Country Focus Report 2023

ETHIOPIA

Mobilizing Private Sector Financing for Climate and Green Growth

AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE DE DÉVELOPPEMENT

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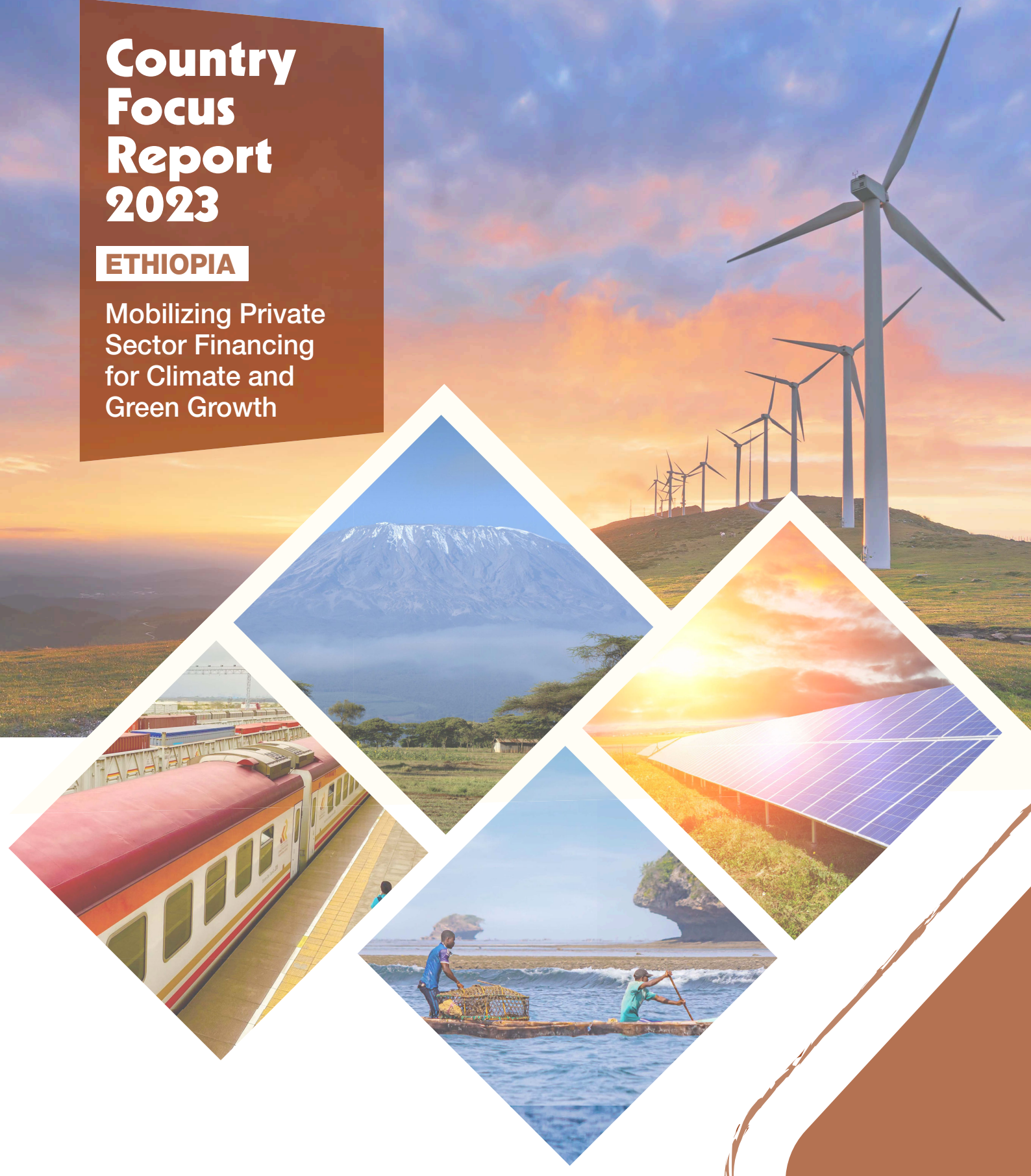

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AEO	African Economic Outlook
AfDB	African Development Bank
AFOLU	Agriculture, Forestry and Other Land Use
BaU	Business as Usual
CDM	Clean Development Mechanism
CFR	Country Focus Report
COVID-19	Coronavirus disease 2019
CRGE	Climate Resilient Green Economy
CRI	Climate Resilience Index
CSA	Central Statistics Agency Ethiopia
DFIs	Development Financial Institutions
DPs	Development Partners
DSA	Debt Sustainability Analyses
EFCCC	Environment, Forest, and Climate Change Commission
EITI	Extractive Industries Transparency Initiative
EOG-PoA	Ethiopia Off-Grid Renewable Energy Program
EPACC	Ethiopian Program of Adaptation to Climate Change 2011
ERPA	Emission Reductions Purchase Agreement
FDI	Foreign Direct Investment
G20	Group of Twenty
GCF	Green Climate Fund
GDP	Gross Domestic Product
GGGI	Global Green Growth Institute
GGI	Green Growth Index
GHG	Global Greenhouse Gas Emissions
GoE	Government of Ethiopia
HGER	Homegrown Economic Reforms
IDPs	Internally Displaced People
IKI	International Climate Initiative
LUCF	Land Use Change and Forestry
MDBs	Multilateral Development Banks
MFIs	Microfinance Institutions
MoPD	Ministry of Planning and Development
MRV	Monitoring, Reporting and Verification
MW	Megawatts
NAMA	Nationally Appropriate Mitigation Actions
NAP-ETH	Nationally Adaptation Plan for Ethiopia
NDC	Nationally Determined Contributions
PPP	Public-Private Partnerships
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SoEs	State-owned Enterprises
SSA	Sub-Saharan Africa
TYDP	Ten-Year Development Plan
UNFCCC	United Nations Framework Convention on Climate Change

Ethiopia

KEY MESSAGES

Macroeconomic Performance and Outlook

- **Overall, economic performance has been adversely impacted by internal conflict, drought, COVID-19, and the effects of Russia's invasion of Ukraine.** Real GDP grew by 5.3% in 2021/22, although this was lower than the 5.6% in 2020/21, driven by industry and services on the supply side, and by private consumption and investment on the demand side. Inflation increased to 33.5% in 2021/22 from 26.8% in 2020/21. The fiscal deficit widened to 4.2% of GDP in 2021/22 from 2.9% in 2020/21 due to increased defence expenditures and weak revenue growth. The current account deficit deteriorated to 4.1% of GDP in 2021/22 from 3.2% in 2020/21. Conflict, drought, and the COVID-19 pandemic increased the number of people requiring humanitarian support to 20 million in 2022 from 15.8 million in 2021.

- **Ethiopia remains at high risk of debt distress, due to weak export performance.** Public and publicly guaranteed debt increased to 52% of GDP in December 2022 (external debt at 24.4% of GDP) from 50.1% of GDP (external debt at 23.6% of GDP) in June 2022. Progress towards debt restructuring under the G20 Common Framework was impeded by internal conflict but is expected to resume following the return to stability during the last quarter of 2022.

- **The economic outlook is positive amidst key downside risks.** GDP growth is projected at 5.8% in 2022/23 and 6.2% in 2023/24, driven by industry and by private consumption and investment. The peace dividend, a rebound in tourism and liberalization of key sectors are expected to boost the growth outlook. The fiscal deficit is projected to reduce to 3.1% in 2022/23 and 2.5% in 2023/24 due to the expected gains in domestic resources mobilization following the implementation of the fiscal consolidation strategy and resumption of donor inflows. The current account deficit is expected to narrow to about 3.6% - 3.7% of GDP during 2023-2024 as merchandise, service exports, and foreign direct investment improve, and imports of capital inputs continue to decline. Key downside risks comprise debt and climate vulnerabilities, intercommunal conflicts, and sustained high global prices (especially oil and food prices) due to supply chain disruptions arising from Russia's invasion of Ukraine.

Private Sector Financing for Climate and Growth Green

- **Ethiopia is vulnerable to climate change impacts due to its dependence on traditional methods of production** and natural resource extraction as well as low adaptive capacity. Since 1960, temperatures in Ethiopia have increased by an average of 0.25oC per decade and rainfall has been more erratic in recent years[1]. The agriculture sector, a key source of employment and livelihoods, is mostly rain-fed, with only 1% of cultivated land under irrigation. During 1986–2015 estimated loss of GDP per capita growth from climate change was 11.4% p.a. and this is projected to increase.

- **Ethiopia is committed to reducing GHGs and resilience building** through (i) afforestation and land rehabilitation interventions; (ii) generation and distribution of electricity from clean renewable sources; and (iii) transportation systems that utilize clean and renewable energy. In addition to the Climate Resilient Green Economy (CRGE), Ethiopia has designed other

[1] The variations can reach 50% in some parts of the country.

national and sectoral climate action plans including: the National Adaptation Program of Action of 2007; and the Ethiopian Program of Adaptation to Climate Change (EPACC 2011).

- **Ethiopia's updated National Determined Contributions (NDC, 2021) estimated financing requirements to meet its adaptation and mitigation targets for 2021-2030 at $316bn** ($275.5bn for mitigation and $40.5bn for adaptation). About $63.2bn could be mobilized from domestic sources and the rest from international sources. Including 'other needs' and 'loss and damage needs', Ethiopia's financing requirements could reach $345.7bn. If Ethiopia receives similar amounts of climate finance as during 2016-2020 ($1.45bn p.a.), the financing gap will average $33.1bn p.a. over 2020-2030.

- **Measures to attract climate finance and increase investment in climate-smart technologies are needed to promote green growth.** The GoE can mobilize resources for green growth and resilience using innovative financing and strategic use of public capital to 'crowd-in' private investment and address barriers to private investment in climate solutions. Tax relief and other incentives can be applied to promote private investment in climate and green growth.

Natural capital for climate finance and green growth

- **The value and potential benefits from the transformation of the abundant natural resources and diverse ecosystems into natural capital wealth remain largely untapped in Ethiopia.** To fully benefit from its natural capital, Ethiopia needs to: (i) Expand investments in appropriate techno-logies and data management capacity for improved valuation and to benefit from inter-national agreements; (ii) engage in natural capital accounting to track stocks and their contributions; (iii) implement prudent fiscal measures to promote sustainable exploitation of natural resources; and (iv) deepen institutional reforms and apply international best practices to improve natural resource governance.

- **Ethiopia's collection of natural rents, mainly from forestry, has decreased from about 15.8% of GDP in 2010 to 5.1% in2020,** due mainly to farmland expansion because of population pressure. Rents collected from minerals also dropped from 0.3% of GDP in 2010 to 0.1% in 2015, and since then rents collected have remained negligible. This calls for accelerated imple-mentation of the Green Legacy Initiative to enhance forest conservation, reforestation, restoration of degraded land and soil as well as the promotion of sustainable management of forests. For sustainable forest landscapes, there is a need to scale up the BioCarbon Fund Initiative that rewards community efforts to reduce carbon emissions by tackling deforestation, and land and forest degradation. With the potential of almost 10 trillion barrels of oil in the Abay, Ogaden and South Omo basins, exploitation of these resources will be key for Ethiopia to increase rents from its natural capital. Consequently, fast-tracking the conversion of ongoing oil and gas exploration into exploitation is key.

- **Home-grown reforms including public-private partnerships, establishment of money and capital markets, and capacity to design bankable climate finance proposals** will help to increase the scope for private sector financing of green projects. Ethiopia could leverage its strategic location in the Horn of Africa to attract increased financing for climate adaptation and the green transition. Development partners (DPs) should sustain support to strengthen capacities to leverage Ethiopia's large natural capital potential.

I INTRODUCTION

This Country Focus Report (CFR) for Ethiopia reviews the role of the private sector in the financing of climate change and green growth. It explores the scope for harnessing natural capital to finance adaptation and mitigation to climate change and to promote green growth. It aims to replicate at country level the analyses at the continental level in the African Development Bank's main African Economic Outlook (AEO) report for 2023 and at the regional level, the Regional Economic Outlook for 2023.

This CFR is structured as follows. Section two discusses Ethiopia's economic performance and outlook. Section three discusses private sector financing for climate and green growth and section four examines natural capital for climate finance and green growth. Section five concludes and draws policy recommendations for the government, development partners, and the private sector.

II RECENT MACRO-ECONOMIC DEVELOPMENTS AND OUTLOOK

2.1 Recent macroeconomic and financial developments

Economic growth and drivers: In 2021/22, Ethiopia's economy grew by 5.3% compared to 5.6% in 2020/21 (Table 1). Growth was negatively impacted by the effects of drought in much of the country's eastern and southern regions, Russia's invasion of Ukraine, civil conflict in the north, central and west of Ethiopia and the lingering effects of the COVID-19 pandemic. Growth in 2021/22 was led by services, which grew by 7.6%, above the 6.3% in 2020/21, as the trade and the real estate sectors recovered. Agriculture grew by 6.1% in 2021/22, above the 5.5% in 2020/21, mainly due to the expansion of cluster farming and use of improved agricultural technology. Lastly, industry grew by 4.9% in 2021/22, below the 7.3% in 2020/21, due to COVID-19-induced disruptions to supply chains, foreign exchange constraints and conflict. Overall, agriculture, industry, and services accounted for 32.4%, 28.9% and 40% of GDP, respectively, in 2021/22. On the demand side, growth was driven by private consumption and investment. Comparatively, the recent GDP growth rates are not bad, but remain below the Pre-COVID growth rates of 6-8%.

Monetary policy and inflation: In 2022, inflation remained persistently high at 34% due to increasing food prices and fueled by supply and value chains disruptions. Monetary policy was mostly accommodative to maintain economic activity. Broad money grew by 27.2% in 2021/22, mainly due to the expansion of domestic credit by 30.3%, but this remained lower than nominal GDP growth of 39%.

Fiscal developments: The fiscal deficit including grants increased sharply to 4.2% of GDP in 2021/22 from 2.8% in 2020/21, reflecting the effects of the civil war that pushed defence expenditure to 1.7% of GDP in 2021/22 from 0.9% of GDP in 2020/21, as well as increased spending on humanitarian assistance and reconstruction. Public spending increased by 25.2%, while domestic revenue grew by only 9.8% in 2021/22. External financing was 22.2% lower than programmed as some development partners (DPs) withheld disbursements due to concerns over the conflict. Tax revenue grew by only 12.3% in 2021/22 compared to 24.8% in 2020/21, and the tax-to-GDP ratio decreased to 7.1% in 2021/22 from 9.8% in 2020/21, mainly due to disruptions caused by COVID-19, internal conflict, and drought.

Public debt: Public debt was estimated at 52% of GDP in December 2022 (external debt at 24.4% of GDP) from 50.1% of GDP (external debt at 23.6% of GDP) in June 2022. Two external debt ratios breached their thresholds: (i) the present value of external debt-to-exports reached 254% vs. a prudent threshold of 180% and (ii) debt service-to-exports hit 25% against a threshold of 15%. Ethiopia is rated as a high risk of public debt distress due to increased borrowing for public infrastructure investments amid weak export performance. Ethiopia is taking measures to contain the debt burden, including improving macroeconomic governance, fiscal consolidation, a moratorium on non-concessional external borrowing and restructuring of external debt. Ethiopia also applied for the G20 Common Framework debt restructuring in 2021 and discussions have continued,

albeit with few signs of progress. Ethiopia's application for the G20 Common Framework debt restructuring in 2021 saw Fitch and S&P downgrade its sovereign ratings from B to CCC.

Table 1: Key Macroeconomic Indicators

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23 (p)	2023/24 (p)
Real GDP Growth	6.8	8.4	6.1	5.6	5.3	5.8	6.2
Real GDP Growth per Capita	4.1	5.7	3.4	3.0	2.7	3.3	3.6
CPI Inflation	13.8	15.7	20.4	26.6	34.0	28.1	20.1
Fiscal Balance (% GDP)	-3.0	-2.5	-2.8	-2.8	-4.2	-3.1	-2.5
Current Account Balance (% GDP)	-6.5	-5.3	-4.4	-3.2	-4.0	-3.7	-3.6

Source: Data from Domestic authorities; estimates (e) and prediction (p) based on authors' calculations. AfDB Statistics Department, April 2023

Ethiopia's economic growth is projected to revive by the recovery in tourism and liberalization of the telecoms, financial, and sugar sectors

Current account balance: The current account deficit deteriorated to 4.0% of GDP in 2021/22 from 3.2% of GDP in 2020/21, due to a 26.6% growth in imports against a 13.5% growth in export revenues. Higher food and fuel prices increased the import bill significantly in 2021/22 (by 26.6%) relative to 2020/21 (growth of 2.9%), mainly due to supply chain disruption caused by the Russian war on Ukraine. Exports growth was driven by higher receipts from coffee (by 57.5%), meat (45.5%), flowers (15.5%), and textiles (19.4%). Net private transfers grew by 18.1%, of which remittances grew by 9.4% to $5.7bn in 2021/22. These inflows financed the current account deficit, partially offsetting the 17% decline in new disbursements of grants and loans.

Financial sector: Ethiopia's financial sector is dominated by the banking industry and is closed to foreign investment. In September 2022, the Government of Ethiopia (GoE) endorsed a policy to open the banking sector to foreign investors and the legal framework is being revised. The banking sector includes 30 commercial banks, two of them state-owned, 43 micro-finance institutions (MFIs) and 18 insurance companies, one state-owned. Together, the commercial banks and MFIs hold close to 99% of total financial assets. The state-owned banks held an estimated 41.5% of total banking capital and 44.4% of deposits in 2021/22. The GoE is establishing the Ethiopian Securities Exchange. Ethiopia's fintech market is just developing and mainly providing digital payment services. The financial sector has been slow to expand owing to liquidity challenges, low competition in the sector that is dominated by two large state-owned banks, and costly licensing requirements. Lack of capital markets and weak foreign investments are key issues in the financial sector. The financial sector is stable, with nonperforming loans at about 3.5% of the total compared to the 5% regulatory requirement.

Poverty and social indicators: Latest data show that national headcount poverty rates declined from 29% in 2011 to 23.5% in 2016 (national surveys); and from 31.1% in 2016 to 27% in 2019 (using the international poverty line of $1.90 per person per day). Inclusive growth is constrained by low productivity and weak value chains, limited diversification, high cost of doing business, and scarce employment opportunities for the youth. The Ten-Year Development Plan 2021-2030 targets poverty reduction to 14.8% by 2026. Urban youth unemployment is estimated at 25.3% (31% among females and 19% among males); 2.5m new jobs are needed annually to absorb new labor force entrants. The number of people requiring humanitarian assistance and social protection increased to 20m in 2022/23, including an estimated 4.6m internally displaced people (IDPs), from 8m in 2019/20.

Box 1: Impacts of Russia's invasion of Ukraine on Ethiopia

Disruptions in the global supply chain and in trade with Russia and Ukraine as well as economic sanctions imposed on Russia adversely impacted Ethiopia's imports of food and other commodities, leading to higher inflation. Ukraine and Russia account for about 30% of the world's wheat supply, and both countries are Ethiopia's key sources of edible oil, cereals, mills, iron and steel and chemical products. In 2021, Ukraine accounted for 12.8% of Ethiopia's imports (mainly food items) from Europe and Russia accounted for 3.8%. Supply chain disruptions and shortages due to the conflict led to higher domestic prices of imported food items, especially wheat and cooking oil.

Prices of edible oil, mainly imported from Ukraine, more than doubled from January to December 2022. While accounting for less than 2% of total exports, exports to Russia have increased since 2008, from about $0.6m to $38.6m in 2021. As of December 2022, gross international reserves were equivalent to only one month of imports, compared to about 2.2 months in December 2021, due to higher import bills and lower exports to Russia. Traders identified new suppliers from South Africa and Argentina, yet costs increased. Increased participation in the AfCFTA and regional economic communities will help to expand trade with other African countries to fill in the gap.

2.2 Outlook and risks

Economic growth: Real GDP growth is projected to revive to 5.8% in 2022/23 and to 6.2% in 2023/24, driven by the industry and services sectors on the supply side and private consumption and investment on the demand side. A rebound in tourism and liberalization of the telecoms and sugar sectors as well as renewed DP inflows, following the peace agreements, are expected to boost the growth outlook. Industrial growth is expected to be driven by the agro-industrial parks; and a return to the African Growth and Opportunity Act could be a plus to Ethiopia's manufactured exports. Services and private consumption will be boosted by a rebound in tourism and reforms to expand private sector activity.

Monetary policy and inflation: The anticipated adoption of tighter monetary policy and open market operations, under the potential new IMF program, will help to mop up excess liquidity and control inflation. Inflation is projected to decline to 28.1% in 2022/23 and to 20.1% in 2023/24, respectively, as food and imported commodity prices stabilize. The severe drought Ethiopia faced in its eastern and southern parts and the supply disruptions due to political tensions across the country could hamper the expected decline in inflation. Prudent monetary policy is expected to be sustained to containing inflation.

Fiscal and current account balances: The fiscal deficit is expected to decline to 3.1% and 2.5% of GDP in 2022/23 and 2023/24, respectively, within the fiscal target of 3.0% of GDP. This is a result of fiscal consolidation with the potential scaling down of security-related expenditures and improvements in tax collections. The fiscal deficit will remain financed by domestic resources, including borrowing from the Central Bank and external grants and loans. The external current account deficit is projected to improve to 3.7% and 3.6% of GDP in 2022/23 and 2023/24, respectively, as merchandise and service exports expand. The current account deficit will be financed by FDI, remittances, grants, and loans[2].

[1] Ethiopia applied for the G20 Common Framework debt restructuring in 2021 and discussion continued but no sign of progress in the G20-led debt-relief initiative. If successful, Ethiopia's debt stress will reduce from high to moderate with the debt relief initiative.

Risks: Key downside risks include debt, climate vulnerabilities, intercommunal conflicts and sustained high global prices (especially oil and food prices) due to supply chain disruptions arising from Russia's invasion of Ukraine and associated sanctions. Structural rigidities could be a headwind. Implementation of the peace agreements signed in November 2022 is expected to consolidate peace and security whereas the recovery in tourism and liberalization of the telecoms, financial, and sugar sectors are expected to boost the growth outlook.

III PRIVATE SECTOR FINANCING FOR CLIMATE AND GREEN GROWTH

3.1 The imperative for green growth and the role of private sector financing

Despite its minimal contribution to the global greenhouse gas (GHG) emissions (only about 0.04%), Ethiopia is vulnerable to climate-change impacts due to its dependence on traditional methods of production and natural resource extraction as well as low adaptive capacity. Since 1960, temperatures in Ethiopia have increased by an average of 0.25oC per decade. Rainfall has been more erratic in recent years, with annual variations around the mean of 25%. Ethiopia's agriculture sector, a key source of employment and livelihoods, is rain-fed, with only 1% of cultivated land under irrigation, which increases vulnerability to climate change. According to the Climate Resilience Index (CRI) estimated by the African Development Bank (AEO, 2022) in 2010-19 , Ethiopia was one of the countries with the least climate resilience globally, with a CRI score of 17.5 out of 100. With estimated climate vulnerability and climate readiness indices of 56.5 and 29.6, respectively, out of 100, Ethiopia is classified in the High Vulnerability - Low Readiness category. According to the AEO 2022, the estimated annual loss in GDP per capita growth for Ethiopia is -11.4% in 1986–2015, and is projected to increase. Therefore, the case for mobilizing adequate resources to build climate resilience cannot be overemphasized.

Ethiopia has undertaken several strategic and programmatic adaptation and mitigation actions. The strategies and plans enabling implementations of climate actions include: the CRGE strategy, the National Adaptation Program of Action (NAPA) of 2007; the Ethiopian Program of Adaptation to Climate Change (EPACC, 2011); nine national regional states and two city administration adaptation plans; five sectoral adaptation plans; the Climate Resilience Strategy in Agriculture and Forestry, in Water and Energy and in Transport; the National Adaptation Plan (2017); the Guideline for Integrating the CRGE into Sector Development Plans, and the CRGE Sectors Roadmap for Implementation of Green Economy Mitigation Actions. Ethiopia is committed to reducing GHGs and building resilience through (i) afforestation and land rehabilitation interventions; (ii) generation and distribution of electricity from clean renewable sources; and (iii) investment in improved transportation systems (e.g., railways) that utilize clean and renewable energy. The Ten-Year Development Plan 2021-2030 (TYDP 2021-2030) further underscores Ethiopia's sustainable and green economy development strategy, with Resilient Green Economy as one of its strategic pillars. **In May 2023, Ethiopia launched its Long-Term Low Emission and Climate Resilient Development Strategy (LT-LEDS),** supported by the Global Green Growth Initiative (GGGI)[3].

[3] LT-LEDS is part of global commitment for decarbonization and climate resilient development. It is aligned with TYDP 2021-2030.

In 2019, the GoE launched the National Adaptation Plan (NAP-ETH) that focuses on the most vulnerable sectors to climate change (agriculture, forestry, health, transport, power, industry, water, and urban development). The plan identifies 18 adaptation options for implementation across the sectors, recognizing the considerable diversity in context and vulnerability across Ethiopia's regions and social groups. The NAP-ETH is expected to cost $5bn per year and $90bn until 2030[4], in addition to $150bn required for the green economy initiatives[5]. The largest share of the total capital investment of $80bn is required to develop power generation and transmission infrastructure (48%), followed by the transport sector (29%), financing agricultural sector transformation (2% for soil and 3% for livestock) and the forestry sector (12%, including agricultural intensification and irrigation initiatives that abate GHG emission in the forestry sector). Upgrading technology in the cement sector will require investments of nearly $5bn over 2030 (6% of the total estimated green economy capital investment of $150bn)[6].

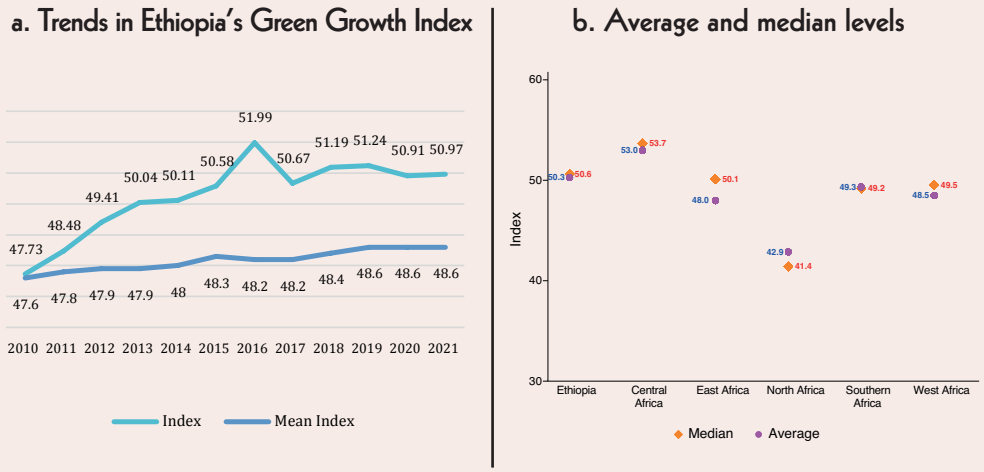
Ethiopia's Nationally Determined Contributions (NDC) update of 2021 targets GHG emissions of below 145MtCO^{2}e by 2030, equivalent to a 68% reduction under the combined conditional and unconditional contributions compared to the business-as-usual (BaU) scenario. The unconditional pathway would result in GHG emissions of 347.3MtCO2e by 2030, a 14% reduction relative to the BaU scenario. The financing requirements to meet these targets during 2021-2030 are estimated at $316bn ($275.5bn for mitigation and $40.5bn for adaptation). Of the $316bn, $63.2bn is expected to be mobilized from domestic sources and the rest from international sources. Including 'other needs' and 'loss and damage needs', Ethiopia's financing requirements amount to $345.7bn[7]. If Ethiopia's receipts of climate finance are sustained at the 2016-2020 mean level of $1.45bn p.a., the financing gap for 2020-2030 would average $33.09bn p.a., limiting its ability to build climate resilience.

The sustained high economic growth registered over the past decades, driven mainly by the public investments financed through borrowing causing **macroeconomic imbalances (inflationary pressures, rising public debt and low productivity)** has reached its limits. This calls for a new growth financing approach to reduce reliance on public spending and borrowing towards private sector-led approach and promotion of green growth.

Ethiopia's Green Growth Index (GGI) has showed a positive momentum, albeit stagnating since 2016. Ethiopia's GGI has been increasing over the past 10 years, from 47.7 in 2010 to 52.0 in 2016, albeit stagnating since at around 51 in 2021 (see Figure 1a), owing to a cooling down of the economy. Ethiopia is one of the performing countries on green growth between 2018 and 2021. The mean and median GGIs for Ethiopia are 50.6 and 50.3, respectively (Figure 1b).

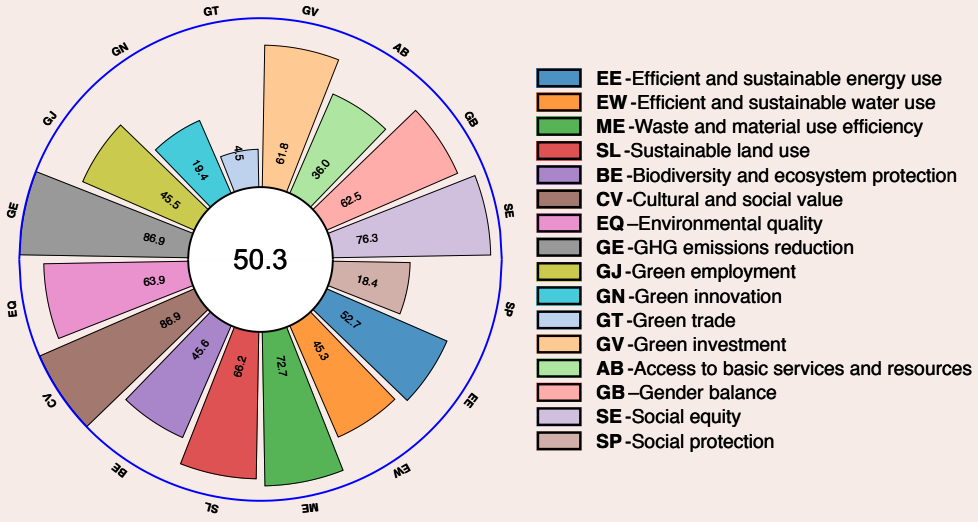
[4] FDRE (2019): Ethiopia's Climate Resilient Green Economy (CRGE) National Adaptation Plan. pp 25-29
[5] These funds are expected to be raised from domestic (public and private) and international sources.
[6] FDRE (2020): Processes and Approaches Utilized for the Determination of Needs of Ethiopia, p5.
[7] FDRE (2021): Updated Nationally Determined Contributions.

Figure 1: Ethiopia - Green Growth Index



Ethiopia's GGI is mainly driven by high performance on Greenhouse Gas emission reduction (86.9), culture and social value (86.9), social equity (76.3), waste and material use efficiency (72.7), sustainable land use (66.2), environmental quality (63.9), gender balance (62.5) and green investment (61.8) (Figure 2). Ethiopia however underperforms in relation to green trade (4.5), social protection (18.4) and green innovation (19.4).

Figure 2: Sources of GGI



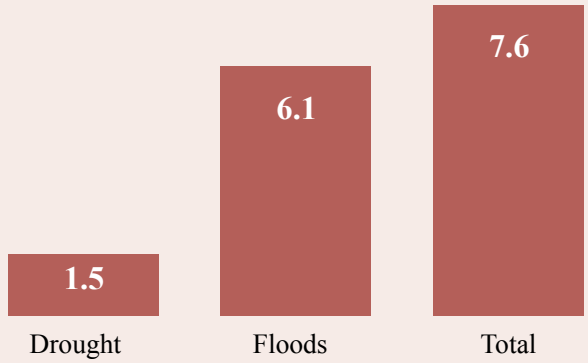
During 2011-2020, the GoE invested about $22.1bn in climate change mitigation and adaptation projects[8]. However, lack of public budget tracking or coding system that identified spending linked to climate change mitigation and adaptation, made it difficult to determine the overall climate change-linked expenditures and to unpack the activities funded. An easy-to-use

[8] The resources were mobilized from domestic, bilateral, and multilateral sources including international climate finance institutions, and were invested in agriculture, energy, infrastructure, water, and sanitation.

climate finance tracking and information system that adopts global climate finance classifications is needed to record climate change linked expenditure by the public sector and DPs.

National frameworks recognize the private sector can play a role in catalyzing other sources of private sector finance, as well as in directing finance towards sectors and areas that are currently underfunded. All policies and strategies on green growth and climate action recognize the role of the private sector in mobilizing resources for the collective goals. For instance, the NAP-ETH notes that implementing the different projects requires affordable capital from both the public and private sectors, and the updated NDC notes that financing from the international public and private sectors is needed. Upfront private investment opportunities to adapt to droughts and floods in Ethiopia between 2021 and 2040 require more than 7.6% of GDP (Figure 3).

Figure 3: Upfront private investment opportunities to drought and floods - 2021 and 2040 (% of GDP)



Source: Bari and Dessus (2022)

3.2 Private sector finance flows, gaps, and needs for green growth in Ethiopia

3.2.1 Current flows of finance

During 2010-2020, Ethiopia received nearly $10bn of climate finance mobilized by developed countries, averaging $904m per year, peaking at $1.9bn in 2019. Climate finance inflows to Ethiopia increased annually by 18.1% on average. During 2010-2015, Ethiopia received $2.7bn of climate finance ($450m annually), compared to about $7.24bn for the period 2016-2020 (or $1.45bn per year). International public climate finance in Ethiopia was primarily committed by multilateral development finance institutions (49.5%, $770m) and by bilateral partners (33%, $511m), the majority of which was channeled as grants (70%). Other key sources were bilateral DFIs (9%, $140m), multilateral climate funds (6.7%, $103m) and export credit agencies (1.8%, $32m). Some 60% of the international public climate finance was used for adaptation projects, 34% went towards mitigation, while the remaining 7% climate financing had dual benefits[9].

[9] Climate Policy Initiative (November 2022). Landscape of Climate Finance in Ethiopia, pp8 -13.

However, the private sector (both domestic and international private investors) plays a minor role in climate finance in Ethiopia, accounting only for 8% of total flows in 2019/20 (Table 2), due to limited awareness and high risks associated with investing in Africa. About 92% of the tracked climate finance in Ethiopia came from public sources. About 33% of private climate finance came from domestic private financiers and 67% from international private sources (Table 2). Commercial financial institutions provide a significant share of private climate finance ($97m) followed by institutional investors, mainly philanthropies ($26m) and corporates ($13m). At least 67% of the tracked private financing was from international sources. Overall, market-rate and balance sheet debt financing were the prominent instruments used by commercial banks at 48% and 23%, respectively, followed by grants from international philanthropies (19%), and corporate financing through balance sheet equity (9.5%). Consistent with global trends, private financiers mostly funded projects in energy systems (83.5%) and agriculture, forestry and other land use (AFOLU) (14.5%) (Table 2).

Table 2: Climate Finance Landscape in Ethiopia

TOTAL CLIMATE FINANCE: $1,691m		
SECTOR	**$m**	**%**
Agriculture, Forestry, Other land uses and Fisheries	486	29%
Buildings and Infrastructure	58	3%
Energy systems	180	11%
Others and Cross-sectoral	585	35%
Transport	105	6%
Water, Wastewater and Waste	276	16%
USE		
Adaptation	945	56%
Mitigation	640	38%
Multiple objectives	106	6%
INSTITUTION TYPE		
Private	**136**	**8%**
Commercial FI	97	6%
Corporation	13	1%
Institutional investors	26	2%
Public	**1,556**	**92%**
Bilateral DFI	139	8%
Export Credit Agency ECA	32	2%
Government	511	30%
Multilateral Climate Funds	103	6%
Multilateral DFI	769	45%

Source: Climate Policy Initiative: The Landscape of Climate Finance in Africa – Last updated on 14/09/2022

Given the limited fiscal space, with the government budget further constrained by the COVID-19 pandemic and Russia's invasion of Ukraine, the private sector must play a more prominent role in closing the climate finance gap in Ethiopia. This will require a shift in existing and planned investments from dirty technologies toward climate action, as well as mobilizing large capital pools such as pension funds and sovereign wealth funds. Huge opportunities also lie in harnessing Ethiopia's great and increasing capacity for innovation, where entrepreneurs in the green economy are developing climate solutions in the form of new business models and financial products.

Barriers related to financial market depth, governance, project-specific characteristics, skills and infrastructure have stifled private investment in climate solutions. For instance, projects in the energy, transport, and building sectors are characterized by high upfront costs and lengthy preparation and construction processes, which make early-stage investment especially risky for the private sector. Barriers in the AFOLU sector limit the commercial viability of private sector projects, calling for concessional financing. Currency risk is an issue (as witnessed in closing financial deals in energy public-private partnership projects (PPP), that requires further consideration to mobilize local currency investments.

Harnessing climate investment opportunities in Ethiopia requires innovative financing structures and strategic deployment of public capital to 'crowd-in' private investment. Innovative climate finance structures are needed to improve capital efficiency and overcome the barriers to finance, which have stifled climate investment, e.g., traditional financial instruments, such as concessional debt and grants, could be reviewed to target barriers to financing climate action. Other solutions such as structured finance and capital market instruments (debentures, shares, bonds, debt instruments) could be explored.

Given their specific characteristics, financial instruments and mechanisms should be deployed depending on the unique geographic and sectoral context of an investment opportunity. Some financial instruments can only be deployed narrowly to address acute barriers to finance, such as the use of guarantees to overcome early-stage construction risk associated with climate infrastructure. Other financial instruments offer broad solutions to chronic barriers to finance. For example, carbon finance presents an opportunity to finance projects with high climate impact but persistent revenue risk, such as clean cook stove distribution, land restoration and averted deforestation, or methane abatement.

3.2.2 Private sector financing needs for the future

During 2011-2019, the GoE invested over $22.1bn (or $3.2bn per year), mobilized from domestic, bilateral, and multilateral sources including international climate finance institutions. Programs in agriculture, energy, transport, industry, forest, urban development, and health sectors were financed. Out of this, climate change adaptation, mitigation, and cross-cutting activities accounted for, respectively, $6.4 bn, $8.1bn, $7.6bn. It is important to note that government contributions (both recurrent and capital budget allocations to different sectors) are not fully captured in these estimates, and community in-kind contributions, especially natural resources management and landscape restoration, are also not included.

Table 3: Estimated financing gap for the NDC adaptation sectors in $m

NDC Adaptation sector	Budget	Financing gap
Agriculture and forest: Microlevel household level and biodiversity response	7,600.00	7,600.00
Urban development: urban planning and risk management, local community development and infrastructure	8,266.20	4,038.30
Water, Irrigation and Energy: power generation, access to energy and potable water, irrigation schemes	24,386.00	11,913.34
Health: reduced tropical diseases, improved household sanitation and safe water supply and improved health facilities	234.40	114.50
Total	**40,486.60**	**19,779.00**

Source: Ethiopia - Environment, Forest, and Climate Change Commission (EFCCC) (2021)

Table 4: Estimated financing gap for the NDC mitigation sectors in $m

NDC Mitigation sector	Budget	Financing gap
Agriculture: improved value chain, mechanization, diversification of livestock mixes, pasture management and irrigation scheme	95,873.88	50,484.48
Forestry: reduced, deforestation, afforestation, and sustainable forest management	765.69	403.19
Mines: biodiesel and ethanol in fuel mix, plantation, and LPG promotion	45.69	24.06
Urban development: landfill gas management, reuse, reduced and recycling and integrated infrastructure planning and energy efficient building	629.57	331.51
Transport: improved public transit in Addis Ababa light rail transit, improved public transport infrastructure, promotion of hybrid and electric vehicles and improved emission standards	16,000.00	8,425.15
Water and energy: renewable energy, climate resilience water land management, energy efficient appliance and irrigation light,	80,353.25	42,311.76
Industries: clinker substitution, waste heat recovery, energy efficiency, fuel switch, alternative production processes and improved industrial waste management system	81,785.32	43,065.85
Total	**275,453.40**	**145,046.00**

Source: EFCCC (2021)

In 2019/20, $1.7bn was committed towards climate change related activities, representing 7% of Ethiopia's estimated climate finance needs ($25.3bn) and less than 2% of GDP. Ethiopia attracted more climate finance for adaptation (56%) than mitigation (38%) projects, in contrast with the global averages of 7% and 90%, respectively. These trends partly reflect Ethiopia's reliance on grant and concessional financing for mitigation projects. This raises a concern for long-term sustainable flow of investments and is not in line with trends observed for Africa where loans were the preferred instruments for climate finance. However, there is limited information on domestic climate budget expenditure in Ethiopia, with no official record to track financing from international NGOs, philanthropies, multilateral or bilateral DPs and the private sector. Ongoing reforms to improve the efficiency of public services and expand the role of the private sector in the economy present opportunities for private climate finance.

International support is required to translate Ethiopia's NDC into an investment plan, quantify the needs and build its national, and institutional capacities to access funding. Capacity strengthening for preparation of bankable projects and negotiations is needed to access climate finance from international sources. On the other hand, cumbersome climate finance accessing processes and procedures of bilateral and multilateral funds need to be simplified. Unlocking private finance is essential, as the private sector can be instrumental in implementing the NDC/CRGE to the level and quality needed.

As mentioned earlier, meeting adaptation and mitigation costs, outlined in Ethiopia's updated NDC, will require $316bn between 2020 and

2030, of which $274.9bn is for mitigation and the remaining $41.1bn is for adaption[10]. Of these needs, $63.2bn is expected to be mobilized from domestic sources and the rest from international sources. Including 'other needs' and 'loss and damage needs', Ethiopia's financing requirements amount to $345.7bn, equivalent to $34.6bn annually[11].

Given recent trends in global private climate finance flows to Ethiopia, the private sector is likely to contribute to 25%-75% of the climate financing needs of the country. For a 25% contribution to climate financing needs, which represents a conservative scenario, the private sector would need to increase its finance contribution by $43bn annually. For a 50% contribution to climate finance by the private sector, which is a moderate scenario, private sector financing would need to grow by $53bn annually, a 75% contribution to the climate financing gap, which is an ambitious scenario would see private sector finance grow by $63bn annually.

Ethiopia targets GHG emissions of below 145MtCO2e by 2030, costing about $316bn, and the financing gap would average $33.09bn per annum

3.2.3 Emerging innovative private sector financing mechanisms for green growth

Ethiopia has a huge potential to build a low-carbon development pathway considering its vast forestry resources and immense potential for renewable energy generation through solar, hydro, wind, and geothermal energy. Climate investment needs and flows in Ethiopia are minimal when compared to the costs of inaction as well as the potential socio-economic and development benefits that climate change investments can yield. The NAP-ETH implementation plan notes that a funding gap analysis, identifying new and innovative funding resources, and engaging with the private sector, are key strategic priorities for implementing effective and sustainable funding mechanisms.

Clean Development Mechanism (CDM) projects have mobilized the private sector in Ethiopia by promoting sustainable energy access through projects such as Ethiopia Off-Grid Renewable Energy Program (EOG-PoA), as well as the Clean Cooking Energy Program managed by the Development Bank of Ethiopia. Scaling up such types of programs is an opportunity to leverage private sector financing for climate and green growth.

Carbon markets in Ethiopia are at a nascent stage but hold tremendous potential for growth. Ethiopia can leverage carbon markets for its mitigation and adaption priorities while achieving its development goals. For instance, UNDP established a voluntary carbon market mechanism for Ethiopia to support urban afforestation activities under its Nationally Appropriate Mitigation Actions (NAMA) initiative. The International Climate Initiative (IKI) of the German Federal Ministry for the Environment is also supporting the Climate Finance Innovators Project, which aims to develop replicable climate financing models such as the clean development mechanism (CDM) and NAMA in Ethiopia. These projects constitute strong cases to build comprehensive capacity among carbon market stakeholders and establish innovative linkages between UNFCCC market mechanisms and climate funds such as the GCF.

[10] Translating into annual financing gaps for the NDC adaptation and mitigation of $20m (Table 3) and $145m (Table 4), resp. UN Department of Economic and Social Affairs (2021). Ethiopia – Capacity Building on Climate Change Financing, pp 31.
[11] About 71% of this will be allocated to adaptation and resilience goals, with the GoE to finance 21% through domestic sources. $40bn will need to come from international public and private sources.

Table 5: Innovative instruments used to mobilize private sector finance in Ethiopia

Type of instruments/ situations	Green and sustainable finance	Blended financing instruments e.g., guarantees, first loss	Private equity and venture capital	Carbon markets
Current performance	Still very limited use, but there are plans under way to expand the use of different sustainable finance mechanisms			• The opportunity to deliver climate finance through carbon markets remains underrealized. • Ethiopia is one of the five countries accounting for ~65% of credits issued over the past 5 years. • Project developers are few, generally small scale and show limited diversification[12].
Contextual challenges to scaling up in Ethiopia	• Market conditions • Insufficient governance • Smaller ticket size project opportunities • Limited technical capacity.	• Absence of supporting frame-works on use of blended finance across sectors such as AFOLU • Limited technical capacity for blending of finance.	• Shallow domestic financial markets that limit sources of invest-ments to only inter-national investors.	• Shallow domestic financial markets that limit sources of investments to only international investors.
Key factors enabling successful use of instrument	• High volume of national wealth held by pension schemes could be used to mobilise sustainable finance in domestic currency • Presence of legislation and policy reforms that support further expansion of sustainable finance.	• A government commitment to financing climate action using public sector domestic finance. • Presence of strong public finance management systems e.g., that track public finance allocation and spending.	• Presence of regulatory frame works that encourage innovation • Presence of a deep consumer market for products	• Increased carbon pricing globally, which provides a positive market signal for current investments in carbon reduction. • The high potential for emission reductions and emission removals in Ethiopia • Strong experience in Africa in the development of carbon projects, mainly developed from the execution of Kyoto Protocol CDM projects.

[12] Africa Carbon Markets Initiative: Roadmap Report – Harnessing Carbon Markets for Africa, p18.

The Land Use Change and Forestry (LUCF) sector has the highest mitigation and private investment potential, which remains largely untapped. LUCF received only 6% of the tracked AFOLU climate financing and 1.7% of the total ($29m), despite the GoE's ambitious forest reforestation targets of up to 15m hectares in the long term. The aim is to turn the sector into a carbon sink through initiatives such as the Forest Sector Development Plan, the Green Legacy Initiative, and clean cooking and REDD+[13] strategies. A recent study suggests that $638m of private investments in tree plantations in Ethiopia could deliver $1.91bn in return, or $3 for every $1 invested[14].

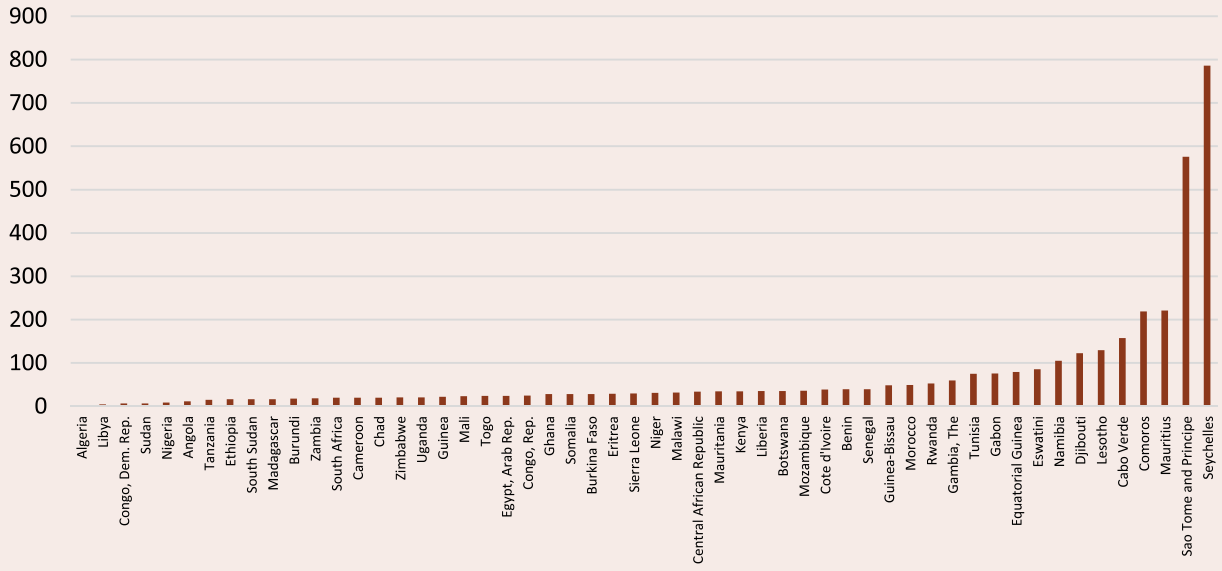
3.3 Opportunities for leveraging private sector financing for green growth

3.3.1 Opportunities for private sector investments

Based on background analysis for the AEO 2023 report, Ethiopia is one of the eight African countries with the least in terms of public sector climate finance investments (proxied by public finance investment per capita) and the least in private sector investment. Ethiopia mobilizes significantly less private sector finance than other countries with the same level of public sector finance allocation (Figure 4), next only to Algeria, Angola, DRC, Libya, Sudan, Nigeria, and Tanzania. This means that Ethiopia cannot effectively use public finance to rally private sector investments for green growth.

Opportunities for private sector investments in green growth and climate action in Ethiopia cut across the economy. The Homegrown Economic Reforms (HGERs) and the TYDP 2021-2030 provide the foundation for expanding the economy, offering climate investments opportunities for the private sector. Given Ethiopia's ambition to become a middle-income country by 2030, high emission intensity sectors in manufacturing, industries, and infrastructure are expected to grow rapidly. The HGER aims to steer private investments in human and economic development in priority sectors by enhancing financial sector development and developing capital markets as one of the objectives.

Figure 4: Public climate finance per capita ($)



[13] Reducing Emissions from Deforestation and Forest Degradation.
[14] Climate Policy Initiative (November 2022). Landscape of Climate Finance in Ethiopia. p15.

With a dynamic entrepreneurial environment and climate finance needs many times higher than the amounts currently invested, **Ethiopia presents a massive investment opportunity for investors to advance the deployment of climate solutions in the coming decade**. To capitalize on this opportunity and bridge the Ethiopian climate finance gap, climate finance innovation must focus on deepening financial markets, both conventional (i.e., debt and equity markets) and non-conventional (i.e., carbon markets), through direct investment and capacity building activities. **Accelerating progress in a fragmented climate finance ecosystem will require improved coordination, knowledge sharing, and a combined engagement from development and public finance providers, private investors, and local policymakers.**

3.3.2 Barriers to private sector investments

(a) Limited access to domestic and international finance. The IMF-World Bank debt sustainability analyses (DSA) flagged a rising risk of debt distress in Ethiopia since 2015, with an assessment of a high risk of debt distress in 2017. In 2019, the GoE issued a moratorium on non-concessional external borrowing and embarked on fiscal consolidation to contain the mounting public debt. The COVID-19 pandemic and conflict in the Tigray region (November 2020-November 2022) exacerbated the fiscal challenges due to the need for higher public spending, in the midst of lower domestic revenue mobilisation as well as lower FDI, remittances, and official development aid inflows. Limited access to domestic (due to policy constraints) and international finance constrains Ethiopia's capacity to apply blend instruments for financing green growth and climate action and investments in infrastructure to leverage private sector financing.

(b) Limited skills to meet green growth and climate action needs. Institutional structures have mostly been established to facilitate coordination between ministries and, to a lesser extent, between other levels of government. However, these are limited by insufficient staffing and resources, and repeated restructuring of the lead climate institution. Ethiopia makes use of both domestic and international knowledge. Transitions to green growth and the implementation of climate change adaptation and mitigation requires green skills and capacities within key sectors. A readiness assessment by GGGI and AfDB found that Ethiopia lacked sufficient skills and capacities to realise its green growth and climate action plans. Skills gaps also leave countries dependent on external providers, limiting a sustained flow of financing once external skills exit. Ethiopia needs to focus on deepening and expanding its skills and promoting innovation across sectors to attract private sector investors.

(c) Insufficient integration and coordination amongst sectors and tiers of government. Despite efforts to move from project-focused to programmatic and integrated climate change adaptation approaches, challenges remain. These include limited institutional structures to initiate functional, cross-sectoral, and iterative to the NAP-ETH process. Systematic integration of climate change adaptation into existing policies and strategies as well as financing at both national and sub-national levels and a shift from project-based to integrated approaches to adaptation are needed. Coordination between national and sub-national governments is also limited[15]. Limited vertical coordination means that sub-national government efforts on green growth and climate action are not identified and funded through existing private sector finance mechanisms.

3.3.3 Pathways to mobilizing private sector finance for green growth

(a) Deepen domestic financial markets to mobilize finance for green growth. Domestic

[15] Climate Action Tracker (2020) – Ethiopia - Climate Governance.

financial markets have a high potential to mobilize private sector finance in Africa. Mobilization of private sector finance through domestic financial markets reduces currency risk, one of the key constraints for private actors in Ethiopia. A vibrant financial sector can be leveraged to direct untapped domestic and external resources to investments in green growth sectors. In 2021, Parliament passed the Capital Markets Proclamation to facilitate the development of capital markets and the Ethiopian Stock Exchange; the fintech market is emerging and mainly providing digital payment services. These will help to increase competition and innovation in the financial sector and scope to mobilize domestic finance for green growth. DP support for ongoing financial sector reforms to reduce government controls and dominance of state-owned banks is needed. This will help to address the liquidity challenges, level the playing field, attract foreign investment and increase competition.

(b) Enhance engagement with sustainable and green finance institutions. Ethiopia needs to continue harnessing the mechanisms of the Paris Agreement to mobilize resources and fill the climate financing gaps. The GoE needs to prioritize developing bankable climate finance proposals, and generating and updating climate related data. Ethiopia should harness seriously the opportunities in the Compliance Carbon Market, Loss and Damage Fund, Convention on Biological Diversity, Carbon Border Adjustment Mechanism (investment in green hydrogen) and Adaptation Benefit Mechanism by complying with their policies and procedures and for that it should strengthen its capacity in understanding the policies and procedures of global sustainable and green facilities and institutions.

(c) Facilitate the use of blended finance instruments for financing green growth. Although not fully developed, Ethiopia's CRGE facility aims to channel public and private sector investments into green growth. Mobilizing private sector finance through blended finance instruments requires regulatory frameworks technical assistance for the structuring of blended finance projects. The level of risk encountered by private sector investors will determine the extent to which public finance is used to de-risk investments. Ethiopia could develop sector-specific frameworks to guide the development of blended finance instruments, while also maintaining flexibility to allow cross-sectoral blending of finance. Bilateral and multilateral development banks can facilitate blended finance instruments.

(d) Enhance skills and capacity. Ethiopia has limited skills and capacities to realize its green growth and climate action plans. Existing skills are mostly limited to renewable energy where most of private sector financing is directed. Ethiopia needs to deepen and expand skills and capacities across sectors to promote innovation and attract private sector investors. Addressing the skills and capacity gap needs integration of innovation that contributes to green growth and climate action into institutions of higher learning. Curriculum reviews of tertiary and technical and vocational training colleges to integrate green growth and climate action will help to strengthen skills.

(e) Incentivize private sector investments through fiscal policies. Fiscal incentives such as tax credits, sound macroeconomic management, domestic climate, and corporate social responsibility facilities to address barriers to finance and direct private sector investments to CRGE sectors should be applied. Traditional financial instruments, such as concessional debt and grants as well as project preparation facilities could be deployed to target specific barriers such high upfront costs, lack of bankable projects, commercial viability, lengthy preparation process and construction periods, and currency risks.

(f) Maximize the role of DFIs and MDBs in unlocking private sector financing. Development Finance Institutions (DFIs) and Multilateral Development Banks (MDBs) in Ethiopia, including the AfDB, have an important role in unlocking private sector finance for climate transitions and green growth. Concessional and

non-concessional finance for greenfield low-emission, resilient infrastructure projects provide a proof-of-concept for specific technologies and investments, and business models, in new markets and also have the potential to be refinanced later in the project cycle by commercial investors. DFIs and MDBs can, for example, attract commercial investment by improving risk-adjusted returns from renewable energy and sustainable transport projects through risk mitigation tools and approaches. They can supplement blended finance structures with a combination of structured finance strategies (e.g., aggregation) and risk mitigation instruments (e.g., guarantees and insurance products) to sufficiently alleviate risk throughout the duration of a project's operating life[16].

Stronger coordination between the GoE and development partners is needed to develop a climate-related expenditure tagging and tracking system (like the Climate Responsive Public Financial Management Framework and Climate Budget System) to monitor climate-related resources. This will help to improve accountability and decision making. Building a project pipeline for PPPs in energy and urban sectors and developing blended financing instruments for risk-sharing could be a key role for DFIs and MBDs in Ethiopia in unlocking private sector financing towards climate transition and green growth. DFIs and MDBs in Ethiopia can empower public and private financial actors expanding climate risk information as well as financial analysis and proposal preparation. This will enable Ethiopia to build a holistic and long-term strategy for climate finance mobilization, expand access to international climate financing, mobilize private investment, and mainstream climate considerations in their portfolios[17].

(g) Strengthen stakeholder collaboration. Ethiopia actively engages stakeholders on green growth and climate change issues, including in the design of the CRGE strategy and the TYDP 2021-2030[18]. The GoE is also designing measures to enhance education and outreach. In 2017, the GoE launched a national climate change education strategy supported by the UNDP and the UN Institute for Training and Research[19]. In 2020, the Ministry of Education and the Environment, Forest, and Climate Change Commission published an annotated guide to integrate climate change into the national curriculum and implement the climate change education strategy. Recent media reforms support the consideration of climate education and attention to climate change. While the GoE is making efforts to engage stakeholders, climate change still ranks very low on the development priorities of many stakeholders[20].

[16] They also act as intermediaries in blending finance from DPs and investors to scale up commercial investment. Blending public and private sector finance is useful to de-risk private sector investments through, for example, first-loss investments or performance guarantees.
[17] Building on their catalytic role, public investors (including DFIs and MDBs) should deploy resources in a targeted way to address barriers to private investment. Public and private investors could tailor their financial instruments depending on the nature of the barriers identified. Climate finance investments are typically long-term endeavors, with differing considerations across project and technology lifecycles. Public and private investors could explore different financial instruments in response to these lifecycle-dependent considerations. As projects and technologies mature, the use of grants and concessional finance by public investors could be gradually phased out, leaving space for the private sector. Bottom-up needs assessments and fiscal and regulatory incentives for domestic and foreign investors are needed to promote invest in sustainable and climate-friendly businesses, and to create a resilient and green economy in the long term.
[18] The Ministry of Planning and Development held public discussions for the plan on climate change, with expert presentations on climate-resilient growth and civil society organization input on climate-related issues.
[19] The program aims to increase environmental awareness through building national and sub-national frameworks that foster climate change learning, integrate climate change into the formal education system and extra-curricular climate change education activities.
[20] Ethiopia has not signed the Silesia Declaration at the Katowice Summit, which pledges support the social aspects of the transition to a low-carbon economy. Evidence to assess the influence of non-state actors on Ethiopia's transition-related policies is limited. The GoE needs to work more with private sector and civil society organizations (CSOs) on climate action.

IV NATURAL CAPITAL FOR CLIMATE FINANCE AND GREEN GROWTH

4.1 Evolution of natural capital

Natural capital is tracked in three groups: (a) renewable capital, consisting of forest timber, forest non-timber, mangroves, fisheries, protected areas, cropland, and pastureland; (b) non-renewable assets, separated into oil, natural gas, coal, and minerals. In addition, non-measured forms of natural wealth, such as renewable energy potential from solar, wind and hydro-resources, landscapes, and marine assets are also reviewed but qualitatively. The data for (a) and (b) are from the World Bank, covering the period 1995-2018. Table 5 presents the summary for sub-Saharan Africa (SSA) and Ethiopia for the two end points – 1995 and 2018. The key findings for Ethiopia are summarized below.

- Ethiopia's total wealth increased by 432% during 1995-2018, over four times that of SSA (118.1%) during the same period. In terms of wealth per capita, Ethiopia's wealth grew by 178% during 1995-2018, compared to 18.5% for SSA.
- The rate of increase of Ethiopia's natural capital during 1995-2018 is by far less (about 101%) compared to the increase in total wealth, although far better than SSA (only 18.1%). In terms of wealth per capita, Ethiopia's natural capital grew by 4.95% during 1995-2018, much better than SSA, which declined by 35.8%
- The total value of renewable assets increased by 100% over the period 1995-2018, but only by 4.6% in terms of per capita growth.
- Ethiopia has abundant natural wealth including a youthful labor force, land, ecotourism, hydropower, sunshine, wind, and biodiversity. Natural capital that used to account for about 36% of Ethiopia's total wealth in 1995 reduced to only 19.5% in 2018 due to the higher growth pace of produced capital. Natural resource rents amount to about 5% of GDP.

Ethiopia launched its Natural Capital Accounting Initiative in September 2022 to build a robust information system for natural capital to underpin national priorities and strategies. Ethiopia has one of the largest arable landmasses, is traversed by the second largest and longest rivers in the world (Nile River) and is also one of the world's richest regions for cheap renewable energy potential, particularly hydropower. With its 18 major agro-ecological zones and various agro-ecological sub-zones, Ethiopia can grow over 146 types of crops. Agriculture accounts for 79% of exports, with coffee, oil seeds, vegetables, and flowers accounting for 64.6% of merchandise exports.

Table 6: Evolution of Natural Capital in Sub-Saharan Africa: 1995-2018

	Total in millions, constant 2018 $			Per Capita, constant 2018 $		
	1995	2018	% change (1995-2018)	1995	2018	% change (1995-2018)
Sub-Saharan Africa						
Total wealth	9,126,768	19,904,322	118.1%	17,273	20,473	18.5%
Produced capital	2,132,222	4,490,723	110.6%	4,035	4,619	14.5%
Human capital	4,158,247	11,936,632	187.1%	7,870	4,619	56.0%
Natural capital	3,283,876	3,879,247	18.1%	6,215	3,990	-35.8%
Renewable natural resources	2,669,748	2,825,724	5.8%	5,053	2,906	-42.5%
Forests, timber	581,892	719,515	23.7%	1,101	740	-32.8%
Forests, non-timber	338,453	356,695	5.4%	641	367	-42.7%
Mangroves	338,453	7,631	105.2%	7	8	11.5%
Fisheries	31,985	14,642	-54.2%	61	15	-75.1%
Protected areas	164,362	282,394	71.8%	311	290	-6.6%
Cropland	1,214,774	992,769	-18.3%	2,299	1,021	-55.6%
Pastureland	334,564	452,079	35.1%	633	465	-26.6%
Sub-soil assets	334,564	1,053,522	71.5%	1,162	1,184	-6.8%
Oil	424,722	626,495	47.5%	804	644	-19.8%
Natural gas	3,122	118,367	3 691.7%	6	122	1 960.7%
Coal	82,957	150,748	81.7%	157	155	-1.2%
Metals and minerals	103,328	157,913	52.8%	196	162	-16.9%
Net foreign assets	103,328	-402,280	-10.1%	-847	-414	-51.2%
Population, millions	528	972	84.0%			
Ethiopia						
Total wealth	221,374	1,178,487	432%	3,880	10,790	178,1%
Produced capital	17,914	200,154	1 017%	314	1,833	483.6%
Human capital	119,885	813,780	579%	2,101	7,451	354.5%
Natural capital	97,934	196,795	101%	1,717	1,802	5.0%
Renewable natural resources	97,776	195,853	100%	1,714	1,793	4.6%
Forests, timber	10,720	16,174	51%	188	148	-21.2%
Forests, non-timber	13,336	14,744	11%	234	135	-42.3%
Protected areas	17,351	41,804	141%	304	383	25.8%
Cropland	36,786	77,876	112%	645	713	10.6%
Pastureland	19,583	45,255	131%	343	414	20.7%
Sub-soil assets	158	942	494%	3	9	210.5%
Metals and minerals	158	942	494%	3	9	210.5%
Net foreign assets	-14,359	-32,242	-125%	-252	-295	-17,3%
Population (millions)	57	109	91%			

Source: World Bank 2021

Nearly half of the potentially cultivable land is still available for use[21]. In addition, Ethiopia is among Africa's richest countries in number of livestock (cattle – estimated at 65m, goats – 51m, sheep – 40m, and camels – 8m)[22]. Improved management of grazing lands and breeding are critical to realizing Ethiopia's livestock potential. Fishing takes place on rivers and inland lakes, mostly by small operators. The limited scale of operation and technology used do not support exports. The forestry sector has the highest mitigation and private investment potential, which remains largely untapped. The ongoing reforestation efforts and Green Legacy Initiative targeting up to 15m hectares aim to turn the sector into a carbon sink.

Ethiopia is endowed with vast energy resources that include biomass, water, fossil fuels (especially natural gas), geothermal and solar energy. Ethiopia's largest renewable energy resource is hydropower, with a gross hydro-energy potential of 650 TWh per year, of which 25% are exploitable. Another important source of energy is natural gas, with a confirmed 2.7m cubic feet commercial quantities. More than 100 MW of geothermal power has been discovered and the total geothermal-based electricity generation capacity is estimated at 700 MW. Solar energy and wind resources are other potential sources of energy in Ethiopia. The total solar radiation reaching the territory is about 2.3m TWh per year while the total wind resource is estimated at about 4.8m Tcal per year.

Ethiopia is Africa's fourth wealthiest country in terms of renewable resources with an estimated value of $195.8bn in 2018, next to DRC ($282.9bn), Nigeria ($260.1bn) and South Africa ($213.8bn). Between 1995 and 2018, Ethiopia's aggregate value of natural capital increased by 100%, as most African countries did. Ethiopia is one of the twenty least wealthy African countries in the non-renewable natural resources, although the stock grew by 494% during 1995-2018. Gold exploitation could be a resource for Ethiopia's development, with a recent survey estimating reserves at 500 tonnes. Ethiopia also boasts gemstones such as diamonds and sapphires; industrial minerals including potash, and other precious and base metals. The development of these resources could support Ethiopia's export-orientated growth strategy and diversification of the economy.

In per capita terms (Figure 5), the evolution of renewable natural capital in Ethiopia is less encouraging. Ethiopia is among the four African countries with the least in per capita renewable resources and recorded a decline of 10% in 2018 compared to 1995. On the contrary, Ethiopia has experienced a better status in per capita non-renewable natural resources, registering an increase of 271% between 1995 and 2018. Overall, a decline in per capita renewable natural resources is a concern from the perspective of sustainable and green growth in Ethiopia where a large part of the population depends on natural resources for their livelihood. A decline in the value of that renewable natural capital exacerbates poverty and inequality and increases vulnerability to climate risks.

Latest available data show that Ethiopia collected about 15.8% of GDP in 2010 in rents from its natural capital, mainly from forest rents which raised up to 15.5% of GDP (Annex 1). However, these rents declined to 12.2% of GDP by 2015 and to 5.1% GDP in 2020, which can be attributed to the expansion of farmland as the result of population pressure. Mineral rents collected have declined from 0.3% of GDP in 2010 to 0.1% in 2015, and since then rents collected have been negligible. For Ethiopia to

[21] The TYDP 2021-2030 identifies unused arable land and other natural resource endowments as critical to Ethiopia's inclusive growth ambitions. The plan proposes reforms for agricultural transformation including land use policy and planning; improved crop and livestock technology, inputs, and services; legal framework for agriculture; and expanding private sector participation.
[22] Based on data from the Central Statistics Agency, 2020.

increase rents collected from its natural capital, the governance of natural resources and transparency in the use of rents collected needs to improve. With the potential of almost 10 trillion barrels of oil in the Abay, Ogaden and South Omo basins, fast-tracking the conversion of ongoing exploration into exploitation will be key for Ethiopia to increase rents from natural capital. Strengthening capacity to negotiate beneficial contracts will also be key in this process. The ongoing efforts to expand forestry coverage through reforestation and the Green Legacy Initiative will help to increase rents from its stock of natural capital. These efforts need to be supported by all stakeholders including development partners, the private sector and communities.

Ethiopia has not benefited effectively from its vast natural resources for sustainable growth, in part due to the use of traditional technologies, low structural transformation, and high poverty rates. The GoE could use fiscal instruments to maximize resource rents from non-renewable resources and sustainably manage renewable resources, including controlling illegal and unregulated mining, and curbing deforestation. An egalitarian policy framework and institutional reforms are required in the governance of natural resources to promote transparency and reduce illicit trade in natural resources and illicit financial flows.

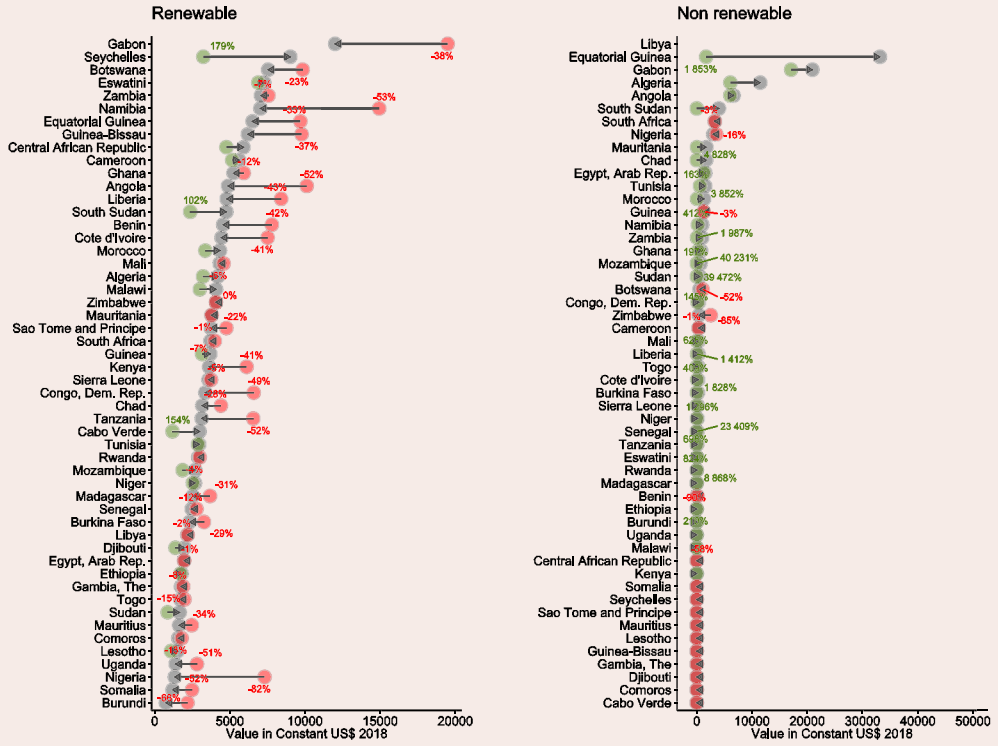
Ethiopia's diverse and vast natural resources offer huge potential opportunities for exploration and development. These include agricultural land, forestry, water, energy, and minerals (tantalum, potash, gemstones, gold, iron ore). Significant gold mineralization has been found in three regions: The western greenstone belts (in the Tulu-Kapi and Ankore areas), the northern greenstone belts (in the Terakimiti prospect), and the southern greenstone belts (Lega Dembi and Sakaro mine). There are additional opportunities for investors in epithermal gold. The East African Rift Valley transecting Ethiopia hosts many geothermal fields which are used for power generation. Ethiopia is already the sixth biggest producer of tantalum in the world with the potential to dramatically increase its standing. The Kenticha mine is estimated to have a reserve of 17,000 tonnes.

Ethiopia's potential for renewable energy resources is immense, with an annual exploitable electric energy potential of 200TWh from hydropower, 4,000TWh from wind energy, 7,500TWh from solar energy and 10GW from geothermal energy resources. Of Ethiopia's total land area of l.22m km^2, 15% is under cultivation and 51% is pastureland. It is estimated that over 60% of the cultivated area is cropland. Forestland, most of it in the southwest, accounts for 4% of total land area. Of the cultivated area, only about 4 to 5% is irrigated.

Ethiopia is ranked as the 5th largest floral country in tropical Africa, with diverse floral resources i.e., more than 6,500 species of vascular plants, 625 endemic species, 669 near-endemic species, and one endemic plant genus. Furthermore, Ethiopia has one of the most diverse mammalian faunas in Africa and wildlife heritage. As mentioned earlier, Ethiopia has about 65m head of cattle, 40m sheep, 51m goats, 7m equines, and 8m camels. About 70 to 80% of the livestock is hosted in highland areas and the rest in the lowland areas of Afar, Somali, and Borena. The sector contributes approximately 12 - 15% of the overall GDP.

Ethiopia is endowed with numerous rivers, lakes, and ample water resources. Ethiopia's 12 river basins have an annual runoff volume of 122bn m^3 of water and an estimated 2.6–6.5bn m^3 of ground water potential. However, only about 3% of water resources are used, of which only about 11% (0.3% of the total) is used for domestic supply. Total annual surface runoff is close to 122bn m^3 of water.

Figure 5: Changes in Per Capita Value of Natural Capital for African Countries, 1995-2018



Ethiopia has abundant solar energy resources. The national annual average irradiance of the country is estimated to be about 5.2 kWh/m^2/day. The solar resource is relatively lower in the most populous northern, central, and western highlands of the country while the rift valley regions and western and eastern lowlands of the country receive higher annual average irradiance (above 6 kWh/m^2/day). Wind energy generation capacity is limited. Ethiopia's total exploitable wind energy potential is estimated at 1,350 GW, mostly in the windy areas located alongside the main east African rift valley, the northeastern escarpment, near Tigray region and the eastern part of the country. In these areas, wind velocities range between 7-9 m/s which is relevant for wind energy generation. Estimated exploitable geothermal potential is around 5,000 MW. However, this potential is largely untapped. A pilot project of 7.5 MW was completed in Aluto Langano and another 10 MW pilot project in Tendaho Dubti is under construction. Work is under way to increase the Aluto Langano geothermal generation capacity to 70 MW. In addition, Corbetti, Abaya, Dofan Fantale and Tulu Moye areas are being explored for future geothermal prospects. Ethiopia has a high potential for biofuel and biogas production with its sufficient resources of sugarcane, crop residues and animal manures. Progress in generating biogas and constructing biogas digesters has remained very low.

Ethiopia has a population of about 104.1 million, with the working age population (15-64 years) estimated at 55.4%, youth population (15-29 years) exceeding 30% and the share of children under 15 years of age at 40%. A key feature of Ethiopia's demographic change is youth bulge. For Ethiopia to reap the first stage of demographic dividend, it needs to augment the value and competence of its youth workforce and ensure its productive employment with the right policies and an efficient use of resources.

4.2 Opportunities for Enhancing the Contribution of Natural Capital

The channels for increasing the returns from natural capital without damaging the base that provides these returns could be both domestically and internationally driven actions. On the former, the importance of good governance in the management of the returns from natural capital and in bringing together physical and human capital to add value to exports offer good opportunities. On the latter, there is a special role for making greater use of international agreements on climate change and biological diversity to finance higher returns from the substantial endowments of natural assets that can serve the country's goals in these areas.

The review highlights that Ethiopia's per capita natural capital has not increased over the past 25 years. Forestry resources both for timber and non-timber declined by 21.2% and 42.3%, respectively[23]. Measures to reverse this trend are divided into those pertaining to non-renewable natural capital and those pertaining to renewable natural capital.

4.2.1 Non-Renewable Resources

Ethiopia has resources of non-renewable primary energies (oil, natural gas, coal), but it does not exploit them. Ethiopia relies on its reserves of wood for energy generation. Ethiopia also has liquid and solid hydrocarbon reserves (fossil fuels): 253m tonnes of oil shales and more than 300m tonnes of coal. Natural gas makes up the most exploitable form of hydrocarbon reserves: 4.1 trillion cubic feet of natural gas reserves were found in two gas fields in Ethiopia's Ogaden basin, the Calub and Hilala gas fields. There are plans to improve the coal calorific value and to increase production by substituting imports with the locally mined product.

Ethiopia's participation in the global non-renewable resource value chain is negligible and the country has hardly invested at all in green minerals. There is no investment either in green minerals or in the emerging energy storage using electrolysis to produce green hydrogen. It is, therefore, important for Ethiopia to break the vicious circle by adding more value in its non-renewable natural resources and strengthening productive capabilities. Exploiting its natural gas can promote Ethiopia's clean growth and the transition to a low-carbon future. As the energy transition to net-zero carbon emissions will not be immediate, Ethiopia needs to follow a pragmatic transition process to reduce emissions while allowing communities to use their natural resources sustainably. Only about 45% of Ethiopians have access to electricity. To eliminate energy poverty and meet the SDG targets, Ethiopia needs to expand electricity generation capacity using clean sources to support industrialization.

Ethiopia has large deposits of minerals including gold, potash, gemstones, platinum, opal, iron, marble, granite, limestone, and tantalum. However, these are not fully exploited. Updating policies, streamlining regulations, and capacitating relevant institutions will promote private sector investment in the mining sector. Other needed support includes provision of geological information, diversifying products; formalizing artisanal and small-scale mining; reviewing gold pricing to reduce incentives for contraband trade; addressing legal issues with local communities and incentivizing miners to engage and invest in local communities; and addressing technical and institutional barriers to large-scale mining projects.

Investments in an efficient, transparent, and user-friendly system to support mining investment, including fast-tracking the digital mining

[23] Also true for SSA - natural capital declined in per capita terms by 35% over the last 25 years.

cadaster system to oversee license applications and provide users with vital mining-related information are needed. With considerable gold reserves, Ethiopia could be one of the most attractive investment destinations for the global mining industry. Ethiopia can boast around 500 tonnes of gold, and with a further 360m tonnes of coal and 69m tonnes of iron ore, there is every reason to be optimistic about the country's mineral future. Oil and gas are also a potential in the country's mineral future. Explorations show that there are about 2bn barrels of crude oil in Warra Illu in the Abay Basin of the Amhara Regional State, six to eight trillion m^3 of crude oil in Ogaden Basin and about 2.7 trillion barrels of oil reserve in South Omo Basin.

4.2.2 Opportunities in renewable resources

Ethiopia has vast natural resources that can provide valuable inputs for light manufacturing, serving both domestic and export markets. Agriculture can provide inputs for agro-industries including food processing and textiles, forests can be managed for the furniture industry, and renewable energy sources can provide cheap power. The livestock value chain can become a big industry by producing high-quality meat for external markets alongside the associated leather and its products. To realize the full potential of the livestock subsector, a conducive regulatory framework and standards for meat processing and live animal management are needed to improve the quality of meat and competitiveness as well as increase supply and capacity utilization. Introduction of improved feeding, fattening, animal health care and other services while encouraging foreign and domestic investment across the value chain are needed to expand supply of livestock and leather products.

Ethiopia has vast tourism potential due to its natural, historical, and cultural gifts. It has almost all types of main tourist products: Historical attractions, national parks with endemic wildlife and cultural and religious festivals. Ethiopia deserves to be higher on the list of key African tourist markets due to its nine UNESCO World Heritage sites and three intangible heritages registered in UNESCO as world heritage. Addis Ababa is the diplomatic capital of Africa and Bole International Airport recently overtook Dubai as the major transit hub to Africa. Despite Ethiopia's endowment with various natural and manmade heritages, many remain untapped due to various challenges (shortage of tourist facilities, lack of skillful human resources, weak promotion, lack of integration and political will). Provision of high-quality tourism services is expected to expand the sector's contribution to economic growth, employment, as well as building a strong image for Ethiopia as a tourist destination.

Prudent macroeconomic policies and domestic administrative reforms will help Ethiopia to sustainably exploit its abundant resources (renewable energy sources, cheap labor, vast irrigable arable land) to drive its development. This is important to reduce vulnerability to climate change and the risks inherent in rain-based agricultural practices. The GoE can follow the Asian nations to accelerate the realization of latent comparative advantage in segments of light manufacturing in which specific, feasible, focused, and low-cost policy interventions can boost output, productivity, and exports.

Ethiopia can benefit more from the Green Legacy Initiative, whose targets (including contributions to climate action and food security) align with various targets of the 2030 Agenda. In 2022 alone, more than 500m trees, some with premium values in local and international markets such as avocadoes, mangoes, apples, and papayas were planted. This directly feeds into the current drive of becoming food self-sufficient by promoting sustainable agriculture as envisaged in SDG 2. The Initiative is a major flagship project that will help attain its adaptation goals as set in the National Adaptation Plan. Directly linked to SDG 13, the Initiative complements Ethiopia's efforts to reduce its vulnerability. It enhances forest conservation, reforestation, restoration of degraded land and soil, as well as the promotion of the sustainable

The natural resources remain largely untapped in Ethiopia, for which it requires a prudent policies and domestic administrative reforms for exploitation

management of forests. Overall, the innovative aspect of the Initiative lies in its potential to address multiple objectives. This entails enormous benefits in environmental protection, restoration of overexploited and degraded natural resources such as surface soil and water, halting desertification and many other interrelated objectives. The enormity of the interlinkages will significantly contribute to Ethiopia's efforts to achieve the SDGs by 2030.

Box 2: Opportunities from resource conservation

In February 2023, Ethiopia signed an agreement with the World Bank on BioCarbon Fund Initiative for Sustainable Forest Landscapes that rewards community efforts to reduce carbon emissions by tackling deforestation and land and forest degradation. The Emission Reductions Purchase Agreement (ERPA) could unlock up to $40m that will help stakeholders to reduce carbon emissions and increase carbon sequestration through forest preservation and other environment-friendly land uses. This ERPA will reward efforts to reduce around 4m metric tonnes of CO2e emissions through 2030.

Ethiopia must continue harnessing the mechanisms of the Paris Agreement to mobilize significant resources and fill the climate financing gaps. It should follow seriously the opportunities in the Compliance Carbon Market, the Loss and Damage Fund, the Convention on Biological Diversity, the Carbon Border Adjustment Mechanism (investment in green hydrogen) and the Adaptation Benefit Mechanism. Ethiopia must continue to initiate bankable climate finance proposals, generating and updating climate-related data and initiate more Clean Development Mechanism (CDM) projects.

4.3 Governance of natural wealth and illicit financial flows

The focus of the TYDP on mining and petroleum is to carefully identify the country's mineral and petroleum resources, develop and ensure equitable utilization as well as their contribution to national wealth and the structural transformation of the economy. The TYDP aims to bolster the economic and social significance of the sector in the national economy by expanding private sector participation. It underscores the availability of geological data to promote investment in mining. Infrastructure development and other targeted support to the sector are vital to boosting private sector confidence.

Ethiopia has various legal frameworks for the regulation of the mining sector, including the Constitution, the Mining Proclamation No. 678/2010 (as amended), the Transaction of Minerals Proclamation No. 1144/2019, the Mining Income Tax Proclamation No. 53/1993 (as amended), and the Mining Regulation No. 182/1994 (as amended), the Petroleum Operations Proc. No. 295/1986 and the Petroleum Operations Income Tax Proclamation No. 296/1986. The Ethiopian Constitution vests the right to ownership of all natural resources to the state on behalf of the people. The federal government enacts laws for the utilization and conservation of natural resources, while state governments manage the natural resources in their jurisdictions[24]. In addition, Ethiopia is a member of the Extractive Industries Transparency Initiative (EITI), which could help to improve transparency in the

[24] The mining operations proclamation No. 678/2010 (as amended) requires licensees to undergo environmental impact assessment, rehabilitation, and community development.

management of royalties from natural resources. Ethiopia understands that unregulated mining investment can lead to an environmental destruction.

As mentioned earlier, Ethiopia lacks sufficient skills and capacities to realize its green growth and climate action plans. Existing skills and capacities are limited to a specific set of sectors, mostly those related to renewable energy, as this is where most of the private sector financing is directed. This means that Ethiopia needs to focus on further deepening and expanding its skills and capacities across sectors, while at the same time promoting innovation in other sectors to attract private sector investors. Addressing the skills and capacity gap that has been identified in Ethiopia through recent assessments[25] also needs further integration of innovation that contributes to green growth and climate action into institutions of learning to ensure that the workforce is equipped with the skills for mobilizing private sector finance. The education system (both tertiary and technical and vocational training colleges) needs to tune its curriculum towards enhancing skills for green growth and climate actions.

Policies and regulations require that investors in the natural resources sectors to comply with key governance standards, including managing the environmental aspects; integrating pollution prevention and control technologies and practices, minimizing risks and impacts to community health, safety and security; avoiding or minimizing impacts on displaced communities; avoiding or mitigating threats to biodiversity; respecting the identity, culture and natural resource-based livelihoods of indigenous peoples; and avoiding significant damage to cultural heritage. These policies require investors to develop good management systems, appropriate to the size and nature of the business activity, to promote sound and sustainable environmental and social performance as well as improved financial outcomes[26].

[25] Climate Action Tracker (2020) – Ethiopia - Climate Governance.
[26] During 1970-2012, total capital flight from Ethiopia was estimated at $31bn, averaging $716m annually. Annual capital flight increased to over $1bn during 1991-2018. The average annual economic growth lost due to capital flight was estimated at about 2.2 percentage points, which could have reduced poverty by about 2.5 percentage points. Considering the effect of capital flight on increased inequality, the reduction in poverty could have reached 5 percentage points. Capital Flight and its Determinants: Case of Ethiopia: https://www.researchgate.net/journal/African Development Review 1467-8268.

V CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Conclusion

Despite Ethiopia's abundant natural resources, diverse ecosystems, and the services they provide, their value, investments, and potential benefits from their transformation into natural capital wealth remain largely untapped. Key challenges include weak natural resource governance frameworks, population pressure as well as the lack of effective use of monitoring tools. Ethiopia could leverage its natural capital, its strategic location and active participation in the Horn of Africa to attract increased financing for climate adaptation and the green transition. A review of changes in natural capital over time show that Ethiopia is, indeed, rich in both renewable and non-renewable natural capital. However, non-renewable resources have an insignificant share both in absolute and in per capita terms compared with renewable natural capital.

For Ethiopia to fully benefit from its stock of natural capital, a number of policies are needed: (i) expanding investments in appropriate technologies, tools and data gathering and analytical capacity for improved valuation and to benefit from international agreements; (ii) natural capital accounting to keep track of key stocks and their contribution; (iii) implementing prudent fiscal measures to promote a sustainable exploitation of resources; and (iv) deepening institutional reforms to improve natural resource governance, transparency and implementation of international best practices.

Ethiopia's Climate Resilient Green Economy (CRGE) strategy and the CRGE facility lend themselves to mobilizing both domestic and international finance for climate investment and green growth. Climate financing gaps are large and require a whole-of-society approach including the private sector and communities. The private sector needs to play a more prominent role in closing the climate finance gap. Policies to promote a shift from investments in unclean technologies towards climate-smart appropriate technologies are needed. Home-grown economic reforms, including the PPP initiative and the emerging money and capital markets will help to expand the scope for private sector climate financing.

5.2 Policy recommendations related to macroeconomic performance and outlook

Ethiopia is facing daunting policy challenges amid global economic uncertainty. To weather the shocks, Ethiopia could consider a broad range of policy responses to the rise in food and energy costs, which have imposed a heavier burden on households with limited coping mechanisms. This comes at a time when the government's fiscal position has been stretched by COVID-19, internal conflict, and emergency responses.

[S] The GoE, particularly the macro institutions (the Ministry of Finance and the National Bank of Ethiopia) should urgently seek to restore macroeconomic stability and prevent further erosion in social conditions arising from higher food and energy prices.

[S] The National Bank of Ethiopia, in consultation with the Ministry of Finance, should keep close

watch on inflation and deploy a mix of monetary, fiscal, and structural policies to tackle soaring inflation.

[S] The Ministry of Finance should sustain fiscal consolidation and safeguarding growth-friendly investments on infrastructure, healthcare, and education. Policies should continue to shield vulnerable households from the effects of increased food and oil prices exacerbated by Russia's invasion of Ukraine.

[M, L] The GoE needs to undertake structural reforms, including irrigation, to boost agricultural output to stabilize food prices. Support for agro-industrialization needs to be sustained by increasing both the quality and quantity of public investment to catalyze private sector investment in the agro-agricultural and allied sector.

[M, L] The government needs to accelerate economic reforms to unlock the resource mobilization potential both by broadening domestic financial markets to catalyze private sector financing, and by strengthening tax administration capacity, leveraging digitalization, and enhancing compliance.

[M, L] The National Bank of Ethiopia may need to consider a countercyclical monetary policy that limits the speed of transmission of high foreign inflation to the domestic economy and help to maintain positive real returns on investments and to avoid steep exchange rate depreciation that exacerbates domestic inflation, thereby undercutting export competitiveness.

5.3 Policy options for private sector financing for climate change and green growth

5.3.1 National Government

Harnessing climate investment opportunities in Ethiopia requires innovative financing arrangements and strategic deployment of public capital to 'crowd-in' private investment. Tax credits, establishing domestic climate and corporate social responsibility for climate finance are needed to improve capital efficiency and overcome the barriers to finance, which have stifled climate investment.

[S] CRGE facility in collaboration with EPA and the Ministry of Planning and Development need to develop an easy-to-use climate finance tracking and information system that adopts global climate finance classifications, needed to record climate change-linked expenditure by the public sector and DPs.

[S] EPA needs to strengthen its monitoring capacity in social impact assessments on companies and corporations engaged in the extraction of natural resources to safeguard biodiversity and ensure that the extraction of natural resources follows sustainable and equitable approaches and considers the role of communities, indigenous people, and human rights.

[S] The government, with the support of DPs, needs to raise awareness that mainstream climate and green growth policies in public and private investments, especially in the natural resource sectors, are important to exploit the natural capital potential.

[S] With DPs' support and the active engagement of the Environment Protection Authority (EPA), all institutions need to strengthen their capacity to implement the recently launched climate-smart strategy, its capacity in international negotiations and accreditation, in the development of bankable projects and the generation of up-to-date data to promote climate investment. The EPA has to revamp and lead on this.

[M] The GoE needs to strengthen its capacities for the design and implementation of environmental and social impact assessments in the extraction of natural resources. More effort is needed to safeguard biodiversity and to ensure that extraction of natural resources follows sustainable and equitable approaches and considers the role of communities, indigenous people, and human rights.

[M] The CRGE facility needs to facilitate tax credits, establishing domestic climate and corporate social responsibility for climate finance to improve capital efficiency and overcome the barriers to finance, which have stifled climate investment.

(M) The Ministry of Finance and the CRGE facility need to deploy the traditional financial instruments, such as concessional debt and grants, more efficiently through blending in all budgetary institutions and SoEs to target specific barriers such as high upfront costs, lengthy preparation processes, lengthy construction period, commercial viability, and currency risks.

[M] Ethiopia needs to continue harnessing the Paris Agreement arrangements by building capacity for the design of quality proposals and bankable projects, updating climate data to mobilize more resources to fill its climate financing gaps.

[M, L] The reform of state-owned enterprises (SoEs) is important for Ethiopia to secure good resource deals in the short-to-medium term. The Ethiopia Investment Holding agency is critical in reforming SoEs to improve corporate governance, technical capacity, transparency, and increased investment. Incentives, such as tax relief for investment in climate and green-growth interventions, are needed to encourage SoEs and private companies as part of their strategic goals and corporate social responsibility.

5.3.2 MDBs and DFIs

Concessional and non-concessional finance for greenfield low-emission and resilient infrastructure projects provide a proof-of-concept for specific technologies and investments and business models in new markets. They also have the potential to be refinanced later in the project cycle by commercial investors. They can supplement blended finance structures with a combination of structured finance strategies (e.g., aggregation) and risk-mitigation instruments (e.g., guarantees and insurance products) to mitigate risk for the duration of a project's operating life. However, cumbersome climate finance assessment processes of bilateral and multilateral funds need to be simplified.

[S] MDBs and DFIs need to support capacity building of Ethiopian institutions in international negotiations and accreditation, the development of bankable projects and the generation of up-to-date data to promote climate investment.

[M] MDBs and DFIs can become less risk averse by engaging the GoE to identify ways to provide affordable capital for green growth and climate change investments. They can also use innovative financing instruments that de-risk private sector investments, particularly in non-energy sectors such as water and health infrastructure development.

5.3.3 Domestic and international private sector

[S] The Ministry of Finance needs to reinstitute the Public-Private Dialogue Forum for policy dialogue in designing the space for the private sector to partner in financing climate change and green growth.

[M] The private sector shall endeavor to collaborate with the GoE, MDBs, DFIs, and other private sector actors to identify key risks to investments and propose ways of addressing these investment risks.

[M] The domestic private sectors should cluster and coordinate better in order to play a stronger role in financing climate change and green growth through the Ethiopian PPP framework. One way will be an active engagement in the capital (equity and debt) market to be set up in the near future.

5.3.4 Developed country governments

[S] The developed countries, as shareholders, can influence MDBs and DFIs to simplify cumbersome climate finance-accessing processes and procedures.

Mainstreaming natural capital in development planning and integrating natural capital accounting in the national system is essential to better track the contribution of natural resource

[M] The developed countries need to support the capacity building efforts of Ethiopia in international negotiations and accreditation, in the development of bankable projects and generating up-to-date data to promote climate investment and in public budget tracking or a coding system that identifies spending linked to climate-change mitigation and adaptation.

[M, L] Developed countries can increase their allocations for climate and green growth aid as well as to influence MDBs and DFIs to be less risk averse in financing green growth in Ethiopia. Support for capacity building to develop and manage bankable projects will facilitate the crowding in additional private climate investment and finance.

5.4 Recommendations for increasing the contribution of natural capital to climate finance and green growth

[S] All relevant institutions (Ministry of Mines and Petroleum, Ministry of Agriculture, Ministry of Water and Energy) need to design a strategy for natural resource wealth management to drive inclusive and sustainable development.

[S] Ministry of Agriculture and relevant authorities in Ethiopia need to design a strategy for natural resource wealth management to drive inclusive and sustainable development. This will help to address natural resource governance issues, including internalizing environmental opportunity costs associated with the exploitation of natural resources and investment in natural capital.

[S] Ethiopia needs to implement the Natural Capital Accounting Initiative, started in September 2022, to be effective and to institutionalize it with the country's systems.

[S] The GoE needs to sustain the Green Legacy Initiative, which enhances forest conservation, reforestation, restoration of degraded land and soil, as well as the promotion of sustainable management of forests. For sustainable forest landscapes, the GoE needs to scale up initiatives like the BioCarbon Fund Initiative that rewards community efforts to reduce carbon emissions by tackling deforestation and land and forest degradation.

[M] These call for mainstreaming of natural capital in development planning and integrating natural capital accounting in the national systems of accounts to better track the contribution of natural resources to GDP. This could inform the way rents from natural capital are used and distributed. Increased investment in natural capital and reform of land-use policies are needed to expand the productivity of agriculture, forestry, and related value chains, and contribute to building climate-smart cities and green infrastructure.

[M, L] With the potential of almost 10 trillion barrels of oil in the Abay, Ogaden and South Omo basins, fast-tracking the conversion of ongoing exploration into exploitation will be key for Ethiopia to increase rents from natural capital. Strengthening the capacity to negotiate beneficial contracts will also be key in this process.

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ANNEX

Annex 1: Ethiopia - Selected Indicators

Indicators	Unit	2010	2015	2018	2019	2020	2021	2022 (e)	2023 (p)	2024 (p)
National Accounts										
GNI at Current Prices	Million US $	33,018	60,458	86,681	94,720	103,128	113,066	...	...	...
GNI per Capita	US$	370	590	780	830	880	940	...	...	...
GDP at Current Prices	Million US $	26,311	64,734	80,207	92,608	96,622	99,261	130,872	154,855	171,356
GDP at 2010 Constant prices	Million US $	26,311	42,786	53,879	58,385	61,923	65,417	68,878	72,876	77,368
Real GDP Growth Rate	%	12.7	10.4	6.8	8.4	6.1	5.6	5.3	5.8	6.2
Real per Capita GDP Growth Rate	%	9.6	7.5	4.0	5.5	3.3	2.9	2.6	3.2	3.6
Value Added: Mining and quarrying	Million US $	173	304	148	116	276	707	397	...	...
Value Added: Mining and quarrying	% GDP	0.7	0.5	0.2	0.1	0.3	0.7	0.3	...	...
Value Added: Fishing	Million US $	15	60	86	104	107	115	144	...	...
Value Added: Fishing	% GDP	0.1	0.1	0.1	0.1	0.1	0.1	0.1	...	...
Prices and Money										
Inflation (CPI)	%	8.1	10.1	13.8	15.7	20.4	26.6	34.0	28.1	20.1
Exchange Rate (Annual Average)	local currency/US$	12.9	20.6	27.4	29.1	34.9	43.7	51.5	57.3	65.3
Government Finance										
Total Revenue and Grants	% GDP	17.5	15.0	13.1	12.8	11.7	11.0	8.5	9.6	9.7
Total Expenditure and Net Lending	% GDP	18.8	16.9	16.1	15.4	14.5	13.8	12.7	12.7	12.2
Overall Deficit (-) / Surplus (+)	% GDP	-1.3	-1.9	-3.0	-2.5	-2.8	-2.8	-4.2	-3.1	-2.5
External Sector										
Terms of Trade Growth	%	73.8	4.9	-6.4	-12.9	15.2	3.7	-5.0	0.7	-2.4
Current Account Balance	Million US $	-381	-6,580	-5,231	-4,934	-4,219	-3,191	-5,200	-5,775	-6,204
Current Account Balance	% GDP	-1.4	-10.2	-6.5	-5.3	-4.4	-3.2	-4.0	-3.7	-3.6
Debt and Financial Flows										
Debt Service	% exports	3.1	17.1	22.7	28.7	26.4	23.1	18.7	18.5	18.7
External Debt	% GDP	21.0	29.5	33.4	31.2	31.6	31.7	24.9	19.5	16.8
Net Total Financial Flows	Million US $	3,710	4,097	5,407	4,793	5,466	3,786	...	...	...
Net Official Development Assistance	Million US $	3,455	3,239	4,941	4,677	5,305	3,982	...	...	...
Net Foreign Direct Investment	Million US $	288	2,627	3,310	2,549	2,381	4,259	...	...	...
Demography										
Total Population	Millions	89.2	102.5	111.1	114.1	117.2	120.3	123.4	126.5	129.7
Population Growth Rate	%	2.9	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.5
Urban population	% of total	17.0	18.9	20.1	20.5	20.9	21.3	21.7	22.1	22.5
Life Expectancy at Birth	Years	59.7	63.6	65.4	65.8	65.4	65.0	65.6	66.6	67.3
Fertility Rate	births per woman	5.2	4.5	4.3	4.3	4.2	4.2	4.1	4.0	3.9
Poverty and Income Distribution										
Pop. living below national poverty line	% of total population	29.6	23.5	...	...	...	...	...	...	...
Population living below $2.15 a day	% of total population	30.8	27.0	...	...	...	...	...	...	...
Gini Index	%	33.2	35.0	...	...	...	...	...	...	...
Labor Indicators										
Labor Force participation (total)	%	81.5	81.0	80.7	80.6	79.8	80.4	80.6	80.6	...
Labour Force participation (youth)	%	75.1	73.3	71.2	70.5	69.9	69.8	70.0	70.0	...
Unemployment rate (total)	%	2.3	2.6	3.1	3.2	4.1	3.9	4.0	4.0	4.0
Unemployment rate (youth)	%	3.5	4.0	4.9	5.2	6.6	6.1	6.3	6.4	6.4
Natural Resources rents										
Total natural resources rents	% GDP	15.8	12.2	5.9	5.5	5.1	...	...	...	...
Oil rents	% GDP	...	...	...	...	...	...	...	...	...
Natural gas rents	% GDP	...	...	...	...	...	...	...	...	...
Mineral rents	% GDP	0.3	0.1	0.0	0.0	0.0	...	...	...	...
Forest rents	% GDP	15.5	12.1	5.9	5.5	5.1	...	...	...	...
Coal rents	% GDP	0.0	...	0.0	0.0	0.0	...	...	...	...
Natural Capital Renewable Resources										
Arable land	1000 hectare	14,565.0	15,721.0	16,187.0	16,191.6	16,195.1	...	...	...	...
Agricultural land	1000 hectare	35,683.0	37,121.0	37,903.0	38,189.6	38,476.1	...	...	...	...
Other land	1000 hectare	59,375.6	58,299.4	57,738.6	57,526.0	57,312.5	...	...	...	...
Forest land	1000 hectare	17,798.5	17,433.5	17,214.5	17,141.5	17,068.5	...	...	...	...
Planted Forest	1000 hectare	740.7	972.0	1,110.8	1,157.0	1,203.3	...	...	...	...
Annual freshwater withdrawals, total	% of internal resources	7.4	8.4	8.6	8.6	...	...	...	...	...
Total Fisheries Production	metric tons	18,083.0	45,609.5	57,331.0	59,432.0	60,536.0	...	...	...	...
Climate Finance and Green Growth										
Tota C imate Finance*	Million US $	...	...	...	...	1,763.4	...	...	...	...
Green Growth Index**	%	47.7	50.6	51.2	51.2	50.9	51.0	...	...	...

Source : AfDB Statistics Department: African; IMF: World Economic Outlook,April 2023 and International Financial Statistics, April 2023;
AfDB Statistics Department: Development Data Portal Database, April 2023. United Nations: OECD, Reporting System Division.

Notes: ... Data Not Available (e) Estimations (p) Projections Last Update: June 2023

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