess the recovery of native species, the establishment of ecological corridors, and the reduction of habitat fragmentation.
- **Measuring the amount of carbon sequestered** because of reforestation and afforestation activities. This will involve tracking carbon stock in vegetation and soil, in alignment with CIF's focus on climate change mitigation.
- **Assessing improvements in water regulation**, such as increased groundwater recharge, improved water quality, and reduced sedimentation in rivers and streams. The framework will also monitor the impact of restoration activities on watershed health and flood risk reduction.
- **Monitoring changes in soil health, i**ncluding increased organic matter content, improved soil fertility, and reduced erosion rates. This objective aligns with the project's goal of enhancing agricultural productivity and resilience to climate change.

**3. Evaluating Socioeconomic Benefits**

The monitoring framework aims to evaluate the socioeconomic benefits derived from the NbS ensuring that they contribute to the well-being of local communities. Specific objectives include:

- **Assessing how restoration activities contribute to improved livelihoods**, such as increased income from sustainable agriculture, forestry, and ecotourism. The framework will track the number of jobs created the increase in household income, and the diversification of income sources.
- **Monitoring improvements in food security** because of better soil health, water availability, and agricultural productivity. This includes tracking the diversity of crops grown, the increase in yields, and the reduction in hunger and malnutrition among local populations.
- **Evaluating how project activities enhance the resilience of local communities** to climate change impacts. This involves assessing the adoption of climate-resilient agricultural practices, improvements in water and food security, and the reduction in vulnerability to climate-related hazards.
- **Monitoring whether GESI is adequately mainstreamed**, and the benefits of project activities are equitably distributed among all community members, with a focus on including women, youth, and vulnerable groups. The framework will monitor participation rates, access to resources, and decision-making roles for these groups, in line with CIF's emphasis on social inclusion and gender equality.

**4. Facilitating Adaptive Management**

Another key objective of the monitoring framework is to facilitate adaptive management, ensuring that the NbS remains responsive to changing conditions and emerging challenges. This includes:

- Implementing systems for real-time data collection and analysis to provide timely feedback on project performance. This enables the project team to identify issues early and adjust strategies as needed.
- Incorporating lessons learned from ongoing monitoring into the project's management approach. This involves testing new methods, refining existing practices, and scaling successful interventions to other areas.
- Engaging stakeholders, including local communities, government agencies, and NGOs, in the monitoring process to ensure that their insights and feedback are incorporated into decision-making. This helps to build local ownership of the project and ensures that the interventions are culturally and socially appropriate.
- Monitoring and managing risks associated with the project, such as natural disasters, political instability, or market fluctuations. The framework will include contingency plans and mitigation strategies to address these risks and minimize their impact on project outcomes.

**5. Ensuring Accountability and Transparency**

The monitoring framework is designed to ensure accountability and transparency in the implementation of the NbS. This involves:

- Providing regular reports to CIF, the Ethiopian government, and other stakeholders on the project's progress, impact, and financial management. These reports will be based on the data collected through the monitoring framework and will include both quantitative and qualitative analyses.
- Conducting independent third-party audits of the project's activities, finances, and outcomes to ensure that they meet CIF's standards and objectives. These audits will provide an external validation of the project's achievements and identify areas for improvement.
- Communicating the project's achievements and challenges to the public, including local communities, through accessible formats such as community meetings, newsletters, and online platforms. This promotes transparency and builds trust amongst stakeholders.
- Documenting best practices and lessons learned from the project to share with other CIF-funded projects, policymakers, and practitioners. This contributes to the broader goal of building a knowledge base on effective ecosystem restoration and climate resilience.

## 9.7 Key Indicators and Metrics

Based on the CIF NPC guidelines and the IRF, the following indicators will be used to monitor the progress and impacts of NbS:

**1) Environmental Indicators**

- Biodiversity:
  - Number and diversity of species (flora and fauna) in restored areas.
  - Recovery rates of endangered species.
  - Area of habitat restored or protected.
- Carbon Sequestration:
  - Volume of carbon sequestered in biomass and soil.
  - Changes in greenhouse gas (GHG) emissions in the project area.
- Water Regulation:
  - Changes in water quality and quantity (e.g., sedimentation rates, water table levels).
  - Improvement in watershed management and reduction in flood risks.
- Soil Health:
  - Improvement in soil fertility (e.g., organic matter content, nutrient levels).
  - Reduction in soil erosion rates.

**2) Socioeconomic Indicators**

- Livelihoods:
  - Number of jobs created through restoration activities.
  - Increase in household income from ecosystem services (e.g., sustainable agriculture, ecotourism).
- Food Security:
  - Increase in agricultural productivity and diversity of crops.
  - Reduction in food insecurity levels among local communities.
- Resilience to Climate Change:
  - Increase in community resilience indicators (e.g., access to water, drought-resistant crops).
  - Reduction in vulnerability to climate-related disasters.
- Social Inclusion and Gender Equality:
  - Participation rates of women and vulnerable groups in restoration activities.
  - Improvement in women's access to resources and decision-making.

**3) Institutional and Capacity Building Indicators**

- Institutional Strengthening:

    - Number of local institutions and community-based organizations (CBOs) involved in the project.
    - Improvement in local governance and management of natural resources.
- Capacity Building:
    - Number of individuals trained in sustainable land management practices.
    - Adoption rates of new technologies and practices by local communities.

## 9.8 Data Collection Methods

To ensure accurate and reliable data collection, a combination of qualitative and quantitative methods will have to be employed:

- Satellite imagery and GIS will be used to monitor changes in land cover, forest cover, water bodies, and soil health. This technology allows for large-scale monitoring and the detection of changes over time. Project implementation sites and implemented activities in rehabilitation, reafforestation and afforestation can be recorded and results and summary reports can be taken from the proposed activity "Creation of an internet based national forest land registry for protected, managed, rehabilitated and restored forests or plantation forests".
- The implementation of project activities, especially the records and reports on trainings will be useful to report on capacity building. Records need to be complemented with training reports and assessments of trainees and their gained knowledge from the trainings.
- Regular field surveys will be conducted to collect data on biodiversity, soil health, water quality, and socioeconomic conditions. These surveys will involve local experts, community members, and external consultants.
- Local communities will be actively involved in the monitoring process through participatory rural appraisal (PRA) methods. This approach ensures that local knowledge and perspectives are incorporated into the data collection process.
- Socioeconomic data will be collected through household surveys and focus group discussions (FGDs) to assess changes in livelihoods, food security, and social inclusion.
- Regular feedback sessions with stakeholders, including government agencies, NGOs, and local communities, will be held to gather insights and improve the monitoring process.

## 9.9 Data Management and Analysis

Data collected from various sources will be stored in a centralized database, which will be managed by the project's M&E team. The data will be regularly analyzed to track progress against the project's baseline, which will be established at the outset of the project.

- To ensure the accuracy of the data, validation processes such as cross-checking field data with remote sensing data and using third-party verification where necessary will be implemented.
- The use of mobile technology (smart phones / tablet computers) and cloud-based platforms (KOBO and others) can enable real-time data entry and analysis. This approach allows for timely identification of issues and facilitates adaptive management. Part of the required data management system is included in the proposed intervention under program 4 – project 10 – strengthening knowledge management systems.
- Regular reports will be generated and shared with CIF, the Ethiopian government, and other stakeholders. These reports will include progress updates, impact assessments, and lessons learned.

## 9.10 Adaptive Management and Learning

The monitoring framework is designed to support adaptive management by providing continuous feedback on the effectiveness of the implementation of NbS. This will involve:

- The project team will hold regular review meetings to assess progress and discuss any challenges or opportunities for improvement.
- If the monitoring data indicate that certain strategies are not yielding the desired outcomes, the project team will adjust the implementation approach. This could involve changes in the types of restoration activities, geographic focus, or engagement with stakeholders.
- Lessons learned from the monitoring process will be documented and shared with other CIF projects, local communities, and international stakeholders. This will help to build a body of knowledge on effective NbS that addresses challenges of NPC and promote replication in other regions.

## 9.11 Stakeholder Engagement and Capacity Building

Successful monitoring of the project requires strong stakeholder engagement and capacity building at all levels. This can be ensured by:

- Engaging communities in monitoring activities through participatory approaches. Training will be provided to community members on data collection techniques and the use of monitoring tools.
- Building the capacities of local institutions and government agencies in monitoring and evaluation, ensuring sustainability beyond the project's lifespan.
- Collaborating with local and international research institutions to enhance the quality of data collection and analysis, and to ensure that the monitoring framework is based on the latest scientific knowledge.

The monitoring concept for the CIF IP implementation in Ethiopia is designed to ensure the successful execution of NbS, emphasizing inclusivity, transparency, and adaptability. By integrating environmental, socioeconomic, and institutional indicators, this framework provides a comprehensive approach to measuring the impact of sustainable forest management, forest and landscape restoration, and climate-smart agricultural practices. These efforts aim to halt deforestation and forest degradation, enhance landscape productivity, improve biodiversity, address climate change, and enhance livelihoods. Through real-time data collection, participatory monitoring, and adaptive management, the CIF IP implementation will address the intricated challenges of NPC and strengthen the resilience and well-being of local communities. This monitoring concept aligns with CIF's guidelines and will serve as a model for future projects focused on restoring ecosystem services through NbS.

**Annexes**

Annex 1: Detailed description of the CIF NPC Pillars

Annex 1_CIP NPC IP-description of proje

Annex 2: Project Concept Notes prepared by the MDBs

WB-Ethiopia-CIF NPC-Project Concept

IFC_Ethiopia CIF NPC IP Project Concept Bri

AfDB Ethiopia CIF NPC IP Project Concep

Annex 3: Profile of program implementing districts

Annex 3- Profile of program impelementi

Annex 4: Result of Spatial Analysis done to select program implementing regions and districts

Annex 4- Result of the spacial analysis th

Anex 5: Suitability matching of the CIF NPC IP implementing regions and districts

Annex 5- Suitability macting of the CIf NP

Annex 6: NbS flagship programs implemented in Ethiopia

- Annex 6.1: The GLI

Annex 6.1 Summary report of the Green Le

- Annex 6.2: Other Major NbS flagship programs

Annex 6 NBS programs and practic

Annex 7: Country Absorption Capacity

Annex 8: Co-benefits

Annex 7- Development of Co_B

Annex 9: Sample evidence on stakeholder consultation and quality assurance

Annex Stakeholder Meet June 2024.pdf

Annex 10: Brief Assessment of Absorption Capacity

Annex 10 -
Assessment of Absorb