
Solar
Forest
crop
Shoat
Wind
Transport
Camel
Diagnostic Study on How to Incentivize Private Sector Involvement in NDC Implementation
Industry
Cattle
Fishing
Biogas
Hydro
Geo therma

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Contents

Tables

Figures

Acronyms

AF	Adaptation Fund
AfDB	African Development Bank
CDM	Clean Development Mechanism
CIT	Corporate Income Tax
COP	Countries of Parties
CRGE	Climate Resilience Green Economy
CSA	Climate Smart Agriculture
CIF	Climate Investment Funds
CCSA	Chamber of Commerce and Sectoral Associations
SCCF	Special Climate Change Fund
DAC	Development Assistance Committee
DFID	Department for International Development
DMSPS	Domestic Monetary Sector credit to Private Sector
EFCCC	Environment, Forest and Climate Change Commission
EFD	Ethiopian Forest Development
EPA	Environmental Protection Authority
ENDCs	Ethiopia's Nationally Determined Contributions
EPACC	Ethiopia's Programme of Adaptation to Climate Change (EPACC)
ESSP	Ethiopia Strategy Support Program
Eth-NAPs	Ethiopia's National Adaptation Plans
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FDRE	Federal Democratic Republic of Ethiopia
FIP	Forest Investment Program
GCCA	Global Climate Change Alliance
GCF	Global Climate Fund
GDP	Growth Domestic Production
GEF	Global Environmental Facility
GEM	Green Economy development Model

GGGI	Global Green Growth Initiatives
GHG	Green House Gas
GTP	Growth and Transformation Plan
IFC	International Financial Corporation
INDCs	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
LDCF	Least Developed Country's Fund
LUCF	Land Use Cover and Forest
MDB	Multilateral Development Banks
M & E	Monitoring and Evaluation
MoA	Ministry of Agriculture
MoF	Ministry of Finance
MRV	Measuring Reporting and Verification
NAMAs	Nationally Appropriate Mitigation Actions
NAPA	National Adaptation Program of Action
MoPD	Ministry of Planning and Development
MoWE	Ministry of Water and Energy
MoWIE	Ministry of Water Irrigation and Energy
MoTL	Ministry of Transport and Logistic
MoI	Ministry of Industry
MoUI	Ministry of Urban and Infrastructure
MoH	Ministry of Health
NDC	Nationally Determined Contribution
N/RFSDPs	National and Regional Forest Sector Development Programs
OECD	Organisation for Economic Co-operation and Development
PMO	Prime Minister's Office
PPCR	Pilot Program for Climate Resilience
REDD	Reduce Emission from Deforestation and Degradation
RFC	Reach For Change
SDGs	Sustainable Development Goals
SLM	Sustainable Land Management
SNV	SNV Ethiopia

UNDP	United Nation Development Program
UNFCCC	United Nations Framework Convention on Climate Change
WB/G	World Bank / World Bank Group
WRI	World Resource Institute
10 YPDP	10 Years Perspective Development Plan

0. EXECUTIVE SUMMARY

Ethiopia has made significant progresses in its committed effort to combat climate change through the development of climate resilience green economy strategy and currently through submission of an updated NDC in 2021 which consists of a holistic and whole-of-government approach with strong links to achieving 10 Years Perspective Development Plan and Sustainable Development Goals (SDGs). The updated NDC seeks to decrease emissions by 68.8 percent from the business-as-usual scenario by 2030, with more than 80 percent of the emission reduction concentrated in the Forest & Land Use Sector and Agriculture and the rest primarily in the energy, industry, and waste sectors.

Ethiopia's updated NDC also has a strong adaptation and mitigation components anchored at the agriculture, energy and water sectors. The country's vulnerability to climate change had already threatened the government's goal of reaching middle income status and Ethiopia has therefore developed the CRGE strategy Plan (CRGE) 2011 – 2020) aiming to develop the country's economy towards building a green, low carbon, climate-resilient, equitable, sustainable, and knowledge-based society. The 10-Years Perspective Development Plan is developed in a way it considers climate change adaptation and mitigation policy interventions for building climate resilience economic sectors.

To this end, Ethiopia became member of the NDC-Implementation Partnership as of 2019. Following the submission of Ethiopia's updated NDCs Ethiopia developed a comprehensive multi-sectoral NDC-Implementation partnership plan for the period from 2021 to 2025. The implementation of NDCs involves huge capacity building actions, adaptation and mitigation interventions which all require substantial financial (ranged 316 – 577 billion USD) and technology support.

Opportunities for accessing financial and technological support for NDC implementation are stated at COP 21 of the the Paris Agreement that was adopted by 196 Parties in Paris, on 12 December 2015 to limit global warming to well below 2 degrees Celsius, preferably to 1.5 degrees Celsius, compared to the pre-industrial levels of 1750. To this end, article 6 of the Paris Agreement allows countries to voluntarily cooperate with each other to achieve emission reduction targets set out in their nationally determined

contributions (NDCs). Under this article a country (or countries) will be able to transfer carbon credits earned from the reduction of GHG emissions to help one or more countries to meet climate targets.

Important for implementation of Ethiopia's NDC using the PA's opportunities towards meeting national development targets and global climate objectives are article 6.4, and 6.8 of the PA. Article 6.8 recognizes non-market approaches to promote mitigation and adaptation. It introduces cooperation through finance, technology transfer, and capacity building, where no trading of emission reductions is involved. Article 6.4 explicitly acknowledges the need to incentivize and facilitate the participation of private entities in the mitigation of greenhouse gas emissions by investing on low-carbon investments.
Thus, this diagnostic study was conducted to identify key barriers that prohibit private sector investments in climate change interventions and to draw mechanisms how to engage Private Sector investments in NDC Implementation and incentivise private investments in climate change interventions and hence, catalysing the Implementation of the Ethiopia's updated NDC for meeting the national development targets and the Paris Agreement on limiting the global warming well below 2 degrees Celsius.

Conducting this diagnostic study involves about 68 experts/managers out of 358 listed private sectors; and these include large numbers of expert include project managers, private investment owners, public sectors, funding agencies, private sector promoters. They did provide relevant data set by completing the questionnaire survey and share views on the methodology at the inception and validation workshops. The results of the diagnostic study and key policy recommendations for engaging the private sector in NDC implementation are highlighted as follows.

Private sectors had been engaged in investments in Ethiopia since late 1880s when the royal family members and foreign investors invested in the manufacturing and production areas in key economic sectors, namely in transport, hotel & tourism, industry, agriculture, forests. Examples of such earlier investment initiatives include: Ethio-Djibouti Railway (1894 – 1917), Tayitu Hotel (1898), Wood processing Sawmill at the Mengaesha –Suba forest (1905), Dire-Dawa Cement (1936). Since then, the government's development policies developed by the various government systems generally do anchor at the overall approach to economic growth focusing on capital accumulation in the industry, construction, infrastructure sectors and creation of large scale commercial farms in the agriculture

sector to feed the growing urban population, generate export earnings and provide agricultural inputs to the industry.

However, the landscape of private investment in various economic sectors was hampered by economic and political police reforms, popular upheavals, climate related risks. This attributed to stagnated contribution of the private sector to GDP, as demonstrated by the private sector contribution below 5% of the GDP over a century; and it is very recently that the private sectors' contributions to the national economy approaches to reach close to 20% of the GDP.

The participants of the diagnostic study (FGDs and KIIs) from private and public sectors and funding agencies identified key investment barriers:

i) Financial barriers (e.g., limited upfront funding, foreign currency, price fluctuation etc.);
ii) Technical/ technological barriers (limited technology promotion, skilled & trained manpower etc.);
iii) Policy barriers (limited incentive policy framework for low-carbon investments, limited awareness on tax right and tax exemption policies/regulation/proclamations, limited investment incentives such as lifting excise tax and tax exemption for law-carbon investments).

Despite the identified barriers, there are however good investment proclamations and regulations that create enabling environment for promoting private sector investment in NDC interventions. Such policy framework includes: Investment Proclamation No1180/2020; Investment Incentive Regulation No. 517/2022; Forest Development, Conservation and Utilization Proclamation No. 1065/2018; Investment Proclamation No1180/2020; Public Private Partnership Proclamation No. 1076/2018; Urban Lands Lease Holding Proclamation No. 721/2011; Rural Land Administration and Land Use Proclamation No, 456/2005). The proclamations and regulations state key incentives promoting private investment in any economic sector.

The incentives supported by legal frameworks including among others:

- Income tax exemption of new investments and for expanding/upgrading of existing investment;
- Additional income tax exemption for investors exporting products or services;
- Loss carry forward;

- Exemption of capital goods and construction material from customs duty;
- Exemption of motor vehicles from customs duties;
- The right to use rural and urban land for investments;
- Benefit from carbon sales and eco-system services;
- Compensation in case of expropriation of land for public interest;
- Access to land free from lease;
- Access to loan upon fulfilling appropriate requirements; and more

The diagnostic study recommends renewable energy fuel subsidy, which need to be treated by legal enforcement. In this respect, ministerial Decree on fuel subsidy for low- carbon and energy efficiency projects as well as for climate smart food and energy security projects is necessary.

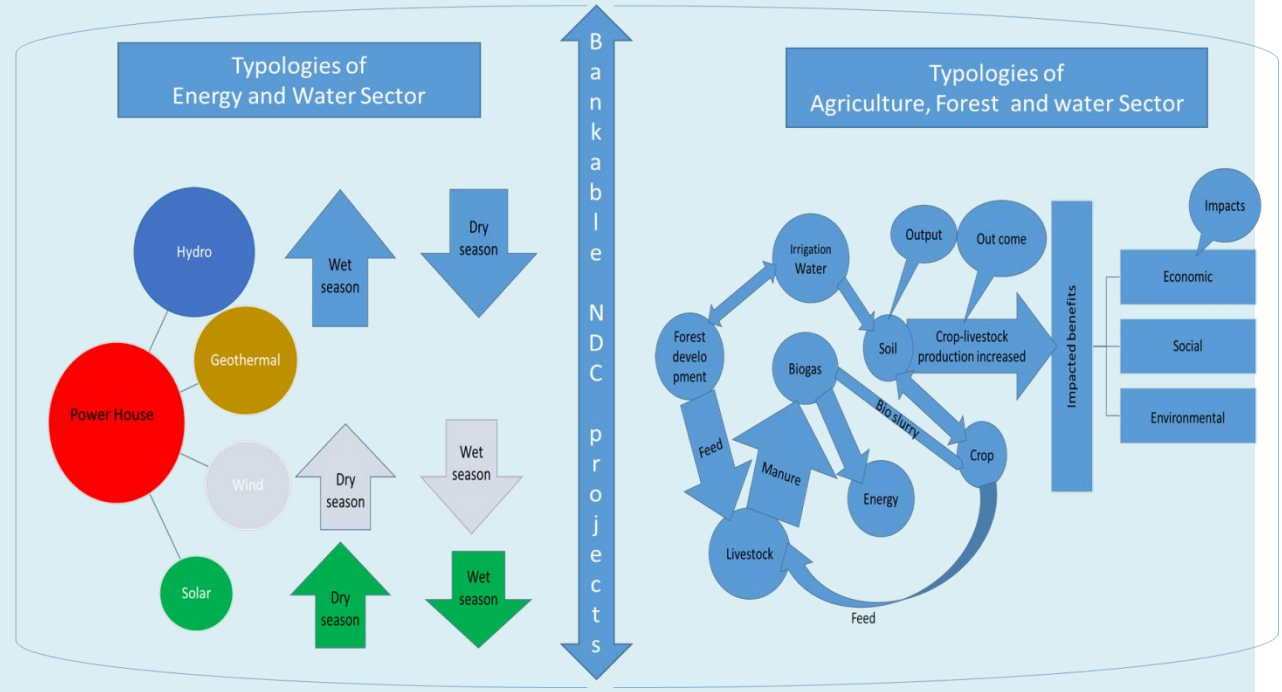
The diagnostic study identified more than 62 typologies with indicative budget requirement of USD 316 - 577 billion which are expected to create wide range job opportunities that could absorb large volume of work forces in the energy, agriculture, industry, transport, construction, infrastructure sectors etc.

The diagnostic study analysed the existing experiences in accessing funding opportunities that may support the private sector investment in NDC interventions. International experiences show that global climate finance allocation from multilateral financial vehicles amounted to USD 45.1 million for adaptation, USD 873.4 million for mitigation interventions and USD 11 million for dual activities in 2016 and 2017. This indicates large volume of climate finance allocation is for mitigation with > 95% share while the adaptation share is just close to 5%.

Furthermore, Ethiopia's experience on accessing climate finance shows that multilateral funding channels (GEF, GCF, AF, WB) allocated USD 19,489,419.7 million to supported climate related projects in Ethiopia. Additionally, Ethiopia thus far received USD 159.7 Million through the CRGE facility directly from bilateral and multilateral financing channels for supporting climate related projects implemented by federal and regional states during 2016 – 2022.

From the view of points of securing more climate finance from global climate finance allocation for supporting the private sector engagement in NDC implementation, our approach of developing bankable project should focus on climate change mitigation interventions centered at the water, energy, and agriculture sectors, as integration of these sectors would meet climate smart energy and food

security both in rural and urban settings. Sectoral considerations for developing bankable projects for catalyzing implementation of NDC are shown by the conceptual framework below.

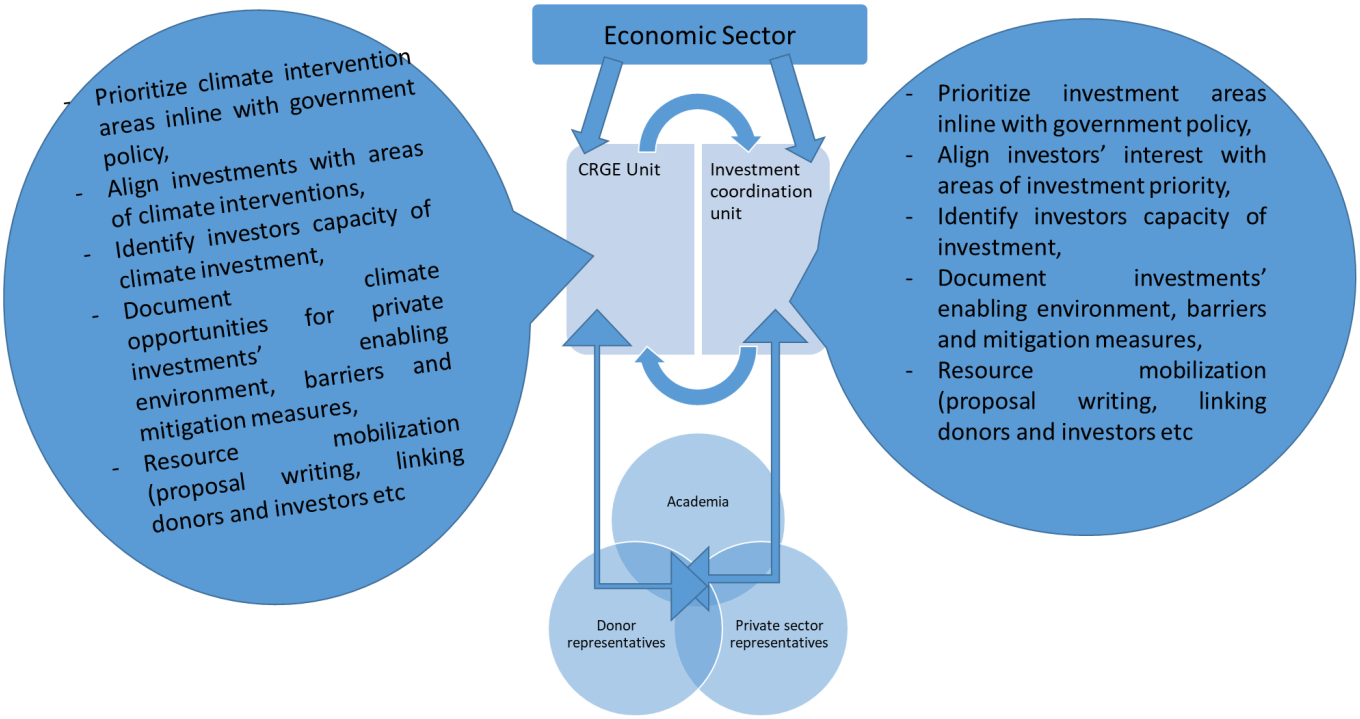


Conceptual framework showing sectorial interventions for developing bankable NDC project for achieving national development goals in building climate smart food & nutrition and energy security while at the same time meeting objectives of the Paris Agreement.

Thus far experiences indicate that there is ample opportunity to secure the required budget from multilateral development banks, climate financing institutions, which are dedicated to finance and support climate related interventions coming from LDCs. Fortunately Ethiopia is a LDC and part of the UNFCCC; and hence, it is eligible for accessing such climate financings. Many of the global financial institutions, namely GEF, GCF, WB etc are financing many climate projects implemented by private and public sectors. Additionally, the availability of the offices of many multilateral and bilateral funding channels in Addis Ababa is an opportunity that creates climate finance-accessing enabling environment.

This makes easy for public and private sectors to establish the link directly with each of the funding agencies. There is a need however, to convert the identified typologies into a bankable package of project proposals that meet the requirements of the funding agencies. In this regard the private and public sectors need to be supported by an institutional arrangement dedicated to the implementation of

NDC. To this end, the diagnostic study proposed establishment of institutional setup in each of NDC implementing public sectors, as shown below.



Proposed institutional arrangement and information sharing framework for catalysing private sector engagement in NDC implementation.

The proposed NDC institutional setup may have a mandate to lead bankable NDC project proposal development, link private and public sectors with funding agencies, find solutions for mitigating investment barriers, mobilize financial and technological supports, follow up the implementation of each NDC projects by various private and public sectors and undertaking more other activities related to NDC implementation. The proposed institutional structure may consist of sectoral CRGE units, investment coordination office, private sector promoters and investors associations, and academia. The proposed NDC implementing institutional setup may have a dedicated staff, budget and office with a clear roles, responsibilities and accountability.

1 INTRODUCTION

1.1. Climate change threats

Climate change is becoming the century's main threat to livelihoods, economic development and is challenging achieving the sustainable development goals. The Intergovernmental Panel for Climate Change ([1]IPCC 2018) projects that global warming from anthropogenic emissions is likely to exceed its pre-industrial average by 1.5– 2.0 ^{0}C between 2030 and 2052. It is expected to persist for centuries to millennia and cause long-term changes in the climate system.

As a result, heavier precipitation and drought will become more frequent ([2]IPCC 2014). This would lead to more frequent floods and severe water scarcity, to which Ethiopia is more vulnerable. Climate variability and changing temperatures will affect both developed and developing countries, disrupting the livelihoods of vulnerable populations and creating economic uncertainties in more vulnerable areas.

1.2. Private Sector Engagement in implementing the Paris Agreement on climate change

In response to addressing the adverse effects of climate change on human being, the Paris Agreement was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015([3]UN.2015). Since then the Paris Agreement is a legally binding international treaty on climate change and entered into force on the 4th of November 2016. The goal of the treaty is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels**.**

The Paris Agreement (PA) made up of 29 Articles, and particularly Article 6 allows countries to voluntarily cooperate with each other to achieve emission reduction targets set out in their nationally determined contributions (NDCs). Under this article a country (or countries) will be able to transfer carbon credits earned from the reduction of GHG emissions to help one or more countries meet climate

[1] IPCC. 2018. Global Warming of 1.5C: Summary for Policy Makers. Accessed in July 2019. https:// report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf.
[2] IPCC. 2014. Climate Change 2014: Synthesis Report, Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)], 151. Geneva, Switzerland.
[3]UN.2015. United Nations 2015. Paris Agreement. 12 December 2015. Paris.

targets. The agreement on Article 6 established an accounting mechanism known as "corresponding adjustment," to ensure that double counting does not occur. Corresponding adjustment requirements may extend beyond compliance markets to the voluntary carbon markets, where demand is driven by the private sector's voluntary commitments to reduce emissions.

Within Article 6 the following sub articles are keys for achieving the temperature goal of the PA:

Article 6.1 recognizes the countries to pursue voluntary cooperation in the implementation of their nationally determined contributions to allow for higher ambition in their mitigation and adaptation actions and to promote sustainable development and environmental integrity;

Article 6.2 creates the basis for trading in GHG emission reductions (or "mitigation outcomes") across countries;

Article 6.3 allows the use of internationally transferred mitigation outcomes to achieve nationally determined contributions where it under this Agreement shall be voluntary and authorized by participating Parties;

Article 6.4 is expected to be similar to the Clean Development Mechanism of the Kyoto Protocol. It establishes a mechanism for trading GHG emission reductions between countries under the supervision of the Conference of Parties (which is the decision-making body of the UN Framework Convention on Climate Change). Article 6.4 aims:

a) To promote the mitigation of greenhouse gas emissions while fostering sustainable development;
b) To incentivize and facilitate participation in the mitigation of greenhouse gas emissions by public and private entities authorized by a Party;
c) To contribute to the reduction of emission levels in the host Party, which will benefit from mitigation activities resulting in emission reductions that can also be used by another Party to fulfil its nationally determined contribution; and
d) To deliver an overall mitigation in global emissions.

Article 6.8 recognizes non-market approaches to promote mitigation and adaptation. It introduces cooperation through finance, technology transfer, and capacity building, where no trading of emission reductions is involved;

Therefore keeping the global warming well below 2.0 ^{0}C; Article 6.4 of the Paris Agreement explicitly acknowledges the need to incentivize and facilitate the participation of private entities in the mitigation of greenhouse gas emissions by investing on low-carbon investments.

Furthermore Article 6.4b is found highly relevant for the implementation of other articles of the PA towards delivering overall mitigation and adaptation objectives of the agreement, as shown in Table 1 below.

Table 1. Contribution of private sector engagement under article 6.4b to the overall achievement of the Paris agreement

Selected articles of the PA to which article 6.4b of PA is contributing at most.	Contribution of article 6.4b: "To incentivize and facilitate participation in the mitigation of greenhouse gas emissions by public and private entities authorized by a Party".
Article 2- Long-term temperature goal: a. Holding the increase in the global average temperature to well below 2°C; b. Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, c. Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.	Incentivising private sector investments in renewable energy sources, sustainable forest development projects and climate smart agriculture and food security interventions, Engaging national, bilateral and multilateral financial institutions in supporting the private sector engagement in the climate change interventions.
Article 4- Mitigation Deals with mitigation and establishes binding commitments by all Parties to prepare, communicate and maintain a nationally determined contribution (NDC) and to pursue domestic measures to achieve mitigation; and states that developing countries should continue enhancing their mitigation efforts, and are encouraged to move toward economy-wide targets over time in	Incentivized private sector engagement in NDC interventions would result in achieving the objectives stated under sub articles of Articles 4 with regards to the contributions of the country's NDC to overall emission reduction targets. Private sectors would be supported for investing in forest sector that play mitigation and adaptation role.

the light of different national circumstances including forests.	
Article 5- Sinks and reservoirs 5.1. Action to conserve and enhance, sinks and reservoirs of greenhouse gases 5.2. Implement and support results-based payments for activities relating to reducing emissions from deforestation and forest degradation,	Private sectors can preferably be engaged in renewable energy sources at various scale, in the conservation and sustainable management of forests for enhancement of forest carbon stocks livelihood supports, while carbon trading/finance is incentivizing carbon benefits associated with such project interventions.
Article 7- Adaptation Establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change.	Large set of adaptation interventions fit at most to private sector investment. Such adaptation interventions include climate smart agricultural production and food security interventions.
Article 8- Loss and damage Importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage.	Private sector can be engaged in providing insurances for economic assets lost and damaged by climate extreme events. Public and private sectors can build a network for climate information flow with regards to early warnings for minimizing climate hazards.
Articles 9, 10, 11- Supports. Article 9. Developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention.	Such financial support from developed countries can be used for financing the private sector in developing nations for their efforts in reducing fossil fuel emissions.
Article 10 share a long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and	Private sector engagement in climate change interventions could be supported by technology development and transfer from Annex 1 countries.

to reduce greenhouse gas emissions.	
Article 11, provides Financial Mechanism of the Convention, including the Green Climate Fund (GCF), shall serve the Agreement. International cooperation on climate-safe technology development and transfer and building capacity in the developing world are also strengthened: a technology framework is established under the agreement and capacity building activities will be enhanced through, inter alia, enhanced support for capacity building actions in developing country Parties and appropriate institutional arrangements.	The private sector in least developed countries, while it is engaged in the climate change interventions; It will be supported by technology development, dissemination and deployment, access to climate finance through education, training and public awareness, and the transparent, timely and accurate communication of information.
Article 13- Transparency The Paris Agreement relies on a robust transparency and accounting system to provide clarity on action and support by Parties, with flexibility for their differing capabilities. In addition to reporting information on mitigation, adaptation and support, the agreement requires that the information submitted by each Party undergoes international review. The Agreement also includes a mechanism that will facilitate implementation and promote compliance in a non-adversarial and non-punitive manner, and will report annually to the COP.	

As presented in Table 1, addressing the climate change challenges through implementation of Article 6 of the PA will require private sectors' engagement with an increased flow of climate finance, improved climate finance governance, as well as the transformation of global financial and energy systems

([4]Buchner et al., 2015) and balancing economic growth and environmental quality ([5]Gyamfi, Bein, and Bekun 2020).

With regard to the role of the private sector in Article 6.4b activities, two types of actors can be distinguished:

a) Infrastructure: Investors and developers of infrastructure for mitigation activities such as new wind farms, equipment for the utilization of landfill gas or electric busses. These actors are responsible for the main infrastructure investment;

b) Transaction: Carbon developers, aggregators, consultants, validators, verifiers, private carbon standards etc. who enable the monetization of the mitigation outcomes generated. These actors are responsible for enabling the transaction under Article 6.

Furthermore, incentivizing the private sector requires a policy framework on the regulatory instrument (which includes influence through legal frameworks); the economic instrument (which includes influence through price and non-price mechanisms); and the information instrument (which includes influence through awareness). In this respect, the regulatory instrument that the private sector should adhere to their ability to access credit, enforce contracts, buy property, process goods through customs, pay taxes and conduct other everyday activities efficiently depends on a business environment that protects property rights without unnecessarily burdensome or inappropriate regulations. Any private sector engaged in climate interventions require to meet the various components of the regulatory environment which include among others: business registration; business licensing; Labor Regulations; Property Registration; Credit Regulations; Tax Administration; Customs and trade facilitation; contract enforcement; Bankruptcy; Alternative Dispute Resolution; Competition Policy and Inspections.

The economic instrument generally provides wide range of interdependency of private and public investments and managements. In Ethiopia like most developing countries, the public sector provides a wide range of services such as electricity, transport, telecommunications, and water supply, education, vocational training, health, and other social services. The public sector controls also development credits and loans. In this respect, if public investment is inefficient its costs become excessive and its output

[4] Buchner, B, C Trabacchi, F Mazza, D Abramskiehn, and D Wang. 2015. The Global Landscape of Climate Finance. Venice, Italy: Climate Policy Initiative Report .

[5] Gyamfi, B. A., M. A. Bein, and F. V. Bekun. 2020a. "Investigating the Nexus Between Hydroelectricity Energy, Renewable Energy, Non-Renewable Energy Consumption on Output: Evidence from E7 Countries." Environ Sci Pollut Res Int. Jul 27 (20): 25327–25339. doi:10.1007/s11356-020-08909-8.

becomes low leading to reduced economic returns from the country's total available investment capital. This may make the public sector to have more cost than they earn; and in consequence, the private sector may be asked to bear the brunt of additional taxes to subsidize the public sector/enterprises.

Additionally, if services from public sectors are inadequate/unreliable/inefficient, then the private sector will be less efficient. Good private and public sector economic policy instruments enable the private and public sectors capable of handling large projects and attracting of foreign investments. Likewise the pricing of public services can have a major impact on taxation, subsidies, government regulations, and direct intervention; and this may foster unstable private sector.

1.3. Opportunities for Ethiopian private sector

Climate finance can provide additional support for business opportunities geared towards resilience, low carbon and other national development objectives and targets indicated in the updated NDCs, 10-Years Perspective Development Plan (10 YPDP), NDC-Implementation Partnership Plan (NDC-IPP). Therefore to attract private investors, nationally identified climate intervention target areas must be first analysed, packaged, and made both attractive and visible for climate investment to potential investors in terms of profitability, climate agenda relevance, funding objectives. Climate intervention target areas for 2025 - 2030 are currently documented with indicated budget requirement by sectoral ministries in updated NDC 2021, such budget gap need to be covered from elsewhere; i.e., looking funding in line with the PA. For these nationally identified intervention typologies, anticipated potential funding agencies and anticipated Adaptation and Mitigation effects are also available and are functional in various projects in Ethiopia. These however need to show the extent of Ethiopia's readiness for its NDCs implementation towards meeting the PA.

1.4. Ethiopia's readiness in response to the Paris Agreement

In response to the Paris Agreement, Ethiopia has submitted its Intended Nationally Determined Contribution (INDC) to the UNFCCC on June 2015. After ratifying the Paris Agreement in March 2017 the government approved it as Ethiopia's 1st Nationally Determined Contributions (NDC) by developing

updated NDCs implementation ([6]FDRE. 2021). The updated NDC has set 2025 interim and 2030 final NDC targets and has identified 40 adaptation interventions. Implementation of updated NDC targets at emission reduction by 68.8% by 2030 which will cost estimated amount of USD 316 Billion USD, of which 63.2 billion will be covered by own finance and the remaining expected to be mobilized from international donors.

Towards implementation of climate change adaptation and mitigation initiatives, sectoral line ministries have developed sectoral NDC Implementation Partnership Plan (NDC-IPP) ([7]EPA and UNDP. 2022) roadmap which is anchored at CRGE, 10-Years Perspective Development Plan (10YPDP) and other flagship programs dealing with climate change mitigation and adaptation. The sectors included in the updated NDC and in the updated NDC Implementation Partnership Plan are Agriculture, Forest, Transport, Energy, Industry, Mining, Health and Urban. Sectoral updated NDCs roadmap identified key capacity gaps (technical, financial, technological, system), climate change adaptation and mitigation interventions and draw recommendations for effective implementation of NDCs roadmap towards meeting the emission reduction targets.

2. BACKGROUND AND SITUATIONAL ANALYSIS

2.1. Potential of Private Sector Investments towards NDCs Strategy

Updated NDCs of Ethiopia seeks to promote private sector investments in climate actions. The main targets are mitigation and adaptation sectors including Agriculture, Forest, Transport, Energy, Industry, Mining, and Urban, and Waste. These are to be achieved through leveraging commitments from Multilateral Development Banks, International Development Partners, and Bilateral financing Sources which support the country's development programs using climate finance to reduce project investment risks. Equally important will be creative ways to attract private investment to support mitigation and adaptation interventions.

[6] EFDRE-2021. Updated Nationally Determined Contribution. July 2021.

Recently, EPA, UNDP and NDC Partnership Support Unit documented Climate-related activities of sectoral NDC-IPP that encompass a wide variety of project types (typology) (Table 2) concentrated on both adaptation and mitigation. The typologies are generally opening avenue for commercial opportunities relevant to the NDCs. They are found relevant for private sector investment. Table 2 shows these sectoral typologies as well as financing support providers and anticipated adaptation and mitigation effects associated with them (EPA , UNDP 2022).

These sectoral NDCs- typologies are aligned with Article 6 activities of the Paris agreement, and provide Potential Private Sector NDC Project Investments towards NDC implementation. In order to enhance the role of the private sector in NDC-activities, the typologies were grouped in to two categories following the roles of the actors (i.e. typologies under private sector actors for Infrastructure and Transaction).

Issues 1:

However, the engagement of the private sector in these targeted investments of climate change adaptation and mitigation actions are limited. Furthermore, barriers and opportunities, enabling environment, cases studies of private sector investment in climate change as well as incentive mechanisms and technical and financial sources for facilitating the private sector engagement in climate change investment interventions are not well documented/studied.

Table 2. Possible typologies of Private Sector Investment in implementing updated NDCs.

Typologies/ type of projects	Anticipated Potential Funding Sources	Anticipated Adaptation and Mitigation Effects as a result of private sector engagement in various typologies
Sector: 1. Mines and Petroleum		

1.Improved sustainable natural resource management through safeguarding landscapes	GEF, DANIDA, EU, GGGI	-Increase in carbon storage in biomass, soils, dead wood, and litter (carbon sink) and or removals
2. Built social protection and livelihood options of vulnerable people		
3.Enhanced alternative and renewable power generation and management		
4.Improved early warning systems		
Sector 2: Transport & Logistic		
1. Improve transport electrification	UNDP, World Bank, DFID, GCF	-Decrease in emissions from fossil fuel burning for transport,
2. Improved public transportation		
3. Built sustainable transport system for resilience through enhanced access to mobility		
4. Increased climate resilient designs and safety standards for major transport systems		
Sector: 3. Urban Development & Construction		
1. 3.945 Mt CO2e Green house gas emission Reduced (Mitigation)	GEF, UNDP, World Bank	Decrease in emissions from waste and or by using dry waste for energy; -Increase in carbon storage in tree biomass, soils, dead wood, and litter (carbon sink) and or removals
2. Enhanced climate resilience urban infrastructure of 75 cities/towns (Adaptation)		
3. Improved climate resilience housing for reducing the effects on people health mentally and physically (Adaptation)		
4. Improved productivity and revenue of Food security beneficiaries (Adaptation)		
Sector 4. Water, Irrigation & Energy: a. Mitigation Actions		
1. Generating electricity from Renewable sources (grid	SNV, Denmark, France,	-Decrease in

and off-grid)to reduce GHG emission 4 Mt Co2 eq.	UNFCCC, GIZ, AfDB, UNDP, World Bank, USAID, UNICEF, Norway, Italy, GCF, Adaptation Fund, EU, GIZ	emissions from fossil fuel burning for transport, industry, household energy; -Decrease in Methane emission by methane trapping for energy; -Decrease in Emission from biomass and fossil fuel burning for household, transport, industry
2. Shifted from residential biomass energy demand to electricity and improved cook stoves		
3. Reducing emissions from wastewater management		
4. Enhanced and ensured Integrated water resources management/IWRM/ towards climate change mitigation		
Sector 4. Water, Irrigation & Energy: b. Adaptation Actions		
1. Enhanced and ensured Integrated water resources management/IWRM/ towards climate change adaptation solutions.		
2. Increased access to safe and clean water for rural and urban households, in a climate-resilient manner		
3. Expanded medium and large scale irrigation systems to enhance adaptability		
4. Enhancing alternative and renewable power generation and anagement)providing adequate and reliable electricity through renewable energy development		
5. Number of climate and early warning data produced and disseminated respective to water and Energy sector		
5. Forest Development Sector		
1. Increased national forest coverage	Norway, NICFI, World Bank (FCPF, BioCF), UN (UNDP, UNREDD, FAO, UNEP), Sweden (SIDA),	-Increase in carbon storage in biomass, soils, dead trees etc and or removals or $CO_{2;}$
2. Enhanced sustainable forest management		
3. Improved sustainable utilization of forest resources and economic and ecosystem contributions		
4. Increased capacities to implement and scale up forestry practices		

5. Enhanced forest protection and health in forest ecosystems	Germany (KfW, GIZ), Denmark, UK, NFG, ICRAF, World Vision, Gaia, SNV, BARR Foundation, CIFOR, WRI,	-Avoid emission from forest fire
Sector 6. Industry Sector		
1. Improved alternative production process and emission reduction. This also includes clinker substitution, as clinker substitution is one of the cement industry sector mitigation measure identified.	DFID, USAID/USFS, EU, UNDP	-Decrease in emission from energy-inefficient old technologies
2.Competitive low emission production technology adopted		
3.Integrated industrial waste management system developed		
Sector 7. Agriculture & Natural Resources Sector		
1. Enhanced Food security by improving agricultural Productivity in Climate-Smart manner	World Bank, AFDB, IFAD, EU, FAO, Adaptation Fund, GIZ	-Increase in Emission from fossil fuel burning for land preparation using farm machinery; -Decreases in NO2 emission from use of synthetic fertilizer and or by substituting inorganic fertilizer by compost;
2. Diversified livestock and animal mix, including promotion of poultry and small ruminants and		
3. Enhanced climate resilience in livestock		
4. Enhanced Prevention and controlled spread of climate-driven vector-borne diseases		
5. Improved rangeland and pasture-land management diversification, including selection of drought- resistant animal forage Varieties		
6. Reduced crop loss due to crop disease and pest incidence (Reduced prevalence of Crop disease and pest(%))		
7. Strengthened drought and crop insurance mechanisms for climate risk management/		

8. Strengthened drought and Livestock insurance mechanisms for climate risk management		-Decrease in emission from fossil fuel burning for farm machinery; -Increase in emissions from enteric fermentation
9. Enhanced sustainable natural resources development, management, utilization and watershed protection.		

2.2. Private sector engagement: Definitions and possible areas of engagement

According to UNDP's Policy on Risk Management for Partnerships with the Private Sector, UNDP defines the private sector as:

(a) For-profit and commercial enterprises of any size, whether privately owned, public or fully governed by governments,

(b) Corporate foundations and foundations directly funded and/or governed by a business entity,

(c) Business associations, coalitions and alliances, including chambers of commerce, employers' associations, cooperatives, and industry and cross-industry initiatives where the participants are for-profit enterprises. Commercial enterprises include:

- Micro, Small & Medium Enterprises (MSMEs) – The local private sector in developing countries consists primarily of MSMEs, which include sole proprietors, smallholder and family farms, and enterprises;
- Large Enterprises & Multinational Corporations (MNCs) – Large enterprises employ 50 or more employees and are more prevalent in advanced developing countries. MNCs are increasingly active in developing countries as registered companies with in-country operations, and also through indirect investments through their supply chains;
- Capital Providers (private financers, Investors, insurance companies, private foundations) & Market Facilitators – Actors that make direct investments and provide financial services,

respectively. They include banks, venture capitalists and angel investors. UNDP also works with IFIs/DFIs as capital providers, often linked to catalysing commercial capital;

Private financiers provide direct financing to private enterprises (non-state, commercial companies) for their products and services of climate change adaptation and mitigation actions to build climate resilience to support adaptation and mitigation intervention priorities and that invest in enhancing the resilience of their operations and supply chains and can support government interventions through public–private partnerships (Crawford & Church, 2019).

The private sector was more broadly represented in the Paris COP than at any previous COPs. In order to turn the Paris climate agreement into climate action, the inventiveness and finance of the private sector is highly required; and hence major corporations and financial institutions made commitments to decrease their carbon footprints, engage in sustainable resource management and finance climate action. However, climate change can have multiple impacts on private sector companies in two ways: Firstly, it creates a series of new business risks, resulted from adverse impacts of extreme weather events (e.g. water scarcity or flooding, land slide etc), and secondly companies are also exposed to transition risks which arise from society's need to respond to climate change. To this end companies are demanding for technologies, markets, government policy and regulation to confront what appears to be a growing climate-threat to implementing traditional economic growth and development initiatives.

On the other hand, climate change presents opportunities for private sectors (companies) to create new more resilient products and services which are less dependent on imported fossil fuels, known for high carbon sequestration enhancement and encourage similar responses from others. These opportunities for example are self-evident for Ethiopian companies promoting agriculture & food security, degraded land restoration, use of adequately available renewable energy sources through integrated hydropower-schemes, agro-industries and Green Legacy initiatives that may also offer nature-based eco-tourism services to local and international visitors resulting in a destination brand committed to conservation and sustainable use of natural assets (including forested landscape and water bodies). These actions can foster competitiveness and unlock new market opportunities for collective security and local economic development.

In this respect, climate finance can provide additional support for business opportunities geared towards resilience, low carbon and other national development objectives and targets indicated in the updated NDCs, 10-Years Perspective Development Plan (10 YPDP), NDC-Implementation & Partnership Plan (NDC-IPP). Therefore to attract private investors, nationally identified climate intervention target areas must be analysed, packaged, and made both attractive and visible for climate investment to potential investors.

Issue 2:

In this regard, selection of priority climate actions from wide range of policy interventions (Updated NDC, 10YPDP, NDC-IPP) to attract private investments (private engagement), particularly for local MSMEs and MNCs are key for Ethiopia to achieve its NDC goals.

For supporting the private sector engagement in climate investment, at the global level huge financing opportunities have emerged in response to the climate crisis. To this end, Multilateral Development Banks, UN Agencies and other development partners operate as intermediaries channelling this technical support and new and 'additional' climate finance to least developing and most vulnerable regions/countries like Ethiopia. For NDC-target interventions, multilateral development banks, development partners and UN-Agencies are identified as potential sources of funding and technical support.

Issue 3:

Therefore, prioritizing NDCs-targets, and matching them with priorities of climate financing institutions, development partners, UN-Agencies and then identifying the most appropriate blend of finance sources are key for attracting the private sector to engage in climate investment.

These are believed to be achieved through leveraging commitments from public sector support programs (e.g. budgetary support to NDC-target typologies) and sustainable development interventions from other international development partners (e.g. WB, UNDP, GIZ, SIDA etc). Equally important will be

creative ways to attract private investment to support both adaptation and mitigation and its capacity building needs.

Issue 4:

There is therefore, urgent need to conduct diagnostic studies on all the projects listed in the updated NDC Priority Actions ([8]Updated NDC) and 10-YPDP priority investment interventions for identifying potential areas of investment suitable for local and international private sector investment in the updated NDCs implementation.

2.3. Source of funding for private sector engagement in climate investment

From review of literature studies we identify sources of financing for the Private Sector Investments on climate change; and these include among others:

- Multilateral development banks (MDBs);
- Foundations;
- Corporations;
- Individual Donors;
- Special Events- fundraising;
- Earned Income- Sales, fees, income generating activities;
- Religious Institutions;
- Governments and public sector financing;
- Bilateral institutions;
- Local private financiers;
- Institutional investors;
- Private financier's- provide direct financing to the private enterprises includes: Private commercial banks, institutional investors, microfinance institutions, insurance companies and private foundations,

[8] EFCC, MoF, UNDP, WB.2021.Ethiopia's Nationally Determined Contribution (NDC) Update. Technical Report.

- Private enterprises- supply services and products that build climate resilience to support adaptation and mitigation priorities;
- Non-state commercial corporations- MSMEs and multinational corporations;
- Instruments for private investment- includes:
    - Debt financing (loans, micro-credit, and green credit lines); equity investments (purchasing shares in climate project or relevant business in exchange for partial ownership); and
    - Grants,
- Risk management funding instruments: risk financing facilities, risk transfer, insurances etc.

Issue 5:

Now therefore there is a need to conduct diagnostic studies to determine which financial sources/instruments for which NDC-typologies are appropriate and which incentive mechanisms can be avail to engage the private sector in investing on climate change adaptation and mitigation interventions.

2.4. Challenges and barriers of engaging the private sector in climate change project activities

Review of case studies on private sector investment on various climate related projects do report that challenges and barriers that face the private sector depend on the types of services and goods that the private sector businesses are providing ([9]UNDP. 2014; [10]Bhim Adhikari & Lolita Shaila Safaee Chalkasra (2021). Accordingly, key challenges that hinder the private sector investment on climate activities include among others:

- **Extreme weather events** that pose a physical risks to the private business operations (e.g. drought, flooding). Risks include both direct and indirect risks;

[9] UNDP.2014. Strategy Note. Engaging the private sector in the context of climate change adaptation, September 14, 2021 | DRAFT.

[10] Bhim Adhikari & Lolita Shaila Safaee Chalkasra (2021): Mobilizing private sector investment for climate action: enhancing ambition and scaling up implementation, Journal of Sustainable Finance & Investment, DOI: 10.1080/20430795.2021.1917929.

- **Lack of financially viable** and bankable projects;
- **Insufficient Climate Data & Absence of Climate Change Risk Assessments and information flow-** This include lack of country-level climate risk and vulnerability data sets and information services resulting lack of complete knowledge of climate risks that guide investment decision-making on climate action. Furthermore, climate-related investment and information flow are weak at country level, with the majority of data collection and information availability are taking place in a fragmented way/approach. Thus far there are gaps in government as well as development partners to understand how public support (through different incentive as well as policy instruments) can be used to mobilize private finance for climate actions both for mitigation and adaptation.
- **Perception of Resilience-building as Public Sector Responsibility**- this includes political economy issues, gender and culture that play an influential role in the perceptions on how climate change risk management should best be pursued. It also includes low perception of actual returns on investment in climate activities;
- **Weak Identification and Evaluation of Cost-effective Adaptation and mitigation measures**- include better assessed and prioritized available adaptation and mitigation measures and options for businesses entities;
- **Weak Financial Incentives to Fund Adaptation and mitigation measures**- E.g. Investments that are required for climate change risk management can have relatively large upfront costs, relatively long payback times, and other uncertainties to those who need to bear such costs. Banks and other financial intermediaries, perceiving unfavourable risk-return profiles and failing to price in climate risks due to poor awareness, might hesitate to invest in such activities;
- **Lack of Effective Institutional Arrangements for Adaptation Planning-** Government institutions are crucial for catalysing more private investment in adaptation and mitigation by articulating national adaptation goals, setting adequate standards and policies to meet those goals, and planning how to ensure private sector participation and attract financing to meet climate action objectives;
- **Lack of Technical Capacity to Implement Mitigation Adaptation Measures**-This include inability to access technical expertise due to scarcity in available experts and lack of finance;
- **Lack of Effective Institutional Arrangements and coordination for Mitigation Adaptation Planning**- this include obstacles to investing in mitigation and adaptation as well as lack of implementation of public financial policy de-risking instruments, potentially caused by capacity

constraints in identifying and implementing right instruments to create risk-return profile that can most cost□effectively attract investments;

- **Lack of Banks' Climate Change Knowledge a Major Constraint on Private Sector Involvement-** this include lack of capacity of financial institutions in both public and private sectors to evaluate projects in relation to specific types of climate change investments and their risk profiles, means that banks often find it difficult to develop and structure appropriate financial products. Most of the commercial banks in Ethiopia rely on short term deposits, and an asset-liability mismatch also limits their ability and willingness to structure financial products with the longer tenure that is typically needed for climate change investments. World Bank and AfDB, along with other development partners provide grants for Solar, Biogas and other alternative energy projects. A policy framework and a dedicated credit facility for banks needs to be established to finance Mitigation and Adaptation projects. Additionally, there is also a problem of implementation guidelines for existing policy framework and there is low attention to policy advocacy, networking and Business to Business activities. These need to be addressed for engaging the private sector in various climate interventions.
- **Limited clarity on** the government's capital- investment gaps to achieve mitigation and adaptation goals where private investment is needed. There is a disconnect between the public and private sectors with regard to information sharing and policy makings, and private sectors are less informed about the potential investment opportunities arising from the updated NDCs across all development sectors;
- **Lack of access to credit**- is a barrier to domestic entrepreneurship in the climate adaptation and mitigation arenas. The extent of this problem is difficult to quantify because this information is not routinely recorded. From the private point of view, other sources of finance such as crowd funding, angel investors, joint ventures and start up financing programs is not getting due attention from all concerned bodies of private and public sectors. As a result, there are also challenges of market for private sectors. Towards effectively implementing the updated NDC, responsible marketing, green marketing and social marketing should be promoted to be implemented by private sectors .Such marketing mechanism are not clearly understood and well institutionalized in government organizations in regulatory and support functions.

Issue 6:

Now therefore there is a need to conduct diagnostic studies to determine which of these barriers are often occurring and become key obstacles for the engagement of the private sectors to invest in climate change mitigation and adaptation interventions in NDC-sectoral projects;

2.5. Incentive mechanism and key enabling policy environment for engaging the private sector in climate change project activities

From wide range of literature and case studies review ([11]Arame Tall et al.) the following among others were found to be key enabling environment and incentive mechanisms which the government play a key role to address the barriers:

- **Making localized climate risk and vulnerability data** available and embedding climate risks in capital investment planning undertaken by governments and their development partners;
- **Setting up effective institutional arrangements** for multi-sector adaptation and mitigation planning. This include a better articulation of adaptation and resilience goals at the national level;
- **Establishing the policies/ regulations/standards, and articulating clear plans**,- including who will do what, where, when, and how to enable private sector participation. The government is expected to design and reframe a policy that encourages and incentivise MSMEs to work in eco-inclusive businesses to contribute to sustainable agriculture, clean energy and green technologies.
- **Strengthening financial incentives (or reducing risks/costs) for private participation**—through public finance instruments such as blended finance, credit enhancement, and other targeted risk reduction or revenue-boosting measures;

[11] Arame Tall, Sarah Lynagh, Candela Blanco Vecchi, Pepukaye Bardouille, Felipe Montoya Pino, Elham Shabahat, Vladimir Stenek, Fiona Stewart, Samantha Power, Cindy Paladines, Philippe Neves and Lori Kerr. No date. Enabling Private Investment in climate adaptation & resilience. Current Status, Barriers to Investment and Blueprint for Action. WBG and GFDRR.

- **Support long-term adaptation planning and taking a whole-of-government approach**- This should be done as part of a country's climate strategy, through the National Adaptation Plan (NAP) and Nationally Determined Contribution (NDC) planning processes along with the associated tangible climate investments in each climate-vulnerable sector;
- **Develop a national adaptation and mitigation investment plan-** which flows naturally from a well-developed national adaptation and resilience strategy (e.g. CRGE, NDCs), to outline a portfolio of projects (e.g. Updated NDC investment interventions) that are ready for investment by public or private entities, domestic and international;
- **Conduct a market assessment and screen the pipeline for "bankable" projects for different investors-** Once adaptation and mitigation investment priorities have been identified, the projects need to be assessed to determine which are "bankable"—that is, potentially attractive to investors, whether MDBs, International Development Partners and other impact investors, or purely commercial investors;
- **Provide on-going support for project preparation**- Once a project has been identified as bankable, it needs to receive targeted support to prepare it to go to market and attract commercial financing. This involves detailed pre-feasibility and feasibility studies to ensure the project will actually be able to attract private investment; changes to policies, incentives, metrics, and market signals may be needed;
- **Support individual projects to close the transaction**- This involves helping coordinate project financing with relevant investors for projects that are ready for investment, including through technical assistance.

Issue 7:

Now therefore there is a need to conduct diagnostic studies to map key policy enabling environment and incentive mechanism that promote the private investment in the NDC-targeted projects across climate vulnerable development sectors.

2.6. Legal and policy context supporting private sector investment in NDC implementation

Ethiopia has set of investment policy, climate policy and other sectoral policies, proclamations, regulations and directives. Intuitional arrangement for climate (i.e. sectoral CRGE implementing units) is also in place and is operational jointly by the ministry of finance and EPA.

Issue 8:

Now therefore there is a knowledge gap in understanding to what extent the existing investment policy and its legal context are governing the private sector engagement in climate change, including any existing institutional arrangements that do or could promote such engagement. These policies and legal frameworks need to be reviewed to determine the gaps and understanding to what extent they could catalyse the private sector investments in NDC interventions.

To address the knowledge gap, the consultant and the workshop participants did analyze the legal and policy context governing private sector engagement in climate change, including any existing institutional arrangements that do or could promote such engagement. This analysis did include a review of domestic laws, regulations, and policies relevant to climate change adaptation; a country's international commitments to adaptation action; national development plans and priorities to ensure alignment. So that in a legislative cycle should an engagement strategy be developed, it can be presented to policy and funding committees. In this regard, the policy analyses was guided by a questionnaire shown in section 4.3, and annex 3,4.

2.7. Building Private- Public Partnership (PPP)

There are at least three Actors, who could engage in investment on climate activities. These are:

i. The private sector,
ii. The public sector and
iii. The Funding agencies/ Donors

Each Actor has its own specific objectives, roles and functions which it plays while engaging in the climate activities, as shown in Table 3. Their concerted efforts, as shown in Figure 1, are keys for achieving climate objectives of climate actions/strategies.

Issue 9

There is, however, knowledge gaps on building concerted efforts of private- and public sectors along with funding agencies in implementing climate actions through their engagement in various investment interventions.

Table 3. Engagements of private, public and funding sectors in climate activities

Actors	Description of roles and level of engagement
i. Private sectors	- Invest on climate activities, - Working for profit, - Include private enterprises: Multinational companies, small and medium-sized enterprises, farmers organizations, etc., - Funding sources are loans, grants, etc
ii. Public sectors	- Government and government affiliated organizations - Invest on climate activities that require large capital investment which is beyond the private sector, and aim at meeting national, regional and global significance, - Create policy enabling environment for engaging the private sectors, funding agencies and NGOs in climate activities, - Working not for profit, - Funding sources are government budget, Multilateral Development Banks, Grants, Bilateral development organizations, UN-Agencies, Loans from international/regional development Banks;

iii. Funding Agencies	- Provide financial and technical support to private and public sectors for engaging them in climate activities, - Include: Multilateral Development Banks, National/International/Regional development Banks, Bilateral organizations, Country specific Development Agencies, Working not for profit, National and International Business organization whose business success is highly affected by the climate change foot print, national/international NGOs, Religion organizations, - Working not for profit,

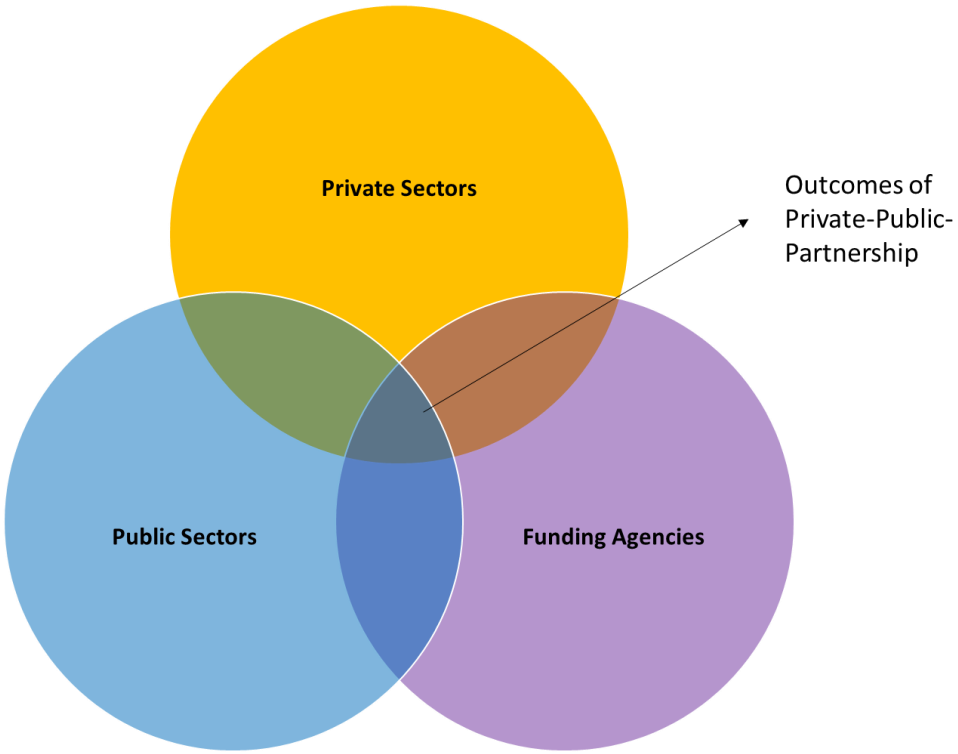


Figure 1. Conceptual framework for Private-Public Partnership engagement in climate activities of NDC implementation.

2.8. Rationale for Diagnostic Study on Private Involvement in NDC Implementation

Given the fact that the private sector is a large emitter of greenhouse gases, and also providing innovative solutions to address climate change adaptation and mitigation, the multiple functions

provided by the private sectors have been recognized by Countries of Parties when they were adopting the Paris Agreement and its Article 6.4, which explicitly aims to incentivize and facilitate the participation in the mitigation of greenhouse gas emissions by private entities (Article. 6.4 (b)). The general consensus on this respect indicated that there is great potential in the use of policy instruments, incentives, and standards to advance private investment in adaptation and mitigation; however, there is limited practical knowledge on how to do it, or how different policy instruments have been used to date ([12]Tall et al).

Generally Development Strategic Direction of the Ethiopian Government as articulated in its 10-YPDP and its Climate Finance Strategy for updated NDC seeks to promote private sector investments in climate actions. The main investment targets planned in sectoral updated NDC and 10-YPDP are mitigation, adaptation and capacity building sectors including energy and waste, agriculture and forestry, transport, industry, mining, health and urban sectors. Furthermore, the CRGE initiative follows a sectoral approach, and its green economy plan is based on four pillars:

i. Improving crop and livestock production practices to increase food security and farmer income while lowering emissions;
ii. Protecting and re-establishing forests for their economic and ecosystem services, including carbon storage;
iii. Increasing electricity generation from renewable sources of energy for domestic and regional markets; and
iv. Accelerating the adoption of modern and energy-efficient technologies in transportation, industrial sectors, and buildings.

Likewise, Ethiopia's fifteen-year National Adaptation Plan (ETH-NAP) with the overarching objective of reducing the country's vulnerability to the impacts of climate change has identified the most vulnerable sectors, including agriculture, forestry, water, and energy, for its full-scale implementation at all levels and across different development sectors.

[12] Arame Tall, Sarah Lynagh, Candela Blanco Vecchi et al. No date. Enabling private investment in climate adaptation & resilience: Current Status, Barriers to Investment and Blueprint for Action. World Bank Group and GFDRR.

All these sectoral plans are presenting generally recognized commercial opportunities relevant to the NDCs. The sectoral plans capture the activities leading to both national and international impacts and natural capitals which private sector investors consider them as priority sectors for their investment.

The rationales of conducting this diagnostic study on private investment in NDC implementation include but not limited to:

i. The engagement of the private sector in the NDC-targeted investments of climate change adaptation and mitigation actions are limited. Furthermore, barriers and opportunities, enabling environment, cases studies of private sector investment in climate change as well as incentive mechanisms and technical and financial sources for facilitating the private sector engagement in climate change investment interventions are not well documented/studied;

ii. Selection of priority climate actions from wide range of policy interventions (Updated NDC, 10YPDP, NDC-IPP) to attract private investments (private engagement), particularly for local MSMEs and MNCs are key for Ethiopia to achieve its NDC goals;

iii. Prioritizing NDCs-targets, and matching them with priorities of climate financing institutions, development partners, UN-Agencies and then identifying the most appropriate blend of finance sources are key for attracting the private sector to engage in climate investment;

iv. There is urgent need to conduct diagnostic studies on all the projects listed in the updated NDC Priority Actions (Updated NDC) and 10-YPDP Priority investment interventions for identifying potential areas of investment suitable for local and international private sector investment in the updated NDCs implementation;

v. There is a need to conduct diagnostic studies to determine which financial sources/instruments for which NDC-typologies are appropriate and which incentive mechanisms can be avail to engage the private sector in investing on climate change adaptation and mitigation interventions;

vi. There is a need to conduct diagnostic studies to determine which of these barriers are often occurring and become key obstacles for the engagement of the private sectors to invest in climate change mitigation and adaptation interventions in NDC-sectoral projects;

vii. With regards to mitigating key barriers and promoting incentives for attracting the private investment in climate activities, there is a need to conduct diagnostic studies to map key policy enabling environment and incentive mechanism that promote the private investment in the NDC-targeted projects across climate vulnerable development sectors,

viii. Furthermore, there is a knowledge gap in understanding to what extent the existing investment policy and its legal context are governing the private sector engagement in climate change, including any existing institutional arrangements that do or could promote such engagement;

ix. There are knowledge gaps on building concerted efforts of private- and public sectors along with funding agencies in implementing climate actions through their engagement in various investment interventions.

3. SCOPE OF THE WORK AND DESCRIPTION OF THE TASKS

As clearly indicated in the ToR, the scope of this diagnostic study is to meet the following objectives. These are to identify:

- challenges, barriers, faced by the private sector to invest in climate change mitigation & adaptation projects,
- opportunities and incentive mechanisms that would facilitate/attract the engagement of potential private sector to invest in climate change mitigation & adaptation projects in the areas of markets and industries linkages; financial instruments and services; provision of available green technologies and capital,
- range of financial and non-financial interventions needed for private sector investment across relevant priority actions for NDC implementation.

These objectives of the diagnostic study are grouped in to two categories of tasks:

i. Task 1- Identifying the barriers, and

ii. Task 2- Identifying Incentive Mechanisms.

Task 1: Activities of Task 1 were focused on identifying the barriers and key factors that discourage the private sector investment across relevant priority actions for NDC implementation in Ethiopia.
Commonly cited barriers that discourage the private sectors to invest in climate change adaptation and mitigation are clustered into three categories ([13]GCA, 2019; [14]UNEP, 2018):

- Lack of country-level climate risk and vulnerability data and information- services that can be used to guide investment decision-making;
- Limited clarity on the government's capital investment gaps- to achieve adaptation goals, and/or on where private investment is needed; and
- Low perceived or actual returns on investment-, and inability for the private sector to capture the full environmental and social benefits generated by adaptation investments.

There are other types of country specific barriers that may need to be addressed as well, such as restrictive regulatory and policy frameworks, knowledge and technology gaps. But the focus of this diagnostic study is on those barriers that are more specific to private investments in adaptation, mitigation and resilience building interventions planned in the updated NDCs.

Task 2: The focus of Task 2 was identifying the range of financial and non-financial interventions and Incentive mechanisms that are relevant and highly needed to address barriers of private sector investments across relevant priority sectors of NDC implementation. In the case of adaptation and mitigation activities, there is high risk and untested character of investments, high upfront costs associated with projects that do not have immediately attractive returns. These can further hamper private sector participation in climate change investment activities. Project development and/or structuring support (as in the case of many NDCs, Eth-NAP, 10-YPDP activities) may be needed to reduce costs that the private investors have to bear, and attract their involvement in an incentive way.
Put together, incentive mechanisms and creating policy enabling environment may reduce such obstacles and strengthen the ability of the private investors to consider climate investment at various scale ranging from small to large scale investments of mega projects. These need to be well analysed

[13] Global Commission on Adaptation (GCA). 2019. "Adapt Now: A Global Call for Leadership on Climate Resilience." Rotterdam and Washington, DC: Global Commission on Adaptation. https://gca.org/ reports/adapt-now-a-global-call-for-leadership-on-climate-resilience/.
[14] United Nations Environment Programme (UNEP). 2018. The Adaptation Gap Report 2018." Nairobi. https:// www.unenvironment.org/resources/adaptation-gap-report.

and incentive mechanism and financing challenges need to be identified along with mitigation measures.

During the consultative workshop the participants did present first the identified key barriers with experts view on mitigation and adaptation measures; and these were further discussed and articulated by the consultant in comparison with literature review.

4. METHODOLOGICAL APPROACH

To achieve the tasks stated above, the following methods and approaches were used to obtain key data types and data sources. The main data sources used for this diagnostic study were collected from various official sources, such as the Chamber of Commerce and Sectoral Associations (CCSA), Private Enterprise Survey, through document review, consultative workshop, questionnaire survey. The approaches used are described as follows.

4.1. Organizing Workshop

To conduct diagnostic studies of identifying country specific key and potential barriers and incentives of private sector investment, and hence to creating enabling environment for private sector investment in climate change adaptation and mitigation interventions, two workshops were organized:

Consultative workshop on inception report

A 3-days multi-stakeholder consultative workshop was held on 22nd- 25th November 2022. Multi-stakeholders participants including experts of sectoral NDC-team, private sector representatives and selected funding agencies including World Bank, FAO, UNDP (Annex 1) were were consulted. The public sectors participated to the consultative workshop included: Ministry of Mines & Petroleum; Ministry of Transport and Logistic; Ministry of Water & Energy; Ministry of Agriculture; Environmental Protection Authority; Ministry of Planning &Development; Ministry of Finance; Ministry of Industry; Ministry of Urban & Infrastructure. Sectoral representative experts participated in the preparation of NDC Implementation Partnership Plan and identified project typologies for the respective public sectors for

2021-2025. Furthermore, private sectors and funding agencies were taking part to the consultative meeting.

Because of the differences between the workshop participants in the level of their understanding of the climate change in terms global agenda, adverse impacts and mitigation measures etc; a short presentation on the overall objective, methodology of this diagnostic study as well the rationale of the Paris climate agreement on engaging the private sector towards achieving the temperature objective was presented. Further clarification and discussion were held on the methodologies of data collection and scope of the study.

During 3-days consultative meeting, the participants served as focus group discussant (while they are working in a group, i.e. private sector group, public sector, donor community group) and as Key Informants (while they are working on public sector (i.e., agriculture group, transport & logistic group, industry group, mining & petroleum group, planning group, finance group, water & energy group). They performed the following activities that were used in the diagnostic study analyses:

They have listed potential private sectors working with public sectors by completing the questionnaire presented in Annex 2, 3. This information has been used to map the private sectors engagement in climate change actions;

They provided key sectoral policy documents and project documents that the private sectors are working with the respective public sectors. This information provide insights about project topologies and funding sources that engage the private sector and the donor agencies in climate change related investment interventions.

Furthermore, they reflected critical comments on the inception report including the methodology of the diagnostic studies, and these comments have been considered for improving the methodology of the studies and issues to be addressed by this diagnostic study.

Additionally, on attending a validation workshop on “Situational analyses of plastic waste management in Addis Ababa and possible alternative solutions” large number of private investors was approached to

complete the questionnaire survey. The workshop was organized by the Addis Ababa Chamber of Commerce and Sectorial Associations and was held on 29 November 2022.

Validation workshop on draft report

A one-day validation workshop was organized on 16 December 2022 to review the draft report. The participants from private sectors, public sectors and funding agencies presented their comments and feedbacks in a written report as well as raised key issues including technical and editorial matters on the draft report. The comments they forwarded were considered and further clarifications were given at that discussions. The draft report was improved following the suggestions and recommendations given by workshop participants.

4.2. Sample Size Determination

The sample size was determined using formula ([15]Scott No. date) applied for the normal approximation to the binomial distribution.

n = Nz^2pq/(E^2(N-1)+ z^2pq)

Where;

- n is the minimum required number of sample private sectors for diagnostic study, and was calculated to n = 53
- N is the total population of private sector (private companies) obtained from public sectors and chamber of commerce;
- z is 1.96 for 95% level of confidence;
- E is (±) Error with a value of 0.1;
- p and q are population proportion with p is set to 0.2 and q is 0.8 (1-p);

For these diagnostic studies, the value of N is obtained from chamber of commerce, workshop participants, Agro-industry investment opportunities directory, Agricultural Investment Executive; and

[15] Scott M. Smith. No Date. Determining Sample Size How to Ensure You Get the Correct Sample Size.Qualtrics.com

the value of N was 352. A total of 67 experts out of 352 (i.e., n = 68 which is above the required sample size) were contacted; i.e. a sampling size of 19% of the population with 95% of confidence level was considered to collect data for the diagnostic study. The list of contacted experts of private sectors, donor agencies, and public sectors at workshops, physical appearance, virtual meetings and field visits is presented in Annex 1. List of private sector organizations obtained from workshop participants and other sources are presented in Annex 2.

4.3. Questionnaire development

To perform each of the tasks questionnaires were developed following the Toolkit for Engaging the Private Sector in National Adaptation Plans (NAPs) presented in ([16] Crawford, A., Church, C., & Ledwell, C. 2020) and other methodological approaches used for several studies of private sector engagement (e.g. [17] Center for Community Change; [18]Jürg Füssler et al 2019; [19] USAID 2013). The questionnaires were prepared in an open-ended and semi-structured manner, not through multiple choice or other semi-quantitative methods, to allow for a freer conversation. The questionnaires were presented on the consultative workshop to the participants for clarification and discussion that would make the questionnaire a practical tool to gather as much information as possible. Detail of the questionnaire is presented in Annex 3, 4.

The questionnaires were shared to the workshop participants in Excel format enabling them to complete the questionnaire survey with as much information as possible. Following the three days consultative meeting/discussions the participants submit the result of their questionnaire survey to the consultant for further analyses.

The questionnaires were developed following three approaches:

i. The Interest–Influence Grid methodology;

[16] Crawford, A., Church, C., & Ledwell, C. (2020). Toolkit for Engaging the Private Sector in National Adaptation Plans (NAPs): Supplement to the UNFCCC Technical Guidelines for the NAP process. NAP Global Network & United Nations Framework Convention on Climate Change Adaptation Committee. International Institute for Sustainable Development.
[17] Center for Community Change. No date. Private-Sector funding sources.
[18] Jürg Füssler (INFRAS), Alexander Wunderlich (INFRAS), Nicolas Kreibich (Wuppertal Institute), Wolfgang Obergassel (Wuppertal Institute). 2019. Incentives for Private Sector Participation in the Article 6.4 Mechanism Discussion Paper. German Emissions Trading Authority (DEHSt) at the German Environment Agency
[19] World Bank Group. 2015. Sources of Financing for Public-Private Partnership Investments in 2015.

ii. Enterprises and financiers approach; and

iii. Open ended semi structured questionnaire for Key Informant Interviews.

The first two questionnaires were completed by the workshop participants at inception consultative meeting, while the third questioners were completed by Key Informant Interviewees, who represent randomly selected private companies.

List of private companies was obtained from workshop participants of public sectors' experts, chamber of commerce and other reports.

The Interest–Influence Grid methodology shown in Fig 2 was adopted for developing the questionnaire to help the workshop participants to prioritize sectors, and private stakeholders, financing sectors, investment areas, barriers and opportunities and incentive mechanisms as well as policy enabling environment for private sector engagement in NDCs implementation.

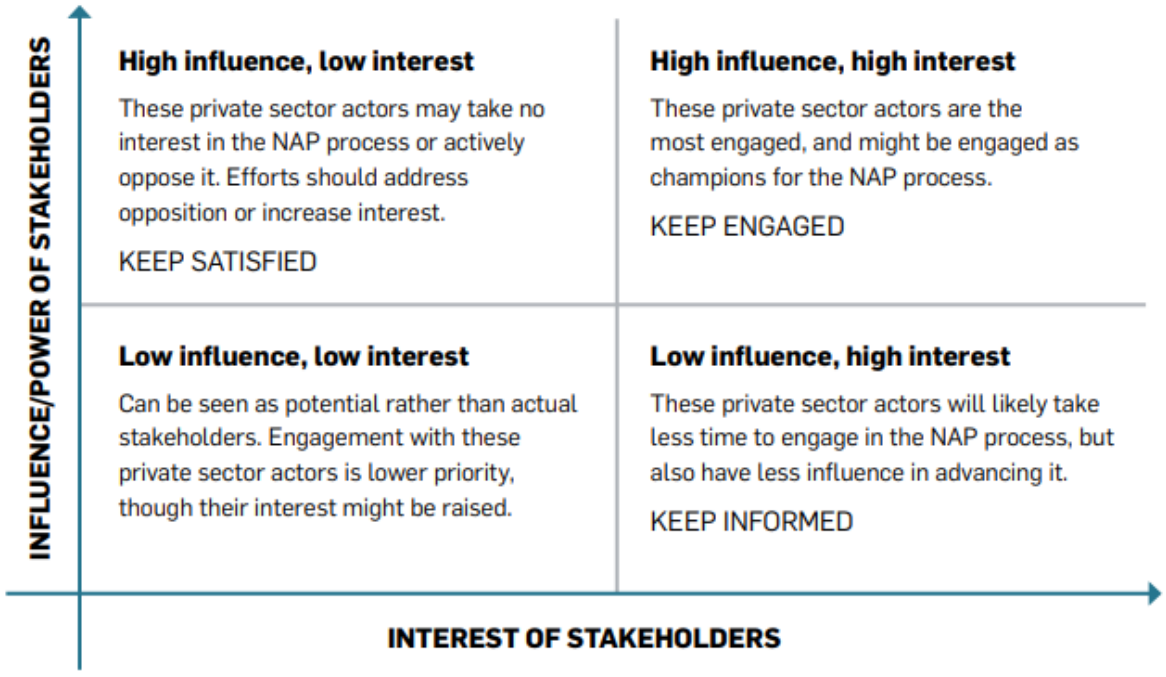


Figure 2. Stakeholder Influence–Interest Grid.

(Source: Adapted from Overseas Development Institute (n.d.); Ackermann & Eden (2011), cited in Crawford, A., Church, C., & Ledwell, C. (2020).

The Enterprises and financiers approach was used to develop questionnaire that guide/enable the workshop participants (diagnostic study teams) to identify successes and gaps in on-going private sector engagement efforts by cross-examining the private and public sectors engagement. The questionnaires are formulated in a way asking five guiding questions:

i. Who has been engaged in the project?
ii. Why they have been engaged in the project?
iii. When were they engaged in the project?
iv. How were they engaged in the project?
v. What were the subsequent impacts of this engagement on reducing climate change vulnerability (adaptation investments) and GHG emissions (mitigation investments)?

4.4. Process of completing the questionnaires

During the consultative workshop, the participants were provided with the questionnaires to complete the barriers in the areas of institutional arrangements, financial and technology incentives, localized business risk, and more others that are adversely affecting the private sector investment in climate change interventions. They did also map and prioritize source of financing and technology supports, legal and policy context, opportunities for private sector, Potential Private Sector NDC Project Investments. Additionally, the participants identified cases studies of good practices of private investments demonstrating investors' current and expected future investment mix in climate change.

Furthermore, during the consultative workshop the participants did identify key barriers based on experts view on mitigation and adaptation measures; and this was further discussed in comparison with literature review. They presented detail description of each key barriers guided by the questionnaire. Following the description of the barriers they were further working on proposing mitigation approaches to address the barriers. Additionally, they identified institutions and stakeholders to determine/ decide "**Who is Best Placed to address this Barrier**?" Guiding questionnaire is annexed (Annex 3).

Open ended semi-structured questionnaire were developed (Annex 4); and these questionnaires were used for gathering information from private companies by contacting private company contact persons

who are serving as Key Informant Interviewees for completing the questionnaire. The companies' contact persons are usually the owner/manager of the technical manager of the company who knows details of the company undertakings. They were chosen for completing the questionnaire based on the perception that they at the company know the most about details of the company's investment objectives/, plans, production challenges etc. When the KIIs complete the questionnaire, clarifications and explanations were given to tailor their response specific to the engagement of their companies.

Questionnaire surveys were completed by selected FGDs, KKI through: Physical appearance discussions; virtual discussions and Field observations.

Photo 1. Group work of participants from private- and public sectors and funding agencies at consultative meting and validation workshop as well as at physical appearance-, virtual interviews.

4.5. Desk review

A desk review approach was used to describe the current status of the private sector engagement and the policy enabling framework that are emanating from various public sectors. An extensive desk review of existing policies, strategies, programs, plans and proclamations and regulations specific to private

sector investment in the country's economic development was conducted. This review was performed to evaluate the effectiveness of proclamations, regulations, policies, strategies, programs and plans designed to promote private sector investment towards contributing to the country's economic development strategy. The study also reviewed various development plans, namely: NDC (2021), 10YPDP (2021), SDGs, project and investment profiles of large sector of private enterprises/PLCs, investment proclamations, public private partnership proclamations and other sectoral proclamations. Furthermore, pertinent sources, such as academic journals and books, annual reports, websites and policy brief papers, relevant to the study were critically reviewed. The following strategic documents among others were reviewed:

- Updated NDCs: Aligned with 10YPDP
- Eth-NAP
- NDC-Implementation Partnership Plan 2022,
- NDC Support Transport Energy & Industry 2021,
- Capacity Building Needs for NDC- Ag & Forest sectors,
- Capacity Building Needs for NDC- Urban and mining sectors 2021,
- Investment Proclamation No1180/2020; I
- Investment Incentive Regulation No. 517/2022;
- Forest Development, Conservation and Utilization Proclamation No. 1065/2018;
- Public Private Partnership Proclamation No. 1076/2018;
- Urban Lands Lease Holding Proclamation No. 721/2011;
- Rural Land Administration and Land Use Proclamation No, 456/2005);
- EIC. No date. Ethiopia Investment Policies and Incentives and opportunities;
- Multilateral financing institutions website for transaction of climate financing

The analysis of the legal and policy context (domestic laws, regulations, and policies relevant to climate change) as well as institutional arrangement that would potentially govern the private sector engagement in climate change interventions for achieving national development plans and international commitments to mitigation and adaptation actions was guided by questioning the following:

- Which articles give emphasis for promoting/supporting the private investment in climate activities?
- To what extent the article is articulated in favor of supporting private business in climate activities?

- What incentive mechanisms are indicated in the proclamation/regulation?
- Is it supported by law enforcement? To what extent?
- What are the weak points of the proclamation/regulation constraining the private sector investment in climate activities?
- What policy recommendation can be suggested to minimize/avoid the policy obstacles?

5. RESULTS OF THE DIAGNOSTIC STUDY

5.1. Historical milestones of private sector engagement and structural transformation policies in Ethiopian economic development

The private sector investment in Ethiopia went back to as early as 1900. In special correspondence the New York Times dated on November 7, 1909, in the Tells of the monarch [20]Baron de Jarlsburg has wrote that King Menelik (1889 – 1913) has investments in the USA and Abyssinia's Ruler Said to be a Heavy Buyer of American Railway Stocks (https://www.nytimes.com/1909/11/07/archives/king-menelik-has-investments-here-abyssinias-ruler-said-to-be-a.html). Tayitu hotel that was opened in the capital in the [21]year 1898 is said to be an example of much earlier investment in the hotel and tourism industry. The Ethio-Djibouti railway construction by the French during 1894 – 1917) could be considered as a remarkable private investment in the transport sector. Furthermore, private investments on forest product processing has begun in early 1900s when a steam powered saw mill was established in 1905 by a German industrialist in the Mengesha-Suba forest where logs of old growth *Junipers* and *Podocarpus* trees were harvested and processed for production of furniture, lumber and construction materials ([22]Sebsebe 1988, [23]Zewdu 2000, and therein cited references).

[20]https://www.nytimes.com/1909/11/07/archives/king-menelik-has-investments-here-abyssinias-ruler-said-to-be-a.html.

[21] https://www.tripadvisor.com

[22] Sesebe, D. 1988. The floristic composition of the Menagesha State Forest and the need to conserve such forests in Ethiopia. Mt. Res. Dev. 8.243-247.

[23] Zewdu E. 2000. Forest soils of Ethiopian Highlands: Their characteristics in relation to site history studies based on stable isotopes. Doctoral Thesis. Swedish University of Agricultural Sciences, Umeå

Since the early twentieth century the private sector engagement in the nation's economic development had passed through various milestones. Generally, the private sector plays a leading role in the structural transformation process towards industrialization and, hence, has been given various level/scale of emphasis by the various Government systems over the last 100 years. This was noticed in several national policy documents of the three government regimes as highlighted in Box 1 below.

With regards to transformational policies playing critical role in the country's economic development, [24]EPA and UNDP (2022) present review of more than 70 policies and strategies. However, only policies and strategies that are highly pertinent to create conduce business environment for strengthening private sector investment in climate change are briefly highlighted in Box 1.

Box 1. Historical milestones of private sector engagement and transformational policies and strategies in development in Ethiopia.

Imperial regime (1930 – 1974):

Following the Italian attempt of occupation (1936 – 1941) commercial agricultures were developed by foreign investors in several lowland and river basin areas that have high economic potential and are relatively close to population centers and trade routes for sustainable market access.

During the monarchy time, the overall approach to economic growth focused on capital accumulation in industry sector and creation of large scale commercial farms in the agriculture sector to feed the growing urban population, generate export earnings and provide agricultural inputs to the industry ([25]Abebe Haile Gebriel 1990; [26]Cohen. 1987).

Investments in capital accumulation in the industry, construction and infrastructure sectors did take place by establishing the first cement factory in 1936 in Dire-Dawa, which was followed later by two cement factories

[24] EPA and UNDP. 2022. Final Report on Development of Ethiopia's NDC Implementation Partnership Plan for 2021-2025. 30 June 2022. Addis Ababa.
[25] Abebe Haile Gebriel 1990. Generating marketed surplus of food through state farms: A critical evaluation of the Ethiopian Experience. Working Paper Series No. 72.
[26] Cohen J.M. 1987. Integrated Rural Development: The Ethiopian Experiences and the Debate, Uppsala: Scandinavian Institute of African Studies.

established in 1964 and 1965 in Addis Ababa and Massawa, respectively, with total annual capacity of 70,000 tons ([27]MoI 2015; Fig 3.). Anticipating the future's aggressive growth of a cement demand for the construction sector (namely:roads, waterworks, public buildings etc) during the following decades, more cement factories were established at different years, namely: Mugher in 1984; Messebo in 2001; Derba in 2012; National Cement in 2013, Dangote in 2015; and Habesha in 2016.

Furthermore, the first and second five year plans (1957 – 1968) gave priority to investments in manufacturing, mining, electricity and infrastructural development. The third five year plan (1968 – 1973) considered large scale commercial farms as key for agricultural development, and developed polices aimed at dealing with investments constraints, stimulating increased mechanization of farms, establishment of raw material processing industry, expansion of agricultural exports. Private investments in large scale commercial farming were incentivized in several ways: the fiscal and monetary policies were stimulative to large scale commercial farming investments, import duty exemption for tractors and crop protection chemicals as well as fuel tax exemption for farm machinery were among the incentives made for large agrarian private investments.

Examples of such commercial agricultural investments include the British and Dutch cotton and sugarcane investments along the Awash valley ([28]Harbeson 19728) where heavy irrigation agriculture investment is conducive. Similarly, foreign investors established sesame production in Humera areas in North West Ethiopia ([29]Puddu 2012). Furthermore, landlords and war-veterans rewarded with large tract of land grants[30] did invest on commercial farms. Many of these farms concentrated on production of cash crops which include fiber, stimulant, oil, fruits, cotton, sugarcane, tobacco, cereals, coffee, vine yard, citrus, oil seed, sesame etc.).

The private sector also engaged in the banking industry; and the first privately owned bank, "**Addis Ababa Bank share company"** was established by Ethiopians initiative. The Addis Ababa Bank share company started its operation in 1964 with a capital of Birr 2 million in association with National and Grindlay Bank, London which had 40 percent of the total share. Many Insurance companies were established.

[27] MoI. 2015. FDRE Ministry of Industry Ethiopian Cement Industry Development Strategy 2015-2025. January 2015.

[28] Harbeson, J.W. 1978. Territorial and Development Politics in the Horn of Africa: The Afar of the Awash Valley, African Affairs 77 (309):479- 498.

[29] Puddu, L. 2012. Extraversion and Development in Northwestern Ethiopia: The case of the Humera Agricutural Project, 1967 – 1975. Paper presented at the Poversty and Empowerment in Africa conference, University of Texas at Austin (30 March – 1 April 2012).

[30]https://www.academia.edu/39601732/Agricultural_investment_in_Ethiopia_Undermining_national_sovereignty_or_tool_for_state_building

The Military Regime (Derg 1974 – 1991):

The Military Junta that overthrew the monarchy regime established first a transitional military government which later transformed itself to a socialist government. The government nationalized all private lands of rural and urban settings, private business organizations, and formed fully state controlled economic sector. Following the formation of the socialist government, inherited large scale commercial farms were entirely nationalized and transformed to state farms; while very small private commercial farms were redistributed to the peasantry (Abebe Haile Gebriel. 1990). The same thing had happened to the private Banks and Insurance Share Companies.

The Federal Government regime (FDRE 1991 +):

The FDRE recognizes that the private sector plays a leading role in the structural transformation process towards achieving government's industrialization goals and, hence, it has been given much emphasis in several government's policies and strategy documents as well as proclamations and regulations, as shortly described in [31]Sisay and Semeneh (2022) and therein cited references. Key economic and investment polices are described as follows.

Sustainable Development and Poverty Reduction Program (SDPRP) (2002/2003- 2004/2005):

It is an Industrial Development Strategy which recognized the private sector as an engine for fostering industrialization and augmenting the structural transformation process of the economy. The strategy clearly stated that the government tasks for promoting private sector development include:

(i) Creating a conducive business environment at all levels for all;

ii) Providing direct support to strategically selected priority subsectors of private sector investment, such as: textiles and apparel, meat, agro-processing industries, construction, and Micro and Small Enterprises (MSEs);

iii) Establishing a range of support programs (such as economic incentives and capacity building) for cluster development in the priority areas of private investment in Ethiopia ([32]FDRE, 2002).

[31] Sisay Debebe and Semeneh Bessie. 2022. Private Sector Development in Ethiopia: Trends, Challenges and Policy Issues Policy. Working Paper 04/2022 August 2022, Ethiopian Economics Association (EEA).

[32] FDRE. 2002. Ethiopian Industrial Development Strategy. Addis Ababa, Ethiopia.

Plan for Accelerated and Sustained Development to End Poverty (PASDEP (2005/2006 - 2009/2010):

The plan considers private sector development as a key for realizing the development of the industrial and export sectors of the economy. To this end PASDEP:

i) Created a conducive business environment for private sector investment by providing multifaceted support and undertaking various reforms (such as institutional, regulatory, and financial sectors), and strengthening the complementary role of the government with greater domestic and foreign private participation;

ii) Identified key sectors for private sector investment participation in various economic sectors, namely:

- Agricultural and rural sector;
- Infrastructure, construction, power generation, and downstream telecommunication services; and
- Social sectors such as private primary and secondary schools in urban areas; technical and vocational training, and higher education; as well as opportunities in the private provision of health care services.

iii) outlined the role of the government is to support and fill the gaps that could not be adequately covered by the private sector vice-versa and maintain macroeconomic stability, a stable exchange rate, and a lower inflation rate, which are integral parts of private sector development in Ethiopia (MoFED, 2006).

Forest Management, Development and Utilization Policy 2007:

This policy is reinforced by the Forest Development, Conservation and Utilization Proclamation (542/2007). The proclamations creates enabling environment for private sector involvement in forest management and development.

Growth and Transformation Plan 1 (GTP-1 2010/2011 to 2014/2015):

Created a conducive investment environment for the private sector's development, such as:

- Enabling the manufacturing industry to play an active role in the economy,
- Revising the investment code to encourage further private sector investment,
- Undertaking privatization of government owned industries to the private sector,
- Maintaining international competitiveness, and
- Providing support for private sector engagement in productive subsectors, particularly manufacturing subsectors.

Provided direct support for capacity-building programs such as twinning programs, benchmarking kaizen, industrial input supply, and skill development programs for the private manufacturing industry sector;

Promoted development of industrial parks with the aim of transferring it to the private sector.

Agricultural Growth Program (AGP 1-2: 2010- 2020):

The AGP-I, 2 aimed to increase agricultural productivity and market access for key crop and livestock products in targeted woredas (districts), with a focus on women and young people's participation; and to address drawbacks in agricultural production and productivity and focused on scaling up investments and technologies with a proven track record in the country. It provides opportunities for the private sector to invest in the livestock sector.

Climate Resilient Green Economy Strategy (CRGE 2011):

The strategy identified several areas of engagement (namely among others: Agriculture, forest, Energy, Transport, Industry and urban construction) for achieving sector wide emission reduction of 64% by 2025 and subsequently creating sustainable jobs, improving health, Reducing market prices, creating market stability promoting value added capital formation. These policy interventions attract the private sector to invest in multiple business opportunities.

Growth and Transformation Plan 2 (GTP-2 2015/2016 to 2020/2021):

The plan:

- Recognized private sector development as a key for creating employment, jobs, and enhancing income on a sustainable basis;
- Gave special attention to utilizing opportunities available for sustainable development and transformation of domestic investors.
- Redirected domestic private investors from service and construction subsectors toward manufacturing,
- Provided institutional support for the transition of small manufacturing enterprises to medium and large scales. Promoted development of aggressive industrial parks and agro□processing zones in different parts of the country by addressing the bottlenecks related to production and logistic constraints and, thereby, enhancing the productivity, quality, and competitiveness of both domestic and foreign investors;
- Created a conducive environment for foreign direct investment (FDI) and attract investment in the key sectors of the economy (manufacturing), and hence made revision of investment regulations, facilitated its endorsement and approval by the parliament and Council of Ministers in 2012 (PDC, 2016).

Ethiopia's Livestock Master Plan (LMP) 2015:

The plan aims at increasing milk and meat productions through improved genetics, feed and health services, and strengthening access to marketing and processing. These interventions are attractive to the private sector to invest in the livestock sector.

10- Years Perspective Development Plan (10-YPDP 2020/2021 to 2029/2030):

The plan:

- Adopted private sector led economic growth as one of the strategic pillars.
- Aimed to create a conducive investment atmosphere for the private sector, such as:
    - Incentivizing private sector investment and strengthening domestic investors' participation in key productive sectors of the economy;
    - Building strong and market-led public-private partnerships to ensure the establishment of an inclusive and pragmatic market economy;
    - Enhancing the provision of quality infrastructure to attract quality FDI inflow to the county;
    - Identifying and optimizing new sources of growth;
    - Empowering and stimulating private sector investment in strategic key areas of inclusive growth;
    - Emphasizing public-private partnerships on problem-solving innovations and research activities for inclusive growth and sustainable development.
    - Strengthening the role of FDI in industrial parks to make Ethiopia's growth momentum more sustainable in the years to come (PDC, 2020).

Ethiopian National Adaptation Plan (Eth-NAP 2017):

The plan is designed for enhancing food security through improving crop and livestock productivity, soil and water conservation and sustainable forest management and utilization in a climate smart manner by developing efficient value chain and marketing systems for livestock, crops, and forest products.

Addis Ababa Non-Motorized transport strategy ([33]NMT 2019 – 2028):

This strategy is the first in its own that lays a path to implementation of NDC and 10YPDP by focusing on creating and expanding carbon free transport system network that need to be available for every residents of urban centres in Addis Ababa City. The strategy is expected to address key challenges that particularly face pedestrians which include: inadequately sized footpaths, dangerous crossings, inadequate illumination, poorly maintained infrastructure; and would result multiple benefits including: better access to job creation and education, improved public health, reduce emissions of dangerous pollutants and GHG; reduced human injuries & life losses as well as property loss & damage from traffic accidents. The strategic initiatives include among others: networks of Pedestrian, Bicycle, Greenway; and provide service on Parking management and Public transport access etc.

Nationally Determined Contributions (NDCs 2021:2025- 2030):

The NDCs set about 45 adaptation interventions and mitigation targets for achieving temperate objectives of the Paris agreement. It provides immediate opportunity for the private sector to engage in climate change investment that may enable the private sector to secure climate financing.

[33] Addis Ababa City Administration. 2020. Addis Ababa Non-Motorized transport strategy 2019 – 2028.

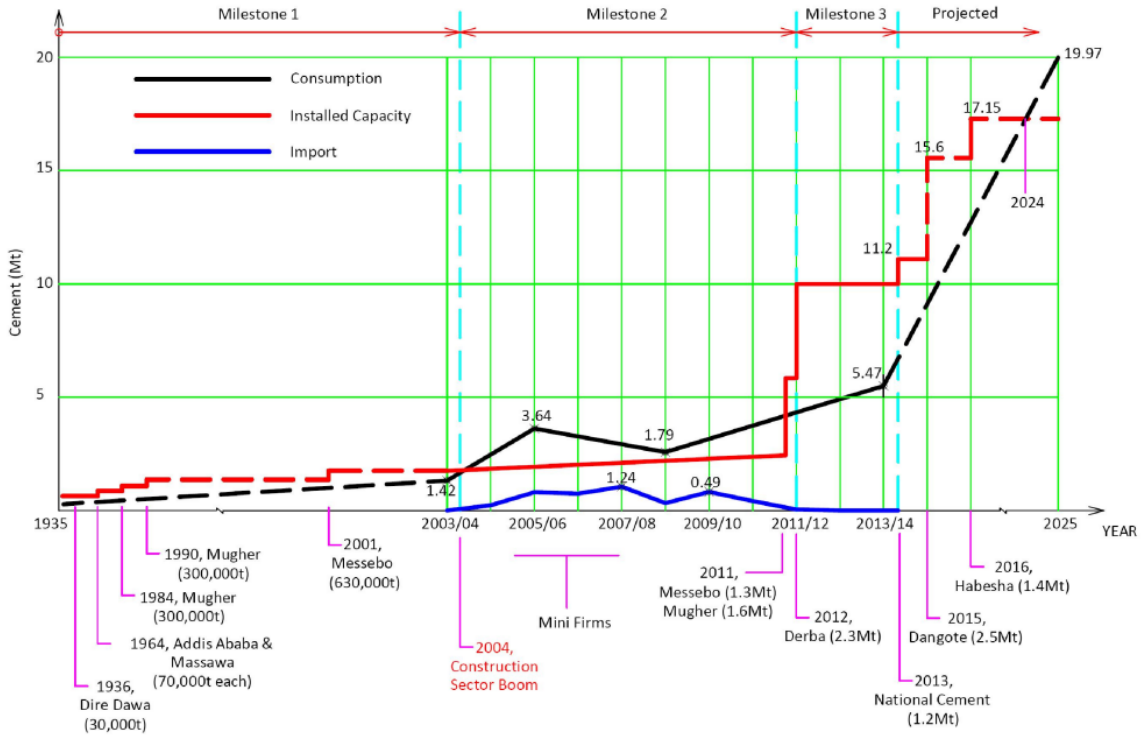


Figure 3. Historical Development of Ethiopian Cement Industry

(Source: MoI 2015).

5.2. Contributions of private sector investment to GDP

The private sectors' contributions to the country's economy is determined in terms of:

- Domestic Monetary Sector Credit to Private's Sector: defined in terms of percent of GDP (%GDP);
- Private Investment Per capita;
- Share of Private Investment in GDP.

The WorldBank and OECD estimated the private sector contributions to the country's GDP and presented Domestic Monetary Sector credit to Private's Sector (%GDP) for 265 countries and regions including Sub-Saharan Africa. Domestic Monetary Sector credit to Private Sector (DMSPS) refers to

financial resources provided to the private sector, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment, as clearly defined in the "International Monetary Fund, International Financial Statistics and data files, and WorldBank and OECD GDP estimates (https://data.worldbank.org/indicator/FM.AST.PRVT.GD.ZS)".

Domestic credit to private sector value is defined in terms of percent of GDP (%GDP). Several studies used the values of DMSPS (% GDP) in Ethiopia to determine the contributions of the Private Sectors to the country's GDP. The DMSPS value estimates of Ethiopia is compared with the DMSPS values of selected countries from Africa and Asia (Fig 4) to infer lessons for improving the private sector incentive mechanism and policies for strengthening private sectors' engagement in investment in economic sector priority areas.

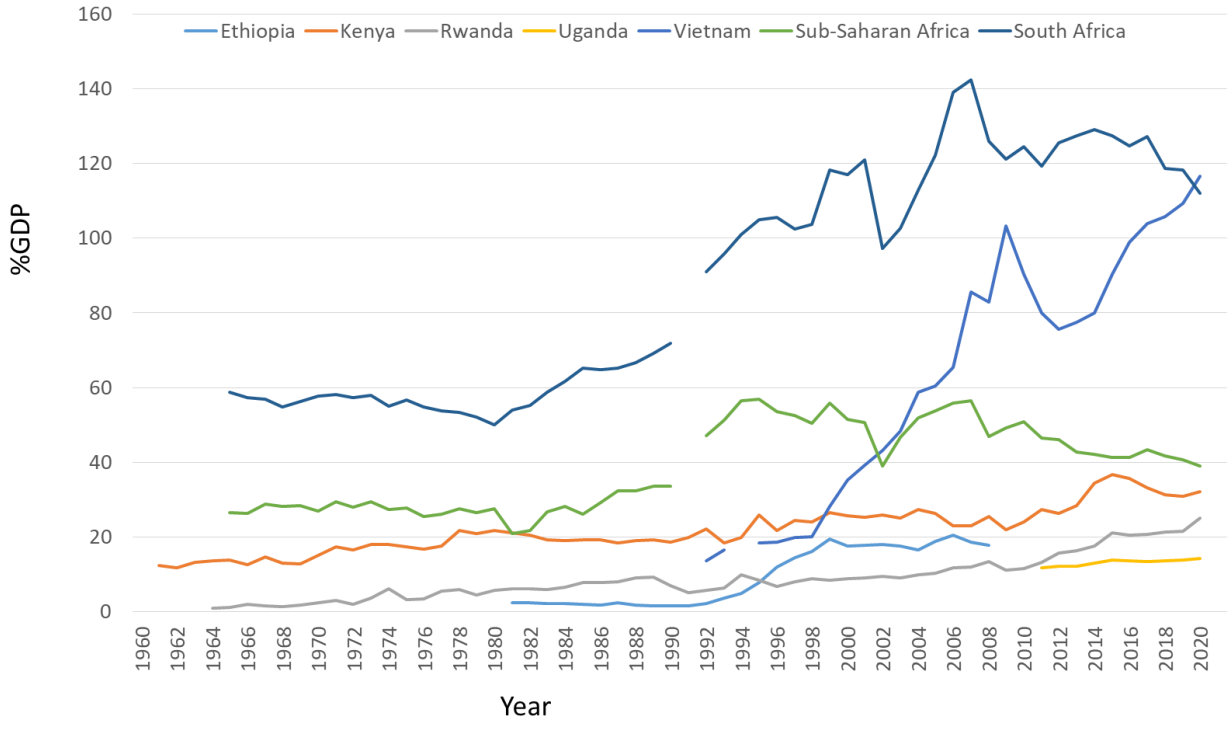


Figure 4. Domestic monetary sector to private sector (%GDP) in Ethiopia, Kenya, Uganda, Rwanda, SSA, South Africa, and Vietnam.

(Data sourced from International Monetary Fund, International Financial Statistics and data files, and World Bank and OECD GDP estimates https://data.worldbank.org/indicator/FM.AST.PRVT.GD.ZS)

As shown in Fig 4., the DMSPS in Ethiopia was estimated for 1981 – 2008, while for Kenya and Rwanda the DMSPS estimate is available without a broken trend for a period of 59 years (1961 – 2020) and 56 years (1964 – 2020), respectively. The highest estimates of DMSPS values are presented for South Africa and followed by Vietnam. The trend indicates that the contribution of the private sector to GDP increased during the years following 1992, although a declining trend was observed after 2018.

In Ethiopia the contribution of the private sector for a period of 10 years (1981 – 1992) was as low as 1.6 – 2.4% of GDP, and during the following period of 15 years (1993 – 2008) DMSPS increased almost by fivefold (4 – 20% GDP). The data indicates that DMSPS trend is highly influenced by the political system of the country. During the period with the lowest DMSPS values (1981 – 1992), the country was under the administration of the military government, which followed a socialist economic system that nationalized all private companies, and hence private sectors were not promoted.

During the periods of relatively higher DMSPS values (1993 – 2008), the country established a new government system with a free market oriented economy system where all state enterprises and production sectors were privatized and sold to private share companies. This was in close agreement with the release of several government's policies and proclamations/regulations that have created a conducive business environment for private sector investment in key economic sector areas by providing multifaceted support and undertaking various reforms (such as institutional, regulatory, and financial sectors), and strengthening the complementary role of the government with greater domestic and foreign private participation.

Detailed study on the contribution of the private sector to GDP across political systems was reported by [34]Ambachew (2010) and therein cited references. The result of this study is presented in Fig. 5 and Fig.6.

[34]Ambachew Mekonnen Sisay. 2010. Determinants of private investment in Ethiopia: A Time Series Study. Ethiopian Journal of Economics, Volume XIX, No. 1, April 2010.

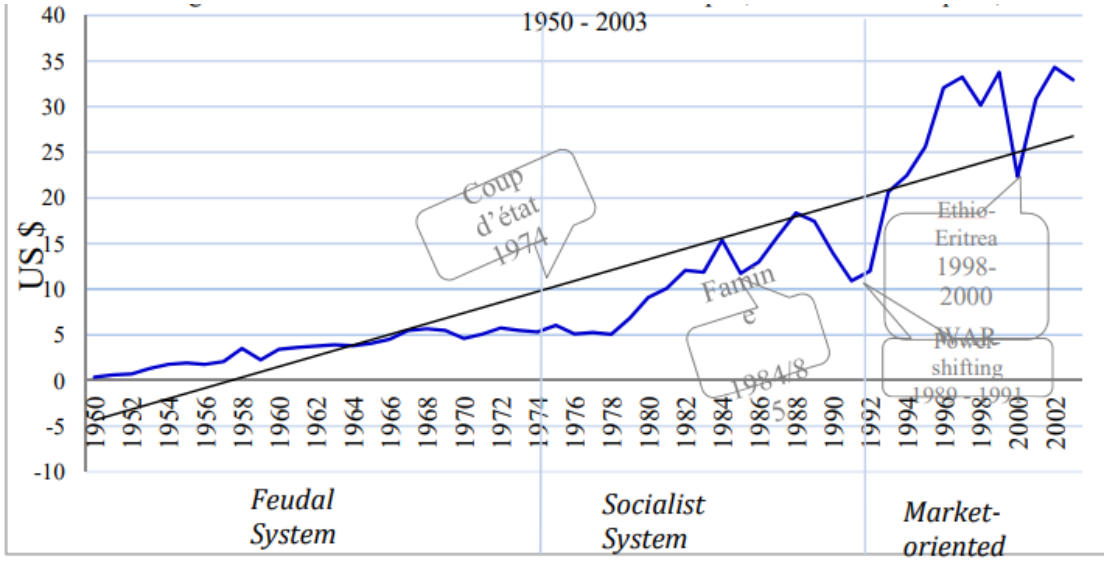


Figure 5. Trend of Gross Private Investment Per capita, at 2000 Constant price

Source: PWT Version 6.2, 2006 (RGDPPC & Share of GINV in RGDPPC) as cited in Ambachew 2010.

Fig. 5 indicates a more than half of a century (1950 – 2003) performance of private investment in Ethiopia in three political economy stems: Feudal-, Socialist and Market- oriented political system. Accordingly, private investment (in terms of USD per capita) during the feudal system gradually increased from the level of almost zero to 5 US$ per capita, while the increment in private investment during the socialist and market oriented political economy systems was not stabled but was highly fluctuated. During the socialist economic system the private investment showed faster rate of increment than the Feudal system, and two increment peaks at 15 US$ and 18 US$ per capita are observed in 1984 and 1988, respectively. In contrast, the private investment during the market oriented political system increased sharply from about 12 US$ per capita in 1992 to about 34 US$ per capita in 2000 and then sharply declined to 22 US$ per capita in 2002, and then sharply returned to close to 35 US$ per capita in 2003. Over the last 53 years the private investment has never been reached beyond 35 US$ per capita.

The share of the private investment in GDP is presented for a 50-Years period (1950 – 2004; Fig. 6) and a 10-Years period (2010 – 2022; Fig. 7). Accordingly, the share of the private investment in GDP increased from the level of below 1% in early 1950s to 4.82% in 1965. During the imperial time, two peaks of private investment contribution to GDP are observed at 4.41% in 1957, which dropped to 2.62% in 1959. Depression in the share of private investment was reported for the socialist economic system at 2.39%

in 1978, which tend to recover to reach at 5.49% in 1986. During the market oriented political system the share of the private investment to overall GDP peaked sharply from 2.49% in 1992 to 5.75% in 1998 then sharply dropped to 3.08% by 2001 (Fig.6). During the last 10 years (2010 – 2022) the share of the private sector to the country's GDP was double as compared to the values of pre-2000, and fluctuated between 18 and 25% (Fig.7); indicating an increasing trend in the contributions of the private sector to GDP towards the recent years. During the period 2016 -2020 the share of the private sector to the GDP remains above 23%.

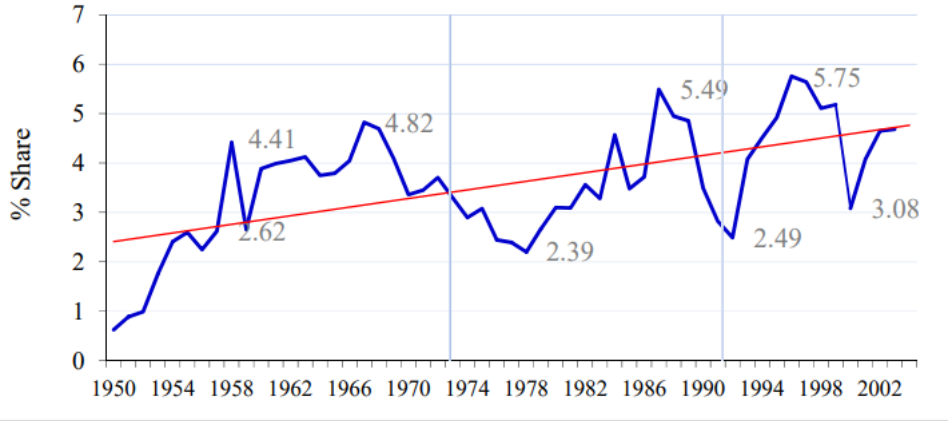


Figure 6. Share of Private Investment in GDP of Ethiopia for 50-Years period (1950-2004)

Source: PWT Version 6.2, 2006 (RGDPPC & Share of GINV in RGDPPC) as cited in Ambachew 2010.

The data shown in Fig. 6 and Fig. 7 provide lines of evidence that the contribution of the private investment to the overall GDP fluctuated very much in response to policy and institutional instability following changes in the political systems as well as in response to loss and damage caused by climate hazards, civil wars and popular upheavals.

The adverse impacts of climate hazards, civil wars and popular upheavals on the performance of the Ethiopian private investment is well articulated by Ambachew (2010) and therein cited references as shown below in Box 2

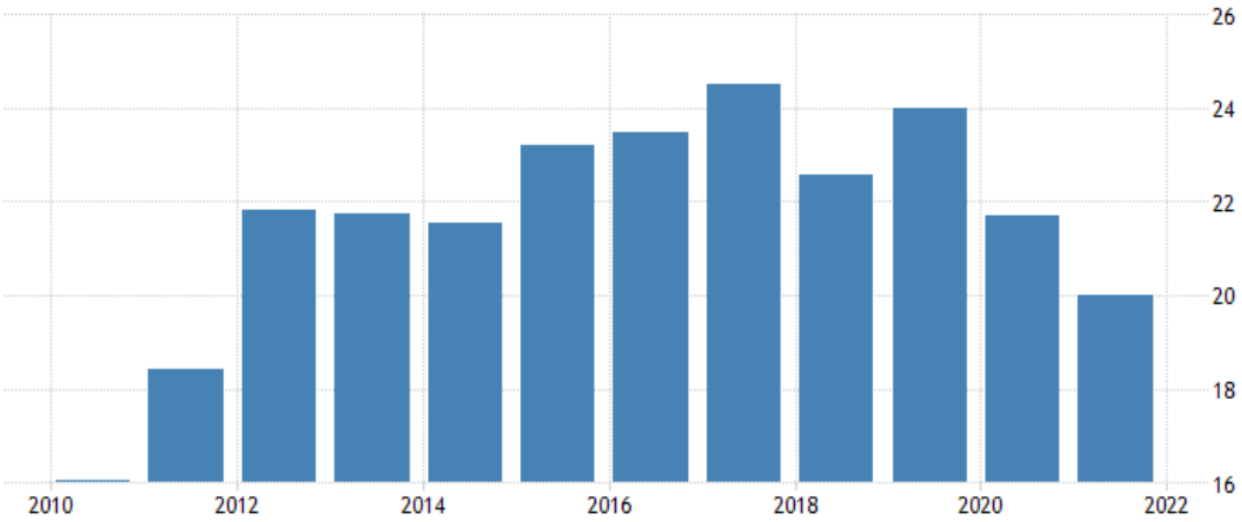


Figure 7. Share of Private Investment in GDP of Ethiopia for 10-Years period (2010 – 2022).

Source: [35]WorldBank.2022.

Box 2: The adverse impacts of climate hazards, civil wars and popular upheavals on the performance of the Ethiopian private investment

The pre-1984 period is known for its vindictive nationalization & expropriation of privately owned enterprises, houses and other properties. As of 1983, the number of nationalized enterprises was 159 ([36]Selvam, 2007). Years between 1985 and 1987 represent the period following the 1984/85 Ethiopian famine whereas the period 1990-1994 and 2000-2001 are periods comprising years of extensive wars that overturned the socialistic regime and the Ethio-Eritrean border wars, respectively. Hence, it could be reasonable to mention, the devastating famine of 1984/85, the nationalization and repressive policy measures of the pre-1991, the power-shifting forced extensive/intensive civil war and its hangover after 1991/92 and the 1998-2000 Ethio-Eritrean border war are some of the major causes for the deteriorated investment performance of the country.

[35] WorldBank. 2022. World Bank on November of 2022. WORLDBANK|TRADINGECONOMICS.COM.
[36] Selvam, J. (2007) "Privatization Programme in Ethiopia: Is the Cause Justified?". African Renaissance, Vol. 4, No. 1, P. 66-75.

5.3. Status of Ethiopia's private investment incentive policies as compared to other countries

Compared with three SSA countries, i.e., Kenya, Nigeria and South Africa, the Ethiopian private investment share of GDP has been found to be the least of all for the whole period considered with a special evidence of equivalence to that of Nigeria in the pre-1971 and the post-1985. Furthermore, in terms of DMSPS values, South Africa and Vietnam show relatively better DMSPS values as compared to Ethiopia and other East African and Sub-Saharan countries. There might be lessons to be learnt from the two countries in this regard. During the years following 1992, the DMSPS values in South Africa increased sharply, and this was consistent with the policy reform that took place following its independence. The South Africa government produced macroeconomic policy document since 1994 that has been aiming at Growth, Employment and Redistribution strategy that identified low savings and low investment as key causes of slow growth in the South African economy in the early 1990s ([37]Paul Barbour.2005). The government then promoted an outward-oriented industrial economy strategy/policy by:

- Lowering of tariffs to compensate for the real depreciation,
- Introduction of tax incentives for a fixed period to stimulate investment,
- Campaigning to boost small and medium firm development,
- Strengthening of competition policy and the development of industrial cluster,
- Rising of savings and investment, both domestically and through Foreign Direct Investment (FDI).

With regards to lessons to learn from Vietnam in the context of incentivizing the private sector investment, the Vietnamese government has been continually improving business conditions through reform and upgrade of investment incentives, making the country more appealing to foreign investors by availing various types of tax incentives. Generally, corporate income tax (CIT) incentives are granted to both foreign and local investors, to promote investment in economic sectors or areas that are in line with the government's development strategies.

[37] Paul Barbour. 2005. An Assessment of South Africa's Investment Incentive Regime with a Focus on the Manufacturing Sector. Economic and Statistics Analysis Unit, ESAU Working Paper 14, Overseas Development Institute London.

The following among others are corporate income tax (CIT) incentives ([38]Valerie Teo, Nguyen Tan Tai. 2021) that are presented in the policy based on eligibility criteria factors namely: sector, location, and size of investment:

Preferential Tax Rates: are reduced tax rates of 10%, 15% and 17%. These lower rates can either hold good for the entire lifetime of a project or for a pre-defined period, depending on the specific provisions. With a few exceptions, such as high-tech enterprises or projects, the period for the preferential tax rate basically starts from the first year of revenue generation;

Tax holidays: are taxes exempted for a certain period or the lifetime of project. Companies can qualify not to pay CIT for a pre-defined period, which is generally four years. In some cases, after the completion of a tax holidays, companies also receive a partial tax holiday, where they only have to pay 50% of the payable tax. The period of tax holiday generally starts with the first year of profit making or fourth year of revenue generation, whichever is earlier. In certain cases, companies can enjoy the benefits of a tax holiday and preferential tax rates at the same time.

Exemption from Customs Duties: Businesses can also enjoy exemptions from import duty if they meet eligibility criteria specified in the custom law:

- Goods are imported to form fixed assets of select projects prescribed under the law;
- Goods are imported for implementing export processing contracts with foreign parties;
- Raw materials and supplies are imported to directly serve the production of software products, and cannot be produced domestically;
- Goods are imported for use in scientific research and technological development, and cannot be produced domestically.

[38] Valerie Teo, Nguyen Tan Tai. 2021. Incentives for Foreign Investors in Vietnam, Bloomberg BNA. Source: https://www.grantthornton.com.vn/insights/articles/tax/bloomberg/0721-incentives-for-foreign-investors-in-vietnam/.

Incentives on Land Rental: this is a land rental fee exemption, which is provided for investment projects that satisfy specific conditions such as investment in encouraged sectors or certain business fields and/or encouraged geographical locations. These include:

- exemption for the whole operational period—projects on the list of special investment encouragement sectors investing in areas of particularly difficult socio-economic conditions;
- 15 years of exemption—projects on the list of special investment encouragement sectors investing in areas of difficult socio-economic conditions or projects on the list of investment encouragement sectors investing in areas of extremely difficult socio-economic conditions;
- 11 years of exemption—projects investing in areas of extremely difficult socio-economic conditions; projects in the list of special investment encouragement sectors; projects in the list of investment encouragement sectors investing in difficult socio-economic areas;
- Seven years of exemption—projects investing in areas of difficult socio-economic conditions;
- Three years of exemption—projects on the list of investment encouragement sectors; business and production relocation under urban planning or due to environmental pollution.

Eligibility criteria factors for incentives: The factors that declare eligibility for incentive rights include the following:

i) Locations: These are incentives for companies operating in disadvantaged locations that are areas with difficult socio-economic conditions, and areas with special economic zones (such as High-Tech Zones (HTZs) and Information Technology Parks (ITPs).

The tax incentives based on location are as follows:

- Firms operating in extremely difficult areas, SEZs or HTZs are taxed at 10% for the first 15 years of revenue generation. This period also includes a tax holiday for the first four years followed by a 50% reduction for the subsequent nine years;
- Firms operating in difficult areas are taxed at 17% for 10 years of revenue generation. This period also includes a tax holiday for the first two years, followed by a 50% reduction for the subsequent four years;
- Firms operating in industrial parks are eligible for two years of tax holidays, followed by a 50% corporate tax reduction for the subsequent four years.

ii) Size of Project: Tax incentives are also available for large manufacturing projects (excluding those in natural resources). These include two categories of criteria:

- For manufacturing projects with an investment capital of more than 6 trillion Vietnamese dong ($261 million) disbursed within three years of being licensed:
- The minimum revenue is 10 trillion Vietnamese dong per annum by the fourth year of operations at the latest; or the minimum headcount is 3,000 by the fourth year of operations at the latest.
- For manufacturing projects with an investment capital of more than12 trillion Vietnamese dong disbursed within five years of being licensed and using prescribed high technology.

By comparing the tax incentive mechanisms with other countries, there are ample lessons of private investment incentives to learn from these countries and others for creating a Better Investment Climate for Everyone. For example in contrast to South Africa and Vietnam, Ethiopia offers a comprehensive set of incentives for the priority sectors. According to [39]Gediyon (2021) the set of incentives that Ethiopia offers include:

- Customs duty free privilege on capital goods and construction materials, and on spare parts whose value is not greater than 15% of the imported capital goods' total value;
- Investors have the right to redeem a refund of customs duty paid on inputs (raw materials and components) when buying capital goods or construction materials from local manufacturing industries;
- Income tax exemption of up to 6 years for manufacturing and agro-processing, and up to 9 years for agricultural investment;
- Additional 2-4 years income tax exemption for exporting investors located within industrial parks and 10-15 years exemption for industrial park developers;
- Loss Carry forward for half of the tax holiday period. Several export incentives, including Duty Draw-Back, Voucher, Bonded Factory, and Manufacturing Warehouse, and Export Credit Guarantee schemes;

[39] Gediyon Bekele Moliso. 2021. Effects of Monetary Policy on Private Investments in Ethiopia. Master's Thesis, (https://perspectives-cblacp.eu/investment-opportunities-in-ethiopia/).

Table 4. Comparison of Tax incentive criteria between Ethiopia and Vietnam

Ethiopia			Vietnam		
Investment areas	Criteria	Tax exemption/ incentives	Investment areas	Criteria	Tax exemption
manufacturing and agro-processing	Investment type	Up to 6 years	Manufacturing	For projects invested in areas of difficult socio-economic conditions; (Location effect)	15 years of exemption
agricultural investment		Up to 9 years		For projects invested in areas of extremely difficult socio-economic (Location effect)	11 years of exemption— projects investing in
Exporting investors located within industrial parks	Location	2-4 years income tax exemption		For projects invested in areas of difficult socio-economic conditions	Seven years of exemption—
for industrial park developers	Location	10-15 years exemption		For investment encouragement sectors; business and production relocation under urban planning or due to environmental pollution (Location effect)	Three years of exemption.
Export incentives	Loss Carry forward	Duty Draw-Back, Voucher, Bonded		Firms operating in extremely	Taxed at 10% for the first 15 years

		Factory, and Manufacturing Warehouse, and Export Credit Guarantee schemes;		difficult areas of Special Economic zones and High-Teck Zones (Location effect)	of revenue generation
					Taxed at 17% for 10 years of revenue generation

As shown in Table 4. There are substantial differences between Ethiopia and Vietnam in the criteria and magnitude of tax incentives. The Ethiopian tax exemption rate is specified by areas and types of manufacturing and investment as well proximity to industrial parks.

Whereas in the case of Vietnam, the size and period of tax exemption gives special considerations for firms working in extreme difficult conditions, special economic and High-Tec Sectors and dislocations due to environmental hazards. These are key lesson to be drawn and applied to Ethiopian business environment.

5.4. Mapping private sectors engagement across economic sectors

List of private sectors engaged in investments in various economic sectors were obtained from three sources:

- Experts of sectoral ministries and agencies and private sector representatives who did participated in the consultative meeting were listing the private sectors with whom they are working,
- Lists of private sector were obtained from the chamber of commerce and sectoral associations.
- KIIs did list the private sector whom they know as sister and partners companies.

In this regard, a total of about 333 private companies were listed (Table 5, Fig 8). The listed private sectors were categorized by economic development sectors and NDC implementing entity sectors and investment areas they are engaged so far.

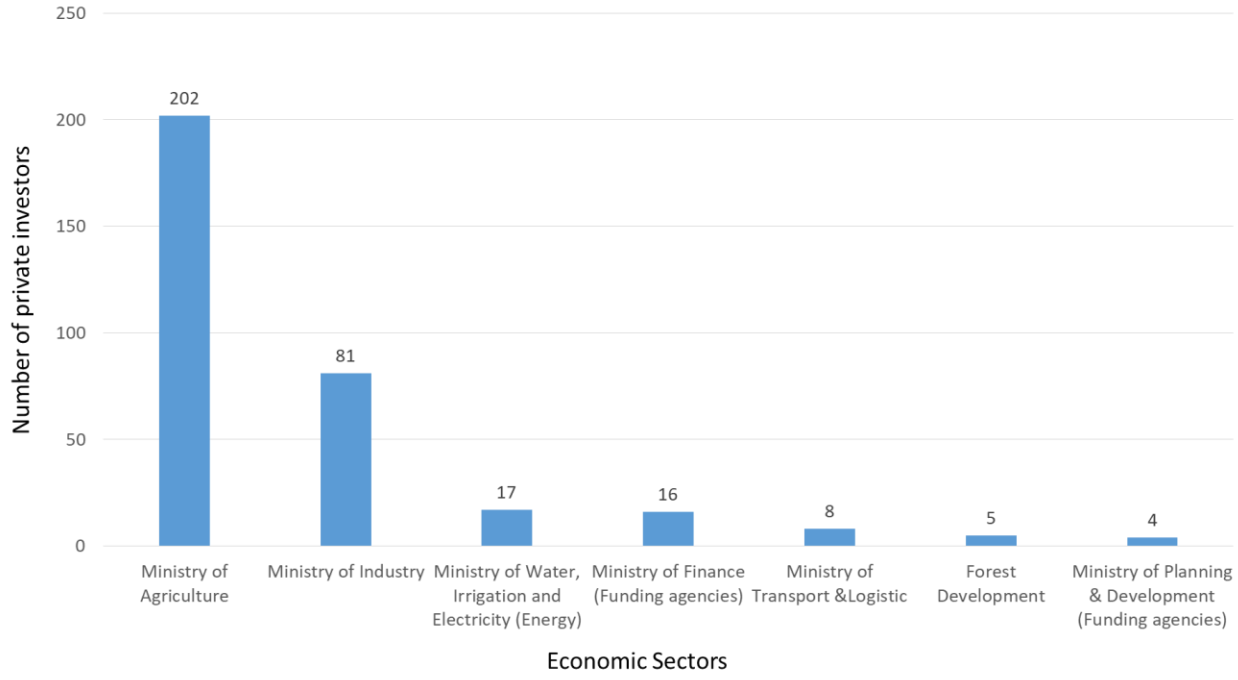


Figure 8. Private sectors' and funding agencies' engagement across public sectors

5.4.1. Category of private sectors by NDC implementing entities and economic sectors

As shown in Fig 8 and Table 5, the largest number of private companies (202) was engaged in the areas of agriculture, and indicating that about 60% of private investment is highly concentrated in the agriculture economic sector. The next economic sector that engaged relatively more private sector was the industry sector with about 80 private companies/shares, which absorbs 25% of the private investors.

This is followed by the energy sector and finance sectors. In the energy sector about 17 private companies did invest and they absorbed just 5% of the private investors. The finance sector worked at least with 16 funding agencies, and the engagement of funding agencies is just about 5% of the private sector investors and their financiers. Surprisingly the Ministry of Transport and Logistics and the Forest Development were characterized by few number of private investments with about 2.4 and 1.5% of the private investors, respectively; and this may suggest that investment environment might have not been conducive for attracting more private sectors to invest in the transport and forestry sector.

Ministry of Planning and Development with least number of stakeholders is working with multilateral and bilateral financing institutions. The least number of private sector engagements with the Ministry of Planning and Development is not surprising, because the ministry is established to serve as regulatory entity, and it is not undertaking development interventions at the ground.

Table 5. Private sectors' and funding agencies' engagement across Economic Public Sectors

Public Sectors (Federal Ministries/ Agencies/Authorities	Number of private sectors	Per cent of private sectors engaged
Ministry of Agriculture	202	60.7
Ministry of Industry	81	24.3
Ministry of Water, Irrigation and Electricity (Energy)	17	5.1
Ministry of Finance (Funding agencies)	16	4.8
Ministry of Transport &Logistic	8	2.4
Forest Development	5	1.5
Ministry of Planning & Development (Funding agencies)	4	1.2
Total	333	100

Sources: Ministry of Agriculture- Agricultural Investment Executive 2022;[40]MEFCCC & WB. 2017; [41]UNIDO.2019. Agro-industry investment opportunities directory Ethiopia 2019, 2019 by the United Nations Industrial Development Organization (UNIDO); Sectoral ministers.

The number of private sectors shown in Table 5 is obtained from the above sources, and according to CSA, the number of large and medium industry ranges between 2500-3000, however.

[40] MEFCCC & WB. 2017. Technical Report. Ethiopian forest sector review, focus on commercial forestry and industrialization.

[41] UNIDO 2019. The United Nations Industrial Development Organization (UNIDO) 2019. Agro-industry investment opportunities directory Ethiopia. Inclusive and sustainable industrial development.

5.4.2. Category of private sectors' investment areas

As shown in Table 6 and Fig.9; about 34 categories of investment areas were identified from a set of investment interventions owned by 333 private investors. This may indicate that on average at least three investors are engaged in similar investment areas and may produce a similar cluster of production. However market demand for each of the production is very high in the country and surplus production is found nowhere. Thus there is a need for call for investors and a call for setting enabling environment for investment that attracts more investors to invest in several economic sectors.

Fig 9 shows large variation in investors' cluster across 34 investment areas. Investment opportunity in the areas of wheat & flour production, flower farming, textile production, integrated agro industry and leather production are liked at most by private investors, and each consist of 41, 39, 30, 28 and 24 investors, respectively. Investment areas with least number of private investors (below 4 investor per investment area) include in the order of large scale power production from renewable energy sources (such as geothermal), bank services, animal feed production, forest development, fish farming and fish products, circular economy, pharmaceutical products etc. These investment areas with small number of investors (below 4) are taught to be most relevant sectors for addressing climate change issues in several ways:

- Wood processing and furniture companies, community forest development services enhances carbon sequestration and maintain carbon stock permanency intact in wood products for long without being emitted back to the atmosphere,
- Large-scale power generation from renewable energy sources such as geothermal and micro hydro power would enhance climate change mitigation as these replace fossil fuel and fuel wood consumptions, particularly at household level,
- The investment opportunity in the areas of live animal and animal feed production could have both adaptation and mitigation effect, because sustainable and market oriented animal and animal-feed production would increase animal productivity (milk, meat) with highly reduced GHG emission intensity. Market and profit oriented productions of animal products and animal feeds by private sectors deal with management of animal health & sanitation along with the production of concentrated feeds which all would reduce methane production from enteric fermentation. There is therefore a need to call private investors to invest in the animal

production and animal feed production, as part of investment in the livestock sector, which is anchored on livestock master plan,

- Private investors in Fish and Fish products are limited. Private investors in this sector are critically needed because of their relevance for ensuring food and nutrition security. The investment could have a quick return too.

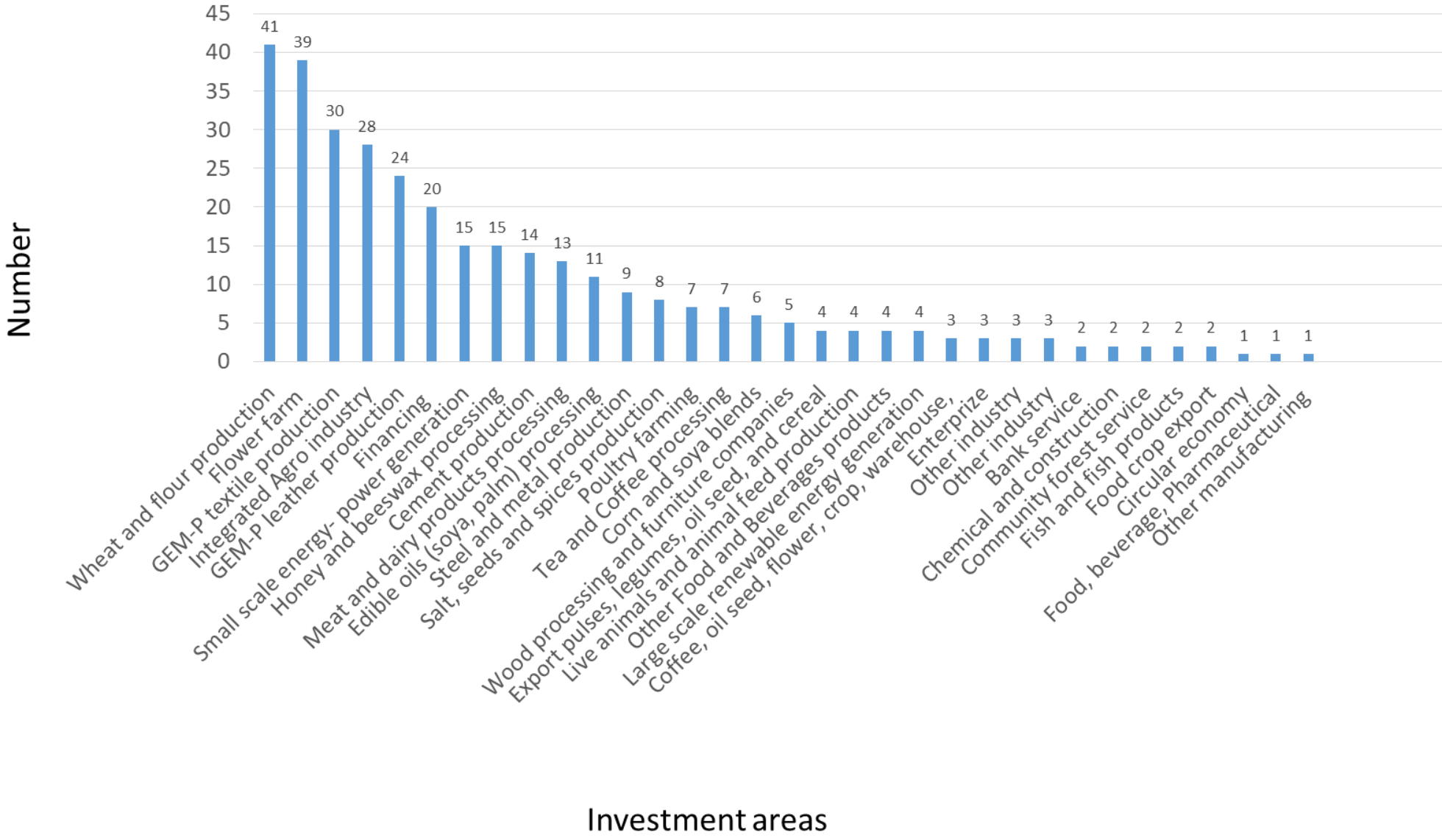


Figure 9. Category of private sectors' investment areas and production clusters

Table 6. Category of private sectors' investment areas and production clusters

S. N	Areas of Engagement	Number of private sectors engaged	Percent of private sectors engaged
1	Wheat and flour production	41	12.3
2	Flower farm	39	11.7
3	GEM-P textile production	30	9.0
4	Integrated Agro industry	28	8.4
5	GEM-P leather production	24	7.2
6	Financing	20	6.0
7	Small scale energy- power generation	15	4.5
8	Honey and beeswax processing	15	4.5
9	Cement production	14	4.2
10	Meat and dairy products processing	13	3.9
11	Edible oils (soya, palm) processing	11	3.3
12	Steel and metal production	9	2.7
13	Salt, seeds and spices production	8	2.4
14	Poultry farming	7	2.1
15	Tea and Coffee processing	7	2.1
16	Corn and soya blends	6	1.8
17	Wood processing and furniture companies	5	1.5
18	Export pulses, legumes, oil seed, and cereal	4	1.2
19	Live animals and animal feed production	4	1.2
20	Other Food and Beverages products	4	1.2
21	Large scale renewable energy generation	4	1.2
22	Coffee, oil seed, flower, crop, warehouse,	3	0.9
23	Enterprise	3	0.9
24	Other industry	3	0.9
25	Other industry	3	0.9
26	Bank service	2	0.6
27	Chemical and construction	2	0.6
28	Community forest service	2	0.6
29	Fish and fish products	2	0.6
30	Food crop export	2	0.6
31	Circular economy	1	0.3

32	Food, beverage, Pharmaceutical	1	0.3
33	Other manufacturing	1	0.3
34	Total	333	100

Source: MoA. Agricultural Investment Executive 2022.

5.4.3. Alignment between private sector investment areas and planed NDCs interventions

Updated NDC identified set of mitigation and adaptation policy interventions for implementing the updated NDC setting for 2025 – 2030. More importantly, these private sectors' areas of interventions are well aligned with updated NDC- and 10YPDP Policy interventions identified for adaptation and mitigation. In the following, effort is made to align the investment areas, where the private sectors are currently invested, with the planned NDC-policy interventions, so that to determine the business opportunities that NDC implementation can provide to the private sector.

Mitigation

In order to make inferences about the contributions of engaging the private sectors to achieve the climate change mitigation goals through implementation of the updated NDC's targets, the current areas of private sector investments (identified in Table 7) are well aligned with the planned interventions of the NDCs that are listed in the updated NDCs. In this regard, the identified 34 investment areas (Table 7) are assigned to match with NDCs investment interventions where it fits perfectly. Table 7 shows the best match of private sector investment areas with targeted areas of mitigation interventions for implementing updated NDCs in 2025 – 2030.

Accordingly, NDC's mitigation policy intervention for sustainable agriculture (GEM sector LUCF) fits best to large set of private sectors investment areas. Likewise the livestock sector (GEM Livestock) with the red meat and poultry package is well aligned with three investment areas that engage more private investors. Furthermore, energy efficiency (GEM Energy sector) and waste management (GEM Waste sector) interventions engaged more private investors. Some policy interventions of GEM LUCF sectors such as grassland improvement, household energy use and forest restoration as well as policy

interventions of some GEM industry sector namely clinker substitution did match with single policy interventions.

Table 7. Alignment between private sectors' investment areas and NDC mitigation Goals

Mitigation policy intervention (Source: Updated NDC 2021)	GEM sector	Politically responsible NDC implementing government sector	Private sectors' Investment areas that is placed best for implementing NDC target mitigation policy interventions (Source: This study)
Sustainable agriculture • Increasing the share of agricultural land under sustainable management practices • Reducing pre-harvest losses and land converted for agricultural infrastructure.	**LUCF**	MoA	- Wheat and flour production, - Edible oils (soya, palm) processing, - Coffee, oil seed, flower, crop, warehouse, - Integrated Agro industry, - Export pulses, legumes, oil seed, and cereal, - Corn and soya blends, - Tea and Coffee processing
Grassland improvement • Additional carbon sequestration through grassland improvement • Lowlands Livelihoods Resilience Project	**LUCF**	MoA	- Live animals and animal feed production
Household energy use • Fuel switch: shift from residential biomass energy demand to electricity • Biomass efficiency: Improved cook stoves	**LUCF**	EFD	-Small scale energy- power generation
Reforestation • Reforestation 3 million ha of land (conditional pathway) by 2030	**LUCF**	EFD	- Wood processing and furniture companies -Community forest service,

Mitigation policy intervention (Source: Updated NDC 2021)	GEM sector	Politically responsible NDC implementing government sector	Private sectors' Investment areas that is placed best for implementing NDC target mitigation policy interventions (Source: This study)
• 20% moist Afromontane, 60% dry Afromontane, 10% acacia-commiphora, 10% combretum-Terminalia)			
Restoration • Restoration of 5 million ha of land (conditional pathway) by 2030 and 9 million ha by 2050 • 10% moist Afromontane, 60% dry Afromontane, 10% acacia-commiphora, 20% combretum-Terminalia)	**LUCF**	EFD, MoWIE,	-Community forest service,
Dairy, red meat and poultry intervention packages • Enhancing efficiency and productivity in livestock subsectors	**Livestock**	MoA	-Live animals and animal feed production, - Poultry farming, - Fish and fish products, - Meat and dairy products processing
Agricultural mechanization • Replacing cattle/oxen by tractors for farmers and smallholders	**Livestock**	**MoA**	--
Increase in the share of poultry. • Replacing non-dairy cattle stock by chicken (supply side) and inducing a demand shift from beef to chicken	**Livestock**	MoA	-Poultry farming, - Fish and fish products,
Oilseed feeding • Improved feeding to reduce emissions from enteric	**Livestock**	MoA	-Live animals and animal feed production

Mitigation policy intervention (Source: Updated NDC 2021)	GEM sector	Politically responsible NDC implementing government sector	Private sectors' Investment areas that is placed best for implementing NDC target mitigation policy interventions (Source: This study)
fermentation.			
Energy efficiency • Economy-wide improvements of energy efficiency of appliances, machinery and other capital assets	**Energy**	MoWIE	-Small scale energy- power generation from renewable energy sources, -Large scale energy- power generation from renewable sources
Transport electrification • Shifting transport energy demand from petroleum to electricity • Increasing the share of electric vehicles	**Energy**	MoTL	-Large scale energy- power generation from renewable sources
Public transport • Shifting transport energy demand from petroleum to electricity • Increasing the share of public transport	**Energy**	MoTL	-Large scale energy- power generation from renewable sources
Industry fuel switches • Fuel switch 1: shift from industrial petroleum demand to electricity • Fuel switch 2: shift from industrial petroleum demand to sustainable biomass	**Energy**	MoTrd, MoI MoWIE	-Large scale energy- power generation from renewable sources
Clinker substitution • Replacing clinker in cement with adequate and available	**Industry**	MoI	Cement production

Mitigation policy intervention (Source: Updated NDC 2021)	GEM sector	Politically responsible NDC implementing government sector	Private sectors' Investment areas that is placed best for implementing NDC target mitigation policy interventions (Source: This study)
materials without compromising cement properties			
Waste management • Reducing emissions from reduced waste generation rate per capita • Reducing emissions from introducing ban on organic materials on landfills, i.e., waste separation and composting • Reducing emissions from wastewater	**Waste**	EPA, MoUD, MoWIE,	-Circular economy, -Wood processing and furniture companies' -Circular economy

Adaptation

Furthermore, in order to make inferences about the contributions of engaging the private sectors to achieve the climate change adaptation goals through implementation of the updated NDC's mitigation targets, the current areas of private sector investments (identified in Table 8) are aligned with the planned adaptation policy interventions of the NDCs that are listed in the updated NDCs. In this regard, the identified 34 investment areas, which have already engaged more than 333 private investors (Table 6) are assigned to match with NDC's adaptation investment interventions where they fit perfectly (Table 8).

Additionally, Table 8 shows the best match of private sector investment areas with targeted areas of adaptation policy interventions for implementing updated NDC in the years 2025 – 2030.

Accordingly, NDC's adaptation policy intervention for enhancing food security fits best to large set of private sectors investment areas, which include among others:

- Poultry farming;
- Fish and fish products;
- Coffee, oil seed, flower, crop, warehouse;
- Other Food and Beverages products;
- Salt, seeds and spices production; and
- Wheat and flour production.

Likewise, large numbers of private investments areas are well aligned with the livestock economic sector which is planned to be achieved through:

- Diversifying livestock and animal mix, including promotion of poultry and small ruminants;
- Preventing and controlling the spread of climate-driven vector-borne diseases; and
- Improving rangeland and pasture-land management diversification, including selection of drought-resistant animal breeds.

The private investment areas that meet these livestock centred policy intervention include:

- Poultry farming;
- Fish and fish products;
- Live animals and animal feed production; and
- Meat and dairy products processing

The climate adaptation policy interventions in the forestry and natural resource management sectors focus largely on sustainable utilization and management of forest resources as well as sustainable natural resource development and watershed protection. The private sectors' engagement in three investment areas namely: Wood processing and furniture companies; Honey and beeswax processing and Community forest service may contribute to meet the adaptation goals of these policy interventions. The private investment in community forest service is also well aligned with the adaptation policy interventions of the urban sector which include:

- Improve provision and condition of housing for enhanced human safety against climatic stressors;

- Enhance urban greenery for improved climate resilience;
- Undertake climate-adaptive urban planning.

There are economic sectors where the adaptation policy interventions have limited private sector investment; and these policy interventions are currently managed by public engagement and international funding/aid agencies, like in the case of:

- Improve access to potable water to strengthen community climate resilience;
- Build sustainable transport systems for resilience through enhanced access to mobility;
- Increase climate resilient designs and safety standards for transport systems;
- Number of climate and early warning data produced and disseminated/year;
- Number of modern weather condition monitoring stations;
- Enhancing climate service data reliability;
- Number of Eco-Hydrology Demonstration Sites in all basins;
- Modernize and update the basin information system coverage;
- Surface water resource assessment coverage;
- Ground water resource assessment coverage;
- Enhancing water quality monitoring coverage;
- Increase proportion of households with safe water supply

These investment gaps may call for reviewing investment policies/proclamations to create conducive private business environment for engaging private investors to invest in these areas of adaptation interventions.

Table 8. Alignment between private sectors' investment areas and NDC adaptation Goals

Adaptation Policy Intervention (Source Updated NDC. 2021)	Relevant and politically responsible NDC implementing government sector	Private sectors' Investment areas (shown in Table 6) which are placed best for implementing NDC target adaptation policy interventions
Enhance food security by improving agricultural productivity in a climate-smart manner (promote yield increasing techniques)	Agriculture	• Poultry farming; • Fish and fish products; • Coffee, oil seed, flower, crop, warehouse; • Other Food and Beverages products; • Salt, seeds and spices production; • Wheat and flour production
Diversify livestock and animal mix, including promotion of poultry and small ruminants	Agriculture	• Poultry farming; • Fish and fish products
Enhanced climate resilience in livestock	Agriculture	• Live animals and animal feed production, • Meat and dairy products processing to support commercial destocking and restocking livestock during time of climate shocks
Prevent and control the spread of climate-driven vector-borne diseases	Agriculture	• Live animals and animal feed production
Improve rangeland and pasture-land management diversification, including selection of drought-resistant animal breeds	Agriculture	• Live animals and animal feed production
Expand the use of improved crop varieties with climate resilient characteristics	Agriculture	• Integrated Agro industry;
Strengthen crop disease and pest monitoring systems in vulnerable areas	Agriculture	--
Strengthen drought and crop insurance mechanisms for climate risk management	Agriculture	• Bank services; • Financing;
Restoration and reforestation through tree planting	Forestry	• Community forest service
Increase national forest coverage	Forestry	• Community forest service
Enhance sustainable forest management	Forestry	• Wood processing and furniture companies; • Honey and beeswax processing; • Community forest service
Improve sustainable utilisation of forest resources	Forestry	• Wood processing and furniture companies; • Honey and beeswax processing; • Community forest service
Implement forest protection and health enhancement measures in natural forest ecosystems	Forestry	• Honey and beeswax processing; • Community forest service
Enhance climate resilient livelihoods of wildlife resource dependent communities in protected areas	Land Use, and Natural Resources Management	• Honey and beeswax processing; • Community forest service
Enhance sustainable natural resources development, management, and watershed protection	Land Use, and Natural Resources Management	• Community forest service;

Adaptation Policy Intervention (Source Updated NDC. 2021)	Relevant and politically responsible NDC implementing government sector	Private sectors' Investment areas (shown in Table 6) which are placed best for implementing NDC target adaptation policy interventions
Integrated watershed development in million Ha	Water	• Community forest service;
Improve access to potable water to strengthen community climate resilience	Water	--
Expand the construction of medium and large-scale irrigation systems to enhance food security	Water	• Large scale renewable energy generation from hydro dams used also for irrigation crop production
Percent of households using renewable off-grid energy sources for lighting	Energy	• Small scale energy- power generation from solar, micro dams, Biogas,
Build sustainable transport systems for resilience through enhanced access to mobility and Increase climate resilient designs and safety standards for transport systems	Transport	--
Increase climate resilient designs and safety standards for transport systems	Transport	---
Construct new sanitary landfill sites in cities/towns in climate resilient locations	Urban	• Circular Economy
Increase the climate resilience of urban systems	Urban	• Circular Economy
Improve provision and condition of housing for enhanced human safety against climatic stressors	Urban	• Cement industry, • Community forest services for green city development
Enhance urban greenery for improved climate resilience	Urban	• Cement industry, • Community forest services for green city development
Undertake climate-adaptive urban planning	Urban	• Cement industry; • Community forest services for green city development; • Small scale energy- power generation from solar;
Number of climate and early warning data produced and disseminated/year	Climate Services and Disaster Risk Reduction	----
Number of modern weather condition monitoring stations	Climate Services and Disaster Risk Reduction	----
Enhancing climate service data reliability	Climate Services and Disaster Risk Reduction	----
Number of Eco-Hydrology Demonstration Sites in all basins	Climate Services and Disaster Risk Reduction	---
Modernise and update the basin information system coverage	Climate Services and Disaster	---

Adaptation Policy Intervention (Source Updated NDC. 2021)	Relevant and politically responsible NDC implementing government sector	Private sectors' Investment areas (shown in Table 6) which are placed best for implementing NDC target adaptation policy interventions
	Risk Reduction	
Surface water resource assessment coverage	Climate Services and Disaster Risk Reduction	---
Ground water resource assessment coverage	Climate Services and Disaster Risk Reduction	---
Enhancing water quality monitoring coverage	Climate Services and Disaster Risk Reduction	---
Reduce Malaria case incidence	Health	• Food, beverage, Pharmaceutical
Reduce cholera case incidence	Health	• Food, beverage, Pharmaceutical
Increase proportion of households with improved toilet	Health	• Small scale energy- power generation Biogas
Increase proportion of households with safe water supply	Health	---
Increase proportion of health care facilities safely managing health care waste	Health	• Circular economy (promoting recycling manufacturers)
Increase proportion of health facilities with safe energy sources (electricity, solar)	Health	• Small scale energy- power generation from solar, micro dams, Biogas • Large scale energy- power generation from solar, hydro-dams, wind, geothermal

5.5. Business opportunities and budget requirement for engaging the Private Sector Investment in NDC implementation

Updated NDC (EEC; **MoPD.2022;** MoF, UNDP and WB. 2021) and Ethiopia's NDC Implementation Partnership Plan (EPA and UNDP. 2022)) identified set of mitigation and adaptation policy interventions for implementing the updated NDC setting for 2025 – 2030. Additionally MoPD.2022 identified high energy level interventions to realize Ethiopia's Net Zero and Climate Resilient Development Strategy (2020-2050) through long term decarbonisation activities.

The required budget is estimated between USD 316 billion by updated NDC (2021) and USD 577,273 million by NDC Implementation Partnership Plan (2022), as also presented in Table 9, 10. For the private sector investment in climate change mitigation and adaptation interventions the NDC implementation plan provides ample business opportunities which could be drawn from a combination of about 61 and 34 typologies identified in updated NDC (2021) and NDC implementation partnership plan (2022),

respectively (Table 9). These interventions are priority areas of the government's development plan while they meet temperature objectives of the Paris agreement. They provide access to mobilize resources to enable the country and the private sector engagement to achieve the goal of net zero emissions for which carbon markets incentivize the private sector engagement in climate action by enabling the country to trade carbon credits generated by the reduction or removal of GHGs from the atmosphere, by engaging the private sector in investing in renewable and forest development projects. It could also engage private investment in switching energy resources from fossil fuels to renewable energy or enhancing or conserving carbon stocks in ecosystems such as forests.

Table 15, 16 and Fig. 15, 16, show the development and deployment of low-carbon related project activities as well as the financing sources typically associated with them following the implementation of CRGE and Eth-NAP. Capacity building (skill, knowledge, system and institutional arrangement) and climate related technology development for undertaking low-carbon related projects are generally financed by multilateral and bilateral funding agencies. Private sector engagement in carbon emission reduction interventions in the livestock sector, carbon sequestration enhancement in forest sector development projects as well as in renewable energy expansion activities are supported by carbon trading mechanisms.

For all low-carbon development projects implemented so far in Ethiopia, different financing sources and arrangements come into play at the different stages of project development, namely upfront/start-up funding and performance based payment at project execution phase etc. For the types of climate interventions typically encountered thus far in Ethiopia, financing comes from bilateral and multilateral financing institutions through grants. Whereas, financing of large-scale grand low-carbon development projects such as rural and urban electrification with power generation from hydro, wind, solar and geothermal are from both public expenditures and loans. Following the Kyoto protocol of Clean Development Mechanism (CDM) carbon markets have provided resources to low-carbon projects related to forest and renewable energy development activities via the Clean Development Mechanism. However, overall flows have been small relative to investment needs.

The mitigation and adaptation typologies listed in updated NDC and NDC implementation partnership plan require large set of investments and capital intensity for financing wide range of technologies. In this respect, the updated NDC implementation plan would use conditional and unconditional funding mechanisms which mobilize 20% and 80% of the required budget from foreign funding sources and

public funding sources, respectively. Financing mechanism and resource mobilization strategy for implementation of updated NDC and NDC implementation partnership plan are well discussed in (EEC, MoF, UNDP and WB. 2021; EPA and UNDP. 2022).

To effectively engage the private sector investment in these business opportunities as necessarily as achieving the Paris temperature objectives, there is therefore a need to critically review investment policies, private sector incentive mechanisms, and avoid key challenges in policy, technology, finance and capacity that constrain the private sector investment in climate change mitigation and adaptation interventions.

In the following sections: i) a typology of Current Private Sector Investment; ii) analyses of barriers to private sector investments and corresponding mitigation measures of avoiding/minimizing the challenges/barriers; and iii) analyses of existing policy and legal frameworks in the context of financial and technological support required for catalysing the private sector investment in climate interventions are described in a private sector view as identified by KII through questionnaire survey and FGDs on consultative meetings.

Table 9. Summary of business opportunities and required budget for engaging the private sector in NDC implementation.

Sectorial Interventions	Updated NDC (2021		Ethiopia's NDC Implementation Partnership Plan (2022)	
	Number of typology	Resource requirement (USD billion)	Number of typology	Resource requirement (USD Billion)
Agriculture	24	103.47	8	30.96
Forest	10	0.765	5	1.74
Mining	4	0.05	4	0.01
Urban construction and development	4	8.88	4	7.55
Transport and logistic	7	16.00	4	2.04
Water irrigation and energy	6	104.73	6	534.95
Industry	6	81.78	3	0.01
Health		0.23		
Total Mitigation and Adaptation	61	315.91	34	577.27

Table 10. Business opportunities and funding requirements for enhancing private sector investments in updated NDC implementation period 2025-2030.

Relevant and politically responsible NDC implementing government sector	Updated NDC (2021	Updated NDC (2021	**Ethiopia's NDC Implementation Partnership Plan (2022)**	**Ethiopia's NDC Implementation Partnership Plan (2022)**
Sector	Intervention	Resource requirement (USD'000,000)	Intervention	Resource requirement (USD)
Agriculture	1.Agricultural Mechanization (Utilization of pre and post - harvest technologies)	2,000	1.Enhanced Food security by improving agricultural Productivity in Climate-Smart manner	24,201,955,000.00
	2.Mechanical source of power (tractor, combiner, engines etc.)	No cost assigned	2.Diversified livestock and animal mix, including promotion of poultry and small ruminants	3,092,460,000.00
	3.Value chain efficiency improvement - farmers (Provide high quality feed)	1,531.56	3.Enhanced climate resilience in livestock	
	4.Value chain efficiency improvement - farmers (Reduce Shoat & Calf Mortality Rate)	1,255.39	4.Enhanced Prevention and controlled spread of climate-driven vector-borne diseases	654,288,000.00
	5.Value chain efficiency improvement - farmers (Increase number of productive cattle breed)	1,405.16	5.Improved rangeland and pasture-land management diversification, including selection of drought-resistant animal forage Varieties	699,900,000.00
	6.Value chain efficiency improvement - farmers (Increase Offtake Rate)	449.60	6.Reduced crop loss due to crop disease and pest incidence(Reduced prevalence of Crop disease and pest(%))	111,600,000.00
	7.Value chain efficiency improvement - pastoralists (Provide high quality feed)	394.20	7.Strengthened drought and crop insurance mechanisms for climate risk management/	8,000,000.00
	8.Value chain efficiency improvement - pastoralists (Reduce Shoat & Calf Mortality Rate)	759.60	8.Enhanced sustainable natural resources development, management, utilization and watershed protection	2,029,900,000.00

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Relevant and politically responsible NDC implementing government sector	Updated NDC (2021	Updated NDC (2021	**Ethiopia's NDC Implementation Partnership Plan (2022)**	**Ethiopia's NDC Implementation Partnership Plan (2022)**
Sector	Intervention	Resource requirement (USD'000,000)	Intervention	Resource requirement (USD)
	9.Value chain efficiency improvement - pastoralists (Increase number of productive cattle breed)	953.44	--	--
	10.Enhancing and intensification of diversifying animal mix (Increase number of productive poultry)	657	--	--
	11.Enhancing and intensification of diversifying animal mix (Increase number of productive small ruminants (Shoats))	945	--	--
	12.Rangeland and pastureland management (Increase pasture & rangeland productivity)	28,850.06	--	--
	13.Rangeland and pastureland management (Fodder bank development)	650.5	--	--
	14,Rangeland and pastureland management (Rehabilitation of range & pastureland)	1,670.4	--	--
	15.Rangeland and pastureland management (Improved forage development)	21,614.04	--	--
	16.Enhance lower-emitting techniques for agriculture (Soil nutrient and crop management)	13,000	--	--
	17.Enhance lower-emitting techniques for agriculture (Tillage/residue management)	9,120	--	--
	18.Enhance lower-emitting techniques for agriculture (water management)	13,500	--	--
	19.Enhance lower-emitting techniques for agriculture (Agroforestry practices)	1,200	--	--

Relevant and politically responsible NDC implementing government sector	Updated NDC (2021	Updated NDC (2021	**Ethiopia's NDC Implementation Partnership Plan (2022)**	**Ethiopia's NDC Implementation Partnership Plan (2022)**
Sector	Intervention	Resource requirement (USD'000,000)	Intervention	Resource requirement (USD)
	20..Enhance lower-emitting techniques for agriculture (Integrated watershed development practice)	8,500	--	--
	21. Small scale irrigation (Efficient utilization of water)	3,800	--	--
	22.Small scale irrigation (Agricultural input supply and utilization)	9,600	--	--
	23. Large scale irrigation (Efficient utilization water)	5,900	--	--
	24.Large scale irrigation (Agricultural input supply and utilization)	4,800	--	--
Total Resource required for the NDC- Agriculture		130,555.95		30,963,031,000.00
Forestry	1.Reduced deforestation: Fuel efficient stoves (baking & cooking) - R&D + Capacity building	5.27	1.Increased national forest coverage	
	2.Reduced deforestation: Fuel efficient stoves (baking & cooking) - Enterprise development/support	41.22	2.Enhanced sustainable forest management	118,910,000.00
	3.Reduced deforestation: Fuel efficient stoves (baking & cooking) - QC & QA	3.5	3.Improved sustainable utilization of forest resources and economic and ecosystem contributions	2,625,000,000.00
	4.Reduced deforestation: LPG	No cost assigned	4.Increased capacities to implement and scale up	4,450,000.00

Relevant and politically responsible NDC implementing government sector	Updated NDC (2021	Updated NDC (2021	**Ethiopia's NDC Implementation Partnership Plan (2022)**	**Ethiopia's NDC Implementation Partnership Plan (2022)**
Sector	Intervention	Resource requirement (USD'000,000)	Intervention	Resource requirement (USD)
			forestry practices	
	---	--	5.Enhanced forest protection and health in forest ecosystems	40,000,000.00
	5.Large- and small-scale afforestation/ reforestation and area closure (Afforestation)	655.11	--	--
	6.Large- and small-scale afforestation/ reforestation and area closure (Re-afforestation)	100.63	--	--
	7.Large- and small-scale afforestation/ reforestation and area closure (Degraded forest land restoration and assisted natural regeneration)	121.19	--	--
	8.Forest management: Forest (Improving forest management)	29.13	--	--
	9.Forest management: Forest (Institutional forest management)	0.6	--	--
	10.Forest management: Wood land (Improving wood lands management)	50	--	--
Total Resource required (Forest)		**1,006.65**		1,741,680,000.00
Mines	1.Biodiesel in fuel mixture	6.32	1.Improved sustainable natural resource management through safeguarding landscapes	1,183,300.00
	2.Ethanol in fuel mixture	14.92	2.Built social protection and livelihood options of vulnerable people	8,560,800.00
	3.Ethanol for cook stove	12.77	3.Enhanced alternative and renewable power generation and management	245,700.00

Relevant and politically responsible NDC implementing government sector	Updated NDC (2021	Updated NDC (2021	**Ethiopia's NDC Implementation Partnership Plan (2022)**	**Ethiopia's NDC Implementation Partnership Plan (2022)**
Sector	Intervention	Resource requirement (USD'000,000)	Intervention	Resource requirement (USD)
	4.Plantation	19.23	4.Improved early warning systems	
	5.LPG	3.86	--	--
Total (Mines)		**57.1**		11,549,200.00
Urban Construction and Development	1.Landfill gas management	86.09	1.3.945 Mt CO_2e GHG emission Reduced (Mitigation)	6,600,210,000.00
	2.Reuse, reduce and recycling of solid waste	68.44	2.Enhanced climate resilience urban infrastructure of 75 cities/towns (Adaptation)	103,010,000
	3.Urban greenery and integrated infrastructure planning	143.08	3.Improved climate resilience housing for reducing the effects on people health mentally and physically (Adaptation)	236160,000
	4.Implementation of energy efficient buildings	489.36	4.Improved productivity and revenue of Food security beneficiaries (Adaptation)	608,950,000
5.Urban Development (Total)				7,548,330,000.00
Transport and Logistic	1.Improved public transit in Addis Ababa Light Rail Transit and other (for passengers & freight)	3000	1.Improve transport electrification	6,485,000.00
	2.Improving Public Transport (PT) Infrastructure	1610	2. Improved public transportation	

Relevant and politically responsible NDC implementing government sector	Updated NDC (2021	Updated NDC (2021	**Ethiopia's NDC Implementation Partnership Plan (2022)**	**Ethiopia's NDC Implementation Partnership Plan (2022)**
Sector	Intervention	Resource requirement (USD'000,000)	Intervention	Resource requirement (USD)
	3.Improving NMT environment	650	3.Built sustainable transport system for resilience through enhanced access to mobility	65,200,000.00
	4.Encouraging the use of Hybrid and electric vehicles	280	4.Increased climate resilient designs and safety standards for major transport systems	64,304,000.00
	5.Setting emission standards for all vehicle types	57	--	--
	6.Para transit/informal transport, like taxi system, etc	20	--	--
	7.Integrating Land use and Transportation Planning & Development	25	--	--
Total (transport)		5642		2,044,325,000.00
Water Irrigation and Energy	1.Generating energy from renewable sources	116.92	1.Generating electricity from Renewable sources (grid and off-grid)to reduce GHG emission 4 Mt Co2 eq. through various high level energy interventions suitable private sector investements: a. Electrification of house hold (petroleum demand reduction; b. Electrification of households (biomass demand reduction; c. Electrification of industrial (petroleum demand reduction; d. Electrification of mass Transport by a shift from petroleum to hybrid and electric vehicles; e. Enhancing NMT; f. Improving Mass Transport (BRT, Rails, trolley bus; g. Fuel quality and efficiency, h. Vehicle age limit and encouraging use of new	533,800,000,000

Relevant and politically responsible NDC implementing government sector	Updated NDC (2021	Updated NDC (2021	**Ethiopia's NDC Implementation Partnership Plan (2022)**	**Ethiopia's NDC Implementation Partnership Plan (2022)**
Sector	Intervention	Resource requirement (USD'000,000)	Intervention	Resource requirement (USD)
			vehicles and opening policy avenue for vehicle recycling; i. Improving transport mobility by reducing congestion, parking etc j. Increasing share of rail transport	
	2.Climate resilience water land management	86,000	2.Shifted from residential biomass energy demand to electricity and improved cook stoves,	No cost assigned
	3.Climate resilience water shade (basin) management	No cost	3.Reducing emissions from wastewater management	No cost assigned
	4.Reducing electricity demand through efficient light	44.64	4. Enhanced and ensured Integrated water resources management/IWRM/ towards climate change mitigation	153200,000
	5.Shift to high efficiency appliance	1,780	5.Enhanced and ensured Integrated water resources management/IWRM/ towards climate change adaptation solutions.	1,000,000,000
	6.Irrigation	No cost assigned	6.Number of climate and early warning data produced and disseminated respective to water and Energy sector	No cost assigned
Total (Water, Irrigation and Energy)		87,941.56		534,953,200,000.00
Industry	1.Clinker substitution	7.5	1.Improved alternative production process and emission reduction	5,000,000
	2.Waste heat recovery	1.3	2.Competitive low emission production technology adopted	5,421,000
	3.Energy efficiency	0.65	3.Integrated industrial waste management system developed	50000

Relevant and politically responsible NDC implementing government sector	Updated NDC (2021	Updated NDC (2021	**Ethiopia's NDC Implementation Partnership Plan (2022)**	**Ethiopia's NDC Implementation Partnership Plan (2022)**
Sector	Intervention	Resource requirement (USD'000,000)	Intervention	Resource requirement (USD)
	4.Fuel switch	57,441.5	--	--
	5.Alternative production processes	1.07	--	--
	6.Improving industrial waste management system	3,529.63	--	--
Total (Industry)		**60,981.65**		10471000
Grand Total (Mitigation and Adaptation)		**315,905,000,000**		577,272,586,200.00

5.6. A Typology of Current and future Private Sector Investment in climate related activities

It is increasingly apparent that climate change alters the conditions that underlie economies of both private and public sectors. Farmers, fishermen, small and large businesses companies are increasingly struggling with the adverse impacts of climate variability and change, and they are turning to a number of climate risk management strategies to protect their livelihoods. To this end private sectors engagement in climate investment areas will contribute to the achievements of the Paris climate objectives in several ways.

To this end the NDC implementation process arrives at a time when many public and private sector actors are realizing the importance, opportunities and urgency of responding to climate change. As presented in Tables 7-10, private sector climate-related policy interventions/activities encompass a wide variety of sectors and project types; most (if not all) are concentrated on mitigation that is implemented by Green Economy Model Sectors (GEM sectors).

By implementing updated NDC in a GEM way growths in employment and income are driven by public and private investment into infrastructure and assets building that allow reduced carbon & other pollution emissions, enhanced energy and resource efficiency, and prevention of losses of biodiversity & ecosystem services by identifying and establishing synergies and cross-sectoral impacts among policy choices. The Updated NDC and its implementation partnership plan are designed to use range of cross-sectoral technologies and policies. The types of key low-carbon projects and core implementing public sectors with strong cross-sectoral economic ties and climate impacts include water & energy (Energy), agriculture & forest (LUCF, Livestock) and waste (Figs. 10, 11). They are typically encountered in Ethiopia in implementing CRGE and GTPs investment interventions across economic sectors at national, regional and district level. The same consideration is now designed to updated NDC and its subsequent implementation partnership plan but with strong engagement of public and private investment towards ensuring climate resilience asset, infrastructure, wealth and social building.

It should be noted that investors are increasingly trying to reduce exposures of their investments to climate risks because either they are aware of, or they are being obliged to do so by government regulations and policies. As a result, an increasingly broad range of private sector actors are now supporting climate adaptation, whether through investments in climate-proofing their businesses,

supply chains and investment portfolios, or through the development of new goods and services to strengthen climate resilience of their business.

Integrated low-carbon projects and GEM sectors that would enhance cross-sectoral economic, policy and climate impacts will offer new business opportunities and markets that would be emerging as result of implementing updated NDC-policy interventions; and these are described below.

5.6.1. GEM Sector: Renewable Energy

Renewable energy (RE) capacity investments use a range of technologies, each representing very different characteristics and providing range of co-benefits for other GEM sectors. Traditionally, renewable energy sources in Ethiopia consist of biomass, used for heating, lighting and cooking, and hydroelectricity and fossil fuel based electricity in urban settings. Recently, new renewable energy sources and technologies namely wind, solar, geothermal, small-medium and large hydropower, modern biomass, bio-char, biofuels, biogas are available but with a very limited access for everyone.

Therefore, updated NDC-projects aim at expansion of these diverse renewable energy technologies to well adapt and mitigate the adverse impacts of climate change on the power supply (Fig.10). Such projects can be both grid-tied and off-grid, and hence are climate smart as in the case of wind, hydro, geothermal, solar. For example during the dry season the water level of the hydro-dams drops and generates hydroelectricity power at its minimum potential; while during the same climate season solar and wind generate power at its maximum potential. Connecting hydro-, geothermal-, wind-, and solar-power supplies together through Grid-tied and off-grid system ensures energy security and would make the NDC-energy projects are climate smart (Fig.10). It should also be noted in this regards that the hydro-dams after generating power could be used for crop and feed irrigation to ensure year-round food and nutrition security.

By doing so, the GEM energy sector enables Ethiopia to receive high power capacity from all renewable energy sources and delivers substantial amount of regional electricity supply for export to neighbouring countries in Eastern and Sub-Saharan Africa. Due to the high capital intensity of the energy sector as compared to other economic sectors, availability of access to finance, tax exemption, and loan to renewable energy projects is key to facilitate the growth of private investors as independent power

producers. Areas of private investment in this respect include wind turbines, or solar photovoltaic devices such as solar cells and modules, and building insulation materials.

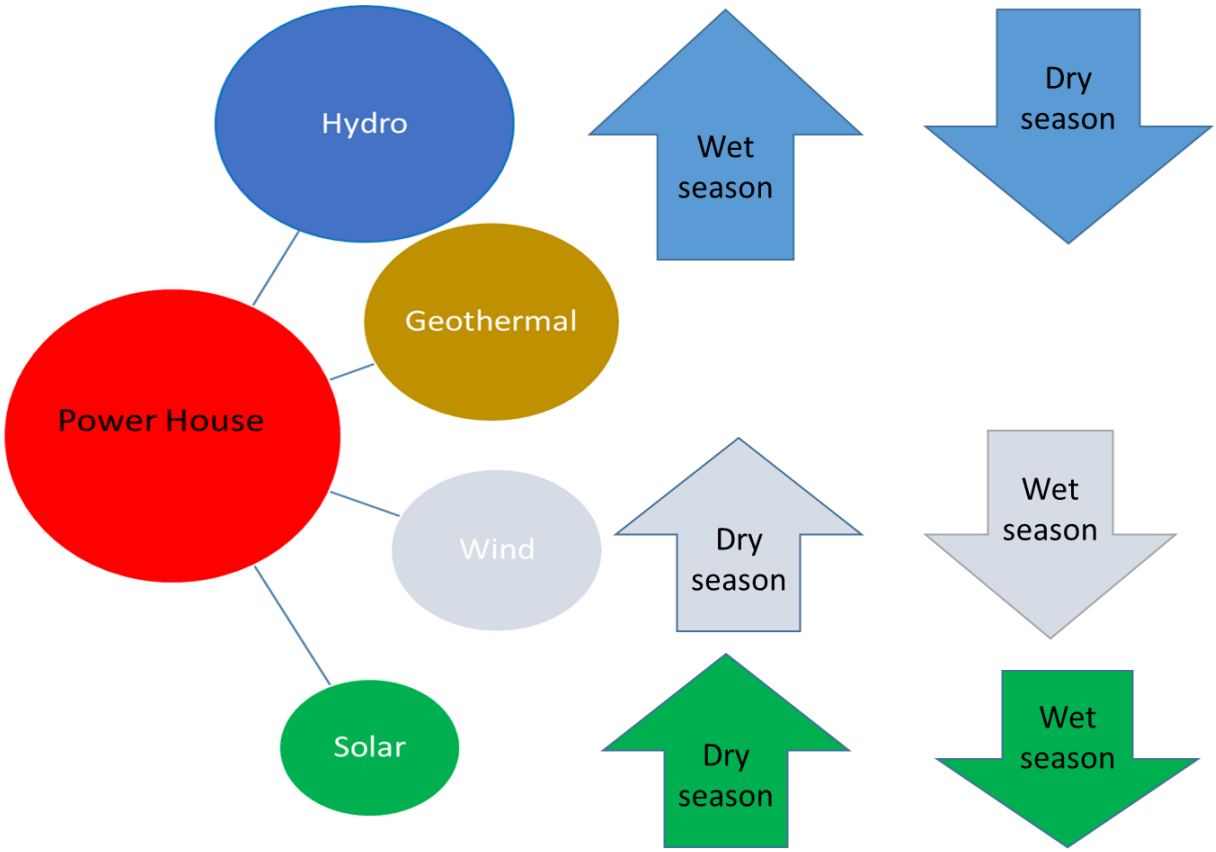

Figure 10. Cross-sectoral GEM framework with Grid-tied and off-grid system.

Fig. 10 shows a Cross-sectoral GEM framework with Grid-tied and off-grid system that builds climate smart power supply; and shows its implication for developing bankable projects. This GEM-Framewrok is discussed as follows.

Solar photovoltaic devices are now days widely distributed by private and public sectors at household level both in rural and urban areas to substitute the electric power cut offs. The engagement of the private sector in the case of GEM sectors's Renewable Energy builds climate smart energy supply and energy security both in rural and urban settings, and this would enhance integration of sectoral typology for socioeconomic resilience building.

This Cross-sectoral GEM framework with Grid-tied and off-grid system is anticipated to create a variety of investment areas that fit to the financial capacity of many private investors. Such investment areas prioritized and supported by GEM energy sectors include Energy Efficiency and Green-Tech. The Energy Efficiency and CleanTech investments are characterized by the application of emerging technologies representing a significant emissions reduction; and provide carbon emission-reduction based climate finance opportunities to the private sector. They also encompass a wide array of NDC implementing economic sectors, particularly the industry and manufacturing sectors. Many of the updated NDC-energy sector projects encompass scopes of private investments in Energy Efficiency and Greentech expansion.

Private investment in Energy Efficiency (EE): Encompass improvements in power generation, power transmission, power distribution and resulting in generally more efficient supply of energy with a significant GHG emissions reduction. It represents the least cost option for the private investors and consumer. Enhancing access to distribution of energy efficient devices in buildings, roadside lighting, industry, transport, parking etc. contribute significant reduction in overall energy consumption and, hence, increases energy savings. Now days, the demand for energy saving cook stoves, solar photovoltaic devices is increasing, and this demand side cannot be met only by the public investment.

In order to strengthen the private investment in EE, it is necessary to facilitate/establish policy instrument for a type of direct and indirect financing through financial intermediaries which include: local public and private banks; private/public equity funds such as microfinances and associations; energy service companies like Ethiopian Energy Authority (EEA), Ethiopian Electric Power (EEP), and Petroleum & Energy Authority (PEA). The overall impact of increases in private investment in the areas of EE is to secure the sustenance of supply and distribution of manufacturing products, which stabilize market and price fluctuation.

Private investment in Cleantech: Updated NDC strategy and its implementation partnership plan provide ample opportunities for the private sector to strengthen its capacity and to invest in Cleantech.

According to [42]Shilpa Patel (2021), Cleantech is a cross-sectoral investment theme; and cleantech investing refers to venture and growth capital stage investments in private companies whose products

[42] Shilpa Patel .2021. Climate Finance: Engaging the Private Sector: A background paper for "Mobilizing Climate Finance," a report prepared at the request of G20 Finance Ministers. International Finance Corporation (IFC), World Bank Group. November 2011.

and services support significant natural resource efficiency and/or pollution abatement (including, but not limited to, GHG emissions abatement). In the Ethiopian case, as proposed by policy interventions in Updated NDC, the cleantech investment sectors include all renewable energy technologies, smart irrigation and efficient water use, waste water treatment, desalination technologies, saline or draught resistant seed multiplication and supply, clean transport; green buildings; bio-chemicals; recycling. Availing clean transport through supply of electrical car is the priority of government's 10YPDP and updated NDC, and covers broad spectrum of mass transport; and it is currently dominating the investment volumes of the private sector due to government's tax incentive policy for electrical vehicle suppliers, buyers and producers. In this respect, limited electric vehicles companies, which are a type of CleanTech ventures, are taking place in Ethiopia. They include Marathon-Hyundai Motor Engineering PLC and GreenTech Africa which are supplying electric cars, energy storage devices etc.

5.6.2. Agriculture and Forestry: GEM Sectors: LUCF and Livestock

The climate related policy interventions identified in the updated NDC and its implementation partnership plan are consistent with economic development activities identified for achieving the 10YPDP targets by 2030 in the agriculture and forest sectors. They are well representing and covering broad areas of private sector investments. GHG emission abatement potentials of the GEM-LUCF and GEM-Livestock sectors remain huge; despite the private sector interventions in carbon-sequestering agriculture and land use activities, livestock management interventions, and forest development practices have been limited to date. This has been evidenced from the perspectives of Multilateral Development Banks' (MDBs) financing supports for private investment in sequestered/reduced carbon.

It is worth mentioning that the agriculture and forest sectors (GEM- Livestock and GEM-LUCF) are representing more than 50% of the GDP and 87% of the country's GHG emission. And, hence, set of policy interventions in the updated NDC would provide varieties of private business opportunities and investment areas that would result in significant improvements in GHG emission abatement, food and nutrition security, energy security and increasing the share of the private sector to GDP.

In this respect as shown in Table 7, the LUCF and Livestock investment sectors include but not limited to: Sustainable agriculture for continuous food supply; grassland improvement for sustained production of livestock products and feeds; restoration and reforestation of degraded lands for sustainable forest

product supply and enhancement of carbon sequestration. The LUCF and Livestock investment sectors identified in updated NDC and 10YPDP are encompassing wide range of climate smart interventions; and are including but not limited to: climate/carbon smart renewable energy such as biogas; climate/nitrogen smart bio fertilizer such as composted green and animal manure; climate/water smart irrigation through building micro dams for enhanced efficient water use; climate smart food and nutrition security through integrating poultry and fish farming and bee keeping; climate/carbon smart clean transport by creating availability of manual cycles/bikes to everyone.

The proposed policy intervention in the updated and 10YPDP- agriculture- and forest sectors would build green economy development model (GEM) by which growths in employment and income are driven by integrated public and private investment into infrastructure development and household assets building. Integrated GEM-LUCF and GEM-Livestock investment sectors allow reduced carbon & other pollution emissions, enhanced energy and natural resource efficiency, and prevention of losses of biodiversity & ecosystem services by identifying and establishing synergies and cross-sectoral impacts among the agriculture, natural resources and forest policy choices (as demonstrated by Fig. 11). The Updated NDC and its implementation partnership plan are therefore designed to use range of cross-sectoral technologies and policies of the agriculture and forest sector. The types of key low-carbon projects implemented by GEM-LUCF and –GEM Livestock sectors with strong cross-sectoral economic development ties and climate impacts (Fig. 11) include but not limited to:

- Farm yard manure/compost management (both crop residue and animal manure) for reducing carbon and nitrogen emission from animal manure and soil emissions;
- Animal hygiene and feed management that reduce methane emission from enteric fermentation;
- Rural energy supply through establishing biogas schemes
- Promoting organic farming through replacement of inorganic fertilizers with bio fertilizers such as bio-slurry and enhance increases in agricultural production and productivity;

By doing so, the agriculture and forest sectors (GEM-LUCF and GEM-Livestock) have been typically encountered in Ethiopia in implementing CRGE and GTPs investment interventions across the country in rural and urban settings by rural and peri-urban communities.

The same considerations, but with due attention to urban agriculture and urban greening, is now designed in the updated NDC and its subsequent implementation partnership plan. The updated NDC in

the agriculture and forest sectors with strong engagement of public and private investment would ensure climate resilience asset building, infrastructure development, food & nutrition security; rural energy security, enhanced ecosystem services.

Figure 11 describes the range of cross-sectoral economy, energy, food security and climate impacts of implementing low-carbon projects of agriculture- and forest-GEM sectors. From the perspective of private sector views, Fig 11 presents cross-sectoral economic, social and environmental benefits of integrating GEM-LUF and-Livestock sectors in small and large scale production system.

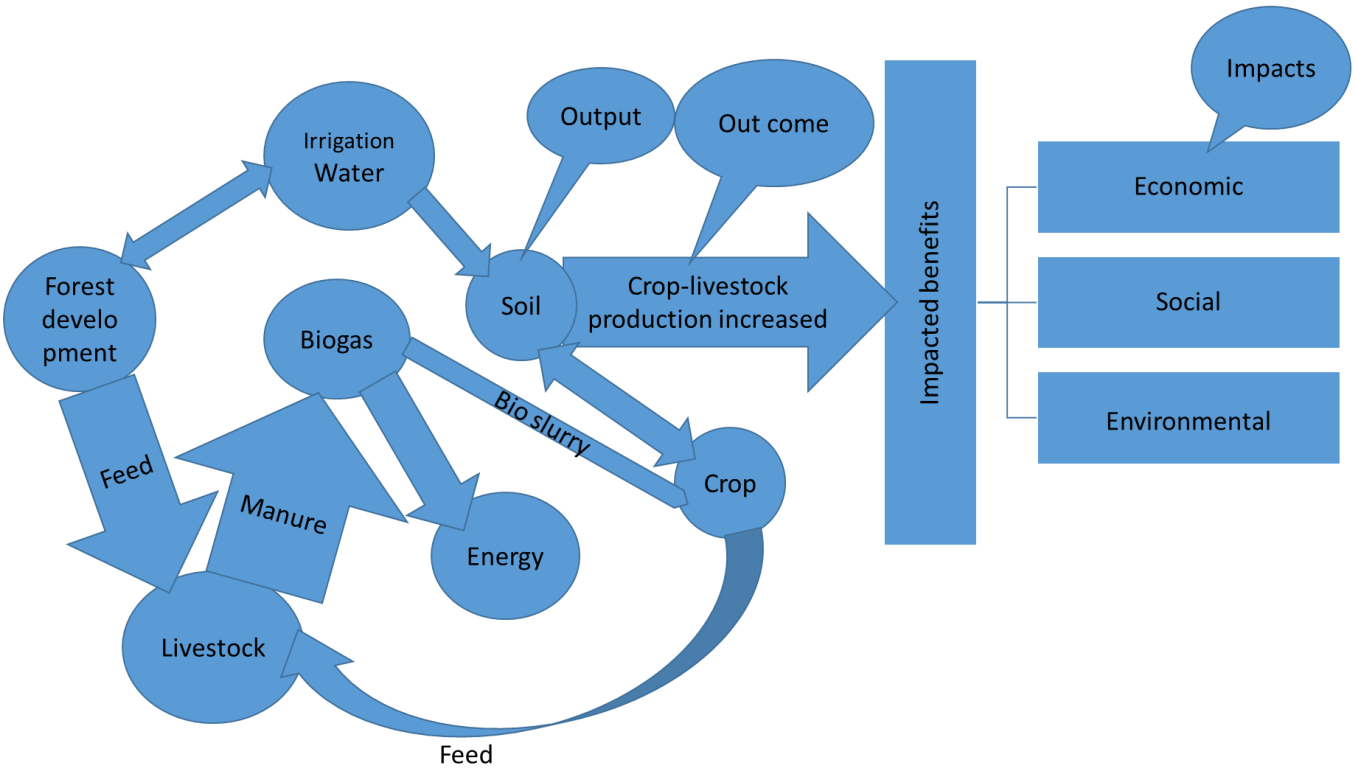

Figure 11**.** Integrated framework for GEM Sectors: LUCF and Livestock: implications for developing bankable NDC project.

The case of GEM-LUCF and GEM-Livestock sectors integrate crop, livestock and forest sectors, and provide range of cross-sectoral economic, social and environmental benefits; which consequently ensure sustainable food & nutrition and energy security. To this end, Fig.11. implies to the development of bankable NDC projects of multiple value and product chains that suit to integrate several investors and donors at various level of investment capacity.

Private investors are highly advised to integrate the GEM-LUCF and GEM-Livestock sectors, no matter how big is the size of their investment. As demonstrated by Fig 11, integrated GEM-livestock and GEM-LUCF projects could increase crop, livestock and forest productions by improved soil conditions (by adding bio slurry complemented with crop residues) and by supplementing rain fed agriculture with water harvesting and micro-dam schemes.

Fig. 11 shows the pathways how GEM-livestock and GEM-LUCF integrated projects could ensure sustainable climate resilience environmental, social and economic outcomes/benefits. The biogas from animal manure is used for household energy consumption which reduces heavy deforestation for fuels. These would reduce the pressure on forests, enhance carbon sequestration, and mitigate the work burden on women and children, who are walking long distances for fetching firewood and drinking water. Crop residues are directly applied to soil to increase soil organic matter and also are used directly as a feed for livestock, which in turn will be back to the crop land through bio slurry. Forest development interventions in various forms (area closures, reforestation, afforestation etc.) could provide substantial benefits in managing extreme climate event hazards by reducing flood hazards, soil erosion and also serving as source of livestock feeds using cut- and carry systems.

One such example of private investor is Ethioadmas agroindustry PlC located at nearby Alemtena town and producing annual and perennial crops on 61 ha of arable land located at the shore of lake Elian. The business plan of the investment is lacking livestock component, however. Since the farm is located strategically at routs to market centres for absorbing all types of agriculture and forest products, the organization is advised to integrate livestock components. Livestock component projects with manure management for producing bio-gas and bio-slurry for energy and soil fertility, respectively, would offer emission-mitigating features which fit to private sector investment potentials at various scale.

Generally, the low-carbon projects of agriculture- and forest-GEM sectors are well suited to all scales of private investment namely micro-, small, medium and large enterprises. Currently in Ethiopia, Agri-businesses in various forms (annual and perennial food and fruit crops production, and processing, exporting etc.) are largely dominating the agricultural investment volume; and are widely distributed across the country. Fig. 12 and Table 11 present regional distribution of private sector investment in agriculture sector as inferred from number of investors in commercial food crop production.

Accordingly, large numbers of investors were investing on commercial food and oil crops in Amhara and Tigray regions. Large volume of these investments in the two regions was concentrated in the lowlands of North West Ethiopia, namely Humera and Metema areas. Gambela stands third in terms of private investments on commercial farms producing mainly oil crops. The fourth is Benishangul-Gumuz with relatively few investors who had large number of projects for producing oil crops and legumes.

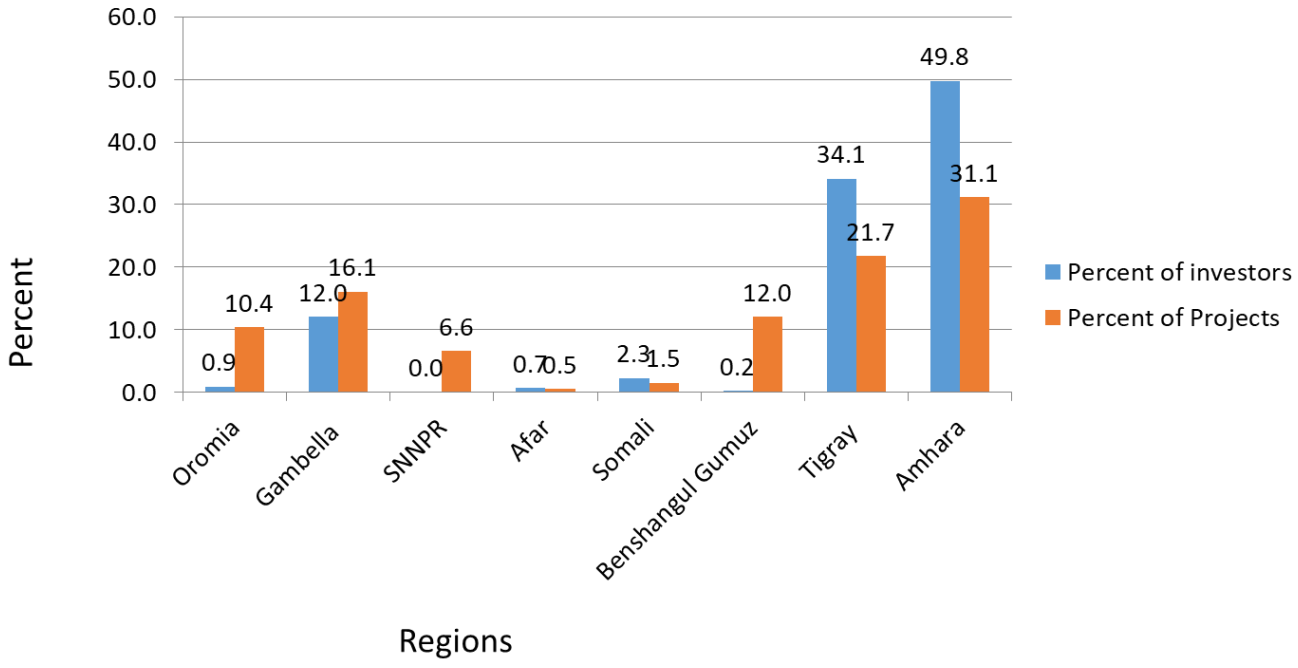

Figure 12. Distribution of private sector investment in agriculture sector

Source: [43]MoA. 2022. Agricuture Investement Executive 2022.

[43] MoA. 2022. Agriculture Investment Executive. 2022.

Table 11. Regional distribution of private sector investment in agriculture sector

Region	Number of investors	Number of projects	Per cent of investors	Per cent of Projects
Oromia	23	413	0.9	10.4
Gambella	299	639	12.0	16.1
SNNPR		263	0.0	6.6
Afar	17	21	0.7	0.5
Somali	57	60	2.3	1.5
Benshangul Gumuz	6	478	0.2	12.0
Tigray	848	865	34.1	21.7
Amhara	1238	1239	49.8	31.1
Total	2488	3978	100.0	100.0

Source: MoA. Agricuture Investement Executive 2022

5.6.3. Adaptation

As defined in academic literature (Shilpa Patel .2021), an activity could be considered an adaptation investment if it:

- Reduces the risk, exposure or sensitivity of human or natural systems to climate change;
- Increases climate resiliency;
- Builds problem solving capacity to develop responses to climate change; and
- Addresses impacts exclusively linked to climate variability and change.

In updated NDC and 10YPDP, wide range of climate related activities are identified as adaptation interventions (Table 8) that are well aligned with investment areas that the private sectors are investing on. In practical terms, however, it seems difficult to disaggregate the portion of an investment that is directly linked to adaptation, interventions are meeting both adaptation and mitigation objectives as they usually provide adaptation vs mitigation co-benefits one way or the other.

Taking multisectoral climate considerations into account, when designing practical undertakings of updated NDC and 10YPDP interventions, is of a sound climate resilience investment in the face of a changing climate. In view of these, it has not been possible to develop a typology of private sector adaptation investment drawn from the identified policy interventions as it has been done for private sector mitigation investment; although NDC policy interventions for adaptation are identified in Table 8.

5.6.4. Waste Management

The collection, transport, processing, recycling and disposal of waste both in liquid and solid form offer ample opportunities to generate energy, enhance energy efficient, secure environmental protection and public health and safety. Activities typically encountered waste management in Ethiopia include land-fill gas capture or waste-to-energy conversion projects and recycling of used plastic materials. Constructing new sanitary landfill sites and solid and liquid waste management are among the policy interventions that updated NDC and 10YPDP identified for immediate action to increase the climate resilience of urban system and health care facilities. Solid and liquid waste management projects with emission capture and recycling features offer private sector investment potentials in circular economy, and hence promote recycling manufacturers for private investment.

5.7. Barriers adversely affecting Private Sector Investments in NDC Interventions:

For analyses of key barriers of private sector investment and mitigation measures addressing the barriers in implementing NDC interventions; pertinent information were collected as per the methods described in section 4. Range of data set was collected through focus group discussions at a consultative meeting, a face to face key informant interviews as well as through questionnaire surveys completed by representatively selected stakeholders. As presented in Annex 1., three groups of respondents; representing the private, public and funding sectors were identified to provide key data sets with regards to investment barriers and mitigation measures. Similar questionnaires were used to guide the KII, FGDs and questionnaire surveys (Annex 3, 4). The results of the diagnostic studies are described and discussed below in a perspective of private, public, and funding sectors view.

5.7.1. Category of Barriers

The results of the diagnostic study indicated three categories of barriers of engaging the private sector investments across NDC-economic sectors. These include: i) Financial; ii) Technical/ technological; iii) Policy gaps. The results of key informant interviews, focus group discussions and questionnaire surveys are presented in Table 12.

5.7.1.1. Financial Barriers

As details are shown in Table 12, the diagnostic study across NDC implementing sectors provides range of financial barriers that are facing private sector investors in any investment in in climate change interventions. The financial barriers that are common to all GEM-NDC sectors include but not limited to:

- Imitated access to loan/credit,
- Lack of upfront funding, Transaction,
- Lack of interest of shareholders to invest and expand the company;
- Lack of Foreign exchange for importing new technologies;
- High investment and overhead costs;
- Low pricing of original and recycled products;
- Price fluctuation;
- High rental cost of vehicles;
- Subsidy
- Little or no collateral provision of loan;

The financial barriers are so diverse enough to discourage local businesses, project developers, vendors, technology providers from offering low carbon solutions to the market, and hamper institutional and

market financing mechanisms. These made the private investments unable to grow along with the changing climate.

Lack of upfront funding of private investments was reported by many of the respondents. In this regard, the upfront cost of making 10YPDP and update NDC development interventions in climate resilient is a serious financial barrier, as the success of those interventions described in the context of climate change adaptation and mitigation in Table 7- 10 and Fig 10-11 would remain uncertain.

Furthermore, the respondents reported lack of access to grant and concessional loans is a critical financial barrier for the success of private investment in NDC's climate interventions. This is because; some elements of grants and concessional loans could be forced to be available to finance the additional costs necessary to make climate dependent development activities resilient to the impacts of climate change. In the Ethiopian case at the phase NDC and 10YPDP implementation, if grants and concessional loans are provided, the grant element of the loan could be allocated to cover the additional costs of integrating climate risks and resilience into those development interventions, no matter for which strategy it is designed (NDC, 10ypdp).

During focus group discussions and key informant interviews (FGDs, KIIs) it was repeatedly reported that higher investment costs and lack of access to capital are still critical financial barriers preventing the private sectors from investing in climate resilience development activities, although such climate related development activities are given high priorities to receive national and international financings (e.g. priorities in CRGE, 10YPDP, Updated NDC, SDGs, Paris agreement). The integration of climate risk and resilience into the NDC implementation partnership plan activities tend to have higher initial capital costs as costs for NDC implementation are estimated between USD 316 and 577 billion (Table 9, 10). This makes the cost of climate resilient development activities planned in updated NDC and 10YPDP more dependent on the cost of capital than conventional development activities. To this end these financial barrier need to be addressed.

Additionally, the results demonstrated that there might be either:

i. Limitation of specific and or unclear guidelines on financing the private sector engagement in climate change; or

ii. Most of the policies and proclamations with regards to investment have no space to accommodate the private investments in climate interventions; or

iii. The investors themselves and public finance officers have no clear understanding about the varies versions of the national and regional policies, proclamations, regulations and law of enforcement frameworks on financing, investment, and taxes that enable the integration of the private sector actions into these country-driven climate inventions (updated NDC, CRGE, Eth-NAP).

Generally, the findings on financial barriers to private investments are consistent with the investments' barrier assessment conducted elsewhere ([44]Abraham. 2020).

5.7.1.2. Technical/ technological Barriers

The FGDs, KIIs through questionnaire surveys, interviews and consultative meetings reported range of Technical/ technological barriers (Table 12) that are potentially constraining the private sectors from not investing in climate activities across NDC sectors. The identified technical barriers/constraints include, but not limited to:

- There are skill gaps to use new / emerging technology of low-carbon interventions
- Limited/lack of access to climate technology made the company to hold outdated machineries and became non- competitive with new companies of its kind; and are being chased out from the market;
- Insufficient understanding of existing challenges
- Conducting good prefeasibility studies on newly emerged business opportunities is limited,
- Fast and frequent changes in technology development/advancement and hence limited skill availability for emerging technology
- Unfair competition and difficulty of acquiring skilled manpower;
- Insufficient availability of skilled and trained manpower;
- Low energy efficiency of the available machineries,

[44] Abraham Demissie Chare. 2020: Factors Affecting Private Investment in Ethiopian Industry Sector: The Case of Sugar Factories. Microeconomics and Macroeconomics 2020, 8(1): 11-22 DOI: 5923/j.m2economics.20200801.03.

- Limited technology promotion and adoption;
- Limited university-industry linkage;
- Assigning experts that do not fit to the position they can deliver;

Generally, the assessments indicated that in addition to financial barriers, the crucial deterrent for the private sector investment in NDC implementation is related to technical skills, knowledge/awareness in climate change from the perspectives of profitable business operations. Like the financial barriers, technical barriers are diverse and complex enough to affect the private sector's ability and business interest to invest in climate actions, particularly in investments in profitable low-carbon businesses. As low carbon investment projects are technology intensive and dynamic; the presence of this much large set of technical/knowledge gaps provides limited assurance and business confidence to how risks related to climate investment can be appropriately managed.

Like any profit making private business models, private investors in NDC-climate intervention need to design to gain a quick return for their investments where NDC's climate mitigation and adaptation interventions may not be an initial priority. In this perspective, the aforementioned technical barriers listed as reflected in the views of respondents, demonstrate that core elements of the technical barriers to private investment in NDC climate interventions are:

i. Availability of limited technical and commercial skills;
ii. Insufficient climate knowledge and climate information; and
iii. Limited real and perceived climate-risks knowledge to associate business profit with climate change.

In Ethiopia, skilled personnel who can integrate climate risks and resilience considerations into development activities do not exist in large numbers in private sector communities; while also officials in public sectors often have limited information about business characteristics associated with climate change and variability.

Combination of these skills, knowledge and information gaps may increase uncertainties of business risks associated with climate change; and these consequently may decrease required rates of return/profit; and, hence, result in less capital available.

In contrast, addressing these technical-, knowledge- and information gaps may provide good preparedness for managing business risks associated with hazards of extreme events of climate anomalies. Hence, this ultimately may increase the required rates of returns and profits and raise more capital available from which profit elements of that capital could be allocated to leverage the additional costs of integrating climate risks and resilience into the investment operations. Additionally, skilled private investors, who integrate climate risks and investment resilience considerations (like in the case of Fig 10, 11) can demonstrate that the investment has impact to provide benefits to communities beyond the profits for the company itself; and this could be considered as good justification for receiving grants from climate financing pools for supporting the private sectors. In these regards, technical/ technological barriers are substantially contributing to financial barriers to exist.

This implies that, neither the right policy environment nor conducive financing system would achieve much if technology, innovation and technical capacity barriers had been existing. Addressing the technical barriers will therefore require different domestic and international levers, which include among others:

I. Establishment of independent technical expertise centres (as the case for MRV system);

II. Sharing of climate risk data (as the case of woreda disaster risk profile);

III. Providing financial and technical support to build national readiness for climate innovation technologies (as the case of MoF is receiving accreditation for GCF, MDBs and other International financing institutions);

IV. Begin with Readiness phase (as the case of the national REDD+ projects by the WB, and the sectoral Fast Track Projects).

If the private sectors had been connected with international and domestic levers during the readiness phase, then the private sectors would have been able to facilitate the brokering and breaking of the boundaries into new knowledge and skill in low-carbon economy, that ensures the food & nutrition AND energy securities of the community while at the same time addressing issues of global warming (Paris

Agreement). One pertinent example of local capacity building through international levers is the establishment of the Ethiopian Climate Innovation Centre (CIC) in Ethiopia, Kenya, Vietnam, Morocco, South Africa and in other countries in Latin America. The aim is to engage private investment of SMEs in various low-carbon businesses and creating job opportunities for youth. Unfortunately, the Ethiopian CIC-project did not advance as expected to meet the primary objectives and was terminated without success due to various constraints with regards to investment management and financial flow.

5.7.1.3. Policy Barriers

The findings of this study with regards to documenting policy barriers to private investment in low-carbon-climate resilience economic development projects across updated NDC-sectors are provided in Table 12. Accordingly, key and persistent policy barriers that often hinder the private sectors from investing in law-carbon economic development are presented as follows:

- Limited updated land acquisition policy for low-carbon investment;
- Lengthy bureaucratic process/procedures and multistage corruption for acquiring land for investment;
- Limited specific policy guideline issuing tax-free right to private investment in climate change across all NDC-sectors
- Insufficient incentive policy framework for low-carbon investments,
- Limited reinforcing mechanisms adhere to environmental pollution protection (e.g. in the case of sawdust from ECAFCO).
- Limited awareness on tax right and tax exemption policies/regulation/proclamations
- Low supply of raw materials from different sources (e.g. decline in the supply of Eucalyptus logs to the company) as government's procurement policy restricts purchase of logs from out grower schemes,
- Limited land use policy options for expansion of working space to expand the companies size;
- Limited public transport availability;
- Insufficient incentives such as lifting excise tax;

- Lengthy bureaucratic process/procedures and multistage corruption for acquiring land for investment;
- Limited availability of foreign exchange for raw material import;
- Irregular water supply and power cut off;
- Lack of standards for plastic pollution;
- Limited environmental law enforcement policy/regulation to enforce the cement sectors to transit from fossil and biomass fuel to renewable energy;
- Limited incentive mechanism,
- Policy implementation gap
- Limited emission standards for both transport and industries. So, the government must formulate emission standard that by indicate solutions lime or technology
- Limited incentive options for low-low carbon investment;

Just like those of financial and technical barriers, the policy barriers are huge and diverse. The assessments indicated that the crucial deter□rent policy barriers for private sector investment in NDC interventions is related to regulatory, operational, incentive mechanisms, land acquisition, environmental standards, and pricing instability (market risks) in the business operations of climate investments. Additionally, instability of local peace and security, the dynamics of the global climate change issues and subsequent national policy changes, institutional instability, limited law of enforcement to many of sectoral investment proclamations affect the private sector's business ability and interest to invest in climate activities.

Hence, the scope of low-carbon investment required for climate mitigation and adaptation may differ on a national/local contextual basis and for different types of projects/businesses. The good example in this respect is the investment in renewable energies which include different levels of sizes that include small, medium and large enterprises. For instance in Ethiopia, SMEs can accommodate investments on efficient cook stoves, biogas plants, and climate proven agriculture production system (dairy & beef, perennial & annual food crop production, sheep & goat, micro-hydro dam for irrigation and power etc.), because these businesses are able to gain a quick return for the investment, and may have low cost of climate risk insurance.

Furthermore, [45]Abraham (2020) reports three categories of factors affecting private investment in Ethiopian industry sectors; and are in close agreement with the barriers of private sector investments identified by this diagnostic studies. These include:

Legal and Institutional Factors: including high tax rate, operational challenges due to restrictions on banking, and pricing policy;

Political Factors: include political instability, growing conflict, opposition from interest groups, and economic orientation of the government.

Socio-economic Factors: Include poor infrastructure development and unstable currency

Market Factors: include high logistic cost, weak financial position of factories, unattractive foreign exchange, and vulnerability to foreign competition;

[45] Demissie Chare. 2020. Factors Affecting Private Investment in Ethiopian Industry Sector: The Case of Sugar Factories. Microeconomics and Macroeconomics 2020, 8(1): 11-22 DOI: 10.5923/j.m2economics.20200801.03.

5.7.2. Mitigation measures identified against the barriers of private sector investment

For analyses of mitigation measures with regards to how to address the key barriers of private sectors to invest in NDC's and 10YPDP's climate related policy interventions (low-carbon projects); the KIIs and FDGs noted pertinent mitigation measures in a perspective view of their business operations against each of the barriers they identify. The mitigation measures were analysed in three categories as it was done for the analyses of the Barriers (Table 12). The categories include:

i. Mitigation measures to financial barriers;
ii. Mitigation measures to policy barriers; and
iii. Mitigation measures to technical/technological barriers.

It is advised that private sector investors engaged in any investment in climate change interventions need to consider key mitigation measures. The mitigation measures under three categories are described as follows in a perspective of private, public, and funding sectors' views.

5.7.2.1. Mitigation measures identified against financial barriers

Mitigation measures for addressing financial barriers include but not limited to:

- Facilitating access to credit, loan, grant, donation from local and international institutions
- Building strong partnership with all forms financiers (MDBs, International Financing Intuitions, microfinances) ,
- Capacity building on quality proposal development,
- Creating access to tax free machinery and equipment for adoption of new technologies; ,
- Facilitating to modest foreign exchanges from National /Public Banks;
- Availing financial provision at low interest rate;
- Inviting foreign banks to support investments in climate actions;
- Creating mechanisms for provision of upfront funding and other financial incentives,
- Creating enabling environment to engage community development fund,
- Developing regulations for subsidy,
- Building readiness for tapping international finance sources and invite financially capable private sectors ;
- Establishing system for Co-financing;

- Developing regulations for uncollateralized provision of finance;
- Developing law enforcement for provision of financial incentives for private investment
- Engaging development partners in fund raising programs;
- Allocating sectoral financial incentives for respective sectoral investment from respective sectoral tax collection; as this may apply to sectoral special funds e.g. special road fund, special water fund, special forest fund etc.
- Creating awareness on wide range of topics related to business opportunities, private actions for private investment and economic development, turning climate risks/problems/challenges to economic development business.

5.7.2.2. The mitigation measures identified against technical/technological barriers:

Mitigation measures for addressing technical barriers are listed as follows but not limited to:

- Facilitating adoption of irrigations technology, improved seed/planting materials, Solar pump, farm machineries;
- Providing Free Veterinary Service;
- Availing biological conservation technologies;
- Facilitating access to temperature and moisture sensors, aerial images, and GPS technology;
- Organizing information exchange platform and field visits to good practices;
- Providing series of capacity building training on mobilizing funds from different sources;
- Provide awareness training on waste disposal, emerging and best available technologies, education quality;
- Creating enabling environment to access technology adoption for renewable energy: solar, wind geothermal, hydro, waste to energy and other new technology,
- Facilitating structural cross-sectoral and internal linkages between the government, non-government, and NGOs,

5.7.2.3. The mitigation measures identified against policy

Key mitigation measures for policy barriers were identified as follows:

- Establishing rewarding system for promotion of the best practices including recycling of waste and plastic materials;
- Issuing law of regulation to incentives private sector in climate activities;
- Producing environmental standards, directives, guidelines;
- Conducting regular environmental impact monitoring of private sector investments;
- Undertaking regular awareness on emerging policies, proclamations, regulations, guidelines etc;
- Identifying and banning health hazardous chemicals and plastics;
- Avoiding/minimizing government's control in all sectors, including privatization of land
- Issuing environmental management and rehabilitation guidelines, regulations for artisanal mining and quarry areas;
- Providing emission standards for vehicles, and industries;
- Developing standards for imported Device, Technology etc.;
- Developing fact based policy framework;

The assessment indicated that many of the mitigation measures identified against the barriers are overlapped. Frequently suggested mitigation measures are:

i. Creating conducive environment for incentivizing private investment in various forms;
ii. Improving land policy;
iii. Providing emission standards; and
iv. Conducting regular environmental monitoring.

Implementation of these and other related mitigation measures to address investment barriers, particularly by framing them in regulatory and policy frameworks, provides assurance to how business risks related to NDC-climate investments can be appropriately managed.

Table 12. Key barriers affecting the private sectors' investment in the implementation of NDC's climate interventions.

	Description of barriers from the views of points of private and public sectors and funding agencies.			Mitigation measures from private, public and funding sectors view
Sector: Agriculture and Forest (GEM-CLUF, GEM-Livestock Sectors)				
Category of Barriers	Private sectors	Public sectors	Funding agencies	Private, public and funding sectors
Financial	Imitated access to loan	Upfront funding, Transaction, Limited access to credit/loan	Upfront funding, Transaction, Limited access to credit/loan	Access to Credit, loan, grant strong partnership, quality proposal development, capacity building, Loan, Donation and tax free equipment,
Technical/technological including Knowledge/awareness /capacity gaps	Skill gap to use new technology,	Access to climate technology, Skills and knowledge gaps etc	Access to climate technology, Skills and knowledge gaps etc	Irrigations technology, improved seed, Solar pump, ploughing Maschinery …….etc, Free Veterinary service, Biological conservation technologies, Temperature and moisture sensors, aerial images, and GPS technology;

				Information exchange platform, Improved machines and planting materials Capacity Building Training on mobilizing funds from different sources Conduct capacity building, experience sharing (Best practices), Capacity building, Technical support (site visit)
Policy	Land acquisition policy, Tax free policy for imported technology,	Incentive , land acquirement,	Incentive , land acquirement,	Reward, promotion of the best practices, Issue policy/strategy, rules & regulation, Producing environmental standards, directives, directives, Capacity building Proclamations
Sector: Industry (GEM- Industry sector)				
Financial	Lack of interest of shareholders to invest and expand the company as they are focusing on			Facilitating to obtain modest foreign exchanges from national /Public Bank;

	short term returns; Lack of Foreign Exchanges; High overhead costs; Low pricing of products; Low price of recycling products; Price fluctuation; Limited financing and lack of loan facility; Limited financial support Self-financing but financial limitation for scale up ; High rental cost of vehicles; Lack of foreign exc;			Facilitating loan from government as the case of micro finance; Avail financial provision at low interest rate; Lease financing; Invite foreign banks to support investments in climate actions;
Technical/technological including Knowledge/awareness /capacity gaps	Being chased out from the market by supply of substitution products; Non-competitive with new emerging companies of its own type, Outdated machinery, and lack of spare parts; Lack of understanding of existing			provide awareness training on waste disposal; Skill training and updating with latest/emerging technologies; Improve education quality; Conduct of need based training for technical staffs;

	challenges; Frequent changes in technology development/advancement; Unfair competition and difficulty of acquiring skilled manpower; Lack of skilled manpower; Lack of trained manpower, Lack of skill for emerging technology, Lack of good prefeasibility,			
Policy	Lack of reinforcing mechanisms adhere to environmental pollution protection (e.g. in the case of sawdust from ECAFCO). Lack of awareness on tax right and tax exemption policies/regulation/proclamations Lack of supply of raw materials (e.g. decline in the supply of Eucalyptus logs to the company) Lack of working space; Lack of public transport availability;			Conducting regular environmental impact monitoring ; Undertaking regular awareness on emerging policies and proclamations etc; Identifying health hazardous chemicals and plastics; Creating conducive environment for introducing incentives; Avoid /minimize government's control in all sectors, including privatization of land Plastic banning policy

	Lack of working space; Lack of incentives; Lack of incentives such as lifting excise tax; Lengthy bureaucratic process/procedures and multistage corruption for acquiring land for investment; Unavailability of forex for raw material import; Water and Power cut off; Plastic pollution; current policy does not encourage cement sectors to transit renewable energy; There is no technological barriers, because most of factories are using modern machines with advance technology, however the sector is highly challenged by lack of capable human resource. Because most of machines are run by foreigners Technical and vocational training institutes as			framework, Incentivize industries to recycle and reuse of wastes; Incentivize industries that reduce their emission through various emission reduction measures.,

	well as higher education institutes are not in a position to solve the problems. In addition the factories also does not take permanent solution for their problem rather they are taking short term mitigation measures for the problems they are facing			
Sector: Mining and Petroleum (GEM- Energy)				
Financial	limited financing and credit;			provide credit and incentives, Upfront Funding, Community Development Fund, Subsidy, Grants,
Technical/technological including Knowledge/awareness /capacity gaps	technology and capacity gaps, Limited appropriate social services and capacity,			Capacity building, Best available technologies,
Policy	no incentive mechanism, Policy implementation gap			Design policy for incentive mechanisms, Artisanal mining environmental management & rehabilitation regulation, proclamation;
Sector: Transport (GEM-Energy)				

Financial	One of our challenge is foreign currency,	Limited upfront funding, transaction, limited financing, credit/loan etc).		Credit/ loan, incentives; Grant
Technical/technological including Knowledge/awareness /capacity gaps	Our technology has up to 30 % - 40 % fuel efficiency based on the type of vehicle and fuel, however the people does not have trust for new technologies and we face challenge to convince the people. Furthermore, we also challenged to get good advisor that able to guide us how we can easily implement our project easily;	technology, skill/knowledge etc)		Capacity building, experience sharing (Best practices);
Policy	Currently there is no emission standard for both transport and industries. So, the government must formulate emission standard that by indicate solutions lime or technology.	(incentive, land acquirement, etc)		Lack of policy, strategies, rules & regulation; Formulate emission standards for vehicles, and industries; Formulate emission standards for fuel, Develop standards for Device, Technology,
Sector Water, Irrigation and Energy (GEM-Energy sector)				
Financial		loan, foreign exchange, credit, subsidy,		Build readiness for tapping international finance sources and invite financially capable

				private sectors ; Subsidy, Loan, Grant, tax, Co-financing; Credit through MFIs;
Technical/technological including Knowledge/awareness /capacity gaps		technology, capacity gap,		Technology adoption for renewable energy: solar, wind geothermal, hydro, waste to energy and other new technology,
Policy				
Sector: Chamber of Commerce and Sectoral Association (Representing cross-sectoral business communities)				

Financial	Little no collateral provision of loan; Limited access to fiancé; Collected resources (many) is not used for the purpose; Wastage of productive time; Unnecessary use of budget ear-tagged budget for unplanned activities such as meetings; Lack of upfront funding; Transaction; Limited access to credit/loan			Facilitating uncollateralized provision finance/credit and adoption of technologies; Provision of financial incentives Establishing easy and clear procedures for processing credits; Facilitating access to finance for private sectors; Engaging development partners in fund raising programs; Allocating the collected tax to the economic sector for which tax is collected; Creating awareness, Turning the problem to business;
Technical/technological including Knowledge/awareness /capacity gaps	Limited technology promotion and adoption; Skills and knowledge gaps in emerging technologies; Limited university-industry linkage; Lack of access to technology and skilled labor; Gap in knowledge, technology;			Facilitating structural cross-sectoral and internal linkages between the government, non-government, and NGOs,

	skill and attitude; Assigning experts that do not fit to the position; Lack of skill/knowledge			
Policy	Inadequate incentive provision; Lack of access to land, Lack of assigning the right expert to the right position he/she fits to; Lack of incentive policy; Limited access to land; Lack of policy implementation; Lack of Incentive; Land acquirement;			Developing and implementing inclusive and participatory policy; Developing fact based policy framework; Follow strict monitoring and evaluation on the outcomes of policy implementation;

Furthermore, Shilpa Patel (2011) reported key barriers of private sector investments that are commonly occurring in relevant low-carbon investment sectors in developing countries (Table 13). Specifically, the barriers and solutions documented by Shilpa Patel (2011) are still remaining as critical barriers to risk private business and they are consistent with those barriers identified by this diagnostic study along with the project typologies drawn from NDC climate interventions (Tables 7-10).

These project types/typologies encompass low-carbon economy sectors with emerging energy technologies that are recently prioritized for NDC's and 10YPDP's interventions. According to Shilpa Patel (2011), what is common across all project types is availability of limited incentives for low-carbon investments created by energy subsidy distortions (i.e., fossil fuel subsidy for public transport) and price inflation for EE technology following global fossil fuel price inflation. Furthermore, Shilpa Patel (2011) notes that markets are still immature in many of these technologies in developing countries, and measures to develop markets more generally, including awareness rising and building capacity to understand technical solutions, is significantly required to foster low-carbon investment in climate vulnerable countries, particularly in least developed countries (LDCs). This capacity building extends across the value chain, including the financial sector (the case of project types demonstrated by conceptual framework Fig. 10, 11).

Table 13 provides key lessons for addressing private sector investment barriers associated with low-carbon technologies in Ethiopia. Particularly, lessons in renewable energy efficiency and CleanTech can be learnt and adopted to Ethiopia, as many private investors are coming in to these business areas.

Table 13. Commonly occurring barriers for private investment in key low-carbon energy technologies in Developing Countries.

Private Attractive Project Type	Contribution to NDC's Green Economy Model (GEM)	Key Barriers	How to address the barriers
Renewable	GEM-Energy	• Fossil fuel subsidies; • Large up-front capital cost; Some technology risk; • Network effects.	• Price externality, • Feed-in tariffs, • Predictable regulation; • Risk reduction measures; Network upgrades; • Develop project risk data,
Industrial Energy Efficiency		• Energy pricing distortions ; • Limited standards and technical expertise; • Transaction costs; • Inability to price risk	• Develop and enforce standards, Local banking capacity, • Risk reduction measures; Demonstration projects; Develop industry/risk data.
Building Energy Efficiency	GEM-Energy	• In addition to the barriers for industrial energy efficiency	• In addition to the measures for industrial energy efficiency: Reduce builder-user information asymmetry by establishing building codes and performance standards
Supply Chains for RE and EE	GEM-Energy	• Dependent on downstream market	• Develop downstream markets for EE and RE
Cleantech Africa	GEM-Energy	• Weak local venture capital or private equity markets; • Most technology innovation originating from developed countries	• Support local R&D; • Supportive tech transfer regime; Support local venture capital / private equity fund

(Source: This study)

5.8. Incentives and financing mechanism required for catalysing the private sectors investment in climate change interventions.

5.8.1. Incentives for catalyzing private sector investments in NDC-Policy Interventions

Large set of incentives for enhancing the private sector investments across economic sectors are stated in proclamations and regulations. Such proclamations and regulations are: Investment Proclamation No1180/2020; Investment Incentive Regulation No. 517/2022; Forest Development, Conservation and Utilization Proclamation No. 1065/2018; Investment Proclamation No1180/2020; Public Private Partnership Proclamation No. 1076/2018; Urban Lands Lease Holding Proclamation No. 721/2011; Rural Land Administration and Land Use Proclamation No, 456/2005. Additionally, private investment incentives are reported in several studies (e.g., [46]EIC.no date; [47]Jürg Füssler et al 2019).

Accordingly, as part of investment policies creating enabling environment for catalysing the private sectors to invest in key economic sectors, the government of Ethiopia has put attractive incentives in its investment regulatory framework (details are discussed in section 5.9). The private investment incentives include:

- Income tax exemption of new investments and for expanding/upgrading of existing investment;
- Additional income tax exemption for investors exporting products or services;
- Loss carry forward;
- Exemption of capital goods and construction material from customs duty;
- Exemption of motor vehicles from customs duties;
- The right to use rural and urban land for investments;
- Benefit from carbon sales and eco-system services;
- Compensation in case of expropriation of land for public interest;
- Access to land free from lease;
- Access to loan upon fulfilling appropriate requirements; and more.

[46] EIC. No date. Ethiopia Investment Policies and Incentives and opportunities. Ethiopian Investment Commission.
[47] Jürg Füssler (INFRAS), Alexander Wunderlich (INFRAS), Nicolas Kreibich (Wuppertal Institute), Wolfgang Obergassel. 2019. Incentives for Private Sector Participation in the Article 6.4 Mechanism. Discussion Paper. German Emissions Trading Authority (DEHSt) at the German Environment Agency.

Categories of tax exemption incentives that are recently granted any private investors invested in eligible economic sectors are categorised into fiscal incentives schemes. Investment proclamation and investment incentive regulation declare that private sectors both national and foreign citizens are entitled for the following Fiscal Incentives Schemes:

- Tax holidays for priority economic sectors listed in Regulation No. 517/2022 (Table 17);
- Income tax holidays for the period of 1 – 9 years;
- Duty exemption of raw materials used as inputs for export;
- Investment credit support from private and public banks and micro finance;
- Provision of land with competitive lease prices (>$1/m2) as stipulated in the Proclamations No. 721/2011 and No, 456/2005). However access to land is becoming critical as land is becoming scarce and unit price is escalated.
- Duty free import of capital goods

According to EIC.No date, private sectors are entitled for various tax rates and incentives depending on the areas of investments. Commonly applicable commercial tax rates are presented in Table 14.

Table 14. Commonly applicable commercial tax rates and incentives granted to private sectors

Type of tax	Tax rate (%)
Corporate income tax	30
Customs duties	0 - 35
VAT	15
Excise tax	0 - 100
Withholding tax	3
Personal income tax	35

(Sources: EIC. Nodate)

The government thus far granted attractive incentives to private investors who engaging in industrial Parks (eic. No date); and these include:

For Manufacturers:

- Exempted from income tax up to 8 - 10 years;
- Exempted from duties and other taxes on imports of machinery, equipment, construction materials, spare parts, raw materials and vehicles;
- No taxes on exports ;
- One-stop-shop government services;
- Land lease term: 60-80 years at zero charge for factories and residential quarters

For Developers:

- Exempted from income tax up to 15 years (outside Addis Ababa);
- Land lease term: 60-80 years at nominal rate with sub□lease rights;
- Provision of necessary infrastructure, including dedicated power substations;
- Exempted from duties and other taxes on imports of machinery, equipment, construction materials and vehicles

These tax exemptions can be applicable for private investments in low-carbon interventions, that results quick returns for the investors.

5.8.2. Financing sources for catalysing private sector investments in NDC-Policy Interventions

There are different sources of finance that could come into play at the investments of different project activities of development interventions and climate mitigation investments. Private financing sources that are functional in Ethiopia include but not limited to:

Private Sources of Finance: A wide range of private sources can be tapped for the financing of private investment. These include the private companies, local, regional and global commercial banks, non-bank financial institutions, leasing companies, private equity investors and institutional investors. In the Ethiopian context, private and public banks, microfinance can be good source of financing through debt

can be raised through borrowing from a bank, or through capital markets via the issuance of bonds or other commercial paper. The Ethiopian banking sector is currently comprised of a central bank (the National Bank of Ethiopia/NBE), one state owned development bank, a government owned commercial bank and large number of private commercial banks. The bank branches reached to several thousand locations across the country. These local banks-financing schemes can take on a wide range of forms including raising debt through borrowing from a bank, or through capital markets via the issuance of bonds or other commercial paper.

Public Sources of Support/multilateral: these are governments' finance supporting directly climate-related private investments through international climate finance institutions, named as multilateral financing institutions. Set of climate related interventions in adaptation and mitigations were identified and prioritized for funding sourced from multilateral (Table 10); and these typologies need to be packaged in form of bankable projects integrating the energy, water and the agriculture sectors (Fig. 10, 11) to unlock financing and technological support from multilateral financing institutions shown in (Fig. 15).

For example studies ([48]CPI 2018) indicate that in 2015 and 2016 multilateral financing institutions mobilized and allocated annual average financing of USD 22, 436, and 6 billion for adaptation and mitigation interventions as well for dual purposes, respectively (Fig 13, 14,). The two years' total fund allocation amounted to USD 44, 872, and 12 Billion, for adaptation, mitigation and dual purpose, respectively. The overall total fund allocation by the global financing vehicles for climate related intervention amounts to USD 928 Billion. The share of mitigation is 94%, while the share of adaptation and of dual purpose is just below 5% and 1.3%, respectively. The dual purpose may refer to cover administration costs.

From the view of points of reaching at high likelihoods of securing climate finance grant, it is suggested to develop bankable NDC projects aiming at mitigation interventions that could also provide substantial adaptation co-benefits, like the case of integrated interventions shown in Fig. 10, 11).

[48] CPI. 2018. Climate Policy Initiative (2018).

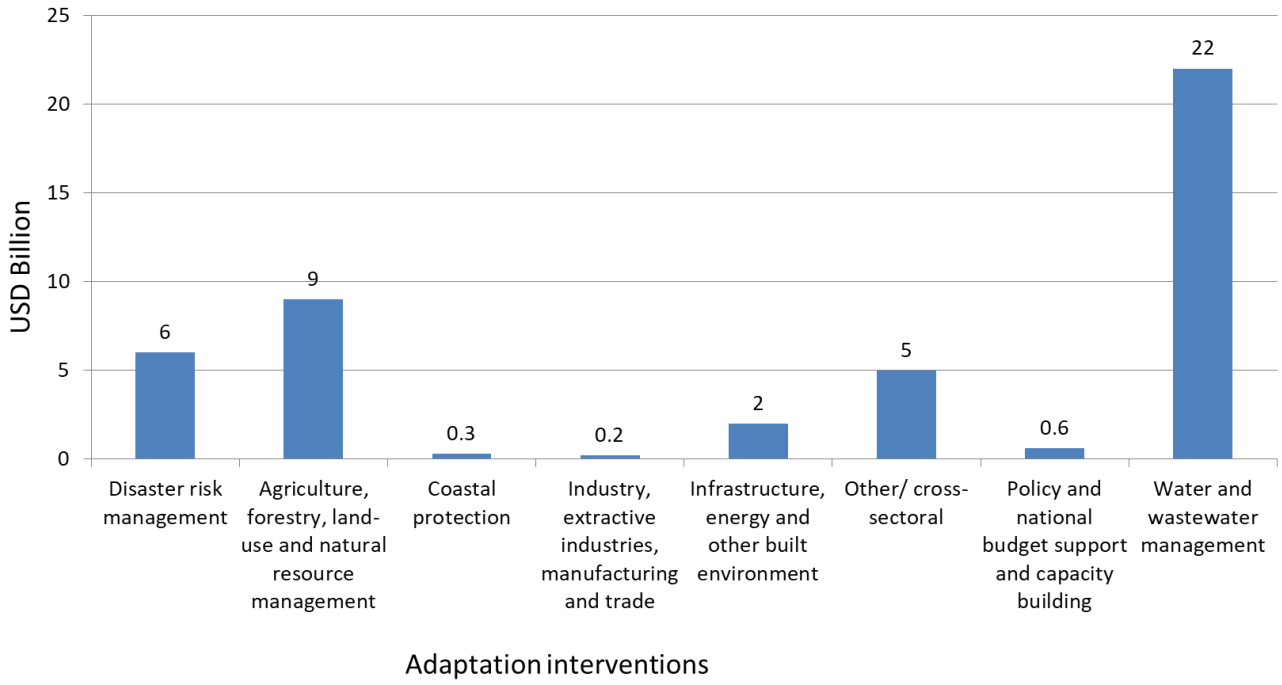

Figure 13**.** Global climate finance allocation for adaptation interventions

Source: CPI (2018)

Accordingly, globally, the adaptation allocation of climate finance indicates that water sector and agriculture and allied activities received a large share of as high as 22 and 9 Billion USD over two years. These sectors are well aligned with the NDC's adaptation interventions.

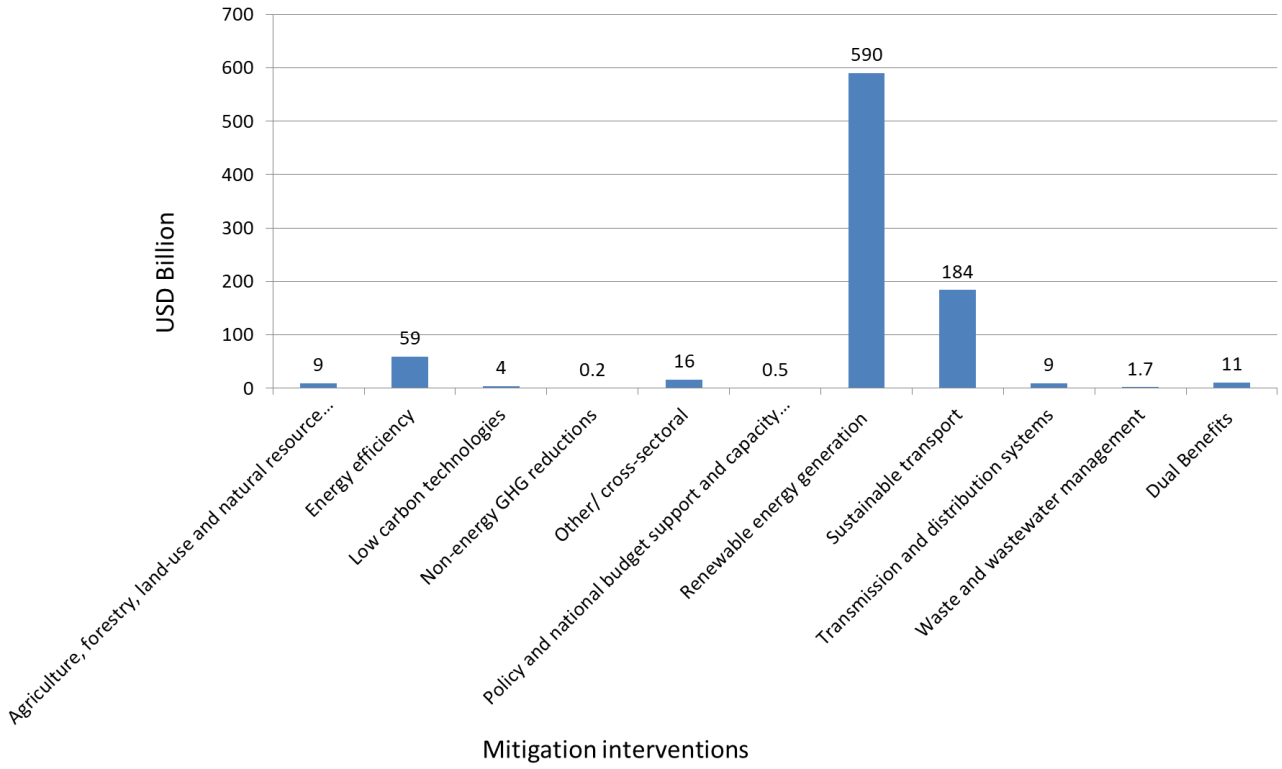

Figure 14. Global climate finance allocation for mitigation interventions

Source: CPI (2018)

As demonstrated in Fig 14., renewable energy and sustainable transport sectors received the largest share within the mitigation component. Energy efficiency also received a good share which perhaps pinpoints the growing interests of bilateral and multilateral financial institutions in the renewable energy and mass transport activities.

Based on these available data, the three top climate priority sectors are agriculture, water and livestock which all together account for about 80% of total global climate finance allocation. These sectors with relatively high adaptation and mitigation finance allocations are well aligned with the updated NDC's adaptation and mitigation interventions; suggesting that both adaptation and mitigation interventions of updated NDC interventions would receive increasing finance and technical support for private investment.

The multilateral financial institutions consists of about 23 financing vehicles, and these have been established to mobilize and channel large amount of finance and provide technological and knowledge

support to climate vulnerable LDCs to enable them well adapt to and mitigate adverse impact of climate change (Fig 15). These include among others: the Global Environment Facility (GEF), the Climate Investment Funds (CIF), Green Climate Fund (GCF), Adaptation Fund (AF), Special Climate Change Fund (SCCF), Least Developed Countries Fund (LDCF), World Bank Group (WBG), International Financial Corporation (IFC) and more others are examples of financing sources for climate-related investments in developing countries. As shown in Fig. 15, GEF, LDCF, CTF, GCCA, PPCR, AF, FIP, GEF are among the highest climate financers. For example, GEF alone has channelled as high as USD 1700 million. A total of USD 6,191 million was channelled, of which 27% was channelled by GEF.

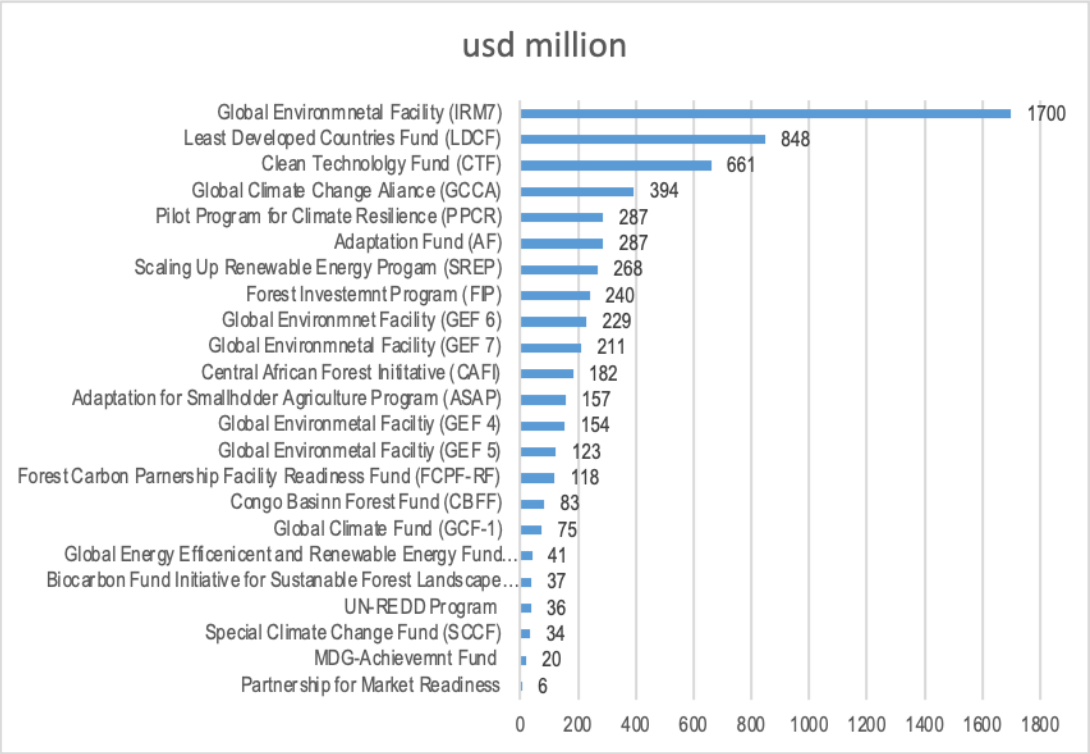

Figure 15. Financing vehicles and amount of financing mobilized for Sub-Saharan Africa

Source: CPI 2018

Bilateral Support: The Organisation for Economic Co-operation and Development's (*OECD*) Development Assistance Committee (DAC) raising the necessary investment for mitigation and adaptation with the largest donors being Japan and Germany.

Feed-in tariffs: a feed-in tariff is a policy mechanism designed to accelerate investment in Renewable Energy. It consists of revenue support through a long-term purchasing agreement at some pre-

determined rate, typically based on the cost of generation of the renewable energy technology. The rate is usually set to provide enough of the incentives to the renewable energy producers.

Energy pricing policies. Many developing countries including Ethiopia subsidize fossil fuels or energy produced from fossil fuels. Such subsidies is now becoming against the intervention of low-carbon economy development through adoption of renewable energy and energy efficiency. The same principle of energy subsidies can be applied for subsidizing the adoption of renewable energy and energy efficiency as part of incentivizing low-carbon investment.

Green Bonds: Green bonds are themed bonds focusing on low-carbon investments. There are few examples of green or climate themed bonds being used to rise financing by private sponsors for low-carbon energy projects. For example MDBs have successfully raised financing from pension funds and institutional investors. There is a possibility in the Ethiopian case to use pension funds investing in Green Bond for financing private sector investments in NDC interventions. The return/profit form the use of pension funds can be used to leverage the living costs of the pensioners/retirees.

5.8.3. Financing sources thus far supporting climate related activities/interventions in Ethiopia

Since efforts made to implement CRGE (2011) Ethiopia had access to major international financing support mechanisms for climate related interventions/activities.

Available data from the websites of international financing institutions indicate that the major international financing vehicles that the convention came up with for LDCs and Ethiopia's access to and allocations of the funds to address climate change challenges are AfDB, WBG, GEF, GECF, LDCF, AF etc.

These financing institutions supported climate change interventions with at least 19,489,419.7 millions of USD investment (Table 15). The lion's share of their support goes into key economic sectors of infrastructure building: electricity/power supply, water and sanitation & health, transport, agriculture & rural development. More importantly, financially supported projects were closely aligned with Ethiopia's national development strategies, namely GTP1-2, CRGE; and are matching with the 10YPDP and updated NDC-policy interventions.

Leading provider of development finances and volume of multilateral funding channels supported thus far Ethiopia's national development agenda are described as follows:

GEF: Ethiopia received a total grant volume of USD 123,789,685 from GEF for about 33 typologies since 1993 through various financing arrangements and implementing entities.

GCF: Ethiopia received the largest GCF funding (USD 265.4 million) for implementing climate related projects including renewable energy, livelihood productivity, sustainable land management, low emission resilient agriculture, enhanced land tenure.

AF: Ethiopia received a total grant amount of USD 19,474,378 from AF financing in supporting five key climate interventions: capacity building on M & E, climate smart agriculture, climate resilient livelihood diversification, water security and awareness and ownership of adaptation planning at the local level. These interventions are key priority areas of updated NDC and 10YPDP.

LDCF: The cumulative pledges to the LDCF amount to USD 1.6 billion as of 2020. Ethiopia being a LDC, be part of the UNFCCC, has identified priority activities in the NAPA, and have established Designated National Authority to the UNFCCC is eligible for this funding.

WB: The WB's support to finance climate related intervention increased, particularly during 2017 - 2021 Fiscal Years. The WB supports three key interventions: (i) maximizing finance for development; (ii) boosting competitiveness through a better environment for the private sector; and (iii) enhancing public transparency and accountability to promote good governance. Thus far the WB provides financial support of USD 14,652.3 million.

Table 15**.** Multilateral funding channels thus far supporting climate related projects in Ethiopia

Multilateral funding channels	USD million
GEF	124
GCF	265.4
AF	19,474,378
WB	14,652.30
Total	19,489,419.7

Furthermore, other data sources from the MoF shows the volume of project financing from multilateral and bilateral funding channeled directly through the CRGE-Facility (Table. 16, Fig. 16.). Accordingly, nine projects were financed by bilateral and multilateral funding agencies that have channeled a total of USD 159.69 Million through the CRGE-Facility. From these, the Norwegian Government financed Forest

Sector Development projects with USD 69.42 Million to implement REDD+ Investment Programme and Institutional Strengthening in Ethiopia. This was followed by GCF funding of 50 million USD to finance disaster risk projects on “Responding to the increasing risk of drought: building gender-responsive resilience of the most vulnerable communities”.

Regarding funding sources, seven funding agencies channelled project funds to implementing entities of the public sectors directly through the CRGE-Facilities (Fig. 16). The public sector with the largest funding support was EFCCC and is followed by the MoA and MoWIE.

Available data sets from funding agencies (Table 15) and from CRGE-Facility of the MoF (Table 16) indicate that Ethiopia thus far received large volume of grants from multilateral and bilateral financing institutes for financing climate related activities.

Table 16. Projects supported by bilateral and multilateral financing channels during 2016 – 2022 in Ethiopia.

Project/ Programme Title	Donor	Total Fund	Implementing Partners
Climate Smart Integrated Rural Development	Adaptation Fund	10 Million USD	Amhara, Oromia, Tigray, Diredawa, Harari
Fast Track Investment	DFID	15 Million GBP (17.86 Million USD)	MoA, EFCCc, MoWE, MoUHC, MoT, MoIT, IPDC
Enhancement of Community Livelihoods and Participatory Forest Management in the Kaffa Biosphere Reserve	DANIDA	45 Million DKK (6.36 Million USD)	EFCCC
Greening Agricultural Transformation in Ethiopia	DANIDA	27.5 Million DKK (3.88 Million USD)	EFCCC & MoA
Institutional Strengthening for the Forest Sector Development in Ethiopia	Norwegian Gov't	10.6 Million USD	EFCCC
Multi-Sector Investment Plan (MSIP)	World Bank	1.5 Million USD	MoA, EFCCC, MoWE
Responding to the increasing risk of drought: building gender-responsive resilience of the most vulnerable communities	GCF	50 Million USD	MoA, MoWE
REDD+ Investment Programme	Norwegian Gov't	600 Million NOK (69.42 Million USD)	EFCCC
Agriculture Sector CRGE Fast Track Investment (FTI) pilot project	Austria	630,000 Euro (0.67009 Million USD)	MoA
Total		159.69 Million USD	

Source: MoF 2022.

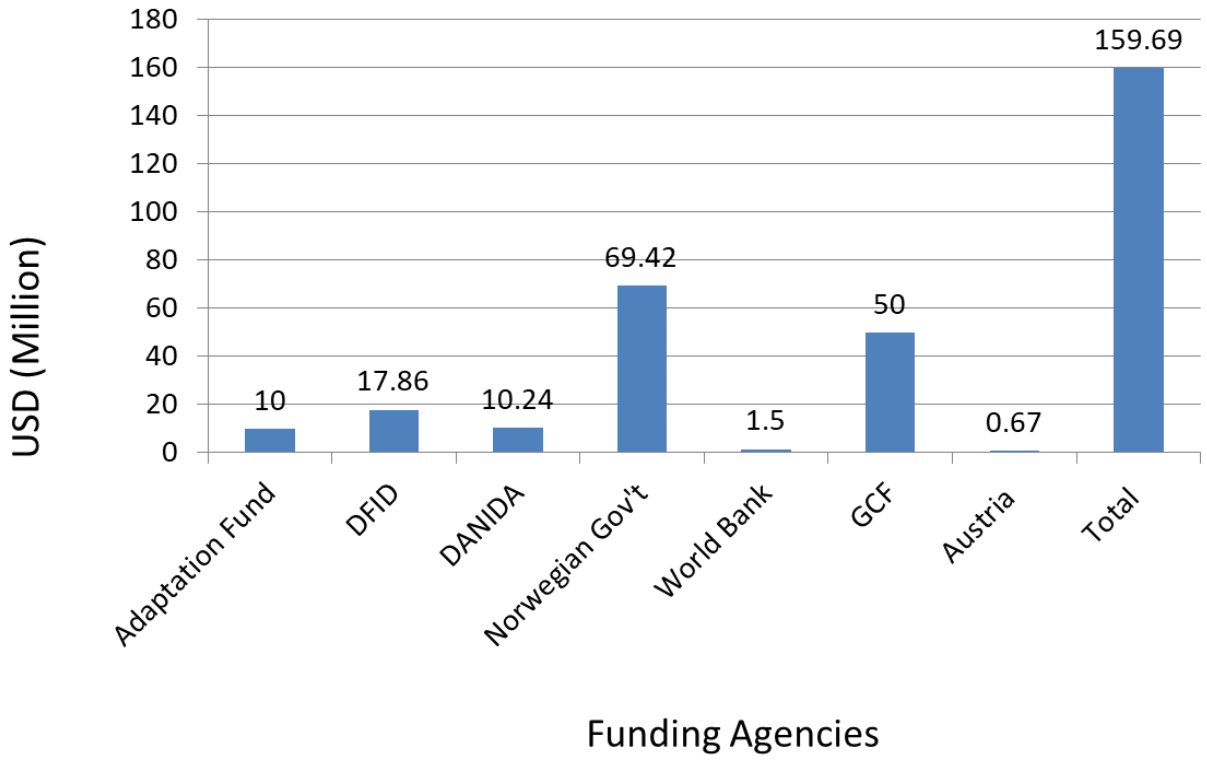

Figure 16. Volume of project finances channeled to the CRGE facility from multilateral funding channels in 2016 – 2022.

Source: MoF 2022

Additionally, the diagnostic study focused on determining funding sources that are supporting thus far the private sectors (Annex 3 Q.9). To this end questionnaires were completed by the respondents; and the respondents highlighted the following sources of funding thus far supported the private sectors.

- Bank loan, mortgaging;
- Self-financing from profit;
- Grants, Aid;
- Multilateral Development Banks, namely: World Bank; African Development Bank, GCF,
- Bilateral, Development Partners, NGOs: EU, GIZ, SIDA, USAID etc.

For example, cement association is supported by European Union and received 11 million Euro for three consecutive years to incentivize.

The results of the assessment were consistent with the financing provided by multilateral financing institutions, suggesting that private sector investments in climate change interventions should be supported by multilateral financing organizations providing that their financing requirements are being fulfilled.

5.9. Current Proclamation and Regulations Required for Catalyzing the Private Sectors' investments in NDC-Policy Interventions

In this section current Proclamation and Regulations are reviewed to evaluate to what extent they are supporting Investment Incentives that are currently required for catalysing the private sector engagement to invest in NDC-climate interventions.

Recognizing the importance of policy in attracting private domestic and foreign investment, the current proclamations and regulations with regards to investment were reviewed. The review of proclamations and regulations is structured around investment incentives which include:

- The right to acquire land for investment;
- Public-private partnerships for engaging the private sector in the implementation of updated NDC by investing in the areas of climate interventions; and
- Draw lessons for promoting private investment in low-carbon economic growth envisioned in the 10YPDP.

The following proclamations and regulations among others were found relevant for review:

- "Forest Development, Conservation and Utilization Proclamation No. 1065/2018"; [49]Federal Negarit Gazette No.21, 23th January, 2018;
- Public Private Partnership Proclamation No. 1076/2018". [50]Federal Negarit Gazette No. 28, 22nd Feburary, 2018; and
- "Urban Lands Lease Holding Proclamation No. 721/2011. [51]Federal Negarit Gazeta No. 4 28th November, 2011;
- Federal Democratic Republic of Ethiopia Rural Land Administration and Land Use Proclamation No, 456/2005," [52]Federal Negarit Gazcta No. 44 IS'hJuly, 20GS;

[49] Forest Development, Conservation and Utilization Proclamation No. 1065/2018" ; [49]Federal Negarit Gazette No.21, 23th January, 2018.

[50] Public Private Partnership Proclamation No. 1076/2018". [50]Federal Negarit Gazette No. 28, 22nd Feburary, 2018

[51] "Urban Lands Lease Holding Proclamation No. 721/2011. [51]Federal Negarit Gazeta No. 4 28th November, 2011

- "Investment Proclamation No1180/2020". [53]Ethiopia 2020; 9 December 2022; and
- "Council of Ministers Investment Incentive Regulation No. 517/2022. [54]Federal Negarit Gazeta No. 39 12th July, 2022;

As described in section 4.4., legal framework analyses were guided by the following questions:

- Which articles give emphasis for promoting/supporting the private investment in climate activities?
- To what extent the article is articulated in favor of supporting private business in climate activities?
- What incentive mechanisms are indicated in the proclamation/regulation?
- Is it supported by law enforcement? To what extent?
- What are the weak points of the proclamation/regulation constraining the private sector investment in climate activities?
- What policy recommendation can be suggested to minimize/avoid the policy obstacles?

Answering these questions identified six sets of legal frameworks:

i. Investment Proclamation No 1180/2020;
ii. Investment Incentive Regulation No. 517/2022;
iii. Proclamation No. 721/2011;
iv. Proclamation No, 456/2005;
v. proclamation No. 1065/2018; and
vi. proclamation N0. 1076/2018)

The first two are dedicated to promote the investments and the investors. The second two proclamations: Proclamation No. 721/2011 and Proclamation No, 456/2005 may clarify the barrier identified by the FGDs and KIIs regarding access to land for investment. The last two proclamations (proclamation No. 1065/2018 and proclamation N0. 1076/2018) consist of articles that are in close agreement with the other proclamations/regulations to catalyse the engagement of the private sector in

[52] Federal Democratic Republic of Ethiopia Rural Land Administration and Land Use Proclamation No, 456/2005,"
[52]Federal Negarit Gazcta No. 44 IS'hJuly, 20GS.
[53] "Investment Proclamation No1180/2020". [53]Ethiopia 2020; 9 December 2022.
[54] "Council of Ministers Investment Incentive Regulation No. 517/2022. [54]Federal Negarit Gazeta No. 39 12th July, 2022.

investments in various economic sectors. Furthermore, Pros and cons of the legal frameworks are discussed as follows in line with the aforementioned guiding questions.

5.9.1. Proclamations and Regulations directory dedicated to private sector investments

The proclamations and regulations that are proclaimed by the offices of the president and prime minister with detailed articles giving emphasis directly on private sector investments are investments proclamations (No 1180/2020 and investments incentive regulation N(No 517/22). Detailed accounts of the articles of respective proclamations and regulations are described and discussed below (Box 3).

Box 3: Investment Proclamation No1180/2020. Ethiopia 2020; 9 December 2022.

Rationale in favour of the private investment

The proclamation consists of 58 articles with all details favouring the private investment. The preamble of the proclamation states the following with regards to the rationale for favouring the private sector:

- Accelerate the economic development of the country by increasing the role of private sector investment in all sectors of the economy;
- Increase the export performance the private sectors to generates more and better employment opportunities by creating an economic framework that fast-tracks the global competitiveness of the National economy;
- Further increase and diversify foreign investment inflow to accelerate inward transfer and diffusion of knowledge, skill and technology as well as Leverage of foreign capital by maximizing by maximizing linkages between foreign and domestic investments;
- Create conducive business environment that enables the investment administration system which has to be transparent, predictable, and efficient to increase investment attraction, retention, and expansion;

Forms of Enterprise for Carrying out Investments

Article 8. 1. Declares that investments may be carried out in one of the following Enterprises:

a) Sole proprietorship;

b) Enterprise established in Ethiopia or abroad;

c) Public Enterprise established in accordance with the relevant law;

d) Cooperative society formed in accordance with the relevant law.

Article 7. States "Public Enterprises Holding and Administration Agency or an authority statutorily mandated to implement projects established by way of public-private-partnership, as appropriate, shall receive investment proposals submitted by any private investor intending to invest jointly with the Government". This fosters the linkage between the private and public sectors.

Attractions for foreign investors

Foreign investors shall have the right to engage in private investment by allocating a minimum capital of USD 200,000,00 – 50,000,000.00 depending on the various arrangement with domestic investors. In this regard, Article 9. 1. Stipulates "Any foreign investor, to be allowed to invest under this Proclamation, shall be required to allocate a minimum capital of between USD 200,000.00 for a single investment project and of USD 50,000.00) if the investment is made jointly with a domestic investor.

Incentive mechanisms stated in the proclamation

Regarding investment incentives for catalysing the private sectors, Article 17. stated that "Investment areas eligible for incentives as well as the type and amount of investment incentives shall be determined by a regulation to be enacted by the Council of Ministers".

Law of enforcement

The functionality of this investments proclamation shall be functional as guided by a law of enforcement regulation to be enacted by the council of ministers.

Summary to the guiding questions

Which articles give emphasis for promoting/supporting the private investment in climate activities?	Articles 1- 58, and Preamble
What extent the article is articulated in favor of supporting private business in climate activities?	Preamble

What incentive mechanisms are indicated in the proclamation/regulation?	
Is it supported by law enforcement? To what extent?	Supported and guided by: Investment Incentive Regulation No. 517/2022 to be enacted by council of ministers; Public Private Partnership Proclamation No. 1076/2018 to be enacted by House of Peoples Representatives

5.9.2. Proclamations and regulations catalyzing private sector investments as law of enforcement

Proclamations and regulation that are directly applying to enforce the proclamation investments are described in Box 4-8, and these include:

i. Investment Incentive Regulation No. 517/2022; Federal Negarit Gazette No. 39 12th July, 2022**.**
ii. Forest Development, Conservation and Utilization Proclamation No. 1065/2018" Federal Negarit Gazette No.21, 23th January, 2018;
iii. Federal Democratic Republic of Ethiopia Rural Land Administration and Land Use Proclamation No, 456/2005," Federal Negarit Gazette No. 44 15th July, 2005; and
iv. Public Private Partnership Proclamation No. 1076/2018. Federal Negarit Gazette No. 28, 22nd February, 2018.

Box 4. Council of Ministers Investment Incentive Regulation No. 517/2022. Federal Negarit Gazeta No. 39 12th July, 2022.

Rationale in favour of the private investment

The regulation consists of 29 articles with all details favouring the private investment through provision of various incentives granted to encourage private sectors investment. The regulation is proclaimed as law of enforcement to enact the proclamation investment.

Article 3.1 states that the provision of the Regulation shall apply to Income Tax and Duty incentives granted to encourage investments in sectors eligible for incentives. The incentive includes exemption of income tax and capital goods and construction material from customs duty.

Types of income tax exemption incentives

The regulation granted the following four types of income tax exemption incentives:

Type of income tax exemption incentives	Eligibility
Article 4. Income tax exemption for new investment	Article 4.1/ Any investor who invests to establish a new business shall be entitled to income tax exemption; Article 4.2/Any investor who invests in areas far from the centre or with very low infrastructure development shall be entitle for income tax exemption; Investor shall be entitled for income tax deduction of 30% for three consecutive years (Article 4.2/a,b), Articles 3-7 stipulate further declaration regarding tax exemption.
Article 5. Income tax exemption for expanding/upgrading of existing investment	5.1/2/ Any investor expanding or upgrading existing investment shall be entitled to income exemption for the expansion or upgrading of existing investment up on a directive to be issued by the MoF and upon ascertaining by relevant regulatory institutions.
Article 6. Additional income tax exemption for investors exporting products or services	6.1/Any investor who has invested outside of the industrial park and who exports or supplies to an exporter as production or service input shall be entitled at least for 60% of the production for a one time income tax exemption for two years.
Article 10. Loss carry forward	10/1/ Any investor who has incurred loss within the period of income tax exemption shall be allowed to carry forward such loss for half of the income tax exemption period after expiry of such period.
Article 12. Exemption of capital goods and construction material from customs duty	Article 12/1. Customs for new investor or an investor expanding existing investment in one of the investment areas specified shall be entitled for exemption of customs duty;

Article 13. Exemption of motor vehicles from customs duties	The total or partial exemption from customs duties to be granted for motor vehicles used for investment purposes shall be determined by directives to be issued by the ministry based on the types and nature of the investment projects.

Eligible areas of investment for income tax incentives

About 10 areas of investments with 67 interventions are considered by the regulation for income tax incentives to attract the private sector to invest in. The sectors are in close agreement with those economic sectors that are made ready for 10YPDP and updated NDCs interventions. The identification of the investment areas is so detail to a level of typology. Entitlement of tax exemption period is in accordance with the jurisdiction boundary of the project areas. Investment areas eligible for tax and other incentives as per the incentive regulations and investment proclamations are presented in Table 17.

Box 5. Forest Development, Conservation and Utilization Proclamation No. 1065/2018" Federal Negarit Gazette No.21, 23th January, 2018;

Rationale in favour of the private investment

The proclamation is made up of 29 articles with all details favouring the private investment through provision of various incentives granted to encourage private sectors investment in the forest sector for livelihoods supports and carbon enhancement thereby addressing climate change mitigation and adaptation.

Article 5 entitles any private investor in the forest sector to the Rights and Incentives of Private Forest Developer be granted by the provision of the proclamation.

Specifically, according to Article 5. 1/ A private forest developer shall have the following rights:

a) Acquire land that has been identified for forest development and to develop that forest;

b) Obtain a certificate of title deed for developing forests in the identified forest land;

f) Benefit from carbon sales and eco-system services generated from the forest he/she develops or which is under his/her possession

g) Get compensation in case of expropriation of his/her possession for public interest;

According to Article 2/A private forest developer shall be provided with the following incentives:

a) Be free from land lease and any kind of tax for the first year of production;

b) Access to loan upon fulfilling appropriate requirements;

According to Article 7.2/ Community forest developer shall be provided with the following incentives:
a) Exemption from any forest development income tax for the first two consecutive production years;

b) Access loan upon fulfilling appropriate requirements.

Box 6. Federal Democratic Republic of Ethiopia Rural Land Administration and Land Use Proclamation No, 456/2005," Federal Negarit Gazette 11th Year No. 44 Addis Ababa -15th July, 2005

Rationale in favour of the private investment

The proclamation is made up of 21 articles with all details favouring the private investment by resolving problems that arise in connection with encouraging individual farmers, pastoralists and agricultural investors and establish a conducive system of rural land administration.

Article 4.a/ stipulates that private investors that engage in agricultural development activities shall have the right to use rural land in accordance with the investment policies and laws at federal and regional levels,

With regards to duration of rural land use right:

Article 7.1/ states that rural land use right of peasant farmers, semi-pastoralists and pastoralists shall have no time limit;

Article 7/2 declares that the duration of rural land use right of other holders shall be determined by the rural land administration laws of regions,

Box 7. Public Private Partnership Proclamation No. 1076/2018". Federal Negarit Gazette No. 28, 22nd February, 2018

Rationale in favour of the private investment

This Proclamation introduces a Public Private Partnership (PPP) Scheme, which shall have the following objectives according to Article 3:

1/ to create a favourable framework for promoting and facilitating the implementation of privately financed projects to support Ethiopian economic growth;

2/ to enhance transparency, fairness, Value for Money, efficiency and long-term sustainability;

3/ to improve quality of Public Service Activity; and

4/ to maintain macroeconomic stability by reducing growth in public debt.

The Proclamation shall apply to Public Private Partnership projects of Public Bodies, Public Enterprises and Private sector.

Box 8. Comments to proclamations

Forest Development, Conservation and Utilization Proclamation No. 1065/2018 needs amendments for the following articles.

According to Article 2/A. a/ private investor is free from land lease and any kind of tax for the first year of production;

In contrast, according to Article 7.2-a/ community forest developer shall be exemption from any forest development income tax for the first two consecutive production years.

In forest terms "production year" may refer to the final harvest of the forest stands which may reach at the rotation age. The rotation age varies depending on the species, use category and site productivity and usually ranges from age 5 to > 60 years. In this regard one production years may imply to one harvest cycle at the age of 5 - > 60 years. For many tree species (e.g., Eucalyptus) second and third generation by coppice after first harvest usually have a biomass production of twice higher than the first generation/ seedling stand. In view of these any incentives granted for the first year production may not attract private investors to invest in the forest sector.

Table 17. Eligible investment sectors for tax and other incentives.

Investment areas by Economic Sector	Possible Number of Typologies/interventions entitled to exemption of income tax and customs duty.
Industry sector	21
Agriculture	17
Information and communication technology	7
Eclectic generation, transmission and distribution	2
Hotel and tourism	5
Construction contracting	3
Education and training	3
Health service	4
Architectural and engineering works technical testing and analyses	3
Logistic services	2
Total	67

Source: Investment Incentive Regulation No. 517/2022. Federal Negarit Gazeta No. 39 12th July, 2022.

5.9.3. Weak points of the proclamation and regulation constraining the private sector investment

From review of the aforementioned proclamation and regulation the following weak points were drawn:

- Most of the articles in the proclamations and regulations stated that implementation shall be determined by directives. In this regard the proclamations and regulations are not followed by respective regulations and or directives. Many of proclamations and regulations are more than almost five years without regulations and directives. Their implementation is therefore hampered very much;
- The Rural Land Administration and Land Use Proclamation has limited details of access to land applied specifically to investment;
- There is nothing stated in the Rural Land Administration and Land Use Proclamation about the rights and obligation of investors that he/she should play with land use management;
- The land use policy has no any article of land right supporting the investment incentives stated under Forest Development, Conservation and Utilization Proclamation No. 1065/2018;
- Proclamations and regulations are not well known by many private sectors. Private sectors have limited awareness about large number of articles. Hence, they do not exercises the rights they are granted.
- The Ethiopian constitution gives regions power to administer land within the region, and regions' land policy is consistent with the constitution and federal laws. This is reinforced in the Federal Rural Land Administration and Land Use Proclamation (Proclamation 89/1997) which allows regions to make laws to manage and administer land within their region. Administration includes determining systems for expropriation and compensation, land rental, communal rights, and land use planning. This vesting of powers at the regional level means there can be great diversity between regions in terms of rules, practices and incentives for different types of investment ([55]James Keeley et al 2013). Likewise, land lease fees and length vary between regions and woredas. This may open avenue for corruption and discrimination against investors favouring one group of investors against the other groups.

[55] James Keeley, Wondwossen Michago Seide, Abdurehman Eid and Admasu Lokeley. 2013. Large-scale land investment in Ethiopia: How much land is being allocated, and features and outcomes of investments to date Report for the Bill and Melinda Gates Foundation and the International Institute for Environment and Development (IIED). June 23.

- A one-forest production year based incentive mechanism needs critical amendment as it is now may not attractive for investors.

5.10. Selected cases studies of private investment considered as examples of Low-Carbon Economy Development for NDC implementation

A very important potential tool to motivate the private sectors is to be more aware of successful and commercially viable investments and initiatives done by other investors/corporates elsewhere in the country and/ or globally. These provide proven knowledge, experience and even lessons learnt from failures. The fact is, the experiences of and lessons learnt from well-established private businesses gives greater confidence as well as a template of business plan or model that can be followed in updated NDC's implementation. Several studies document good practices and lessons learned on low-carbon green economic development. Selected case studies from Ethiopia and experiences from other countries are presented below.

5.10.1. Cases of good practices and initiatives fit to private sector investment in NDC implementation

Following the formulation of the CRGE strategy, Ethiopia made available range of investment ready projects in climate related issues for public and private investments, as details are described in [56]UNEP-ECA (2015) and therein cited references. Investment ready projects encompass key economic sectors: agriculture and land use management; forestry; energy; and transport.

These projects and other initiatives were selected as cases of good practices and lessons learnt to demonstrate the country's investment potentials in low-carbon economy, and hence, catalysing the private sectors to invest in NDC's climate policy interventions. Table 18 presents selected cases of investment ready projects and initiatives across key economic sectors with implications for catalysing private investment in NDC-climate interventions (Source: UNEP-ECA .2015). Selected case studies of good practices that are consistent with the CRGE's investment ready projects are highlighted 9 and 10.

[56]UNEP-ECA. 2015. Inclusive Green Growth in Ethiopia: Selected case studies. United Nations Economic Commission for Africa, 2015 Addis Ababa.

Box 9. Household level projects in manure management for household energy security and soil improvement using biogas

1. W/ro Doro Adu is a biogas user (Photo below) pastoralist living in Amibara woreda, Afar regional State. She represents female headed family of pastoral community. She with her family owns large cattle herd (more than 50). Since very recently she is using biogas energy for meeting her household energy demand for cooking and lighting. Establishment of a biogas plant is part of the national biogas project. She expressed her feeling in appreciating the biogas and management of the cow yard manure she obtains daily from her large cattle herd. She articulated that household with few number of cattle (about 2 cattle for highlander farming communities) are using clean and healthy energy from biogas and effective manure management, while we with large livestock resource (> 50 cattle per household) are using fuel wood collected from long walk distance. Fire wood collection takes much of our time, which we otherwise can use it to do something else productive for generating additional household income. She keeps the slurry far away from homesteads considering it as a waste. Extension education on crop farming and application of bio slurry replacing commercial fertilizer need to be introduced in the pastoral and semi pastoral communities. Source: [57]EFCCC and UNDP. 2021).

2. CORDAID started supporting a biogas, crop production and afforestation/reforestation projects in Argoba special woreda, Amhara region. Ato Seid Yimam is the first beneficiary of the project (photo

[57] EFCCC and UNDP. 2021. Capacity Gap Assessment and Capacity Building Action Plan for the Implementation of the Updated Ethiopia's NDCs. Federal Democratic Republic of Ethiopia. 2021. Addis Ababa.

below). He owns pairs of ox and cow and uses the biogas to meet household energy demand and the bio-slurry as organic fertilizer to improve the fertility of his crop land. Human waste was connected with the wet manure inlet into the biogas dome. He installed roof water harvesting as source of water for mixing the cow dung for the biogas.

Before the instalment of the biogas plant, Ato Seid Yimam was using 40 kg of fuel wood daily for cooking and lighting, and yields to annual tree harvest of 14600 kg per household. This would produce annual emission of 26718 kg CO_2 eq per household. Following the establishment of the biogas, the household of Ato Seid uses 40 kg fuel wood per week indicating daily fuel wood consumption declines to of 5.71 kg fuel wood per day per household to supplement biogas energy. The annual fuel wood requirement for supplementing the biogas energy is at 2,086 kg per household. This would result in annual emission reduction of 22901 kg CO_2 eq and annual saving of a tree biomass harvest of 12514 kg. The case study provides good lessons for integrating three GEM sectors: Livestock, forest, crop, soil management and health. (Source: cited in EFCCC and UNDP. 2021).

Looking forward: Ethiopia is currently facing severe energy crisis, particularly in rural settlement areas. Energy Efficiency and Renewable Energy project such as generating biogas from animal manure produced by a dairy farm and installing solar panels to produce energy for cooking and lighting could reduce operational costs of a business while at the same time promoting clean energy business development. This calls for building of the capacity of a network of bankers, finance service providers and private sector entrepreneurs who will be able to develop and support market awareness in the energy sector (Energy efficiency, Renewable Energy).

Box 10. NAMA Compost project for urban waste management and urban greenery development

Nationally Appropriate Mitigation Actions (NAMAs) refer to any action that reduces emissions in developing countries and is prepared under the umbrella of a national governmental initiative. They can be policies directed at transformational change within an economic sector, or actions across sectors for a broader national focus. As a part of the agreed outcome of the Negotiations pursuant to the Bali Action Plan at COP 18 in Doha, concluded that developing country Parties will take Nationally Appropriate Mitigation Actions in the context of their sustainable development. In response to make advantage of the Bali Action Plan, Ethiopia developed a NAMA compost project and secured funding of USD 6.9 million from GEF and UNDP. The NAMA compost project was implemented in six cities: Adama, Bahrdar, Hawasa, Dire-Dawa, Bishoftu and Mekele.

The focus of the NAMA compost project was to:

- Develop legal and institutional framework and creating enabling environment that makes efficient urban waste management and urban green development,
- Create market chain for Small and Micro Enterprises working in the areas of urban waste management and urban greening development
- Create national GHG emission reduction system for reducing national vulnerability to adverse impacts of climate change,
- Establish a sustainable system that integrates the implementation of dry waste management and green development in the selected cities.

The NAMA compost project implementation results in the following achievements:

- The project built shades where dry wastes are sorted out and composted to produce organic fertilizer, and 109220.7 tons of compost (organic fertilizer) was produced,
- It produced training manuals and published and distributed in four local languages,
- Market chains were created for It created market chain for the Small and Micro Enterprises supported by the project,
- With regards to urban greening development, 32055 hectares of riverside were covered by planted trees of various species.
- The project also contributed to creation of green job opportunity and employed 5000

permanent and 60000 short-term employees. From these 47% and 53% were male and female, respectively.

Implications for private sector investment in updated NDC implementation

From NAMA compost project implementation two important lessons among others are drawn.

- Appropriate funding sources for supporting private investment in climate actions are known;
- Local experts' capacity is built for developing bankable project proposals that meet win-win objectives, i.e. meeting national development priorities and global climate change mitigation objectives.

Table 18. Selected cases of investment ready projects and initiatives across key economic sectors, and implication for catalysing private investment in NDC implementation

Investment-ready projects	Implementing sector	Adaptation outcomes in terms of economic and social benefits		Mitigation outcomes in terms of CO2 emission reduction	Implications for investment in NDC interventions in terms of private business benefits
		Economic benefits	Social benefits		
1. Power infrastructure financing projects for (Hydropower, wind, solar, geothermal	Ministry of water, irrigation and Energy	-Offers GDP increase through export, tariff adjustment, tapping external funding sources -Enables renewable power generation of large scale (> 60 MW); Medium scale (40-60 MW) Small scale (<40 MW)	-Creates improved and efficient public transportation - Enhances technology transfer - Improves health and creates an enabling working environment for the labour force -Absorbs a large labour force -Meets growing domestic demand -Offers significant jobs	Reduces greenhouse gas emissions by about more than 46 Mt CO_2e	-Public enterprise; - Private business; - Retailers; - Public-Private Joint Venture; - Foreign and domestic investors
2. Cement and garment industries	Ministry of Industry	-Increases cement production from 3 Mt/yr in 2010 to > 65 Mt/yr in 2030; creating value of > $6.5 billion -Increases textile and leather production by fivefold to a an amount > $2.5 billion by 2015 - Reduces the volume of fossil fuels	-Creates sustainable jobs - Improves health - Reduces market prices and creates market stability by increasing cement production -Creates employment, value added capital formation -Enables construction of comfortable	-Reduces greenhouse gas emissions by 22 Mt CO_{2e} -Creates savings of an average value of about $50 /t CO_{2e}	Public enterprise; - Private business; - Retailers; - Public-Private Joint Venture; - Foreign and domestic investors

		import, and increases savings of foreign currency -Results in switch from fossil fuels to biomass energy -Increases farmers' household income by selling biomass to cement factories	and risk-resilient housing due to high volume (per capita) of cement production available at affordable prices		
3. Rural energy and efficient stoves	Ministry of Energy and Water	-Reaches more rural households, supplying them with efficient stoves -Creating $1 billion savings from fuelwood expenditure and increases rural household income -Creates more jobs	-Reduces burdens of fuel wood collection on women -Improves health and women's empowerment and girls' school attendance	-Reduces greenhouse gas emissions by about 50 Mt CO_{2e}	Public enterprise; - Private business; - Retailers; - Public-Private Joint Venture; - Foreign and domestic investors
4. Efficient livestock rearing	Ministry of Agriculture	-Increases productivity to up to 40 million cattle -Creates1,800 full-time employees -Results in saving of $800 million in the period 2011-2015 and $10 billion in the period 2011-2030	-Offers employment opportunities by boosting the value chain, mechanization etc. -Improve the incomes of 17.6 million households by 2030 -Reduces child malnutrition	Reduces greenhouse gas emissions by 48 Mt CO_{2e}	- Private business; - Retailers; - domestic investors
5. REDD, afforestation and sustainable forest management	Ministry of Agriculture	-Reduces the rate of deforestation (140,000 ha/yr for fuel and farmland expansion). -Distribution of fuelwood-efficient	-Supports community empowerment in benefit sharing of forest resources through the implementation of PFM -Improves health, women	-Emission reduction by 130 Mt CO_{2e} -Climate regulation, reduces soil and	Public enterprise; - Private business; - Retailers; - Public-Private

		stoves, biogas, electric stoves -Covers 4 million ha of afforestation/reforestation etc. -Increases household incomes through sales of forest products - Increases GDP via wood product import substitutions -Increases financing through payment for C sequestration and reduced CO2 emission i.e. C trading and environmental services to $1.2–3.6 billion/yr -Generates income from timber and non-timber products by $3.5 /ha/yr, -Generates savings/ additional income of $1.4 billion in the short-term (2015) and about $16 billion in the long-term (2030)	empowerment, etc.	biodiversity losses	Joint Venture; - Foreign and domestic investors; -International financing
6. Improve soil management	Ministry of Agriculture	-Increases yields via crop residue -Applies agriculture-technologies, small- and large-scale irrigation schemes to create benefits of $600 million/yr (2011-2030)	-Create labor savings from high labor productivity -Fosters climate-resilient asset building -Ensures women and youth empowerment	-Reduce greenhouse gas emissions by 40 Mt CO_2e	- Private business; - Retailers; - Domestic investors; -Association/ Unions

			-Increases food security		
7. Electric light rail, and rapid transit; and electric vehicles ; Fuel efficiency standards for vehicles,	Ministry of Transport	Reduce transport costs, and increase foreign currency accumulation through improved trade balance and reduced import of fossil fuels by 2030. Lower transport costs would translate into savings of USD 0.03 per ton-km in 2030.	When the projects are fully operational, they would provide employment for more than 300,000 citizens, in particular youths, women and girls who are disproportionately unemployed and underemployed	Reduces emission 19 Mt CO_{2e} by replacing 280 city buses and 282 other busses and 900 mini buses of diesel driven by electric LRT and RBT.	-Public enterprise; - Private business; - Public-Private Joint Venture; - Foreign and domestic investors
8. For buildings and green cities: -Transiting to high efficiency light bulbs -Managing landfill gas and liquid wastes	Concerted efforts of Ministry of Water and Energy; city administration; Ministry of Housing and Urban Development	Generate household/ communities income	Promote employment opportunities, improve health and environmental safety	Converting landfills into energy sources	-Public enterprise; - Private business; - Retailers; - Public-Private Joint Venture; - Foreign and domestic investors; -International financing
9. Ethanol-burning clean cook stove	Ministry of water irrigation and energy	Saves foreign exchange through import substitutions	Reduces indoor pollution hazards; saving time productive time from spending on fuel wood collection	An ethanol stove operates at a 74 per cent higher efficiency rate than a kerosene wick stove.	-Public enterprise; - Private business; - Retailers; - Public-Private Joint Venture; - Foreign and

					domestic investors
10. Biogas	Ministry of water irrigation and energy	The bio slurry used as organic fertilizer and hence increase crop productivity, save the expenses, that otherwise to be spent for inorganic fertilizers	Improve the health, livelihood and quality of life of rural households	Reduces GHG emissions from fuel wood, and soil emission.	- Public Education centers Private business; - Retailers; - Public-Private Joint Venture; - domestic investors
12. Green Legacy Initiatives	Multisectoral projects led by the Prime Minister's Office	Green Legacy Initiative started at the event of national campaign to plant more than 4 billion of tree seedlings four years ago, and more than 20 billion seedlings were planted covering more than 8 million hectares of land in the rural and urban areas. The Initiative includes also commercial wheat production using irrigation. Eco-tourism development projects like Addis Ababa riverside; Eco-friendly parks: Entoto, Friendship, Union Parks, Gorgora, Wenchi, Qoesha etc. are part of the project. They generate	Served as recreation and tourism. Increase tourist flow to the country,	Environmental protection; Climate risk reduction in the case of flood control; Strengthen solid and liquid waste management; Ensures carbon sequestration enhancement by increasing biomass production of forests, feeds and	-Public enterprise; -Public Education centers - Private business; - Retailers; - Public-Private Joint Venture; - Foreign and domestic investors

		quick return from Ecotourism, and employ large number of youths and promote ecosystem services. ***Implication to food security:*** In the year 2021/22, more than 400,000 ha of wheat is being produced under irrigation across the entire country with a projected grain yield of 5.7 million MT (https://www.fas.usda.gov). This would have substantial contribution to ensure the food security of citizens in terms of food availability, stability of supply, economic access and utilization. ***Implication to climate mitigation***: Using a global average wheat harvest index of 0.46 ([58]Jing et al		foods.	

[58] Ling Dai, Brent Bean, Bradford Brown et al.2015.Harvest Index and Straw Yield of Five Classes of Wheat. http://www.elsevier.com/open-access/userlicense/1.0/

		2015), the 5.7 million MT of wheat grain yield would produce a straw yield of 8.8 million MT which together could amount to a total biomass of 16.3 million MT. This is expected to sequester estimated amount of 59.8 million MT CO_2 eq. from the atmosphere. However, whether these wheat and other food crop production activities, as part of the interventions of the Green Legacy initiatives, are climate smart or not may need a bite detail research conducts on: How much GHG is emitted from the use of commercial fertilizers to boost the production, How much is the CO_2 emission from farm machinery as they consume large amount of diesel.			

Source: UNEP-ECA .2015

5.10.2. Lessons drawn from other countries' experiences to Ethiopia for updated NDC implementation

Documenting success stories of the private sector investment from other countries is an important potential tool to motivate the local/domestic private sectors. It makes the private investors to be more aware of successful and commercially viable investments and initiatives that already established large, medium and small scale investments into climate change interventions by other groups of private business men in other countries with similar level of economic and political development. This will give greater confidence as well as a template or business models that can be followed by the private sectors while they are engaged in investments in to NDCs climate policy interventions. Few examples of success stories of private investments supported by domestic and regional or global financing institutions from other countries are documented in Shilpa Patel (2011) and therein cited references. The case studies, as presented below, can be considered as good lessons to be adopted in Ethiopia.

Case study 1. Investing pension funds in financing green growth initiatives as example of institutional investors to infrastructure investment.

Organisation for Economic Co-operation and Development (OECD) examines initiatives around the world to assist and encourage pension funds to help financing green growth projects ([59]Della Croce et al. 2011). The study indicated that the broad mass of pension funds are more interested in lower risk investments which provide a steady, inflation adjusted income stream, particularly where investment or solvency regulations require a relatively conservative approach to investment. Pension fund assets can therefore be expected to be directed more towards this type of green project. As such, pension funds already invested in fixed income securities have been appetite for investing in the emerging asset class of green bonds. To help financing climate initiatives and expanding the domestic financing base, the study outlines different financing mechanisms and made recommendations as to what role governments in general and pension fund regulatory and supervisory authorities in particular, can play in supporting pension funds investment in climate interventions. The results of the assessment suggest the following policy recommendations for investing pension funds in climate related interventions:

- Provide supportive environmental policy backdrop;
- Create right investment vehicles;

[59] Adapted from Della Croce, R., C. Kaminker and F. Stewart (2011, forthcoming). "The Role of Pension Funds in Financing Green Growth Initiatives." OECD Publishing, Paris).

- Support investment in green infrastructure;
- Remove investment barriers;
- Provide education and guidance to investors;
- Improve pension fund governance;

Implications to Ethiopia: In Ethiopia, there is a broad mass of pension funds, regulated and supervised by public authority/agency. Common experiences in Ethiopia shows that the pension funds are invested in fixed‐income securities in terms of asset Bonds; this experiences can be adopted to invest pension funds in the emerging asset class of green Bonds, as suggested by OECD (Della Croce et al. 2011).

According to OECD (Della Croce et al. 2011), pension fund investment in Green bond is a lower risk of investments which provide a steady, inflation adjusted income stream for senior citizens particularly where investment or solvency regulations require a relatively conservative approach to investment. Despite the benefits, pension funds' asset allocation to such green investments remains low or is unknown, however. This is partly due to lack of:

- Climate policy support for investing pension funds in climate interventions,
- Lack of appropriate investment vehicles,
- Regulatory disincentives,
- Track record and expertise among pension fund regulatory authorities about investments and associated risks.

To tap into this source of capital, public sectors should have a role to play in mitigating these barriers and hence ensuring that attractive opportunities and instruments are available to pension funds as institutional investor. This is a good lesson learnt to be adopted for investing pension funds in climate change interventions in Ethiopia.

Case study 2. AfDB Sustainable Energy Fund for Africa (AfDB-SEFA)

The Sustainable Energy Fund for Africa (SEFA) supports energy provision to small and medium sized enterprises (SMEs) in Africa in order to stimulate economic growth and increased employment. SEFA has two components of investment support:

Component 1 provides grants to offset project preparation costs for renewable energy projects in the size range of USD 30-75 million, corresponding to outputs between 20 - 50 MW depending on the technology employed. These projects include grid-connected electricity generation utilizing wind, hydro, geothermal, bio fuel or waste incineration power, and can also include energy efficiency.

Component 2 provides direct equity investments to projects with total investment needs between USD 5-30 million. SMEs are eligible for receiving investment funds from component 2 to produce, distribute or enhance efficient use of sustainable energy on a smaller scale.

Implication to Ethiopia: Private investments in grid-tied and off-grid power generation projects can be supported from component 1 upon submission of bankable project proposals. Component 2 supports SMEs investing in micro hydro dams, solar, bio fuel or waste recycling, and Energy Efficiency projects. Investment ready projects identified for inclusive green growth economic development (Table 18) including the Green Legacy Initiatives are well aligned with the financing objectives of AfDB- SEFA. Upon submission of bankable project proposals on updated-NDC's climate interventions, AfDB-SEFA could reach out to SMEs engaging in investments in GEM-Renewable Energy and Energy Efficiency sectors.

Case study. 3. IFC Monetization of future carbon revenues for EE projects

International Finance Corporation (IFC) is the largest global development institution focused on the private sector in developing countries. It is working in Ethiopia with the WB. IFC provides long tenor financing to very small and dispersed energy saving project activities under the Clean Development Mechanism (CDM). IFC also supports a large scale residential lighting program to replace incandescent lamps (ICLs) with high quality compact fluorescent lamps (CFLs) in India.

Implication to Ethiopia: The large set of energy project types identified since the launching of CRGE encompass very small and dispersed renewable energy and energy efficiency projects that could reach out to large population in rural and urban settings. These projects are therefore good fits with IFC's mandate/objective to develop and deploy new financial products that include revenue from carbon credit under CDM. However, the challenge in this respect is that such CDM projects are stagnating in Ethiopia and many developing countries due to carbon market uncertainties, complexity of MRV procedures, and limited number of expertise and fixed assists required for MRV system. Bankable

energy projects well developed under programmatic CDM projects are able to attract commercial financing, and become important segment of the carbon market for enhancing the private sector investment in the energy sector.

Case study 4. Crop Insurance in India

Rainfall insurance was launched in India in 2003 in partnership with Bhartiya Samruddhi Investments and Consulting Services Ltd (BASIX Group), the World Bank's Commodity Risk Management Group, and private insurers. BASIX is an Indian micro-finance institution based in Hyderabad. The rainfall insurance product was not crop-specific, but focused on district as the risk factor.

Insurance for non-farming activities takes off. The premium rates are at between five and 12 per cent of sum insured, but insurers do not participate unless the scheme is viable, and clients are willing to pay if the claim settlement process is fast and fair. The insurer identified three barriers:

I. Better weather data will reduce basis risk for clients and encourage improved reinsurance rates;
II. Automatic reinsurance is needed to permit greater flexibility in writing new contracts and portfolios;
III. The government should revise its subsidy policy for yield-insurance products, which undermines the weather insurance market.

This initiative has succeeded due to strong collaboration between all the partners, with doorstep delivery, and quick claim settlements, even before harvesting is over, compared with customary delays of twelve months in public schemes.

All the stakeholders gain the following advantage:

- Government by reduced relief payments and social problems, and easier budgeting;
- The insurer buy more business;
- The microfinance institution BASIX complements its client services;
- The poor farmers receive reliable protection for their income and assets;
- Overseas development agencies avoid disruption from emergency relief calls, and can claim speedier assistance for clients;

- Wider schemes benefit intermediaries by generating more revenue and Banks by protecting their credit risk.

The Indian rainfall crop insurance scheme is for farming activities exacerbated by range of climate and other natural hazards resulted from:

i. Increasingly frequent and severe tropical cyclones with higher wind speeds and storm surges leading to more damage in the coastal region
ii. Heavier and more erratic rainfall in the Ganges□Brahmaputra-Meghna system;
iii. Higher river flows - causing over-topping and breaching of embankments and widespread flooding in rural and urban areas;
iv. River bank erosion - resulting in loss of homes and agricultural land to the rivers;
v. Increased sedimentation - in riverbeds leading to drainage congestion and water logging;
vi. Melting of the Himalayan glaciers - leading to higher river flows in the warmer months of the year, followed by lower river flows and increased saline intrusion after the glaciers have shrunk or disappeared;
vii. Lower and more erratic rainfall - resulting in increasing droughts, especially in drier northern and western regions of the country;
viii. Sea level rises - leading to submergence of low-lying coastal areas and saline water intrusion up coastal rivers and into groundwater aquifers, reducing freshwater availability; damage to the Sundarbans mangrove forest, a World Heritage site with rich biodiversity; and drainage congestion inside coastal polders, which will adversely affect agriculture;

In view of these benefits the World Bank replicated these success stories in other developing countries, namely in Thailand and Mali.

Implications to Ethiopia: For long in Ethiopia, various forms of traditional self-help insurance systems have been in place serving as asset insurance for property loss and damage by natural and anthropogenic hazards (e.g., housing, crop, livestock etc.). These traditional insurances are no more commercially viable as agricultural insurance.

Currently, Ethiopian farmers and pastoralists do understand so well that their assets buildings are at high risks of extreme events of weather anomalies including but not limited to increased intensity and frequency of drought, flood, hail storm, frost, and associated impacts on the environment and societies. Thus agricultural insurance services are becoming in high demand by farming and pastoral communities who can cope with loss and damage of assets and income losses in the time of drought and flood by purchasing agricultural insurance as a risk finance activity.

To this end, the Japan International Agency for Cooperation (JICA) launched "Index-based Crop Insurance Promotion (ICIP) project" in 2019 together with the Ministry of Agriculture and the Oromia Bureau of Agriculture and Natural Resources (OBoANR) ([60]46JICA, 2019). The program is expected to cover 20,000 farmers in the Oromia region over five years.

Additionally, Vegetation-Index Crop-Insurance (VICI) in Ethiopia was established in by partnering: KIFIYA, ATA, MoA, State Bank, Public Finance Enterprise Agency (PFEA), Insurance companies, Farmers, ICIP (JICA-Project) and Wasasa (Microfinance). The project provides a (i) geodata driven drought monitoring services and (ii) a financial service delivery to smallholder farmers based on a geodata-driven risk-mitigation (insurance) product that offers a basic safety net to protect them against the weather related peril 'drought'. It builds on the existing 'VICI' single-peril drought- insurance product from the G4AW funded GIACIS project (Geodata for Innovative Agricultural Credit Insurance Schemes), which was targeted at Ethiopian small holder farmers, by continuing to serve that user base with a more sustainable and future proof delivery service ([61]47GIACIS).

The workflow of VICI lays on the basis of use of long term Earth observation data that provide accurate, timely and highly spatially detailed information on drought. The two crop insurance schemes provide multiple co-benefits:

- The Insurance smooth the income;
- Incentive uptake of improved technologies (i.e., improved seeds/planting materials; machineries; organic fertilizer (e.g. bio slurry from biogas production);
- Can allow farmers get access to agricultural credit for investment

[60] JICA, 2019. **https://agrica.de/2020/06/11/ethopia-crop-insurance/**;
https://www.jica.go.jp/ethiopia/english/office/topics/220610.html;
https://www.jica.go.jp/ethiopia/english/office/topics/210521.html;
[61] GIACIS. 2020: https://e-shape.eu/index.php/showcases/pilot1-3-vegetation-index-crop-insurance-in-ethiopia

- High yield (agricultural production)

Despite the co-benefits, however, the two crop insurance schemes showed limited up scaling potential in the country which might be due to:

- That crop and livestock insurance have a low uptake in Ethiopia,
- Premium costs may not be affordable for farmers, requiring financial support in order to increase uptake.

Considering lessons for Ethiopia, there are practices to be adopted from the Indian rainfall insurance scheme for Ethiopia (Table 19). The “match and mismatch” comparison of the practices/approaches of the crop insurance schemes are presented for drawing lessons to Ethiopia.

Table 19. Comparison of Crop Insurances schemes Between Ethiopia and India to draw lessons for Ethiopia

Conditions and works flow of the crop insurance schemes	Indian rainfall crop insurance (RCI 2003)	Ethiopian Crop insurances: ICIP (2019), VICI (2020)	Practices to be adopted for Ethiopia
Financing bases and technical support	Local micro finance, MDBs (World Bank's Commodity Risk Management Group);	Public federal and regional sectors (MoA, Oromia BoANR); Development partners (JICA, KIFIYA/KfW), ATA, MoA, State Bank, Public Finance Enterprise Agency (PFEA),Insurance companies, Farmers, ICIP (JICA-Project) and Wasasa (Microfinance).	**ICIP (2019; VICI (2020)** • Development partners and international organization dedicated to Disaster reduction are operating in Ethiopia (World Bank's Commodity Risk Management Group; FAO, WHO,KfW, USAID etc); • Private banks and insurance companies are widely functional across the country, • Microfinance sector is well established for supporting small scale farmers in rural areas, and are regulated by public authorities/agency
The base for the insurance product	The rainfall insurance is not crop-specific, but focused on district as the risk factor.	On the basis of use of long term Earth observation data that provide accurate, timely and highly spatially detailed information on drought. Weather index-based insurances (WII), uses a weather index, such as temperature or	**Combination of three: ICIP (2019); VICI (2020); RCI (2003):** • Consideration of district as risk factor can be easily applied to Ethiopia as Ethiopia has documented Woreda Disaster Risk Profiles, Disaster hot spot areas;

		precipitation to determine a payout. Alternative index-based insurance schemes that can also be **area-yield** index insurance, Based on pre-risk assessment to decide whether it is insured or not; Payouts based on weather station measurements	• Real time weather data sets are documented at woreda level; • Simulation models for crop response to rainfall is widely used,
Extreme weather hazards	• Severe tropical cyclones; • Heavier and more erratic rainfall; • Higher river flows ; • River bank erosion; • Increased sedimentation, water logging; • Melting glaciers; • Sea level rises;	• Perils in crop production: • El Niño-related and heat wave; • Hail; • Storm, wind, sandstorm; • Floods and excessive rainfall; • Fire and lightning; • Uncontrollable disease and pets; • Frost;	**ICIP (2019); VICI (2020);**
Beneficiaries	• Small scale climate shock vulnerable farming community	• Small scale climate shock vulnerable farming	**Combination of three: ICIP (2019); VICI (2020); RCI (2003):** • Small scale climate shock vulnerable farming
Premium rates (% of sum insured)	5 – 12%	3.2%	(RCI 2003) 5 – 12%
Limitation	As names applied it is only for crop	As names applied it is only for crop farming	• Special arrangement is proposed to

	farming activities	activities	ensure the livestock in terms of destocking and restocking at the time of bad years and good years, respectively. • Agro processing investments
Barriers	• Better weather data will reduce basis risk for clients and encourage improved reinsurance rates; • Automatic reinsurance is needed to permit greater flexibility in writing new contracts and portfolios; • The government should revise its subsidy policy for yield-insurance products, which undermines the weather insurance market.	• That crop and livestock insurance have a low uptake in Ethiopia, • Premium costs may not be affordable for farmers, requiring financial support in order to increase uptake	

5.11. Private sectors' knowledge on climate risks and other influences impacting private investments

In order to infer the knowledge of the private sectors on climate risks, and other influencing factors data were collected using the questionnaires that were developed following the methodology described in section 4.3. The results are presented in the following sections.

5.11.1. Investors' knowledge on climate risks on private investment

The knowledge/awareness of the private sectors on climate change risks on private investments was documented through a questionnaire survey (Annex 4.Q6-8). Three key questions were asked regarding:

I. Level of private sectors' awareness on climate change;
II. Adverse impacts on private sectors and
III. Supports needed from the government to minimize climate risks.

The respondents were categorized into four categories based on level of their awareness on climate change risks: high, medium, low and undifferentiated/undetermined (Fig. 17). The level of awareness is defined as:

- "**High**" for those who have perceived the climate knowledge by training and is able to understand the adverse impacts on the private business;
- "**Medium**" for those who practically or by research/observation understands the climate extreme events on business risks;
- "**Low"** for those who have very limited or no knowledge on climate change;
- "**Undifferentiated/undetermined**" for those who did not complete that particular questionnaire.

The majority of the respondents had medium level of awareness on climate change risks, and this group is about 67% of the respondents; and this was followed by high (13%) and undetermined (13%). The respondents with low level of awareness were just 7%. The undifferentiated group are those respondents who were not determined their level of knowledge on climate risks, in general. From the assessment it could be possible to infer that two third of the private sector has medium knowledge

/awareness of climate change and its risks on private investment. This implies that the private sectors have good knowledge and understanding of climate risks to invest in climate resilience interventions and manage towards building climate resilience economic development that would contribute to the achievements of the NDC implementation.

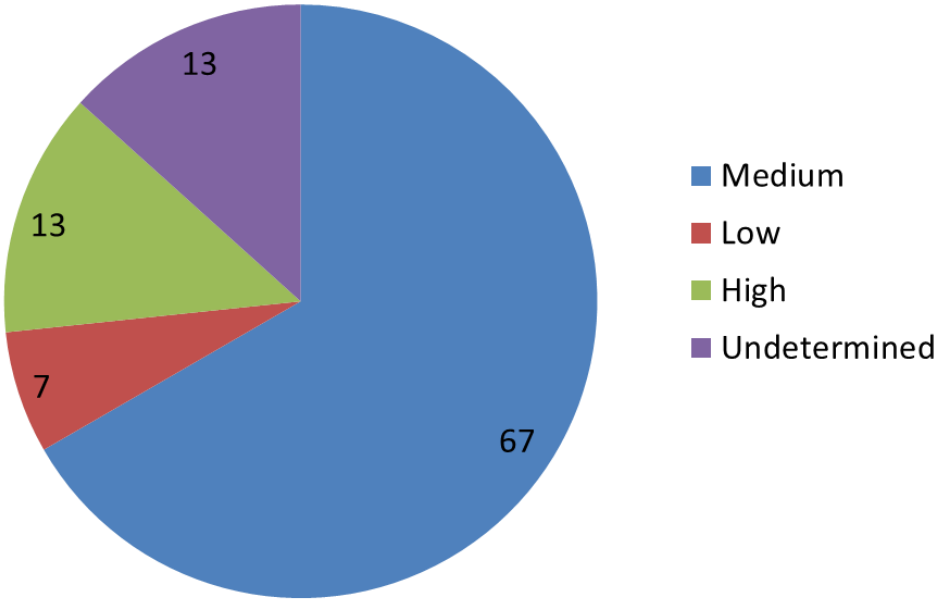

Figure 17. Level of Investors' knowledge/ awareness on climate risks

5.11.2. Investors knowledge on investment related legal frameworks and project management

The knowledge/awareness of the private sector on investments'' legal framework and capacity on project management were documented through a questionnaire survey (Annex 4. Q13-15.). Three key questions were asked regarding:

I. Level of private sectors' awareness on key legal framework that deals with incentives etc.;
II. Investment incentives thus far they used; and
III. Constraints adversely affecting the rights of investors to claim for investment incentives.

The respondents were categorized in to four categories based on level of their awareness on legal frameworks on investments and investment incentives: high, medium, low and undifferentiated/undetermined (Fig. 18). The level of awareness is defined as:

- "**High**" for those who have perceived the knowledge on legal frameworks by training and is able to understand the legal rights on the private business;
- "**Medium**" for those who practically understands the legal frameworks and faces challenges to business risks;
- "**Low"** for those who have very limited or no knowledge on investment related legal frameworks;
- "**Undifferentiated/undetermined**" for those who did not complete that particular questionnaire.

The majority of the respondents had undifferentiated level of awareness on key legal frameworks (including proclamations and regulation on investment, incentives etc.), and this group is about 53% of the respondents; and was followed by medium (27%) and low (20%) level of awareness on investment legal frameworks. Unfortunately, there was no record of respondents with high level of knowledge on investment proclamations and regulations (0%).

The undifferentiated group are those respondents who were not determined their level of knowledge on their rights for investment incentives. From the assessment it could be possible to infer that the majority of the private sector (73%) that includes low and undifferentiated level of awareness had insufficient knowledge about the investment's legal framework.

This may suggest that the private sector may have very limited access to any form of legal frameworks communication. Concerned public sectors (namely investment commission, ministry of revenue ministry of finance, ministry of planning and development, and Environmental Protection Authority) need to plan for awareness creation mechanism and plan to enhance the awareness of the private sectors on various aspects investments legal frameworks, if the private sector has to be engaged in investing in climate policy interventions, and hence to achieve the national goals set for NDCs implementation. The awareness creation activities could be undertaken regularly through mass media, newspaper/newsletter, pamphlets, awareness training.

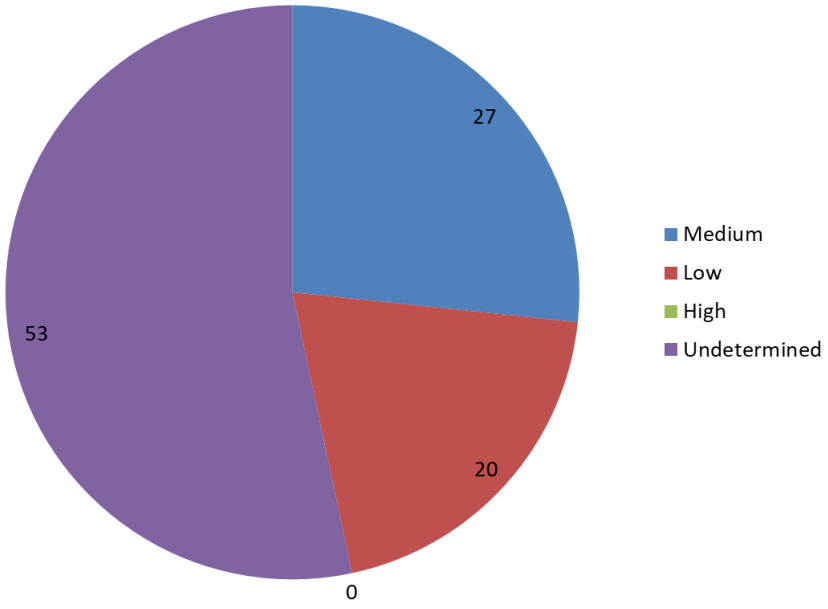

Figure 18. Level of Investors' knowledge/ awareness on legal frameworks of private sector investments

Further assessment was conducted to document the private sectors' level of capacity building on project management at various stages of project management (project cycle): at Initiation phase, Pplanning phase, Execution phase, Monitoring & Performance phase, Closure/Exit phase (Annex 4. Q.12).

All most all respondents did not complete those particular questions. As discussed during the interview they do not categorize their business plan in project cycle. They are very much aware of auditing as part of monitoring and evaluation, where they perform regular auditing, which included internal auditing every three months and external auditing annually towards end of the budget year. The audit reports are prerequisites for renewal of the business licence.

Few respondents emphasised on the need for capacity building and training on project management and project cycle, which is described as follows:

Initiation phase:

- Limited awareness on climate action;
- There is conflict of interest among stakeholders between inside and outside the organization

Planning phase:

- Limited competent personnel in the planning of climate action
- Insufficient understanding on the existing situation
- Poor sensitization

Execusion /implemnetation phase

- Limited infrastructures and equipment
- Budget constraints
- Conflict of interest in and outside the organization (with stakeholders)
- Limited commitment from the public sector
- Poor integration among stakeholders

Monitoring and performance phase

- Limited uniform standards
- Problem continuous supervision of the project
- Insufficient handling of the project as ownership

Closure/ exite phase

- Poor environmental auditing;
- Delay of delivering the project performance;

5.11.3. What influences the private sector to invest in NDC's climate interventions?

As described in section 4.3 shown in Fig 2 the Interest–Influence Grid methodology was used to determine what influences the private sector to invest in a particular sectoral typology.

The result of the Stakeholder Influence–Interest Grid assessment is presented in Figs. 19, 20). According to Fig. 19, the typologies identified by updated NDC for the Agriculture and Water, irrigation & energy sectors received high public, funding and private investor's interest; and the typologies of the two

sectors were characterized by high values of both interest and influence, which were rated at 81% and 75%, respectively. The private sectors are encouraged to keep on their investment in these sectors, and the government is also encouraged to minimize any barriers and to enhance incentives.

The third priority typologies are from transport and logistics sector. The typologies were rated as High-Influence-Low-Interest with a value of 75% vs. 25% for high influence high interest; suggesting that there was high interest of funding agencies and public sectors, which might have influenced the private sector. In contrast to the energy and transport sectors, Agriculture sector typologies with High Influence- Low Interest and Low Influence- Low- Interest were rated at 15% and 4%, respectively.

The mining and petroleum sectors, as compared to other sectors, it was characterized by equal percent values of 25% for High Influence-High Interest and Low Influence-Low Interest.

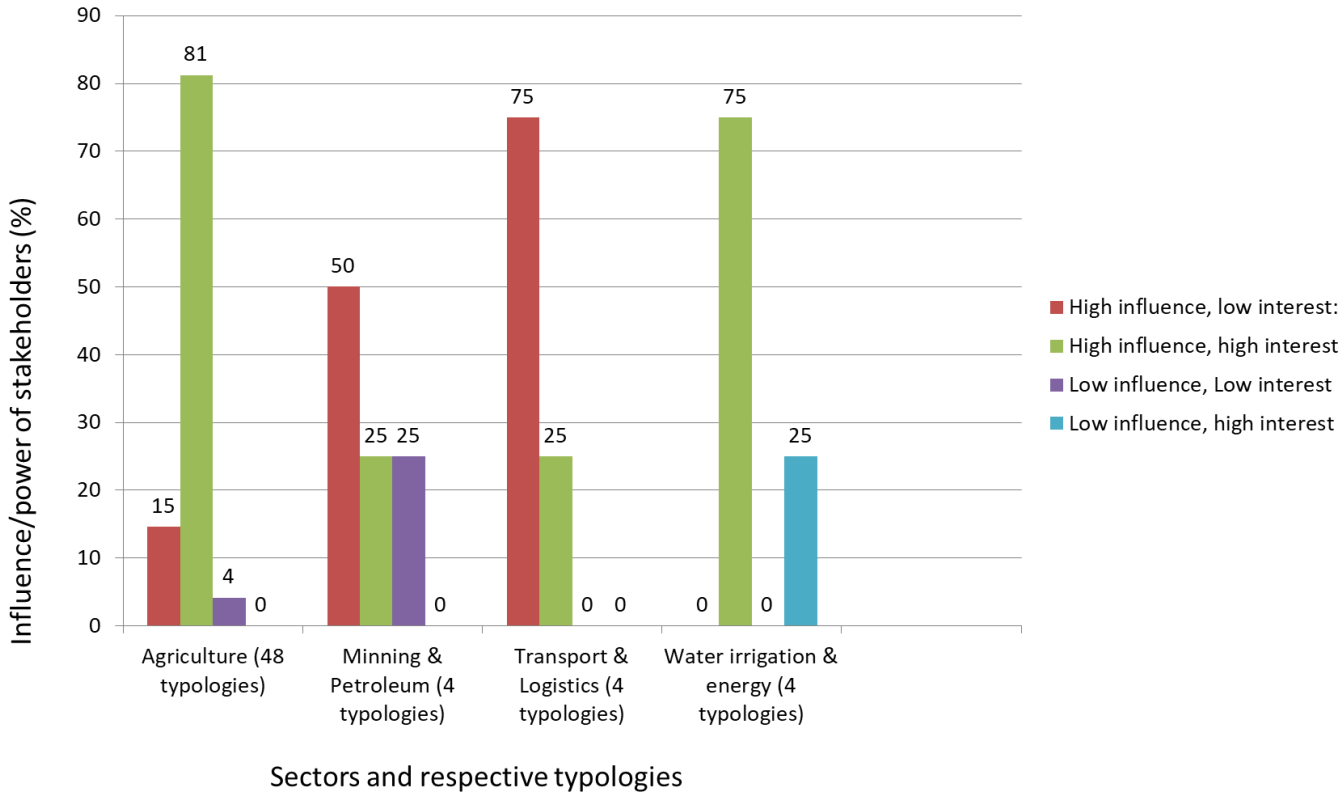

Figure 19. Power of private interest and stakeholders' influence in prioritizing sectoral typologies for NDC investment.

For Mapping and prioritizing Private Sector Stakeholders' Engagement in climate change investment interventions, the combination of the two approaches: interest and influence of stakeholders were grouped into 4 categories as defined by Ackermann & Eden (2011), cited in Crawford, A., Church, C., & Ledwell, C. (2020) and presented in four quadrants (Fig.20):

- Quadrant I: High-Influence-Low-Interest;
- Quadrant II: High-Influence-High-Interest;
- Quadrant III: Low-Influence-High-Interest; and
- Quadrant IV: Low-Influence-Low-Interest.

The definitions to the power of influence and interest were adopted to the Ethiopian context and the result of the study is presented in Fig 20.

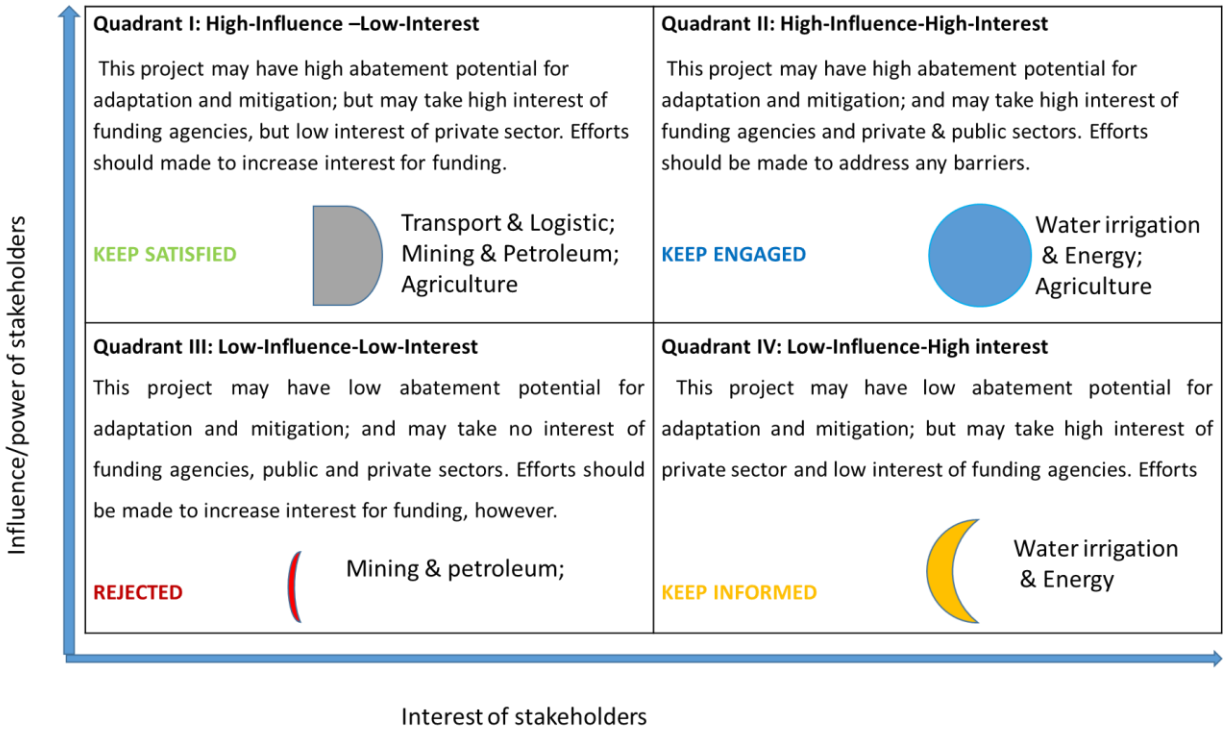

Figure 20. Stakeholder Influence–Interest Grid adopted to Ethiopian NDC context.

Accordingly, the private investment in the agriculture (with 48 typologies) and water, irrigation & energy sectors (with 4 topologies) are highly influenced by the interest of both stakeholders and investors (i.e. High-Influence-High-Interest). The decision for these investment areas is to keep the engagement.

In contrast, few investment areas from mining and petroleum sectors had received neither of the investor's interest nor the influence of stakeholders. Investments in the transport and logistics sectors received low interest of the investors but investments are already underway due to the influence of the stakeholders, which might be attributed to the influence of the government's policy aiming at mass transport expansion using renewable energy sources replacing petroleum vehicles (such as electric vehicles, Rapid Light Transit Railway). It resulted, however, large public satisfaction.

5.12. Institutional arrangement and information sharing mechanisms needed for catalyzing private investments in NDC's climate interventions?

The diagnostic study focused also on what institutional arrangement and information sharing mechanisms are needed for catalysing the private sector investments in NDC's climate interventions. To this end questionnaires were completed by the respondents (Annex 3).

With regards to institutional arrangement among the private, public, funding sectors and others stakeholders, the following among others were suggested:

- Establishing Public-Private-Partnership Forum,
- Set rules & regulation of collaboration among the partners and stakeholders,
- Customization of contract farming in the case of agriculture and forest sectors,
- Adoption of out growers scheme etc,
- Regulation of travels tariff and rout arrangement,
- On time provision of plate number,
- Regular monitoring and evaluation

With regards to information sharing mechanism among the private, public, funding sectors and others stakeholders, the following among others were suggested:

- Organizing workshop, training, seminar,
- Establishing and networking Web based information sharing platform,
- Use of mass media, newspaper/newsletter etc. and developing awareness creation directives, regulations with dedicated budget,

On the validation workshop, the establishment of a platform or a dedicated sectoral unit was highly recommended. A platform is however temporal and not sustainable. In this respect, there is good lesson

from the MoA where investment coordination unit is in place and working closely with the private sectors. Additionally, each sectoral ministry has established a CRGE unit with own staff and budget dedicated to lead climate interventions including mobilizing finance for climate change related project activities in the areas of capacity building, climate awareness creation, technology transfer/adoption, negotiation, MRV facility, climate data acquisition, etc. Such efforts are however poorly linked with the private sector investment.

Understanding the need for creating institutional arrangement and information sharing mechanism, efforts in linking the private sector with public sectors, academia and donor agencies should be made; and hence, institutional framework should be put in place where the CRGE unit and the investment coordination unit are working together within the economic sector.

In this regard a type of institutional arrangement as shown in Fig. 21 is proposed. In this arrangement, the role of the investment coordination unit is to link prioritized investment areas with investment private sectors, funding agencies and find policy solutions for addressing barriers that hinder the engagement of private sectors and donor agencies. The CRGE unit in its part is expected to align climate interventions with priority development areas and mobilizing climate finances and technology fits to the objectives of the private investments and donor interests while working closely with the investment coordination unit and financing agencies. The investment coordination unit and CRGE unit are expected to exchange feedbacks, information etc. and bring the academia, donors and private sectors together by establishing climate and economic development projects task force who serves as think-tank providing services in resource mobilization, capacity building, creating enabling environment, evaluating project implementation performance etc.

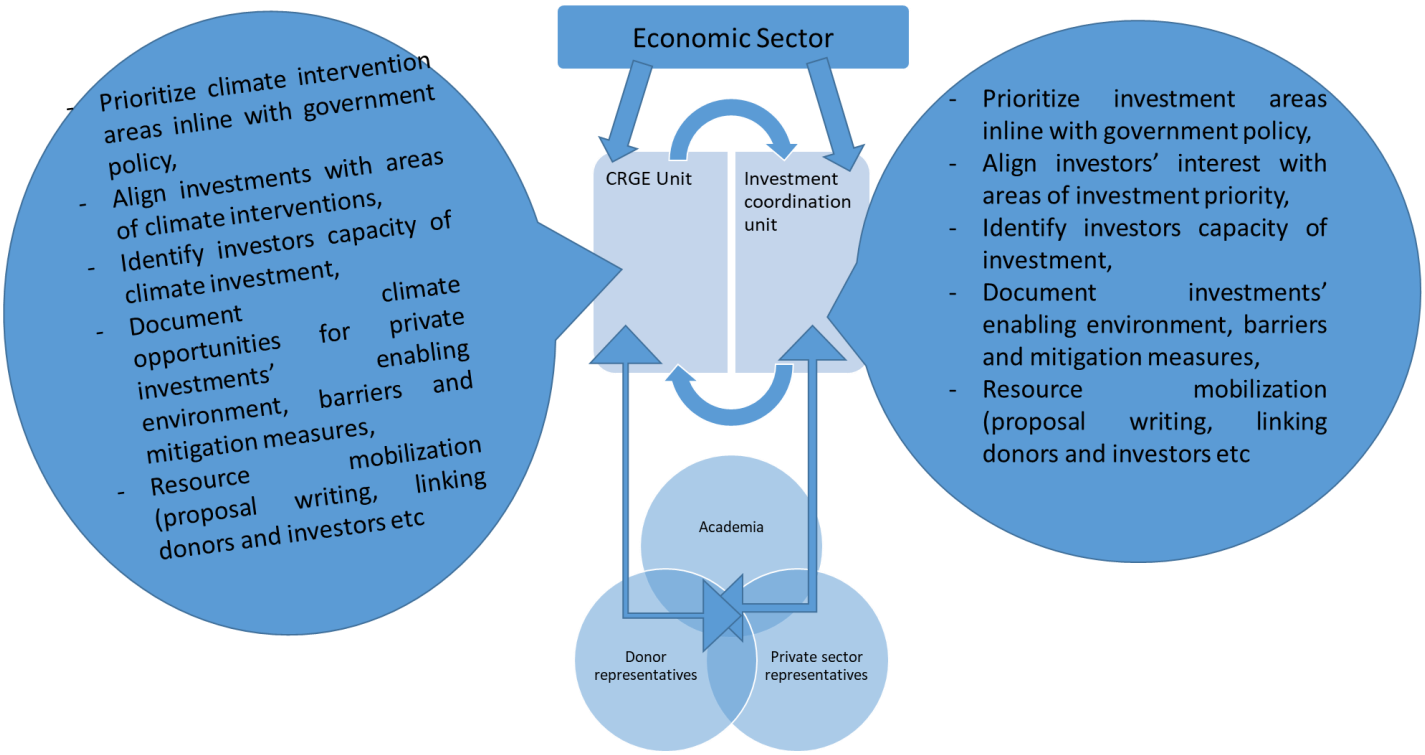

Figure 21. Institutional arrangement and information sharing framework for catalysing private sector engagement in NDC implementation.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

From this Diagnostic Study on How to Incentivize Private Sector Involvement in NDC Implementation, the following conclusions are drawn:

1. Private investments in Ethiopia had been going on over a century, and the early investments were in hotel & tourism sector with opening of Tayitu hotel, in transport sector with the establishment of Ethio-Djibouti Railway, in forest industry sector with the establishment of Sawmill in the Mengesha-Suba forest. It is worth to mention that the governments' economic development policy had been focusing on capital accumulation in the industry sector and expansion of large commercial agricultural system over the century;

2. The private investment since the 1950s had been emphasized by every 5-years national development plans with a focus on capital accumulation and industrialization targeting at foreign earnings through export. Key investments areas are large scale irrigated commercial agriculture, manufacturing sector, industrial development, transport and electrification,

3. Enhancement of private sector, however had been hampered very much by economic police reform following changes in government form. To this end all private investments in all sectors were nationalized in the 1970s by the socialist government, and government controlled public investments in form of state farms, state hotels, peasant association farms etc. were encouraged over the private investments. In contrast, the federal government with its market oriented economic policy has privatized all public investments, and since then many new private investments are emerging, particularly in the construction sector,

4. In addition to policy reforms, the private sector is very much hampered by climate anomaly risks, civil war, and popular upheavals. This is evidenced by the lowest level of the share of the private investments in GDP that was recorded during the years of extreme weather events (drought years) and during Ethio-Eritrean war.

5. Limited enabling environment and incentives are taught to be critical constraints adversely affected the private sector investments. However, there are proclamations and regulations that state several mechanisms of incentivizing the private sector. In this respect, insufficient knowledge and awareness that the private investors perceived about various aspects of proclamation and regulation with regards to investment are observed and are becoming very critical factors affecting the private investments. Furthermore, differences in investment policy among regional government and limited knowledge about various legal frameworks may open a path for corruption, which is critical for private investments.

6. In response to meet the Paris agreement, Ethiopia has submitted updated NDCs which are well aligned with 10YPDP and SDGs. The updated NDCs and its implementation partnership plan identified more than 62 typologies which are expected to create verities of job opportunities that could absorb large volume of work force, as it is inferred from the volume of required budget between USD 316 and 577 billion USD.

7. There is ample opportunity to secure the required budget from multilateral development banks, climate financing institutions, which are dedicated to finance and support climate related interventions coming from LDCs. Fortunately Ethiopia is a LDC and part of the UNFCCC and is eligible for accessing such climate financings. Many of the global financial institutions, namely GEF, GCF, WB etc are financing many climate projects implemented by private and public sectors. There is a need however, to convert the identified typologies into a bankable package of project proposals that meet the requirements of the funding agencies. In this regard the private sectors need to be supported by the public sectors.

8. The identified NDC- policy interventions in key economic sectors: agriculture; transport and logistic; mining and petroleum, construction and urban development, water, irrigation and electricity are well aligned and fit well to the investment areas where the private investors are currently investing in. Many of the interventions can easily be integrated and build sectoral synergy and this may attract the private sectors as it may help to make the business plan/the project viable. A good example in this respect is the integration of the interventions in the agriculture and energy sectors. The agriculture and energy sectors are linked through the water sector standing as a central pillar of the two; and this unlocks new market opportunities for collective security and local economic development.

9. Large list of private investment incentives including particularly, tax exemption, import- export custom duty exemption, renewable energy fuel subsidy suggested to be treated by legal enforcement. In this respect, fuel subsidy for low- carbon and energy efficiency projects is necessary, although they are mentioned in the investment incentive proclamations and regulations.

10. Proclamations and regulations have several weak points which include among others:
    - Limited regulation/directives;
    - Sectoral investment proclamations are contradicting with land policy in terms of access to land; investors have limited knowledge on investment and incentive policies; and
    - Dissimilarities in investment and incentive legal framework between regional states create non-conducive environment for investment attraction.

11. National development and commercial banks as well as private banks are limited in financing private investment in climate change interventions. They need to learn any modalities and mechanism from WB and AfDB.

6.2. Recommendations

From the view of points of engaging private sector investment in NDC-climate interventions, the results of the diagnostic study recommend the following:

1. Enhancement of private sector is hampered very much by economic police reforms, by climate anomaly risks, civil war, and popular upheavals. The government needs to ensure peace and security for the investments, and guide investors to invest in safe and secure place.

2. Although there are proclamations and regulations that state several mechanisms of incentivizing the private sector; there is limited knowledge and awareness that the private investors perceived about various aspects of proclamation and regulation; and these are considered as very critical factors affecting the private investments. In this respect regular training on various aspects of investments proclamations, regulations and directive should be organized using workshop trainings, mass media etc. It should be noted that training alone may not help.

3. The updated NDCs and its implementation partnership plan identified more than 62 typologies with required budget between USD 316 and 577 billion. This is a huge amount of budget. In this regards, it is suggested to convert the identified typologies into a bankable package of project proposals that meet the requirements of the funding agencies. To this end the private sectors need to be supported by the public sectors, and adequate training on bankable project proposal preparation is needed for key experts.

4. The identified NDC- policy interventions in key economic sectors are well aligned and fit well to the investments areas where the private investors are currently investing in. Many of the interventions can easily be integrated and build sectoral synergy as the private sectors are investing. Private sectors need to be advised, supported and encouraged to invest on sectorally integrated typologies.

5. Large list of private investment incentives including particularly, tax exemption, import- export custom duty exemption, renewable energy fuel subsidy suggested to be treated by legal enforcement. In this respect, however, fuel subsidy for low- carbon and energy efficiency projects is necessary, and should be supported by directives or regulations.

6. Public sectors should do much efforts to bridge the legal framework gaps where there is no regulation or directives for enacting the law of proclamations and regulations.

7. Thus far climate projects are financed usually by multilateral development financing institutes and foreign tax payers. However, foreign aid may not be sustainable as it is simply hampered by international or regional political situation/scenarios. In this regard, it is encouraging to attract domestic private banks, national development and commercial banks. Lessons need to be learnt from WB and others.

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8. ANNEXES

Annex 1. List experts/persons from private and public sectors and funding agencies met during the diagnostic studies.

No.	Name of the expert	Name of the Organization	Type of organization/stakeholder (Business organization/ funding agency/public organization)	Areas of Engagement
Workshop Participants and Questionnaire Survey respondents				
1	Akberet G/Tsadic	Ethiopia Solar Association	Business	
2	Gebrie Mengistie	Reach for change	Business	
3	Mariyana Fasil	EPA	Public	
4	Haileab Meressa	Ethio Admas Agro Industry	Business	
5	Yamelakesira Tamene	EPA	Public	
6	Habtamu Adam	EPA	Public	
7	Masresha Yifru	EPA	Public	
8	Berhanu Assefa	MoA	Public	
9	Getnet Fantahun	EPA	Public	
10	Habtamu Denboba	EPA	Public	
11	Rukia Seid	MoUI	Public	
12	Mikyas Sime	MoF	Public	
13	Kidnu Hurisa	UNDP	Funding	
14	Nesru Awol	EPA	Public	
15	Hana Basazinew	MoI	Public	
16	Zerihun Melaku	MoPD	Public	
17	Sori Chalchisa	MoMP	Public	
18	Getachew Beyene	MoWIE	Public	
19	Addisu Negash	MoA	Public	
20	Samson Emiru	MoA	Public	
21	Kassahun Wakoya	EPA	Public	
22	Hailu Abate	Ethio Admas Agro Industry	Business	
23	Rehima Mohammed	EPA	Public	
24	Dr. Dawit Wubeshet	World Bank	Funding	
25	Terhas Mebratu	EPA	Public	
26	Michael Hordofa	EPA	Public	
27	Bemnet Teshome	EPA	Public	
28	Benti Firdissa	EPA	Public	
29	Desalegn Tebratu	EPA	Public	
30	Getnet Fantahun	EPA	Public	
31	Mehari Wondimagegn	EPA	Public	
32	Esmael Mohammed	MoI	Public	
33	Weinshet Mekonnen	EPA	Public	
34	Adanech Alebachew	EPA	Public	
35	Getnet Abate	EPA	Public	

36	Umi abdulkadir	EPA	Public	
37	Getenesh Abate	EPA	Public	
38	Mensure Dessie	EPA	Public	
39	Yared Abera	Youth	Public	
40	Mecheal Hordofa	EPA	Public	
41	Fitsum Deressa	Green Tech Africa	Business	
42	Yizengaw Yitayih	MoTL	Public	
Questionnaire survey respondents through online, physical appearance , virtual meetings, field visits				
43	Sileshi Jima	Field visit at Ethio Admas Agro Industry	Business	Agriculture
44	Million Sisay	Ethiopian Leather Industry Association	Business	Manufacturing
25	Kessi Ginyo	Eden Business	Business	
46		Oryx International PLC	Business	
47	3 Experts	Addis Ababa Chamber of Commerce and Sectoral Associations	Business membership	Investment promotion and research
48	Manderas Hailu	Concord Industrial PLC	Business	Construction
49		Qeste-Damana Sponji Factory	Business	Manufacturing
50	Habtamu Abebaw	Excel Plastic PLC	Business	Recycling
51	Teshome Belhunen	BA Manufacturing PLC	Business	Manufacturing
52	Henock G/Michael	Lidya Plastic products manufacturing	Business	Manufacturing
53		Addis Ababa Women Federation		Awareness creation on women's day today problems
54	Hiwot Yimer and Tomas Girmahun	Kombolcha Textile Share Company	Business	Manufacturing
55	Ashenafi Sahlemariam	Kombolcha Brewery	Business	Food and beverage
56	General Manager	Amare plastic production PLC (Kombolcha)	Business	Manufacturing
57	Negussu Hundie	Ethiopian cheap wood and furniture company	Business	Manufacturing
58	Ato Solomon	Cement Association	Business	Production
59	Owner of the company	Green Tech	Business	Transport
60	Ato Bemnet Nadew	T-Tex Garment	Business	Manufacturing
61	2 members of the association	Mid buss taxi services Associations	Business	Transport
62	Ato Shimelis Sima	WorldBank	Funding	
63	Ato Hailu Tefera	WorldBank	Funding	
64	Ato Zekarias Asefa	Addis Ababa Chamber of Commerce and Sectoral Associations (Deputy Secretary General)	Business	Investment promotion and Business services
65	Ato Seyoum Chane	Addis Ababa Chamber of Commerce and Sectoral Associations (Manager)	Business	Investment promotion and Business services
66	Ato Shibeshi	Addis Ababa Chamber of Commerce and Sectoral	Business	Investment promotion and

		Associations (Secretary General)		Business services
67	Ato Million Feleke	Ethiopian Chamber of Commerce and Sectoral Associations (Director of research & advocacy	Business	Investment promotion and Business services
68	Melak Mulken	Elfora Agro processing Industries Kombolcha	Business	Agriculture

NB: The list in Annex 1 includes also experts, managers and owners the private companies and relevant subject specialist experts from NDC public sectors and donor agencies, who met at inception and validation workshop as well at physical appearance and virtual interview during the diagnostic studies.

Annex 2. List of private sectors obtained from public sectors and chamber of commerce

S.Nr	Name of Private Sector	Economic Sectors	Commodity sector	Location	Ref/sources
1	Wood industry	Forest		Wood processing companies	Technical Report. Ethiopian forest sector review, focus on commercial forestry and industrialization; MEFCCC & WB. 2017.
2	Furniture	Forest		Wood processing companies	Technical Report. Ethiopian forest sector review, focus on commercial forestry and industrialization; MEFCCC & WB. 2017.
3	Pulp and paper production	Forest		Wood processing companies	Technical Report. Ethiopian forest sector review, focus on commercial forestry and industrialization; MEFCCC & WB. 2017.
4	Small-scale furniture companies (registered)	Forest		Wood processing companies	Technical Report. Ethiopian forest sector review, focus on commercial forestry and industrialization; MEFCCC & WB. 2017.
5	Small-scale furniture companies (unregistered)	Forest		Wood processing companies	Technical Report. Ethiopian forest sector review, focus on commercial forestry and industrialization; MEFCCC & WB. 2017.
6	Ethio Agri-CEFT	Agriculture	Coffee, food crop, flower	Biggests Agribussines company	Document (February 28, 2019)
7	Horizon Plantations	Agriculture	Coffe, oil seed, warehouse,	Biggests Agribussines company	Document (February 28, 2019)
8	Karuturi Global Limited	Agriculture	Food production	Biggests Agribussines	Document (February 28, 2019)

				company	
9	Adulina Coffee Exporter PLC	Agriculture	Coffee export	Biggest Agribusiness company	Document (February 28, 2019)
10	Delma Agribusiness PLC	Agriculture	Exporting oil and legume crops	Biggest Agribusiness company	Document (February 28, 2019)
11	AHADU PLC	Agriculture	Tea, coffee Soya beans, corn, red pepper and sesame production	Biggest Agribusiness company	Document (February 28, 2019)
12	Feed Green Ethiopia Exports PLC	Agriculture	Food crop export	Biggest Agribusiness company	Document (February 28, 2019)
13	HANDA International PLC	Agriculture	Exports include sesame seeds, Niger seeds, Sunflower, pulses, chickpeas, Green mung beans, black and white cumin, and red pea bean.	Biggest Agribusiness company	Document (February 28, 2019)
14	Tadesse Desta Business Group	Agriculture	Exports coffee, sesame seeds and kidney beans	Biggests Agribussines company	Document (February 28, 2019)
15	ABAT IMPORT & EXPORT PLC	Agriculture	Export pulses and cereal.	Biggests Agribussines company	Document (February 28, 2019)
16	Alliance flowers	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022.
17	Dream Ethiopia	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022

18	Ethio Dream	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
19	Galica,	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
20	Oromia wonders	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
21	Hanssa Horticulture	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
22	Holeta Rose	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
23	EthioAgri-ceft	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
24	Margin par,	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
25	Afri flower	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
26	CAF rose	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
27	Linsen Rose,	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
28	Sheketeryosef,	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
29	Euro Flora,	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022

30	Larka investment	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
31	Veg pro (tulubollo),	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
32	Enyi Ethio Rose(A/Ababa)	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
33	Assela Flowers,	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
34	Tinaw Bussines	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
35	Adam Horticulture	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
36	Satasay	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
37	Dpream	Agriculture	Flower farm	Holeta Woliso Wolkite Cluster	MoA Agricultural Investment Executive 2022
38	Lafto Rose	Agriculture	Flower farm	Sebeta, Arba Minch Cluster	MoA Agricultural Investment Executive 2022
39	Ethio passion	Agriculture	Flower farm	Sebeta, Arba Minch Cluster	MoA Agricultural Investment Executive 2022
40	Et-Highland Flora	Agriculture	Flower farm	Sebeta, Arba Minch Cluster	MoA Agricultural Investment Executive 2022
41	Saron Rose	Agriculture	Flower farm	Sebeta, Arba Minch Cluster	MoA Agricultural Investment Executive 2022

42	Eden Rose	Agriculture	Flower farm	Sebeta, Arba Minch Cluster	MoA Agricultural Investment Executive 2022
43	Tal flower	Agriculture	Flower farm	Sebeta, Arba Minch Cluster	MoA Agricultural Investment Executive 2022
44	Dere Bi-color	Agriculture	Flower farm	Sebeta, Arba Minch Cluster	MoA Agricultural Investment Executive 2022
45	Yalkone	Agriculture	Flower farm	Sebeta, Arba Minch Cluster	MoA Agricultural Investment Executive 2022
46	Sheba flower	Agriculture	Flower farm	Sebeta, Arba Minch Cluster	MoA Agricultural Investment Executive 2022
47	Tana Flora	Agriculture	Flower farm	Bahir Dar Cluster	MoA Agricultural Investment Executive 2022
48	Ethio Agriceft	Agriculture	Flower farm	Bahir Dar Cluster	MoA Agricultural Investment Executive 2022
49	Sleceta	Agriculture	Flower farm	Bahir Dar Cluster	MoA Agricultural Investment Executive 2022
50	Abyssinia (sendafe)	Agriculture	Flower farm	Bahir Dar Cluster	MoA Agricultural Investment Executive 2022
51	Ethio Magical (sendafa)	Agriculture	Flower farm	Bahir Dar Cluster	MoA Agricultural Investment Executive 2022
52	Frezia (Samore Agriculture(Sululta)	Agriculture	Flower farm	Bahir Dar Cluster	MoA Agricultural Investment Executive 2022
53	Derba Flower(derba)	Agriculture	Flower farm	Bahir Dar Cluster	MoA Agricultural Investment Executive 2022
54	Mullo Farm(derba)	Agriculture	Flower farm	Bahir Dar Cluster	MoA Agricultural Investment Executive 2022
55	Ethio-Agriseft(CEFT)	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
56	EELFORA	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022

57	Horizon Plantation	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
58	Verdanta Harvest Plc	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
59	Saudi Star	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
60	Afrotsion Coffe plantation PLC	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
61	Share Ethiopia	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
62	Desa plnat plc	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
63	Florescense Abyssinia PLC	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
64	Heneken Brewery	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
65	VERD BEEF PLC	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
66	Green Coffee Plc	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
67	Soja Agro Industry	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
68	Ethio cutting	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
69	Red fox	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
70	Zuway Rose	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
71	Herberg Rose	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
72	AQ Rose	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
73	Bram flower plc	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022

74	Holland Dairy plc	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
75	Seka Agro Industry	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
76	Mucha Agro Industry	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
77	BDJ Agricultural Dev. Plc	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
78	Amaya Agricultural plc	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
79	Ethio-China bright farming plc	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
80	All Green Agro Industry	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
81	Africa Global Agr Dev	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
82	Al Enjaz Agro industry	Agriculture	Integrated Agro Industry		MoA Agricultural Investment Executive 2022
83	Mekiya Enterprise	Agriculture	Enterprise		MoA Agricultural Investment Executive 2022
84	Oromia Forest & Wild life enterprise	Agriculture	Enterprise		MoA Agricultural Investment Executive 2022
85	Amhara Forest enterprise	Agriculture	Enterprise		MoA Agricultural Investment Executive 2022
86	Sheka Community Forest MGT	Agriculture	Community		MoA Agricultural Investment Executive 2022
87	Sheka Community Forest	Agriculture	Community		MoA Agricultural Investment Executive 2022
88	AMAROGAYO COFFEE	Agriculture	Tea and Coffee	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
89	ASTER BUNNA PLC	Agriculture	Tea and Coffee	Addis Ababa,	Agro-industry investment opportunities directory

					Ethiopia 2019
90	EAST AFRICAN AGRI-BUSINESS PLC	Agriculture	Tea and Coffee	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
91	EAST AFRICAN AGRI-BUSINESS PLC	Agriculture	Tea and Coffee	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
92	RAHA COFFEE ROASTING PLC	Agriculture	Tea and Coffee	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
93	SAFU TRADING PLC	Agriculture	Tea and Coffee	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
94	ARBAMINCH FISH PROCESSING COMPANY	Agriculture	Fish and fish products	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
95	BERHANU MEBRAHTU TEKLU FISH EXPORTER	Agriculture	Fish and fish products	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
96	AFAR SALT PRODUCTION SHARE COMPANY	Agriculture	Salt, seeds and spices	Afar	Agro-industry investment opportunities directory Ethiopia 2019
97	ASHALIE SALT SUPPLIERS S.C	Agriculture	Salt, seeds and spices	Afar	Agro-industry investment opportunities directory Ethiopia 2019
98	BELESTY AND HIS CHILDREN TRADING PLC	Agriculture	Salt, seeds and spices	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
99	DENAKEL INDUSTRY ETHIOPIA PLC	Agriculture	Salt, seeds and spices	Afar	Agro-industry investment opportunities directory Ethiopia 2019

100	OLERA AGRO PROCESSING PLC	Agriculture	Salt, seeds and spices (Industrial zone)	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
101	RIB INDUSTRIAL AND COMMERCIAL PLC	Agriculture	Salt, seeds and spices	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
102	ZERENTOS YEBALTINA PRODUCTS PLC	Agriculture	Salt, seeds and spices	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
103	GELILA BALTINA	Agriculture	Salt, seeds and spices	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
104	AL-SAM PLC	Agriculture	Edible oils (soya, palm oil) and related processing	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
105	GLOBAL VISION PARTNERS COMMERCIAL AND INDUSTRIAL PLC	Agriculture	Edible oils (soya, palm oil) and related processing	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
106	JERRY EDIBLE OIL PROCESSING COMPANY	Agriculture	Edible oils (soya, palm oil) and related processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
107	KANA EDIBLE OIL PLC	Agriculture	Edible oils (soya, palm oil) and related processing	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
108	KEBIELEMENIE EDIBLE OIL	Agriculture	Edible oils (soya, palm oil) and related processing	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
109	PHIBELA INDUSTRIAL PLC	Agriculture	Edible oils (soya, palm oil) and related processing	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
110	RUTHA TEKILEHAIMANOT	Agriculture	Edible oils (soya, palm oil)	Addis Ababa,	Agro-industry investemnt opportunities directory

	GENERAL TRADING PLC		and related processing		Ethiopia 2020
111	SELA GOJA OIL FILTRATION FACTORY	Agriculture	Edible oils (soya, palm oil) and related processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
112	SHEMU EDIBLE OIL PLC	Agriculture	Edible oils (soya, palm oil) and related processing	Dire Dawa,	Agro-industry investment opportunities directory Ethiopia 2019
113	TILIKSEW GEDAMU EDIBLE OIL FACTORY	Agriculture	Edible oils (soya, palm oil) and related processing	Gambella	Agro-industry investment opportunities directory Ethiopia 2019
114	KUNIFRA AGRO PROCESSING PLC (KUNAP)	Agriculture	Edible oils (soya, palm oil) and related processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
115	ABAY INTERNATIONAL PLC	Agriculture	Corn and soya blends	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
116	BAHERAN TRADING PLC	Agriculture	Corn and soya blends	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
117	BAHIR DAR AGRO PROCESSING PLC	Agriculture	Corn and soya blends	Bahir Dar	Agro-industry investment opportunities directory Ethiopia 2019
118	BERHAN FARM	Agriculture	Corn and soya blends	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
119	KIDAN INDUSTRIAL PRIVATE LIMITED COMPANY	Agriculture	Corn and soya blends	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
120	PAKANA FOOD PROCESSING INDUSTRY PLC	Agriculture	Corn and soya blends	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
121	ABAT AND MAHARI AGRO	Agriculture	Wheat and flour products	Amhara	Agro-industry investment opportunities directory

	PROCESSING INDUSTRY PLC				Ethiopia 2019
122	ABAY AND TANA FOOD COMPLEX	Agriculture	Wheat and flour products	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
123	ABEBA FLOUR AND BISCUIT FACTORY	Agriculture	Wheat and flour products	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
124	ADDIS KETEMA SWEETS FACTORY PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
125	ADDIS DALLAS INDUSTRIES PLC	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
126	ADMAS TESFA PLC	Agriculture	Wheat and flour products	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
127	AFIA FOOD COMPLEX PLC	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
128	AFRICA PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
129	AKLILU BERGA TEFF INJERA PRODUCTION	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
130	ANJONUS FRUIT AND VEGETABLE PROCESSING COMPANY	Agriculture	Wheat and flour products	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
131	AYAAN FOOD AND MINERAL WATER FACTORY	Agriculture	Wheat and flour products	Dire Dawa,	Agro-industry investment opportunities directory Ethiopia 2019

132	BROTHERS FLOUR BISCUIT PRIVATE LIMITED COMPANY	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
133	CHILALO FOOD COMPLEX PLC	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
134	DHGEDA FLOUR FACTORY PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
135	ENRICH AGRO INDUSTRY PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
136	ESTEFANOS MEKASHA IMPORT AND EXPORT FOOD PROCESSING COMPANY	Agriculture	Wheat and flour products	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
137	ETHIOGREEN PRODUCTION & INDUSTRY PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
138	FAFFA FOOD SHARE COMPANY	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
139	FIKER FOOD PROCESSING COMPANY	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
140	FURI GENERAL TRADING PLC	Agriculture	Wheat and flour products	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
141	GEYON FLOUR FACTORY	Agriculture	Wheat and flour products	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
142	GONDE ADAMA PP BAG,	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory

	FLOUR AND MACARONI FACTORY				Ethiopia 2019
143	JEMAL AGRO PROCESSING INDUSTRY P.L.C	Agriculture	Wheat and flour products	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
144	KIYA FOOD COMPLEX	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
145	LOVE GRASS AGRO PROCESSING PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
146	MAKELIT FOOD COMPLEX	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
147	MERXY TRADING PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
148	MIRONA INDUSTRIES PLC	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
149	MOYA FOODS PLC	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
150	NETSANET ASSEFA GEBREMARIAM PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
151	NIB CANDY FACTORY	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
152	SANATE FOOD PROCESSING COMPANY	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019

153	SEMIRA INJERA PROCESSING	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
154	T.M. FOOD COMPLEX PLC	Agriculture	Wheat and flour products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
155	TANA HAYIK FOOD PROCESSING PLC	Agriculture	Wheat and flour products	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
156	TAPU PREPARED FOOD INC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
157	TEWODROSE ASERSE TEFF INJERA PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
158	THBM INDUSTRY PLC	Agriculture	Wheat and flour products	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
159	UNIQUE FLOUR AND MACARONI FACTORY	Agriculture	Wheat and flour products	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
160	ZLN GENERAL BUSINESS PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
161	YONI INTERNATIONAL PLC	Agriculture	Wheat and flour products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
162	JARA AGRO INDUSTRY	Agriculture	Other Food and Beverages	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
163	KUNIS BARI GENERAL TRADING PLC	Agriculture	Other Food and Beverages	Oromia	Agro-industry investment opportunities directory Ethiopia 2019

164	THEDAY AGRO INDUSTRY PLC	Agriculture	Other Food and Beverages	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
165	YESUF PEANUT BUTTER PROCESSING INDUSTRY	Agriculture	Other Food and Beverages	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
166	7 D FOOD FACTORY	Agriculture	Meat and dairy products processing	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
167	ADA MILK PROCESSING COOPERATIVE	Agriculture	Meat and dairy products processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
168	DOBI & ITS SURROUNDING AREA AGRO INDUSTRY (CAMEL MILK PROCESSING) PLC	Agriculture	Meat and dairy products processing	Afar	Agro-industry investment opportunities directory Ethiopia 2019
169	ENDALKACHEW DAIRY FARM AND MILK PROCESSING	Agriculture	Meat and dairy products processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
170	LASALLE AGRO PROCESSING	Agriculture	Meat and dairy products processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
171	LIFE AGRO INDUSTRY PLC	Agriculture	Meat and dairy products processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
172	MOJO MILK PROCESSING ENTERPRISE	Agriculture	Meat and dairy products processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
173	RUT AND HIRUT MILK COWS BREEDING AND DAIRY PRODUCTION &	Agriculture	Meat and dairy products processing	Amhara	Agro-industry investment opportunities directory Ethiopia 2019

	PROCESSING				
174	M.E.H AGRO INDUSTRY	Agriculture	Meat and dairy products processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
175	AMBA PLC	Agriculture	Honey and beeswax processing	Tigray	Agro-industry investment opportunities directory Ethiopia 2019
176	BENCH MAJI INTEGRATED COFFEE AND BEE PRODUCTS UNION	Agriculture	Honey and beeswax processing	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
177	BEZA MAR AGRO INDUSTRY	Agriculture	Honey and beeswax processing	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
178	DEBUBE FEDERATION OF HONEY, BEESWAX AND COFFEE PROCESSORS AND EXPORTER	Agriculture	Honey and beeswax processing	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
179	GENALE MIGS BEESWAX PROCESSORS AND EXPORTER	Agriculture	Honey and beeswax processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
180	GOLLA BEE PRODUCTS PLC	Agriculture	Honey and beeswax processing	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
181	GORJE PAPIYO BEESWAX PLC	Agriculture	Honey and beeswax processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
182	KATA MUDUGA UNION	Agriculture	Honey and beeswax processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019

183	MEKAEAL KEBED HONEY EXPORTER	Agriculture	Honey and beeswax processing	Tigray	Agro-industry investment opportunities directory Ethiopia 2019
184	MONDIAL BEESWAX PROCESSING AND EXPORT COMPANY	Agriculture	Honey and beeswax processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
185	SHEKA NORDIC HONEY AND BEES WAX DEV. IND	Agriculture	Honey and beeswax processing	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
186	SHEKA BEE PRODUCT DEVELOPMENT AND MARKET COOPERATIVE UNION	Agriculture	Honey and beeswax processing	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
187	TESFU AND EMBET BEESWAX PROCESSING PLC	Agriculture	Honey and beeswax processing	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
188	YERKISHO HONEY AND BEESWAX PROCESSING AND EXPORTER	Agriculture	Honey and beeswax processing	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
189	ZEMBABA UNION HONEY AND BEESWAX PROCESSING AND EXPORTER	Agriculture	Honey and beeswax processing	Amhara	Agro-industry investment opportunities directory Ethiopia 2019
190	ADDIS ALEM AGRICULTURAL DEVELOPMENT PLC	Agriculture	Live animals and animal feed	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
191	ALEMA KOUDIJS FEED PLC (AKF)	Agriculture	Live animals and animal feed	Oromia	Agro-industry investment opportunities directory Ethiopia 2019

192	ALFOZ PLC	Agriculture	Live animals and animal feed	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
193	DOGOMOTE FARMS PLC	Agriculture	Live animals and animal feed	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019
194	ABYSSINIA SLAUGHTERING HOUSE	Agriculture	Meat processing and related products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
195	ALNUJUM GENERAL BUSINESS PLC	Agriculture	Meat processing and related products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
196	HALAL FOOD INDUSTRIES MEAT EXPORT PLC	Agriculture	Meat processing and related products	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
197	PRIME MEAT AND FOOD PRODUCTS	Agriculture	Meat processing and related products	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
198	BORA INTEGRATED COMMERCIAL FARMS PLC	Agriculture	Poultry	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
199	BASMIN Modern poultry farm and processing	Agriculture	Poultry	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
200	ELERE Farms PLC	Agriculture	Poultry	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
201	FW Agro production processing	Agriculture	Poultry	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
202	Golden poultry PLC	Agriculture	Poultry	SNNPRS,	Agro-industry investment opportunities directory Ethiopia 2019

203	Hage poultry farm and meat processing PLC	Agriculture	Poultry	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
204	Highland poultry processing PLC	Agriculture	Poultry	Oromia	Agro-industry investment opportunities directory Ethiopia 2019
205	Three flexible packaging PLC PLC	Agriculture	Other industry	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
206	Addis Ababa bottle and glass share company	Agriculture	Other industry	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
207	Chamber printing house PLC	Agriculture	Other industry	Addis Ababa,	Agro-industry investment opportunities directory Ethiopia 2019
208	Derba cement	Industry	Cement	Derba	MoI
209	East cement	Industry	Cement	East	MoI
210	Ethio cement	Industry	Cement	Ethio	MoI
211	Mugher cement	Industry	Cement	Mugher	MoI
212	Dangote cement	Industry	Cement	Dangote	MoI
213	National cement	Industry	Cement	National	MoI
214	East steel	Industry	Steel	East	MoI
215	Sino Steel	Industry	Steel	Sino	MoI
216	C&E Brothers	Industry		C&E	MoI
217	Abyssinia Integrated Steel	Industry	Steel	አቢሲኒያ	MoI

	PLC				
218	ZenZen Steel	Industry	Steel	ZenZen	MoI
219	Habesha steel	Industry	Steel	Habesha	MoI
220	Sentinel Steel PLC	Industry	Steel	Sentinel	MoI
221	Huano manufacturing	Industry	Manufacturing	Huano	MoI
222	Nascheb steel mfg.	Industry	Steel	Nascheb	MoI
223	steely RMI	Industry	Steel	steely	MoI
224	Eth. Steel & Iron	Industry	Steel	Eth	MoI
225	Ethiopia textile industry development institute	Industry	Textile		EPA
226	Ethiopia leather industry institute	Industry	Leather		EPA
227	Food beverages pharmaceutical industry development institute	Industry	Food, beverage, Parmaceutical		EPA
228	Chemical and construction input industry development institute	Industry	Chemical, and construction		EPA
229	Metal industry development institute	Industry	Metal		EPA
230	Ethiopian leather industry Association	Industry	Leather		EPA

231	Ethiopian textile industry Association	Industry	Textile		EPA
232	Ethiopian chemical industry Association	Industry	Chemical		EPA
233	Cement industry Association	Industry	Cement		EPA
234	Africa development bank ,GIZ,EU.EIB,ILO,BMZ,UNIDO IFC,WB (support agro industry parks)	Industry	Bank		EPA
235	Europe Union (energy efficiency project on cement industry)	Industry	Energy		EPA
236	United Nation Industry Development Organization (project on circular economy)	Industry	Circular economy		EPA
237	World Bank (National quality infrastructure development project)	Industry	Bank		EPA
238	Kabana PLC	Industry	GEM-P leather cluster members		EPA
239	Yezichalem Meaza Leather Products	Industry	GEM-P leather cluster members		EPA
240	Batu Tannery	Industry	GEM-P leather cluster		EPA

			members		
241	Endu Leather	Industry	GEM-P leather cluster members		EPA
242	Metadel Shoe	Industry	GEM-P leather cluster members		EPA
243	Metadel Shoe	Industry	GEM-P leather cluster members		EPA
244	Bahiru Asefa and His Friends P.L.C	Industry	GEM-P leather cluster members		EPA
245	Modern Zege	Industry	GEM-P leather cluster members		EPA
246	K&T Trading PLC	Industry	GEM-P leather cluster members		EPA
247	Muzeyen Siraj Leater products Manufacturing and Export	Industry	GEM-P leather cluster members		EPA
248	Arkis Leather	Industry	GEM-P leather cluster members		EPA
249	Arkis Leather	Industry	GEM-P leather cluster members		EPA
250	Eleleta Leather Craft	Industry	GEM-P leather cluster members		EPA
251	Natniel, Brook and His friends leather products manufacuring	Industry	GEM-P leather cluster members		EPA

252	Cherenet Tadesse PLC	Industry	GEM-P leather cluster members		EPA
253	Natural Leather	Industry	GEM-P leather cluster members		EPA
254	Trufat leather products Manufactruing	Industry	GEM-P leather cluster members		EPA
255	Daniel Tesfaye Leather Products Manufacturing	Industry	GEM-P leather cluster members		EPA
256	Fisscha Leather products Manufacturing	Industry	GEM-P leather cluster members		EPA
257	Wallia Tannery	Industry	GEM-P leather cluster members		EPA
258	Modern Zege	Industry	GEM-P leather cluster members		EPA
259	Abka	Industry	GEM-P leather cluster members		EPA
260	Azrar	Industry	GEM-P textile cluster members		EPA
262	EDE	Industry	GEM-P textile cluster members		EPA
263	EDE	Industry	GEM-P textile cluster members		EPA
264	Hayelom and Aster	Industry	GEM-P textile cluster members		EPA

265	Sabeh Garment	Industry	GEM-P textile cluster members		EPA
266	Beka Button Factory	Industry	GEM-P textile cluster members		EPA
267	Eagle Advert	Industry	GEM-P textile cluster members		EPA
268	Derry Kebede Business P.L.C	Industry	GEM-P textile cluster members		EPA
269	Addisu Tesfye Enterprise	Industry	GEM-P textile cluster members		EPA
270	W.E.D	Industry	GEM-P textile cluster members		EPA
271	Mirca Engineering	Industry	GEM-P textile cluster members		EPA
272	RedReeling PLC	Industry	GEM-P textile cluster members		EPA
273	Akaki Garment	Industry	GEM-P textile cluster members		EPA
274	Vitccon PLC	Industry	GEM-P textile cluster members		EPA
275	Alebel Textile	Industry	GEM-P textile cluster members		EPA
276	Desta PLC	Industry	GEM-P textile cluster members		EPA

277	Tamra Techno-Packaging	Industry	GEM-P textile cluster members		EPA
278	Tamra Techno-Packaging	Industry	GEM-P textile cluster members		EPA
279	Kertas Packaing and Advert	Industry	GEM-P textile cluster members		EPA
280	Crown Textile	Industry	GEM-P textile cluster members		EPA
281	Habte Garment	Industry	GEM-P textile cluster members		EPA
282	Sebrom Garment	Industry	GEM-P textile cluster members		EPA
283	DBT textile and Tailor	Industry	GEM-P textile cluster members		EPA
284	GABI Textile	Industry	GEM-P textile cluster members		EPA
285	Lila Products	Industry	GEM workshops participants from Addis Ababa, Arbaminch and Adama		EPA
286	JANO Handcraft (Arbaminch)	Industry	GEM workshops participants from Addis Ababa, Arbaminch and Adama		EPA

287	Yefiker Design	Industry	GEM workshops participants from Addis Ababa, Arbaminch and Adama		EPA
288					EPA
289	Aluto Langano Geothermal	Energy	Power generation		EPA
290	Tullu Moye Geothermal	Energy	Power generation		EPA
291	Korbetti Geothermal	Energy	Power generation		EPA
292	Ore Power Geothermal	Energy	Power generation		EPA
293	Dangote Cement	Energy/Industry/mines	cement		EPA
294	Derba Cement	Energy/Industry/mines	cement		EPA
295	Mughar Cement	Energy/Industry/mines	cement		EPA
296	National Cement	Energy/Industry/mines	cement		EPA
297	Pioneer Cement	Energy/Industry/mines	cement		EPA
298	East Cement	Energy/Industry/mines	cement		EPA
299	Zhongshun Cement	Energy/Industry/mines	cement		EPA

300	UNDP	MoP	financer		EPA
301	World Bank	MoP	financer		EPA
302	WRI	MoP	financer		EPA
303	GGGI	MoP	financer		EPA
304	GCF	Funding agencies	Financier		EPA
305	GEF	Funding agencies	Financier		EPA
306	GIZ	Funding agencies	Financier		EPA
307	EU	Funding agencies	Financier		EPA
308	UNEP	Funding agencies	Financier		EPA
309	KFW (German Bank)	Funding agencies	Financier		EPA
310	ADB	Funding agencies	Financier		EPA
311	IFD	Funding agencies	Financier		EPA
312	USAID	Funding agencies	Financier		EPA
313	SIDA	Funding	Financier		EPA

		agencies			
314	DFID	Funding agencies	Financier		EPA
315	FIDA	Funding agencies	Financier		EPA
316	CIDA	Funding agencies	Financier		EPA
317	AF (Adaptation Fund)	Funding agencies	Financier		EPA
318	Norway AID	Funding agencies	Financier		EPA
319	P4G	Funding agencies	Financier		EPA
320	Passenger transport Association	MoTL	Energy sector		MoTL
321	Freight transport association	MoTL	Energy sector		MoTL
322	Automotive industries	MoI	Energy sector		MoI
323	Car import companies	MoTL	Energy sector		MoTL
324	Driving training centres	MoTL	Energy sector		MoTL
325	Electric vehicles	MoTL	Energy sector		MoTL
326	Mass transportation	MoTL	Energy sector		MoTL
327	NMT	MoTL	Energy sector		MoWIE

328	Solar Importers	MoWIE	Energy		MoWIE
329	Biogas Enterprises	MoWIE	Energy		MoWIE
330	Solar Enterprises	MoWIE	Energy		MoWIE
331	Coockstoves Enterprises	MoWIE	Energy		MoWIE
332	Geothermal Companies	MoWIE	Energy		MoWIE
333	Hydropower Companies	MoWIE	Energy		MoWIE
334	Reach for change	Private	Knowledge and Research		EPA
335	Ethio Admas Agro Industry	MoA	Agriculture		EPA
336	Green Tech Africa	MoTL	Energy		EPA
337	Ethiopian Leather Industry Association	MoI	Industry		EPA
338	Eden Business		Industry		AACCSA
339	Oryx International PLC		Trade		AACCSA
340	Concord Industrial PLC		Industry		AACCSA
341	Qeste-Damana Sponji Factory		Industry		AACCSA
342	Excel Plastic PLC		Industry		AACCSA
343	BA Manufacturing PLC		Industry		AACCSA
344	Lidya Plastic products manufacturing		Industry		AACCSA
345	Kombolcha Textile Share Company	MoI	Industry	Amhara	Consultant
346	Kombolcha Brewery	MoI	Industry	Amhara	Consultant

347	Amare plastic production PLC (Kombolcha)	Industry	Industry	Amhara	Consultant
348	Ethiopian cheap wood and furniture company	MoI	Industry	Addis Ababa	Consultant
349	Cement Association	MoMP	Industry	Addis Ababa	MoI
350	T-Tex Garment	MoI	Industry	Addis Ababa	MoI
351	Mid buss taxi services Associations	MoTL	Transport	Addis Ababa	MoTL
352	Melak Mulken	Elfora Agro processing Industries Kombolcha	Agriculture	Amhara	MoA
353	Dry waste and used plastic collection and recycling association (9 associations)	MoUI	Dry waste collection and recycling	Addis Ababa	MoUI

Annex 3. Questionnaire surveys completed by FGDs at consultative meeting

Questionnaire 1. Assessing and Evaluate Private Sector Engagement

Questionnaire 1A to be completed by NDC-, CRGE sector experts.

To Assess and Evaluate Private Sector Engagement in climate change investment interventions.

General:

1. Name of your Sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction.
2. Name of Team Members:_____
3. Guiding questions: i. Who has been engaged in the project?; ii. Why they have been engaged in the project?; iii. When were they engaged in the project?; iv. How were they engaged in the project?; v. What were the subsequent impacts?
4. Steps: Complete the questionnaire in the Table below step by step:

Step 1. identify who has already been engaged and understanding what your sector is doing					
Name of private sector actor	Are they an enterprise or financier?	What sectors do they represent? (e.g. agriculture, forestry, Energy)	What scale do they operate at? (e.g. micro, small, medium, large)	Are they a women-led, Men-led, or women□focused, Men-focused entities?	Are they a champion in the private sector? Could they crowd in other private sector actors?
Step 2. List perspective Actors to be engaged					

Step 3. Understanding when the private sector actors were engaged

Name of private sector actor (From step 1)	During formulation of climate actions (CRGE, Eth-NAP, NDCs)	During Implementation of climate actions (CRGE, Eth-NAP, NDCs)

Step 4. Describe " How private sector actors were engaged"					
Name of private sector actor (From step 1)	[62]What institutional arrangements were used to engage the actor?	[63]What information sharing actions were used to engage the actor?	[64]What financing mechanisms were used to engage the actor?	[65]What capacity building programs were used to engage the actor?	Other considerations

Step 5. Describe "What were the impacts of private sector engagement on reducing climate change vulnerability (adaptation effect) and reducing GHG emission (mitigation effect)"[66]	
Name of private sector actor (from step 1)	Impact

Step 6 (Final step). Describe other considerations[67]: adaptation and mitigation related activities that have not been aligned with the climate actions (NAP, CRGE, NDCs)		
Name of private sector actor (from step 1)	Adaptation and mitigation related activities	Is there an opportunity to align this activity with NAP, NDCs, CRGE

[62] Any specific institutional arrangement,
[63] Were they awareness and information sharing of any of the climate actions (NDC, NAP, CRGE etc),
[64] Did they benefit from any financing mechanisms from climate actions,
[65] Did they benefit capacity building from any capacity building programs of the climate actions (e.g. system establishment, training, workshops etc)
[66] Subsequent impacts of private sector engagement in the Climate actions, in terms of strengthening adaptation and mitigation to climate change. (E.g. Number of trainees, cook stove, biogas plant, areas of reforestation etc.
[67] Private sectors have worked on mitigation and adaptation activities that have not been coordinated under NAP, CRGE, NDCs, but may contribute to climate action goals.

Questionnaire 1B to be completed by private sector experts

To Assess and Evaluate Private Sector Engagement in climate change investment interventions. Questionnaire is to be completed by:

General:

1. Name of the sector you are working with: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of the private organization: _____

3. Name of Team Members:_____

4. Guiding questions: i. Who has been engaged in the project?; ii. Why they have been engaged in the project?; iii. When were they engaged in the project?; iv. How were they engaged in the project?; v. What were the subsequent impacts?

5. Steps: Complete the questionnaire in the Table below step by step:

Step 1. identify who has already been engaged and understanding what your sector is doing					
Name of private sector actor	Are they an enterprise or financier?	What sectors do they represent? (e.g. agriculture, forestry, Energy)	What scale do they operate at? (e.g. micro, small, medium, large)	Are they a women-led, Men-led, or women□focused, Men-focused entities?	Are they a champion in the private sector? Could they crowd in other private sector actors?
Step 2. List perspective Actors to be engaged					

Step 3. Understanding when the private sector actors were engaged		
Name of private sector actor (From step 1)	During formulation of climate actions (CRGE, Eth-NAP, NDCs)	During Implementation of climate actions (CRGE, Eth-NAP, NDCs)

Step 4. Describe " How private sector actors were engaged"					
Name of private sector actor (From step 1)	[68]What institutional arrangements were used to engage the actor?	[69]What information sharing actions were used to engage the actor?	[70]What financing mechanisms were used to engage the actor?	[71]What capacity building programs were used to engage the actor?	Other considerations

Step 5. Describe "What were the impacts of private sector engagement on reducing climate change vulnerability (adaptation effect) and reducing GHG emission (mitigation effect)"[72]	
Name of private sector actor (from step 1)	Impact

Step 6 (Final step). Describe other considerations[73]: adaptation and mitigation related activities that have not been aligned with the climate actions (NAP, CRGE, NDCs)		
Name of private sector actor (from step 1)	Adaptation and mitigation related activities	Is there an opportunity to align this activity with NAP, NDCs, CRGE

[68] Any specific institutional arrangement,
[69] Were they awareness and information sharing of any of the climate actions (NDC, NAP, CRGE etc),
[70] Did they benefit from any financing mechanisms from climate actions,
[71] Did they benefit capacity building from any capacity building programs of the climate actions (e.g. system establishment, training, workshops etc)
[72] Subsequent impacts of private sector engagement in the Climate actions, in terms of strengthening adaptation and mitigation to climate change. (E.g. Number of trainees, cook stove, biogas plant, areas of reforestation etc.
[73] Private sectors have worked on mitigation and adaptation activities that have not been coordinated under NAP, CRGE, NDCs, but may contribute to climate action goals.

Questionnaire 1C to be completed by funding agency experts.

To Assess and Evaluate Private Sector Engagement in climate change investment interventions.

General:

1. Name of the sector you are financing: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of the Funding Agency: _____

3. Name of Team Members:_____

4. Guiding questions: i. Who has been engaged in the project?; ii. Why they have been engaged in the project?; iii. When were they engaged in the project?; iv. How were they engaged in the project?; v. What were the subsequent impacts?

5. Steps: Complete the questionnaire in the Table below step by step:

Step 1. identify who has already been engaged and understanding what your sector is doing					
Name of private sector/ Public sector actor	Are they an enterprise or financier?	What sectors do they represent? (e.g. agriculture, forestry, Energy)	What scale do they operate at? (e.g. micro, small, medium, large)	Are they a women-led, Men-led, or women□focused, Men-focused entities?	Are they a champion in the private sector? Could they crowd in other private sector actors?
Step 2. List perspective Actors to be engaged					

Step 3. Understanding when the private sector actors were engaged		
Name of private sector/ Public sector actor (From step 1)	During formulation of climate actions (CRGE, Eth-NAP, NDCs)	During Implementation of climate actions (CRGE, Eth-NAP, NDCs)

Step 4. Describe " How private sector actors were engaged"					
Name of private sector/ Public sector actor (From step 1)	[74]What institutional arrangements were used to engage the actor?	[75]What information sharing actions were used to engage the actor?	[76]What financing mechanisms were used to engage the actor?	[77]What capacity building programs were used to engage the actor?	Other considerations

Step 5. Describe "What were the impacts of private sector engagement on reducing climate change vulnerability (adaptation effect) and reducing GHG emission (mitigation effect)"[78]	
Name of private sector/ Public sector actor (From step 1)	Impact

Step 6 (Final step). Describe other considerations[79]: adaptation and mitigation related activities that have not been aligned with the climate actions (NAP, CRGE, NDCs)		
Name of private sector/ Public sector actor (From step 1)	Adaptation and mitigation related activities	Is there an opportunity to align this activity with NAP, NDCs, CRGE

[74] Any specific institutional arrangement,
[75] Were they awareness and information sharing of any of the climate actions (NDC, NAP, CRGE etc),
[76] Did they benefit from any financing mechanisms from climate actions,
[77] Did they benefit capacity building from any capacity building programs of the climate actions (e.g. system establishment, training, workshops etc)
[78] Subsequent impacts of private sector engagement in the Climate actions, in terms of strengthening adaptation and mitigation to climate change. (E.g. Number of trainees, cook stove, biogas plant, areas of reforestation etc.
[79] Private sectors have worked on mitigation and adaptation activities that have not been coordinated under NAP, CRGE, NDCs, but may contribute to climate action goals.

Questionnaire 2. Prioritizing Private Sector Stakeholders' Engagement

Questionnaire 2A to be completed by NDC-, CRGE sector experts.

For Mapping and prioritizing Private Sector Stakeholders' Engagement in climate change investment interventions using two approaches: [80]Interest and [81]influence.

1. Name of your sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of Team Members:_____

3. Guiding: Place each private stakeholder actor within the column with their placement corresponding to the combination of their perceived interest and influence in engaging in the climate action.

	High influence, low interest:	High influence, high interest	Low influence, low interest	Low influence, high interest
Name of private sector/ Public sector actor (From step 1)	These private sector actors may take no interest in the Climate action or actively oppose it. Efforts should address opposition or increase interest	These private sector actors are the most engaged, and might be engaged as champions for climate action	Can be seen as potential rather than actual stakeholders. Engagement with these private sector actors is lower priority, though their interest might be raised.	These private sector actors will likely take less time to engage in climate action, but also have less influence in advancing it.

[80] A private sector stakeholder demonstrate interest in climate actions or its potential to be impacted by the climate action.

[81] The private sector actor has potential to have a significant impact in the success of a country's ability to achieve its goals in the climate actions, whether positive or negative.

Questionnaire 2B to be completed by Funding Agency sector experts.

For Mapping and prioritizing Private Sector Stakeholders' Engagement in climate change investment interventions using two approaches: [82]Interest and [83]influence.

1. Name of funding Agency: _____,

2. Name of sector you are working with _____: choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

3. Name of Team Members:_____

4. Guiding: Place each private stakeholder actor within the column with their placement corresponding to the combination of their perceived interest and influence in engaging in the climate action.

	High influence, low interest:	High influence, high interest	Low influence, low interest	Low influence, high interest
Name of private sector/ Public sector actor (From step 1)	These private sector actors may take no interest in the Climate action or actively oppose it. Efforts should address opposition or increase interest	These private sector actors are the most engaged, and might be engaged as champions for climate action	Can be seen as potential rather than actual stakeholders. Engagement with these private sector actors is lower priority, though their interest might be raised.	These private sector actors will likely take less time to engage in climate action, but also have less influence in advancing it.

[82] A private sector stakeholder demonstrate interest in climate actions or its potential to be impacted by the climate action.

[83] The private sector actor has potential to have a significant impact in the success of a country's ability to achieve its goals in the climate actions, whether positive or negative.

Questionnaire 3. Prioritizing sectoral climate change investment interventions

Questionnaire 3A to be completed by NDC-Sector experts

For prioritizing sectoral climate change investment interventions in view of the private sector stakeholders and funding agencies using two approaches: [84]Interest and [85]influence.

1. Name of your sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of your most funding agency working with:_____-

3. Name of your most private sector stakeholder working with:_____

4. Name of Team Members:_____

5. Guiding: Place each sector's project within the column with their placement corresponding to the combination of their perceived interest and influence in engaging in the projects of sectoral climate activities.

	High influence, low interest:	High influence, high interest	Low influence, low interest	Low influence, high interest
Name of project (Insert from Table 1)	This project may have high abatement potential for adaptation and mitigation; but may take no interest of funding agencies. Efforts should made to increase interest for funding.	This project may have high abatement potential for adaptation and mitigation; and may take high interest of funding agencies. Efforts should be made to address any barriers.	This project may have low abatement potential for adaptation and mitigation; and may take no interest of funding agencies. Efforts should be made to increase interest for funding, however.	This project may have low abatement potential for adaptation and mitigation; but may take high interest of funding agencies. Efforts should be made to increase its adaptation and mitigation outcomes.

[84] A private sector stakeholder demonstrate interest in climate actions or its potential to be impacted by the climate action.

[85] The private sector actor has potential to have a significant impact in the success of a country's ability to achieve its goals in the climate actions, whether positive or negative.

Questionnaire 3B to be completed by Funding Agencies and NGOs.

For prioritizing sectoral climate change investment interventions in view of the private sector stakeholders and funding agencies using two approaches: [86]Interest and [87]influence.

1. Name of your most Clint sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of your funding agency:

3. Name of Team Members:_____

4. Guiding: Place each sector's project within the column with their placement corresponding to the combination of their perceived interest and influence in engaging in the projects of sectoral climate activities.

	High influence, low interest:	High influence, high interest	Low influence, low interest	Low influence, high interest
Name of project(Insert from Table 1)	This project may have high abatement potential for adaptation and mitigation; but may take no interest of funding agencies. Efforts should made to increase interest for funding.	This project may have high abatement potential for adaptation and mitigation; and may take high interest of funding agencies. Efforts should be made to address any barriers.	This project may have low abatement potential for adaptation and mitigation; and may take no interest of funding agencies. Efforts should be made to increase interest for funding, however.	This project may have low abatement potential for adaptation and mitigation; but may take high interest of funding agencies. Efforts should be made to increase its adaptation and mitigation outcomes.

[86] A private sector stakeholder demonstrate interest in climate actions or its potential to be impacted by the climate action.

[87] The private sector actor has potential to have a significant impact in the success of a country's ability to achieve its goals in the climate actions, whether positive or negative.

Questionnaire 3C to be completed by Private stakeholders.

For prioritizing sectoral climate change investment interventions in view of the private sector stakeholders and funding agencies using two approaches: [88]Interest and [89]influence.

1. Name of your most Clint sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of your most funding agency:_____

3. Name of your private agency:_____

4. Name of Team Members:_____

5. Guiding: Place each sector's project within the column with their placement corresponding to the combination of their perceived interest and influence in engaging in the projects of sectoral climate activities.

	High influence, low interest:	High influence, high interest	Low influence, low interest	Low influence, high interest
Name of project (Insert from Table 1)	This project may have high abatement potential for adaptation and mitigation; but may take no interest of funding agencies. Efforts should made to increase interest for funding.	This project may have high abatement potential for adaptation and mitigation; and may take high interest of funding agencies. Efforts should be made to address any barriers.	This project may have low abatement potential for adaptation and mitigation; and may take no interest of funding agencies. Efforts should be made to increase interest for funding, however.	This project may have low abatement potential for adaptation and mitigation; but may take high interest of funding agencies. Efforts should be made to increase its adaptation and mitigation outcomes.

[88] A private sector stakeholder demonstrate interest in climate actions or its potential to be impacted by the climate action.

[89] The private sector actor has potential to have a significant impact in the success of a country's ability to achieve its goals in the climate actions, whether positive or negative.

Questionnaire 4. Identifying key Incentives for attracting Private Sector Engagement in NDC-Interventions

Questionnaire 4A to be completed by NDC-Sector Experts.

For identifying key incentives to engage the private sector in climate change investment interventions developed for NDC implementation in view of public, private and funding sector stakeholders

1. Name of your sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of your most funding agency:_____

3. Name of Your most private sector Clint:_____--

4. Name of Team Members:_____

5. Guiding: List key incentives and incentive mechanisms for each project within the column with their placement corresponding to the combination of their perceived incentives for engaging the private sector, funding agencies in the projects of sectoral climate activities.

	Financial Incentives	Technological Incentives	Policy	Others considerations
Name of project (Insert from Table 1)	This project may require financial incentives (e.g. upfront funding, tax, loan, etc).	This project may require climate smart technologies (list)	This project may require policy intervention (list policy interventions)	List other considerations of incentives attracting the private sector investment for this project

Questionnaire 4B to be completed by Private stakeholders.

For identifying key incentives to engage the private sector in climate change investment interventions developed for NDC implementation in view of public, private and funding sector stakeholders

1. Name of your most Clint sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of your most funding agency:_____

3. Name of your private agency:_____

4. Name of Team Members:_____

5. Guiding: List key incentives and incentive mechanisms for each project within the column with their placement corresponding to the combination of their perceived incentives for engaging the private sector, funding agencies in the projects of sectoral climate activities.

	Financial Incentives	Technological Incentives	Policy	Others considerations
Name of project (Insert from Table 1)	This project may require financial incentives (e.g. upfront funding, tax, loan, etc).	This project may require climate smart technologies (list)	This project may require policy intervention (list policy interventions)	List other considerations of incentives attracting the private sector investment for this project

Questionnaire 4C to be completed by Funding Agencies.

For identifying key incentives to engage the private sector in climate change investment interventions developed for NDC implementation in view of public, private and funding sector stakeholders

1. Name of your most Clint sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of your most funded project areas:_____

3. Name of your funding agency:_____

4. Name of Team Members:_____

5. Guiding: List key incentives and incentive mechanisms for each project within the column with their placement corresponding to the combination of their perceived incentives for engaging the private sector, funding agencies in the projects of sectoral climate activities.

	Financial Incentives	Technological Incentives	Policy	Others considerations
Name of project (Insert from Table 1)	This project may require financial incentives (e.g. upfront funding, tax, loan, etc).	This project may require climate smart technologies (list)	This project may require policy intervention (list policy interventions)	List other considerations of incentives attracting the private sector investment for this project

Questionnaire 5. Identifying key Opportunities, Barriers and Mitigation Options for implementing NDC-Interventions

Questionnaire 4A to be completed by NDC sectors:

For identifying key Opportunities, Barriers and Mitigation Options for enhancing private sector engagement climate change investment interventions in view of the private sector stakeholders, funding agencies and public sectors.

1. Name of your sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of your most funding agency working with:_____-

3. Name of your most private sector stakeholder working with:_____

4. Name of Team Members:_____

5. Guiding: List potential opportunities, key barriers and mitigation options within the column with their placement corresponding to the combination of their perceived negative/positive factors affecting the private sector engagement in the projects of sectoral climate activities.

	Opportunities	Key barriers that may negatively affect the engagement of the private engagement and funding sources			Suggested mitigation measures for minimizing/avoiding the barriers		
Name of project (Insert From Table 1)	This project may have a potential to provide opportunities (e.g. job creation, food security, skill/knowledge/technology, and others.	This project may face **financial barriers** (upfront funding, transaction, limited financing, credit/loan etc).	This project may face **policy barriers** (incentive, land acquirement, etc)	This project may face **technical barriers** (technology, skill/knowledge etc)	Financial measures	Policy measures	Technical measures

Questionnaire 4B to be completed by Private Stakeholders:

For identifying key Opportunities, Barriers and Mitigation Options for enhancing private sector engagement climate change investment interventions in view of the private sector stakeholders, funding agencies and public sectors.

1. Name of your most Clint public sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of your most funding agency working with:_____-

3. Name of your private sector:_____

4. Areas of your engagement:_____

5. Name of Team Members:_____

6. Guiding: List potential opportunities, key barriers and mitigation options within the column with their placement corresponding to the combination of their perceived negative/positive factors affecting the private sector engagement in the projects of sectoral climate activities.

	Opportunities	Key barriers that may negatively affect the engagement of the private engagement and funding sources			Suggested mitigation measures for minimizing/avoiding the barriers		
Name of project (Insert From Table 1)	This project may have a potential to provide opportunities (e.g. job creation, food security, skill/knowledge/technology, and others.	This project may face financial barriers (upfront funding, transaction, limited financing, credit/loan etc).	This project may face policy barriers (incentive, land acquirement, etc)	This project may face technical barriers (technology, skill/knowledge etc)	Financial measures	Policy measures	Technical measures

Questionnaire 4C to be completed by Funding Agencies:

For identifying key Opportunities, Barriers and Mitigation Options for enhancing private sector engagement climate change investment interventions in view of the private sector stakeholders, funding agencies and public sectors.

1. Name of your most Clint public sector: _____, choose from the list: Agriculture & Natural Resources; Forest Development; Transport & Logistic; Water, Energy & Irrigation, Industry & Trade; Mines & Petroleum; Urban Development & Construction,

2. Name of your most private agency working with:_____-

3. Name of your funding agency:_____

4. Areas of your funding engagement:_____

5. Name of Team Members:_____

6. Guiding: List potential opportunities, key barriers and mitigation options within the column with their placement corresponding to the combination of their perceived negative/positive factors affecting the private sector engagement in the projects of sectoral climate activities.

	Opportunities	Key barriers that may negatively affect the engagement of the private engagement and funding sources			Suggested mitigation measures for minimizing/avoiding the barriers		
Name of project (Insert From Table 1)	This project may have a potential to provide opportunities (e.g. job creation, food security, skill/knowledge/technology, and others.	This project may face financial barriers (upfront funding, transaction, limited financing, credit/loan etc).	This project may face policy barriers (incentive, land acquirement, etc)	This project may face technical barriers (technology, skill/knowledge etc)	Financial measures	Policy measures	Technical measures

Annex 4. Questionnaire surveys completed by FGDs and KIIs

To Assess and Evaluate Private Sector Engagement in climate change investment interventions. (በአየር ንብረት የግል ዘርፉ ተሳትፎን የመዳሰስና የመገምገም ጥናት እና ትንተና).

Questionnaire 1B to be completed by private sector experts. (በግል ዘርፉ የሚሞላ)

General (አጠቃላይ):
1. Name of the organization (የድርጅቱ ስም):
2. Year of establishment (የተመሰረተበት ጊዜ)፡
3. - Name of Team members completing the questionnaire (መጠይቁን የሞሉ አበላት) - Total number of employees including casual laborers (የሰራቶኞች ብዛት የቀን ሰራተኞችን ጨምሮ)፡
4. Areas of engagement (ድርጅቱ የሚሳተፍባቸዉ የልማት ዘርፎች) ግብርና፣ ደን፣ ኢነርጂ፣ ትራንስፖርት፣ መስኖ፣ ግንባታ ወዘተ
5. **Investment areas, products and community services of the organization (የድርጅቱ ስራዎች፤ ምርቶችና ለማህብረስቡ የሚሰጣቸዉ አግልግሎት)**
6. How is your awareness on climate change: high, medium, low (የኤር ንብረት ግንዛቤ ምን ይመስላል ፡ ክፍተኛ፤ ዝቅተኛ፤ መካከለኛ)፡
7. List adverse impact of climate change on the organizations investment, production and productivity e.g. by flooding, drought etc (አየር ንብረት ለዉጥ በድርጅቱ ስራ፤ምርትና ምርታማነት ላይ ያስከተለዉ አሉታዊ ተጽእኖ ዝርዝር)፡
8. What support is needed from the government to reduce adverse climate shocks on your business (አሉታዊ የአየር ንብረት ተጽእኖዎችን ለመgkም ከመንግስት ምን ድጋፍ ይጠበቃል)፡

9. Funding Sources:loan from which bank; Grant from..; Self-financing; others (የበጀት ምንጭ፡ ብድር ከ---፤ ግራነት/እርዳታ ከ---፤	
10.Key barriers that may negatively affect the engagement of the private engagement and funding sources (የግል ዝረፉን እና የፈንድ ምንጭን ተሳትፎ የሚያደናቅፉ ቁልፍ ችግሮች/እንቅፋቶች	These projects may face **financial barriers** (upfront funding, transaction, limited financing, credit/loan etc). (እነዚህን ፕሮጅክቶች ሊያጋጥሙ የሚችሉ የፋይናንስ ቁልፍ ችግሮች)፡

	These projects may face **policy barriers** (incentive, land acquirement, etc) (እነዚህን ፕሮጅክቶች ሊያጋጥሙ የሚችሉ የፖሊሲ ቁልፍ ችግሮች)
	These projects may face **technical barriers** (technology, skill/knowledge etc) (እነዚህን ፕሮጅክቶች ሊያጋጥሙ የሚችሉ የቴክኒከና እዉቀት/ክህሎት ቁልፍ ችግሮች)

11.Suggested mitigation measures for minimizing/avoiding the barriers (ችግሮቹን ለመቀነስ/ለማሰወገድ የተጠቆሙ የመፍተሄ ሃሳቦች	Financial measures (ለፋይናንስ ችግር መፍትሄ)
	Policy measures (ለፖሊሲ ችግር መፍትሄ)
	Technical measures (ለቴክኒክ ችግር መፍትሄ)

12. Challenges/Bariers along project life cycle (በፕሮጅቶት ትግበራ ወቅት /ደረጃዎች ያጋጠሙ ችገሮች)	Initiation phase (የፕሮጅቶት ጽንሰ ሃሳብ መነሻ ወቅት ያጋጠሙ ችግሮች)
	Planning phase (የፕሮጅቶት ፕላንና እቅድ ዚግጅት ወቅት ያጋጠሙ ችግሮች)
	Execusion /implemnetation phase (የፕሮጅቶት ትግብራ ወቅት ያጋጠሙ ችግሮች)
	Monitoring and performance phase (የፕሮጅቶት አፈጻጸም ክትትልና ግምገማ ወቅት ያጋጠሙ ችግሮች)
	Closure/ exit phase (የፕሮጅቶት መዝጊያ ወቅት ያጋጠሙ ችግሮች)
13. Awareness on government's investment incentive proclamation/regulations/policies (የግል ዘርፍ ሳቢ ለማበረታቻ የወጡ የመንግስት አዋጆች/ህጎች/ፖሊሲዎች ያለወት ግንዛቤ ምን ያህል ነዉ): ክፍተኛ፤ ዝቅተኛ፤ መካከለኛ)	

14. Please list investment incentives that your organization has been benefited (ድርጅትዎ የተጠቀማቸዉን የግል ዘርፍ ሳቢ የማበረታቻዎች ካሉ እባክዎ ይጥቀሱልን).
15.Please list constraints adversely affecting your right of benefiting investment incentives (ለድርጅትዎ የሚገባዉን የግል ዘርፍ ሳቢ ማበረታቻዎችን ለመጠቀም የማያሰችሉ ችግሮች ካሉ እባክዎ ይጥቀሱልን).