East Africa Economic Outlook 2022

Supporting Climate Resilience and a Just Energy Transition

GROUPE DE LA BANQUE AFRICAINE DE DÉVELOPPEMENT
AFRICAN DEVELOPMENT BANK GROUP

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ACKNOWLEDGEMENTS

The East Africa Regional Economic Outlook 2022 was prepared in the Vice Presidency for Economic Governance and Knowledge Management, under the supervision and general direction of Professor Kevin Urama, Acting Vice President and Chief Economist.

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The drafting of the report was led by Marcellin Ndong Ntah and Edward Sennoga, with significant contributions from Duncan O. Ouma and Jacob Oduor. This core team was supported by Alemayehu Geda (Addis Abeba University) and Joanes Atela (African Centre for Technology Studies—Kenya). The report benefited from comments from the East Africa Regional Team and the Macroeconomics Policy, Forecasting, and Research Department as well as from external reviewer Konan Nguessan. Country Economists in East Africa provided inputs to the report, including Seydou Coulibaly (Burundi), Saminirina Andriambelosoa (Comoros and Djibouti), Edirisa Nseera (Eritrea), Paul Mpuga and Admit Zerihun (Ethiopia), Zerihun Alemu (Kenya), Walter Odero and Bernis Byamukama (Rwanda), Tilahun Temesgen (Seychelles), Albert Mafusire (Somalia), Flavio Soares (South Sudan), Duncan O. Ouma and Yousif Bashir (Sudan), Jacob Oduor and Prosper Charle (Tanzania), and Peter Rasmussen (Uganda).

The data appearing in the report were compiled by the Statistics Department, under the supervision of Louis Kouakou, Manager, Economic and Social Statistics Division. The team included Kokil Beejaye, Anouar Chaouch, Stéphane Regis Hauhouot, Adidi Ivie, Slim Jerbi, Mbiya H. Kadisha, Soumaila Karambiri, and Slaheddine Saidi. Data related to climate financing were compiled and estimated by the team from the Macroeconomics Policy, Forecasting and Research Department including Andinet Woldemichael and Adamon Mukasa.

The cover of the report is based on a general design by the Bank's External Relations and Communications Department. Editing was provided by Nicholas Jewitt and layout support by Yasso Creation (Tunisia). Translation of the report to French was done by the Bank's Language Services Department.

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EXECUTIVE SUMMARY

East Africa recorded strong economic recovery in 2021, but the pre-COVID-19 growth levels are yet to be achieved in most of the countries. The recovery momentum is now hampered by the effects of the Russia-Ukraine war. The 4.8 percent estimated growth in 2021, up from 1.5 percent in 2020, was supported by sustained public spending on flagship infrastructure projects, reopening of travel and trade as COVID-19 vaccine uptake increased, deeper regional ties under the East African Community (EAC—consisting of Burundi, Kenya, Rwanda, South Sudan, the United Republic of Tanzania, and Uganda), and the recovery in tourism in the tourism-dependent countries. The region's top performers in economic growth in 2021 were Rwanda (10.0%), Seychelles (7.9%), Kenya (6.7%), Uganda (6.0%), and Ethiopia (5.6%), while growth was subdued in Burundi (2.3%), Somalia (2.0%), Comoros (1.9%), and Sudan (0.5%), and negative in South Sudan (-6%).

The region is expected to grow at a slower pace of 4.7 percent in 2022—due to the lingering effects of the COVID-19 pandemic and the impacts of the Russia-Ukraine war, which is already putting pressure on energy and food prices—before recovering to 5.5 percent in 2023. The projected strong growth is not homogenous across the region, with four countries (Kenya, Rwanda, Seychelles, and South Sudan) expected to grow above 5 percent in both 2022 and 2023. Growth will likely be subdued in Comoros, Somalia, and Sudan below 3 percent in 2022, while all the East African countries (except Comoros and Eritrea) should experience a growth rate of more than 4 percent in 2023.

East Africa's real gross domestic product (GDP) growth was driven by industry on the supply side, contributing 2.2 percentage points of the region's 4.8 percent economic growth in 2021. This was followed by the service sector which contributed 1.6 percentage points while the agriculture sector contributed 1.0 percentage point. The industrial sector's performance was strongly influenced by its strong growth in Ethiopia, Tanzania, and Uganda where construction dominated the industrial sector. On the demand side, private consumption was the dominant driver of growth, contributing 3.0 percentage points to the 4.8 percent real GDP growth in 2021, supported by a growing private sector, youthful population, and rising per capita incomes and wages. This was followed by investments which contributed 0.92 percentage points driven by increased spending on public infrastructure projects. The contribution of government consumption stood at 0.8 percentage points, while net exports contributed 0.1 percentage points in 2021 due to weak external demand.

The fiscal deficit moderated a little in 2021 due to better revenue performance and various fiscal consolidation measures, but remained elevated averaging at 4.9 percent of GDP, compared to 5.1 percent of GDP in 2020. The high fiscal deficit inherited from 2020 continued in 9 out of the 13 East African countries, with only four countries (Seychelles, South Sudan, Sudan, and Uganda) reducing their fiscal deficit in 2021. Fiscal deficit is projected to narrow to 3.8 and 3.4 percent of GDP in 2022 and 2023, respectively as fiscal consolidation efforts continue. The region became more indebted, partly due to the impacts of COVID-19, with the debt-to-GDP ratio reaching 87 percent in 2021 from 79 percent in 2020. Although most countries of the region managed to control inflation, it remained at the highest level in the

region's recent history, averaging 40.6 percent in 2021, 13 percentage points above the 2020 level, and the highest among the African regions. The region's inflation was to a large extent driven by the hyperinflation in Sudan and the high inflation in South Sudan and Ethiopia, driven largely by currency depreciation, and political and macroeconomic instability, and is projected to remain high in the medium term. The current account deficit widened further in 2021, averaging 5.9 percent of GDP from 5.3 percent in 2020, which was attributed to higher import bills caused by rising commodity prices, particularly oil prices, and a weak recovery of export earnings.

Despite ebbing, the adverse impacts of the pandemic on extreme poverty are still expected to linger in the medium term. Easing of COVID-19 restrictions, recovery of global economic activity and roll-out of vaccinations in 2021 reduced poverty in five East African countries (Djibouti, Kenya, Tanzania, Uganda, and Rwanda). Poverty persistence was recorded in another five countries (Burundi, Eritrea, Somalia, Sudan, and South Sudan) in 2021.

Like elsewhere, East Africa faces several downside risks. The Russia-Ukraine war has increased global food and energy prices and heightened inflationary pressures in East Africa. Its continuation could weigh heavily on the region's commodity importing countries and exacerbate food insecurity. Similarly, several East African (EA) countries, including Ethiopia, Kenya, and Uganda, could face rising risks of debt distress, thus widening fiscal and current account deficits, largely due to structural weaknesses exacerbated by COVID-19 and the Russia-Ukraine war. The region still remains vulnerable to COVID-19 infection on the account of fears of a sixth wave in the USA and a surge of infections in South Africa. In addition, lingering political instability—notably in Ethiopia, Somalia, South Sudan, and Sudan—could weigh down on the region's outlook, while at the same time several EA countries are faced with different climate change vulnerabilities.

East Africa's high vulnerability to climate change is attributed to the sensitivity of the region's livelihood and economic sectors. Climate change presents significant ecological, socioeconomic, and strategic risks to the region. These impacts are becoming dynamic and are compounded by other shocks including commodity prices, health, and insecurity which calls for enhanced contextual risk and vulnerability assessments to inform clear adaptation and mitigation measures. Climate change impedes GDP per capita growth, with the impact varying according to economic structure and exposure to climate change.

The East Africa region has several opportunities for building climate resilience through clean energy transition. The key areas for addressing climate resilience include adaptation actions such as the move from "dirty fuels" to "clean energy options", which is beneficial environmentally, socially, and economically. Diversifying energy utility and investments in clean cooking interventions is equally important. These actions are critical in facilitating the long-term success of low-carbon development pathways.

East Africa, like the rest of the continent, is owed significant carbon credits created by industrialization in the more developed world. The region's estimated carbon credit, using the discounted social cost of carbon is $4,956 on a per capita basis during 2022–2050, implying that the region is owed $1,960 billion. Compensated annually during 2022–2050, East Africa should receive an estimated $67.59 billion per year in climate change compensation under "common but differentiated responsibilities" principles accounting for historical climate damage. Furthermore, East Africa's carbon credit exceeds Africa's other regions.

Climate finance is a key aspect in bridging the gap around current and future generational equity with regards to climate

impacts, and in line with the UN's Sustainable Development Goals (SDGs). Several multilateral and bilateral partnerships have emerged to support financial mobilization for climate action with outcomes beneficial to multiple SDGs. East Africa's revised Nationally Determined Contributions (NDCs) climate financing needs are estimated at $725.61 billion on average during 2020–2030, with adaptation and mitigation financing needs estimated at $219.04 billion and $389.95 billion, respectively. On average $65.96 billion is required each year, during 2020–2030 to implement the NDCs. If East Africa receives the same annual amount of climate finance as was received over 2016-2020 (USD 5.77 billion per year), the resulting financing gap is estimated at $60.19 billion a year during 2020-2030. These current trends demonstrate that Africa's conditional NDCs are unlikely to be delivered as well as other multiple SDGs.

Amid the emerging shocks, a mix of policy interventions should be considered to boost post-COVID-19 economic recovery, build climate resilience, and accelerate just energy transition in East Africa. In the **short term,** EA policy makers must focus on building macroeconomic stability through debt restructuring, creating temporary fiscal and monetary buffers to mitigate the effects of the Russia-Ukraine conflict, and accelerating the roll-out and uptake of COVID-19 vaccines. In addition, development partners should initiate a multilateral development bank (MDB) dialogue/roundtable on just energy transition to support the region in developing a common position on just energy transition pathways that will enable the current energy sector portfolio and pipeline projects deliver "just" outcomes while ensuring that development objectives are met. Also, financing climate resilience in the region calls for enhancement of project preparation facilities supported by MDBs to improve the bankability of adaptation projects, and re-alignment of national budgets to respond to climate change.

In the **medium term,** the EA authorities and other stakeholders must address the climate shocks aggravated by the impacts of COVID-19 in the region, accelerate domestic resource mobilization, and strengthen spending efficiency to restore fiscal stability, which also has been eroded by the pandemic. Further, to mainstream just transition into climate-resilient development, medium-term policy options such as incorporating a regional just-transition knowledge and policy hub into the existing climate change decision-making bodies should be initiated. The formulation of a just transition policy that realigns existing climate mitigation targets should lead to capacity development and technical assistance for EA countries on just energy transitions, and opportunities for achieving national development blueprints. These efforts would likely accelerate poverty reduction and economic development to facilitate regional synergy in current renewable energy development. East African governments, in collaboration with development partners, should also provide incentives to mobilize private-sector finance for adaptation and energy transition investments.

In the **long term,** EA countries need to put more emphasis on supporting economic diversification, especially of exports, to reduce increased debt vulnerabilities that has led to persistent currency depreciation, inflation, and lower growth. In addition, enhancing regional electricity grids and market integration while improving the regional integration of energy markets would support the addition of various renewables at a lower cost in the region. The authorities and development partners should also incorporate just transition within existing and upcoming financing programs for renewable energy initiatives, and also harness technologies like geothermal, solar, wind, and hydropower at a regional level to synchronize and scale-up the already abundant opportunities for addressing energy poverty in the region. Additional long-term measures include strengthening the integration of climate-change and just-transition actions in national development frameworks, diversifying the financing mix for just transition, and building capacity to design bankable funding proposals, access, and the management of climate finance.

ADDENDUM: UPDATED AFRICAN DEVELOPMENT BANK MACROECONOMIC PROJECTIONS – OCTOBER 2022

This addendum updates the projections contained in the main report, which were produced in April 2022 based on certain assumptions regarding the evolution of the COVID-19 pandemic and its variants, ongoing and planned policy measures to accelerate the post-pandemic recovery, and the Russia – Ukraine conflict, among others. Since the production of the April 2022 projections, several significant developments have been observed, particularly with the continued rise in energy and food prices and disruptions to global value and supply chains, which has stoked inflation. Consequently, East Africa's growth in 2022 is now estimated at 4.0 percent according to the October 2022 projections, compared to the April 2022 projection of 4.7 percent. Inflation on the other hand is estimated at 36.8 percent in 2022 according to the October 2022 projections compared to the 36.0 percent projected in April 2022. However, inflation is projected to decrease to 27.8 percent in 2023, based on October 2022 projections, as global value and supply chains stabilize gradually. The fiscal and current account balances are projected to worsen compared to the April 2022 projections, partly attributed to reduced public revenues and financial inflows amidst high public spending needs to support economic recovery efforts. The full set of projections for East Africa and for each of the individual countries are provided in the Tables A.I – A.V below.

Table A.I: East Africa's Key Macroeconomic Indicators, April & October 2022 Estimates

	AS OF APRIL 2022			AS OF OCTOBER 2022		
		Projections			Projections	
	2021	*2022*	*2023*	*2021*	*2022*	*2023*
Real GDP Growth (%)	4.8	4.7	5.5	5.1	4.0	4.7
Inflation (Consumer Prices, %)	40.6	36.0	23.1	40.7	36.8	27.8
Fiscal Balance, including grants (% of GDP)	-4.9	-3.8	-3.4	-5.8	-5.2	-4.7
Current Account Balance, including grants (% of GDP)	-5.9	-6.0	-4.3	-5.9	-6.6	-5.3

Table A.II: East Africa's Real GDP Growth (%), by Country						
	AS OF APRIL 2022			AS OF OCTOBER 2022		
		Projections			*Projections*	
	2021	*2022*	*2023*	*2021*	*2022*	*2023*
Burundi	2.3	3.6	4.6	1.8	2.9	3.8
Comoros	1.9	2.5	3.2	2.3	3.3	3.5
Djibouti	3.9	3.4	5.2	4.3	3.5	5.0
Eritrea	2.9	4.7	3.6	2.5	2.9	3.5
Ethiopia	5.6	4.8	5.7	5.6	4.1	4.8
Kenya	6.7	5.9	5.5	7.5	5.7	5.3
Rwanda	10	6.9	7.9	10.9	5.9	7.1
Seychelles	7.9	5.0	5.9	7.9	7.1	5.2
Sudan	0.5	2.5	4.5	0.7	0.4	2.2
South Sudan	-6.0	5.3	6.5	-5.0	-2.8	-0.3
Tanzania	4.9	5.0	5.6	4.9	4.8	5.0
Uganda	6.0	4.6	6.2	6.1	4.8	6.2
Somalia	2.0	3.0	3.6	2.0	1.9	3.6
East Africa	**4.8**	**4.7**	**5.5**	**5.1**	**4.0**	**4.7**

Table A.III: East Africa's Inflation (consumer prices, %), by Country						
	AS OF APRIL 2022			AS OF OCTOBER 2022		
		Projections			*Projections*	
	2021	*2022*	*2023*	*2021*	*2022*	*2023*
Burundi	8.3	9.3	8.3	8.3	16.5	11.5
Comoros	1.4	4.7	2.0	0.1	6.0	3.0
Djibouti	1.2	3.8	3.9	1.9	7.5	4.0
Eritrea	4.5	6.2	3.5	4.5	7.5	5.5
Ethiopia	26.7	32.6	24.9	26.8	34.0	27.2
Kenya	6.1	7.0	5.4	6.1	7.3	6.9
Rwanda	0.8	8.1	7.1	-0.4	14.1	8.0
Seychelles	9.7	6.1	1.5	9.8	4.1	3.3
Sudan	358.9	246.4	115.7	358.9	246.4	152.0
South Sudan	24.0	5.3	16.0	43.5	2.1	11.5
Tanzania	3.7	4.4	3.8	3.3	4.2	5.3
Uganda	2.2	5.9	4.4	2.2	6.9	6.0
Somalia	4.6	9.4	3.6	4.6	9.0	3.9
East Africa	**40.6**	**36.0**	**23.1**	**40.7**	**36.8**	**27.8**

Table A.IV: East Africa's Fiscal Balance, including grants (% of GDP), by Country

	AS OF APRIL 2022			AS OF OCTOBER 2022		
		Projections			*Projections*	
	2021	*2022*	*2023*	*2021*	*2022*	*2023*
Burundi	-4.5	-5.2	-4.2	-5.5	-4.8	-5.4
Comoros	-2.3	-5.1	-5.3	-2.0	-2.9	-2.6
Djibouti	-1.8	-3.7	-2.6	-2.6	-4.1	-3.2
Eritrea	-4.0	-1.0	0.1	-4.1	-3.6	-1.8
Ethiopia	-2.6	-2.6	-2.6	-4.4	-6.3	-6.1
Kenya	-7.9	-6.5	-5.5	-7.8	-5.9	-4.4
Rwanda	-7.1	-7.3	-6.8	-7.5	-7.7	-6.9
Seychelles	-6	-6.8	-1.5	-5.6	-3.8	-0.8
Sudan	-4.5	-3.0	-3.2	-5.9	-5.0	-4.7
South Sudan	-6.7	10.0	8.9	-3.7	-0.4	-0.6
Tanzania	-3.4	-2.7	-2.8	-3.9	-2.8	-3.3
Uganda	-7.5	-6.4	-5.1	-9.2	-7.2	-6.1
Somalia	-1.1	-0.5	0.1	-1.1	-0.3	-0.1
East Africa	**-4.9**	**-3.8**	**-3.4**	**-5.8**	**-5.2**	**-4.7**

Table A.V: East Africa's Current Account Balance, including grants (% of GDP), by Country

	AS OF APRIL 2022			AS OF OCTOBER 2022		
		Projections			*Projections*	
	2021	*2022*	*2023*	*2021*	*2022*	*2023*
Burundi	-15.4	-15.9	-14.8	-13.4	-15.3	-12.1
Comoros	-3.6	-8.0	-7.3	-2.0	-6.8	-3.9
Djibouti	9.5	7.3	8.5	-4.4	-7.9	-1.0
Eritrea	13.5	13.5	13.3	13.5	13.5	13.3
Ethiopia	-4.3	-4.8	-4.1	-6.0	-6.9	-6.2
Kenya	-5.2	-6.1	-5.2	-5.5	-5.9	-5.5
Rwanda	-10.6	-12.1	-11	-10.9	-12.4	-11.0
Seychelles	-19.8	-26.8	-22.4	-20.1	-22.4	-19.3
Sudan	-10	-6.4	-3.9	-8.0	-6.5	-4.0
South Sudan	-15.6	-7.6	9.5	-4.2	4.5	1.2
Tanzania	-3.1	-4	-2.6	-1.9	-4.5	-4.3
Uganda	-9.5	-9.9	-9.3	-9.5	-9.9	-9.3
Somalia	-14.9	-12.8	-12.4	-17.4	-17.4	-16.4
East Africa	**-5.9**	**-6.0**	**-4.3**	**-5.9**	**-6.6**	**-5.3**

CHAPTER 1

EAST AFRICA'S ECONOMIC PERFORMANCE AND OUTLOOK

Key Messages

- **East Africa recorded relatively strong economic recovery in 2021, expanding by 4.8 percent from a weak growth of 1.5 percent in 2020, but the recovery momentum is being affected by the persistence of the COVID-19 pandemic and the effects of the Russia/Ukraine war.** Growth in 2021 was supported by sustained public spending on flagship infrastructure projects, reopening of travel and trade as COVID-19 vaccine uptake increased, deeper regional ties under the East African Community (EAC), and the recovery in tourism for tourism-dependent countries. The region's economic growth is merely expected to stabilize at 4.7 percent in 2022 due to lingering effects of the COVID-19 pandemic and the spill-over impacts of the Russia-Ukraine war, which is already putting pressure on energy and food prices before recovering in 2023 (5.52%). The persistent climate shocks such as drought and floods that have engulfed the East Africa regional countries have negatively affected food security.

- **The pace of recovery is however different across the region, with political fragility a major challenge to growth.** Sustained fiscal stimulus, accelerated vaccination and the recovery in tourism helped Rwanda and Seychelles to grow robustly in 2021, while continued investments in public infrastructure and rejuvenated private consumption supported growth in Kenya, Tanzania, and Uganda. However, the growth performance in four of the region's countries, namely Comoros, Somalia, South Sudan, and Sudan was below 2 percent, mainly due to weak structural transformation in Comoros and political instability in the other three countries.

- **The region's main macroeconomic fundamentals remained stable in 2021 despite pressures from political fragility, structural bottlenecks, and the lingering effects of COVID-19.** East Africa's inflation was high at 40.6 percent in 2021 from 27.4 percent in 2020, driven by significant currency depreciations in some countries, political instability, structural bottlenecks, rising energy prices, and debt vulnerabilities in some countries. However, in most of the countries, inflation remained in single digits and below the region's average—supported by lower food prices. Exchange rates remained generally stable, but some of the currencies like the Sudanese pound weakened due to political fragility and reduction in donor inflows, debt vulnerabilities, and the effects of COVID-19 on exports. The fiscal deficit was lower in 2021 at 4.9 percent compared to 5.1 percent of GDP in 2020 due to better revenue performance but, in some countries including Kenya and Rwanda, the deficits were higher than the regional average due to rising commercial debt servicing obligations and sticky spending on large public infrastructure projects. The region's debt increased slightly in 2021 driven by exchange rate depreciations, limited economic diversification, and vulnerability to external shocks, expensive commercial debt, and high primary deficits. The current account balance continued to deteriorate in 2021 due to high import demand as domestic production

remained weak, weak recovery of exports, and rising oil prices. However, rising global demand and prices for metals helped to improve the surplus in Eritrea to 13.5 percent of GDP in 2021 from 11.4 percent in 2020.

- **Policies to support the recovery range from social to political, and economic to environmental.** In the short to medium term, countries should continue encouraging vaccine uptake, addressing political fragility including peaceful resolution of conflicts, reducing debt vulnerabilities by sourcing more concessional financing, and accelerating domestic resource mobilization as well as efficiency in the use of public resources through economic and financial governance reforms. Building climate resilience also remains a key area to support food security through improved agricultural production.

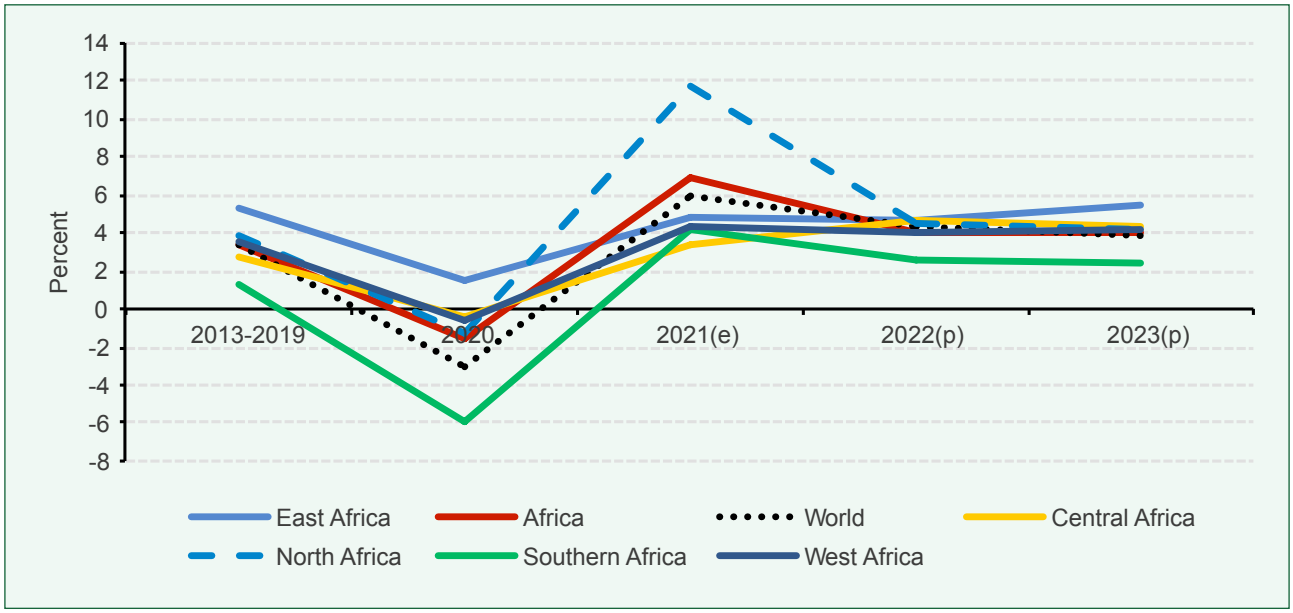
1.1 MACROECONOMIC PERFORMANCE AND PROSPECTS

Compared to a contraction of 3.1 percent in 2020, the global economy recorded notable recovery in 2021 with a growth of 6.1 percent attributed to the reopening of trade corridors and the resultant recovery in aggregate demand, and the roll-out of COVID-19 vaccines. However, the effects of the Russia-Ukraine war will cause that momentum to be slowed to an expected 3.6 percent in 2022 compared to the 4.4 percent projected in January 2022 by the International Monetary Fund (IMF)'s World Economic Outlook (WEO).

1.1.1 Africa recorded notable recovery in 2021 supported by strong global demand as well as rising oil and commodity prices

Africa's GDP grew by an estimated 6.9 percent in 2021 compared to a contraction of 1.6 percent induced by the COVID-19 pandemic in 2020 (see Figure 1.1). The rebound was attributed to recovery in oil prices and global demand, combined with the resurgence in household consumption and investment in most countries after COVID-19 restrictions were eased. The lifting of restrictions on oil exports from Libya as well as the easing of tensions in that country helped push North Africa's growth to 11.7 percent, the highest in the continent. That was followed by East Africa at 4.8 percent, which benefited to a large extent from its more diversified economy and the recovery of tourism in tourism-dependent countries like Seychelles. Southern Africa's estimated growth of 4.2 percent represented the fastest rebound, from a contraction of 6.0 percent, underpinned by strong recoveries in Botswana (12.5%), Zimbabwe (6.3%), and South Africa (4.9%).

Figure 1.1: GDP growth in East Africa and other regions, 2013–2023



Source: African Development Bank statistics.

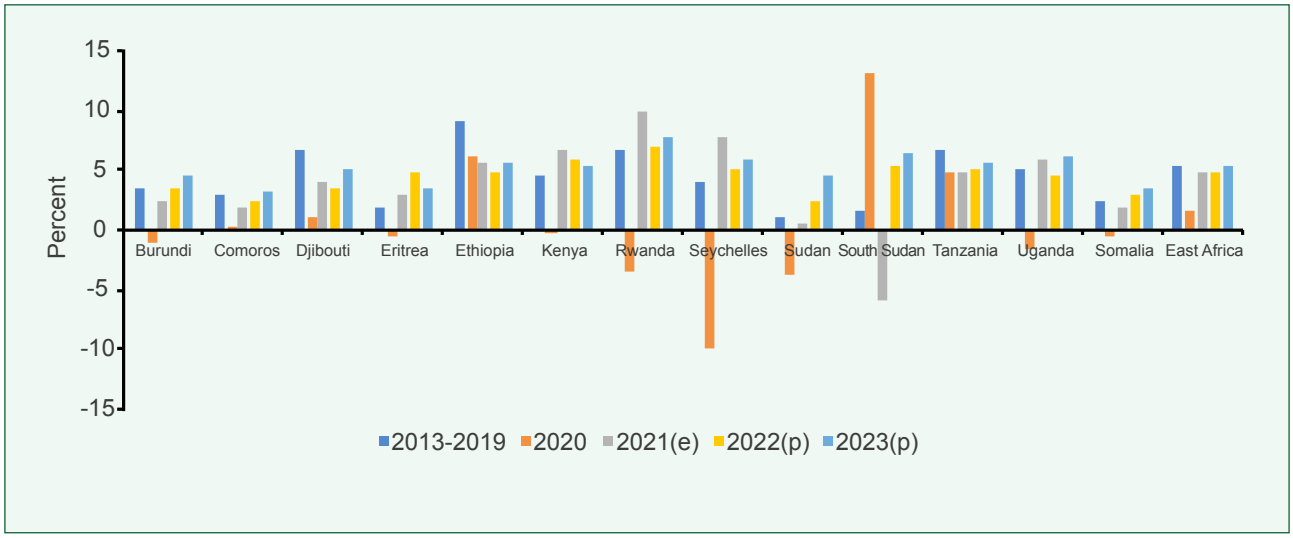
In Central Africa, growth reached an estimated 3.4 percent in 2021 with a rebound in all countries in the region except the Republic of Congo. The rebound was driven by increased trade in both oil and non-oil primary commodities. West Africa's 4.3 percent growth in 2021 on the other hand was driven largely by Nigeria, whose economy grew by an estimated 3.6 percent in 2021 benefiting from the high oil prices, recovery in services and manufacturing, and policy support in agriculture.

1.1.2 Underpinning its resilience, the East Africa region recorded a relatively strong recovery in 2021, supported by sustained public investments and closer trade ties

The region's strong recovery of 4.8 percent in 2021, up from 1.5 percent in 2020 was attributed to sustained spending on flagship infrastructure projects including the standard gauge railway in Tanzania and the Mombasa Road Expressway in Kenya, to the resurgence in household consumption after COVID-19 restrictions were eased in most of the countries, as well as to deeper regional integration. Furthermore, the staggered withdrawal of the stimulus measures in many of the countries supported the recovery. The region's growth was however lower than the World's and Africa's averages, which were driven to a large extent by higher oil and commodity prices and pickup in global demand.

The pace of the recovery was however heterogeneous across the region. Growth in 6 of the 12 countries was above the region's average in 2021, reflecting differences in vaccination rates, policy interventions, and the impacts of political instability (Figure 1.2).

Figure 1.2: East Africa's real GDP growth by country, 2013–2023



Source: African Development Bank statistics.

The top performers in GDP growth in 2021 were Rwanda (10.0%), Seychelles (7.9%), Kenya (6.7%), Uganda (6.0%) and Ethiopia (5.6%). Rwanda's remarkable recovery was attributed to sustained fiscal stimulus and recovery in global demand as well as increased agricultural production and related exports. Seychelles' recovery benefited from the rebound in tourism and services which lifted it from the severe contraction of 9.9 percent in 2020, which was the result of the contraction specifically of its tourism sector by 60 percent in 2020 owing to global travel restrictions imposed to bring the COVID-19 pandemic under control. Growth in the other top performing countries was attributed to policy support, recovery in the global economy, strong performance in agriculture, and resumption of economic activities following the easing of restriction imposed in relation to the pandemic.

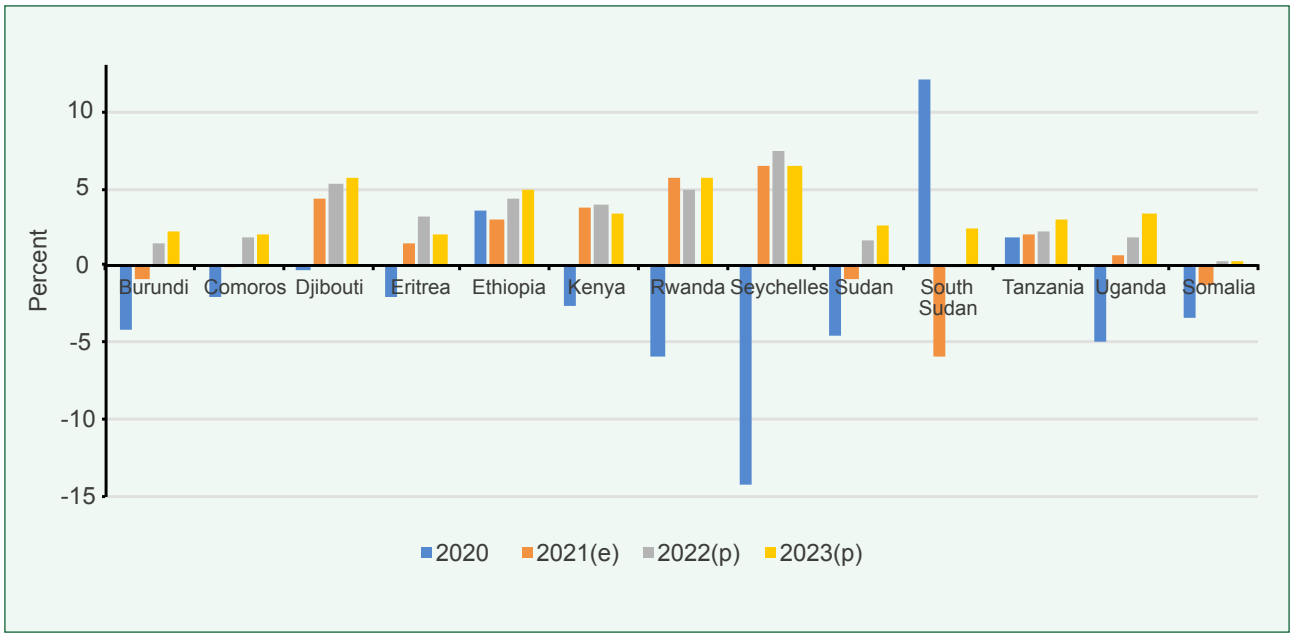
In contrast, there was subdued growth in 2021 in countries such as Burundi (2.3%), Comoros (1.9%), Somalia (2.0%), and Sudan (0.5%), and continued contraction in South Sudan (-6%) compared to a growth of 13.2 percent in 2020 as oil production, which accounts for over 75 percent of the country's GDP, dropped as some oilfields reached maturity and offset the gains from higher global oil prices. Compounding the problem were the effects of exogenous shocks, including floods and locust invasions which hit South Sudan in 2021. Although Sudan recovered in 2021 from the recession in 2020 caused by COVID-19 impacts, its recovery was subdued by the political fragility caused by the takeover of government by the military in October 2021. Comoros, which recorded improvement from 0.2 percent in 2020 to 1.9 percent in 2021, was affected by weak structural transformation limiting the speed of its recovery. Somalia on the other hand faced multiple crises in 2021, including drought and political instability caused by delayed general elections and the subsequent suspension of donor support by some development partners. Burundi also bounced from a recession of -1.0 percent in 2020 to a growth of 2.3 percent in 2021 due to more efforts towards mitigation of COVID-19 by the new administration, but 2 million people (about 15.8 percent of the population) still face food insecurity and are vulnerable to small changes in food prices due to domestic and external shocks. Rising waters from Lake Tanganyika and the Rusizi River Delta flooded the coastal communities of Bujumbura, Bujumbura Mairie, Makamba,

and Rumonge provinces in April and May 2021 which displaced more than 50,000 people, affecting agricultural production and the pace of the economic recovery.

Of the remaining countries, Eritrea and Djibouti grew at 2.9 and 3.9 percent, respectively, just below the region's average. Djibouti's recovery was supported by the revival of the tertiary sector, notably port and logistics activities, which generates nearly three quarters of its GDP. On the demand side, exports and investment remained the engines of growth for Djibouti in 2021. Eritrea's recovery from a recession of 0.6 percent in 2020 was boosted by a rebound in metal exports following improved global demand and prices. The growth was also led by the industry and services sectors on the supply side and private consumption and investment growth on the demand side.

The recovery helped to reverse the deterioration in real per capita GDP in 2020 (Figure 1.3). Income per capita contracted in 10 of the 13 East African countries in 2020 with only 3, namely Ethiopia, South Sudan, and Tanzania recording growth, but that trend changed in 2021: 9 countries out of the 13 recorded growth in real per capita income in 2021, with Burundi, Sudan, South Sudan, and Somalia remaining in the negative territory. The persistent depression in income per capita growth in Burundi, Sudan, South Sudan, and Somalia could be attributed to political fragility in these countries.

Figure 1.3: Real GDP per capita growth in East Africa, 2020–2023



Source: African Development Bank statistics.

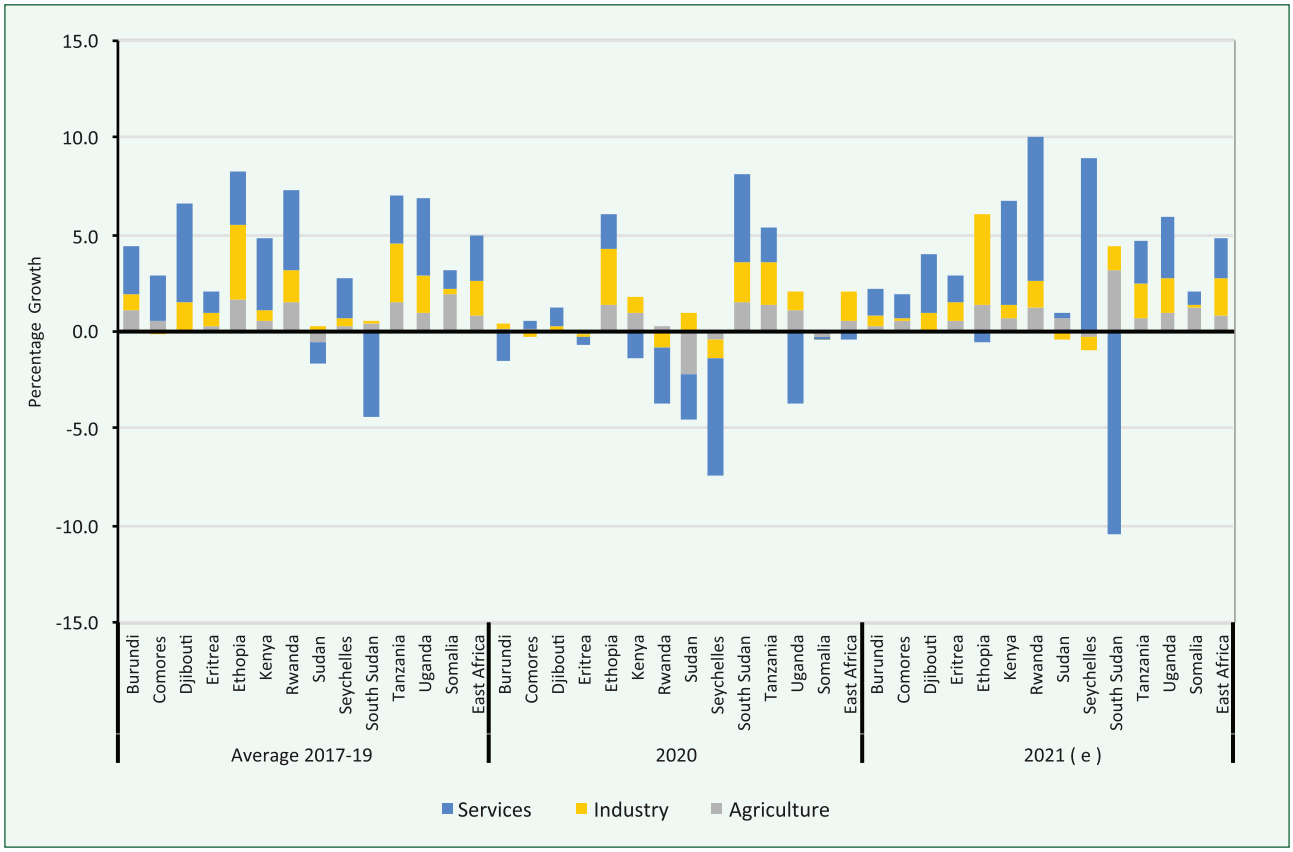
1.1.3 Growth performances in 2021 vary significantly across countries

Before the onset of COVID-19, the service sector was the main driver of East Africa's GDP growth, contributing 2.2 percentage points of the 4.9 percent average growth in the 2017–2019 period (Figure 1.4). The service sector made the highest contribution to growth in 8 out of the 13 countries in the region over the same period. The growth in the sector was catalyzed by new technologies and innovations and a more dynamic and youthful population, more interested in tech-driven service activities. The sector maintained its dominance in the region in 2021, contributing 2.1 percentage points to the 4.8 percent growth recorded for the region in 2021 from a negative contribution of -0.4 percentage points in 2020 caused by the devastation of COVID-19 to the sector.

The industrial sector was the second contributor to real GDP growth, accounting for 1.8 percentage points of the 4.9 percent average growth recorded during 2017–2019, mainly driven by construction and manufacturing. Most of the East African countries have ramped up their spending on large public infrastructure projects which has boosted the construction and manufacturing industries. For instance, in 2019/2020 the share of construction in the industry sector GDP was 70 percent in Ethiopia. With the large projects have come requirements in some of the region's countries for certain shares of local content, where a prescribed percentage of local materials must be used in the execution of projects. This has helped to boost local manufacturing and the contribution of the industry sector to growth. Prior to COVID-19, in 2017–2019 the industry sector was the leading contributor to growth in three countries, namely Ethiopia, Sudan, and Tanzania. The industry sector gained prominence in 2020, contributing 1.4 percentage points of the region's 1.5 percent real GDP growth as the service sector was hard hit by COVID-19. Industry was the leading contributor to growth in 4 of the 13 countries in 2020 (Burundi, Ethiopia, Sudan, and Tanzania), mainly supported by the construction sector as some of the large legacy infrastructure projects continued despite the pandemic.

The agriculture sector on the other hand has performed dismally, making the highest contribution to growth in only two countries before COVID-19 in the 2017–2019 period, namely Somalia and South Sudan. This trend was largely unchanged in 2020 with the agriculture sector leading real GDP growth in only three countries—Kenya, Rwanda, and Uganda. In 2021, the sector contributed 0.9 percentage points of the 4.8 percent average regional growth, an improvement from its 2020 contribution of 0.6 percentage points. However, the sector made the highest contribution only in Somalia, South Sudan, and Sudan in 2021. The high contribution of the agriculture sector in Somalia is attributed to improvement in livestock production. In South Sudan, the increase in land for cultivation and cereal production was able to offset the locust infestation and floods that engulfed the country leading to a higher contribution of the sector to GDP.

Figure 1.4: Sectoral decomposition of GDP growth, 2017–2021



Source: African Development Bank statistics.

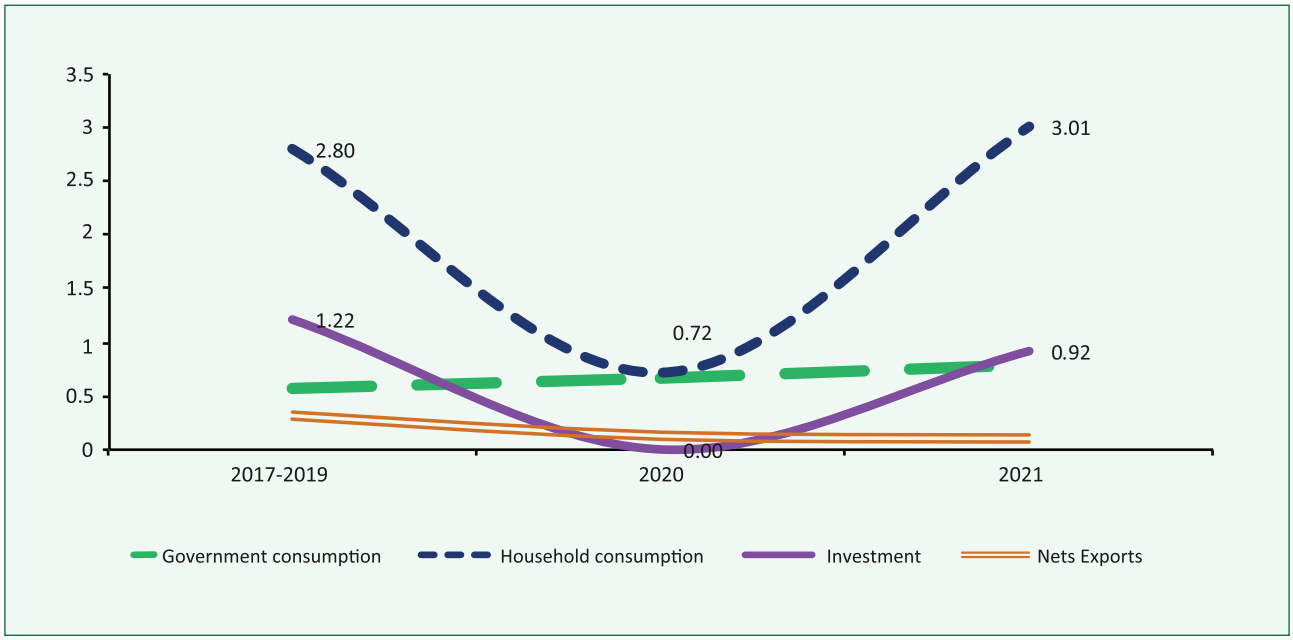
1.1.4 On the demand side, private consumption is still a dominant driver of East Africa's real GDP growth, followed by investments which have recovered after slumping in 2020

Private consumption contributed 3.0 percentage points to the 4.8 percent growth recorded in East Africa in 2021, up from 0.7 percentage points of the 1.5 percent growth recorded in 2020 (Figure 1.5), and representing a contribution of 62.5 percent to the 2021 real GDP growth, up from a 47 percent contribution to the 2020 growth. This dominance is consistent with the trend in the 2017–2019 period where private consumption contributed 2.8 percentage points to the region's 4.9 percent average growth recorded. A growing private sector, a youthful population, and rising per capita incomes and wages helped to sustain this trend.

The contribution of investments (private and public) to real GDP growth dipped to 0.0 (zero) percent in 2020 as investment projects were postponed due to the adverse effects of COVID-19. In 2021, East Africa regional countries enhanced their spending on flagship projects, increasing the investment contribution to real GDP. This led to a recovery of a 0.92 percentage point contribution to a real GDP growth of 4.8 percent in 2021. This was slightly lower than the 1.22 percentage point contribution it made in the 2017–2019 period when real GDP growth averaged 4.9 percent in the region. This contribution of investments is mainly driven by increased

spending on public infrastructure projects, which has significantly boosted public investment figures. The contribution of government consumption to real GDP growth in the region, though still lower than those of private consumption and investments, has steadily increased between 2017 and 2021. The contribution of net exports on the other hand has remained dampened at around 0.1 percentage points in 2021, similar to 2020, due to weak external demand performance.

Figure 1.5: Demand-side decomposition of GDP growth, 2017–2021



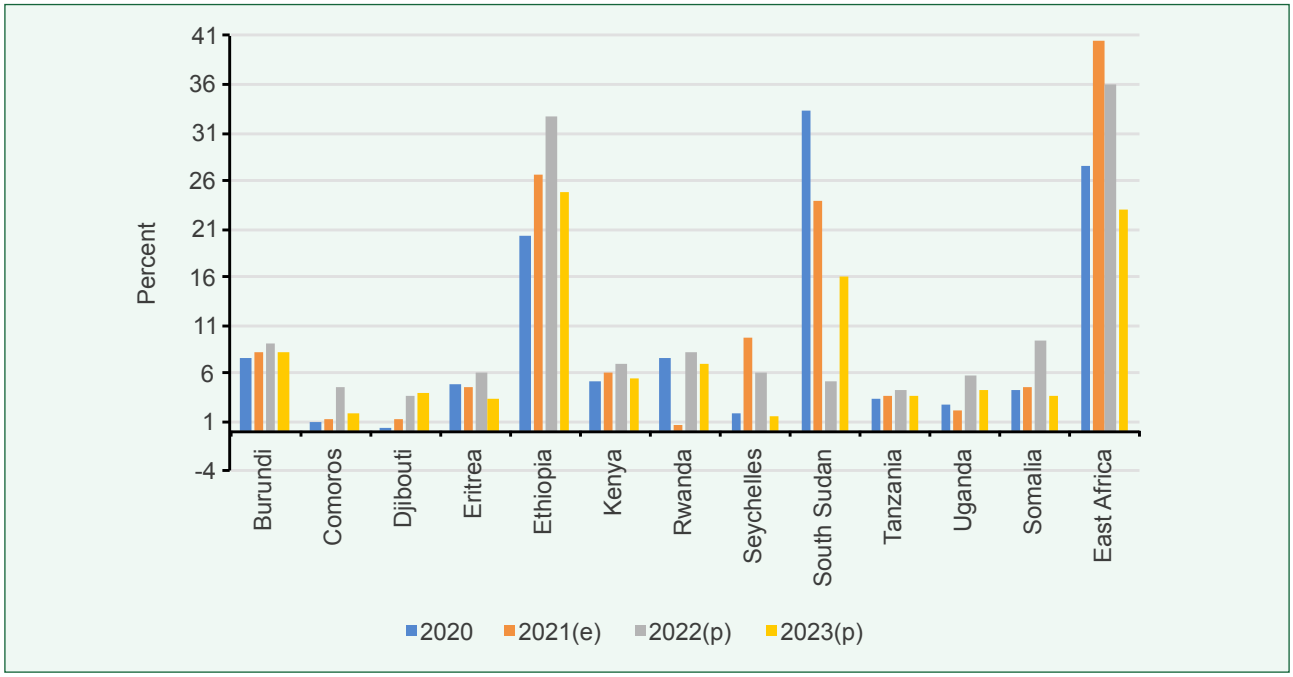
Source: African Development Bank statistics.

1.2 RECENT EVOLUTION OF KEY MACROECONOMIC FUNDAMENTALS

1.2.1 Political instability and the lingering impacts of COVID-19 such as supply chain disruptions were responsible for inflationary pressures in East Africa, but lower food prices and tighter monetary policy moderated it in a few countries

East Africa recorded its highest inflation rate in the recent past in 2021, at 40.6 percent up from 27.4 percent in 2020 (Figure 1.6). This 2021 rate was much higher than Africa's average (13.0%) and the highest among all the regions of Africa. The high inflation rate in the region was largely driven by the hyperinflation in Sudan (358.9%) and high inflation in South Sudan (24.0%) and Ethiopia (26.7%). Sudan's inflation was driven by among others, significant currency depreciation on the account of exchange rate unification and shift to a more competitive rate. Monetization of fiscal deficit, removal of fuel subsidies, and suspension of development assistance due to political instability which depreciated the currency by about 50 percent in 2021 further fueled inflation.

Figure 1.6: Annual inflation in the East Africa region, 2020–2023



Source: African Development Bank statistics
Note: Sudan is excluded due to extremely high values

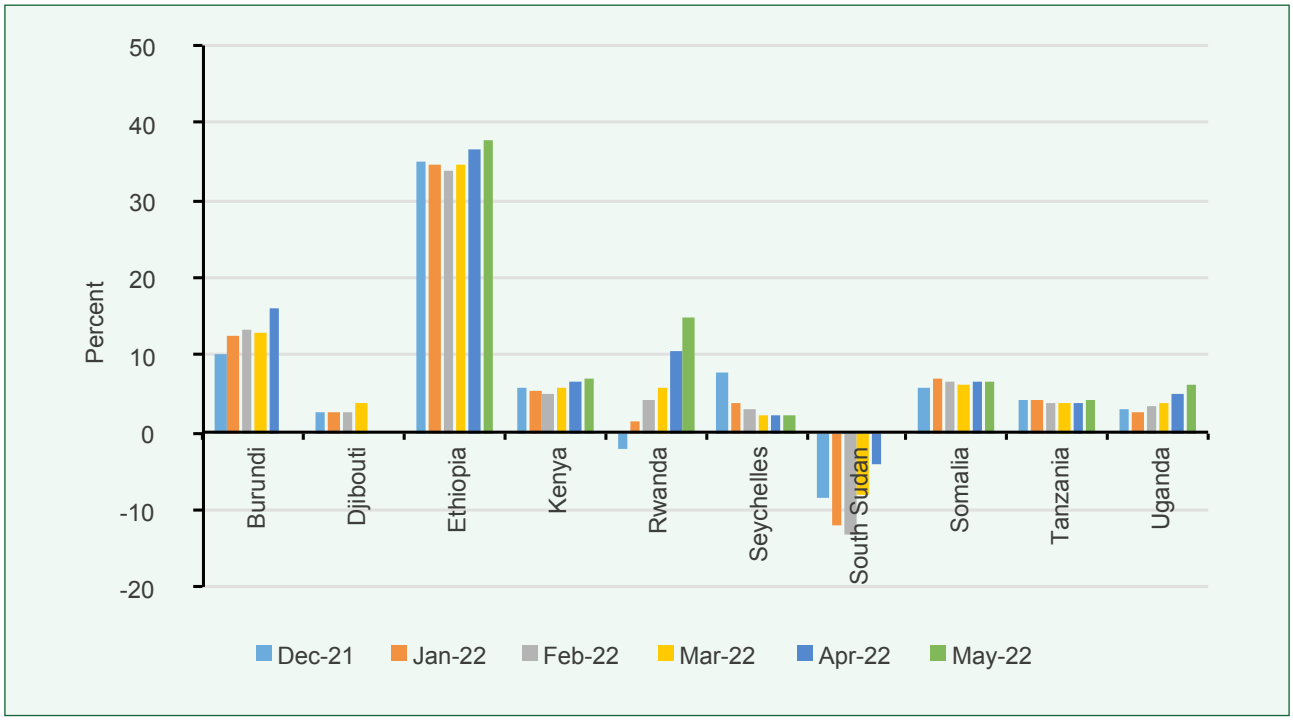
In Ethiopia, inflation was primarily driven by structural bottlenecks, particularly the low production and productivity in agriculture. Inflationary pressure also came from the continuous depreciation of local currency (23 percent during 2021), and monetization of the fiscal deficit. The monetization trend was initially triggered by the government's policy response to contain the effects of COVID-19 but continued in 2021 due to increased public spending related to the conflict in northern Ethiopia. Inflation was also fueled by a significant domestic credit growth of 25.9 percent, which pushed the central bank to double the cash reserve ratio to 10 percent in 2021 from 5 percent in 2020 but this policy response did not contain inflationary pressures.

In South Sudan, inflation remained high at 24.0 percent in 2021, although lower than the 33.3 percent registered in 2020. The moderation in inflation was partly attributed to a tighter monetary policy stance of the central bank, which showed a reserve ratio increase from 18 percent in 2019 to 20 percent in 2020. Furthermore, reduced monetization of the fiscal deficit, lower food prices, and the appreciation of the South Sudanese pound by over 63 percent against the U.S. dollar during March to September 2021 also helped to reduce the inflation rate.

Inflation was above 5.0 percent in Burundi, Kenya, and Seychelles in 2021, due to rising energy prices and macro-economic vulnerabilities. Inflation in Seychelles rose to 9.7 percent in 2021 from 1.8 percent in 2020 due to 2020 COVID-19 induced negative effects on tourism and price increase of non-food items. In Burundi, inflation increased from 7.5 percent in 2020 to 8.3 percent in 2021, due to poor agricultural production and rising oil prices. In Kenya, inflation increased from 5.3 percent in 2020 to 6.1 percent in 2021 due to a steady depreciation of the Kenya shilling relative to the U.S. dollar, disruptions to global supply chains due to COVID-19, and the rising global

oil prices, which increased domestic food and energy prices. The main driver of inflation in the above three countries was food and non-alcoholic beverages (52.3%), core inflation (34.2%) and energy inflation (13.6%). The accommodative monetary policy and good performance of the agriculture sector stabilized inflation to below 5 percent in seven other countries (Comoros, Djibouti, Eritrea, Rwanda, Tanzania, Uganda, and Somalia). In South Sudan, a tighter monetary policy was crucial in narrowing inflation to below 5.0 percent. The figure 1.7 below is commented under 1.4.1 on page 25.

Figure 1.7: Monthly inflation in selected East African countries (December 2021 to May 2022)



Source: African Development Bank statistics.

1.2.2 Exchange rates in the region remained generally stable, but some of the currencies weakened due to debt and external vulnerabilities

In most countries in the region, the exchange rate was generally stable in 2021, attributed to prudent monetary policies, better prices, exports of minerals especially gold, and steady foreign exchange inflows. The currencies that were stable in 2021 included those of Rwanda, Tanzania, and Uganda, while that of Eritrea is fixed at 15 nakfa per U.S. dollar. The Tanzania shilling depreciated by only 0.2 percent against the U.S. dollar due to prudent monetary policy and higher gold prices and exports. The Rwanda franc depreciated by 3 percent in 2021, supported by a prudent monetary policy stance. The Ugandan shilling appreciated by 4.3 percent against the U.S. dollar during the same period, which the Bank of Uganda attributes to increased inflows from offshore investors, civil society organizations, coffee export receipts, and non-financial institutions, amid increased demand for the Uganda shilling from the oil, manufacturing, and telecom sectors.

However, a rapid exchange rate depreciation was observed in some of the countries, caused by sentiments attributed to political risks and reduction in donor inflows, debt vulnerabilities, and the effects of COVID-19 on exports. The Sudanese pound experienced the steepest depreciation of 724 percent in 2021 from 54 per U.S. dollar (USD) at the beginning of the year to 445 per USD at the end of 2021. The depreciation was attributed to currency devaluation as part of reforms to unify the official and parallel market exchange rates, political risk, and related negative sentiments. The suspension of donor financial assistance in Sudan after the military takeover of government in October 2021 reduced government revenue, which however had a short-term and muted effect on the exchange rate overall. Similarly, the South Sudanese pound depreciated by 143 percent in 2021 from 175 per USD at the beginning of 2021 to 425 at the end of 2021 due to fluctuations in oil receipts, notwithstanding foreign exchange reforms including periodic auctions of foreign currency to stabilize the exchange rate by the authorities. The Kenya shilling experienced a depreciation of 12 percent against USD in 2021, which is significant especially when compared to its regional peers in the East African Community such as Uganda and Tanzania. The depreciation of the Kenya shilling mainly resulted from the rising debt and high structural trade deficit. Similar to Kenya, the Ethiopian birr recorded a depreciation of about 25 percent against USD in 2021, partly driven by weak export performance, sentiments on account of security risks and reforms to transition to a more competitive exchange rate.

Seychelles experienced a rapid exchange rate depreciation followed by appreciation caused by COVID-19 induced reduction in tourism revenues. Although the Seychelles rupee appreciated back to 13.8 rupees per USD by the end of December 2021 following the resumption of economic activity, the currency had depreciated by 51 percent to 20.8 per USD by the beginning of 2021. This shows the vulnerability of exchange rates for countries that are dependent on service exports, including tourism earnings.

1.2.3 An accommodative monetary policy stance was maintained by most central banks in the region in 2021, but it did little to reduce lending rates or boost private credit in some of the countries

Monetary policy continued to be accommodative in most countries in the region in 2021, aimed at consolidating the gains made in mitigating the effects of COVID-19 in 2020, particularly in the private sector. In Sudan the central bank reduced the cash reserve ratio from 22 percent in 2020 to 18 percent in 2021 to increase credit for businesses affected by COVID-19. Despite the lending rates in Sudan remaining elevated at 16.97 percent in 2021, attributed to limited competition in the banking sector, credit provided by commercial banks to the private sector grew by 189.3 percent in 2021 compared to 71.8 percent in 2020. In Uganda, stable prices emboldened the central bank to lower the policy rate by 2.5 percentage points to 6.5 percent in June 2021, but lending rates remained high at 18–19 percent in 2021 due to limited competition in the banking sector and high operational costs. Credit growth slowed to 8.9 percent in 2021 from 13.2 percent in 2019 despite a reduction in the central bank's policy rate. The limited responsiveness of credit growth to changes in policy rates was aggravated by the prolonged COVID-19 containment measures in Uganda, which severely affected business activity. In Kenya, the policy rate and the cash reserve ratio were held at 7 percent and 4.5 percent respectively in 2021 (since April 2020). However, commercial bank lending rates increased from a weighted average of 11.94 percent in 2020 to 12.1 percent in 2021, and private credit growth slowed to 7.5 percent in 2021 compared to 8.1 percent in 2020. The slowdown in credit growth was attributed to the lockdown from March to July 2021 in the five counties of Nairobi, Kajiado, Machakos, Kiambu, and Nakuru. In Rwanda, private-sector credit growth slowed from 18 percent in 2020 to 10.1 percent in 2021 despite monetary policy remaining accommodative, with the central bank's policy rate maintained at 4.5 percent from May 2020 until February 2022 when it was raised to 5 percent.

A few countries in the region tightened their monetary policy to contain inflation. Ethiopia implemented contractionary monetary policy in 2021 to contain inflation. In October 2021, its central bank doubled the cash reserve ratio from 5 percent to 10 percent. Similarly, the central bank of South Sudan implemented a tighter monetary policy stance in 2021 to reduce inflation. The reserve requirement ratio had been increased from 18 percent to 20 percent in November 2020.

1.2.4 The financial sector was mostly stable in 2021, notwithstanding significant systemic risks

The financial sector remained stable in most countries, partly due to the monetary policy stimulus packages of 2020. The ratio of non-performing loans (NPLs) to gross loans in the banking sector stayed around 5 percent in many countries. In Uganda, for instance, the NPLs for commercial banks declined from 5.3 percent of gross loans in 2020 to 4.8 percent in 2021. In Rwanda, the NPLs' ratio declined from 6.6 percent in March 2021 to 5.1 percent in September 2021 due to the growth in gross loans.

Capital adequacy also remained above the statutory thresholds in East Africa region. In Tanzania, the ratio of core capital to total risk-weighted assets stood at 17.9 percent in June 2021, which was above the 10 percent statutory requirement, partly due to strong macroprudential supervision from the Bank of Tanzania. In Rwanda, the capital adequacy ratio was 22.2 percent and liquidity coverage ratio was 221.4 percent, both of which surpassed the prudential limits of 15 percent and 100 percent, respectively. In Kenya, the capital adequacy ratio of 15.9 percent was higher than statutory requirements of 10.5 percent and was supported by normalization of economic activities, macroprudential measures, financial sector reforms, and digitization.

However, systemic risks remain high with the smaller financial institutions at more risk of instability. Microfinance institutions faced more instability compared to their larger counterparts. In Uganda, for instance, the NPLs of microfinance institutions rose from 6.3 percent of gross loans in 2020 to 12 percent in 2021. Average credit growth slowed to 8.9 percent in 2021 in Uganda from 13.2 percent in 2019, reflecting the COVID-19-induced disruptions to economic activity. Systemic risks remain a challenge with concentration risk relatively high, as five banks hold 61 percent of the financial sector's assets in Uganda. High concentration is also witnessed in Ethiopia, Kenya, and Tanzania. Despite the monetary policy stimulus packages, private credit did not improve much in some countries in the region. In Uganda, average private credit growth slowed to 8.9 percent in 2021 from 13.2 percent in 2019, due to lagged effects of the COVID-19-induced disruptions to economic activity, particularly given Uganda's prolonged containment measures compared to regional peers.

Countries where political tensions were high also experienced more financial instability. In Sudan, where the banking sector accounts for over 80 percent of the total financial sector assets, NPLs to gross loans increased to 3.5 percent in 2021, from 3 percent in 2020, reflecting the reduced asset quality related to the nascent economic recovery. The capital adequacy ratio also dropped to 7.2 percent in 2021, compared to 11.5 percent in 2020, due to reduced investment deposits following the significant exchange rate depreciation.

1.2.5 Overall fiscal deficit moderated in 2021 due to expenditure prioritization, but sluggish recovery in revenues kept it elevated in some countries

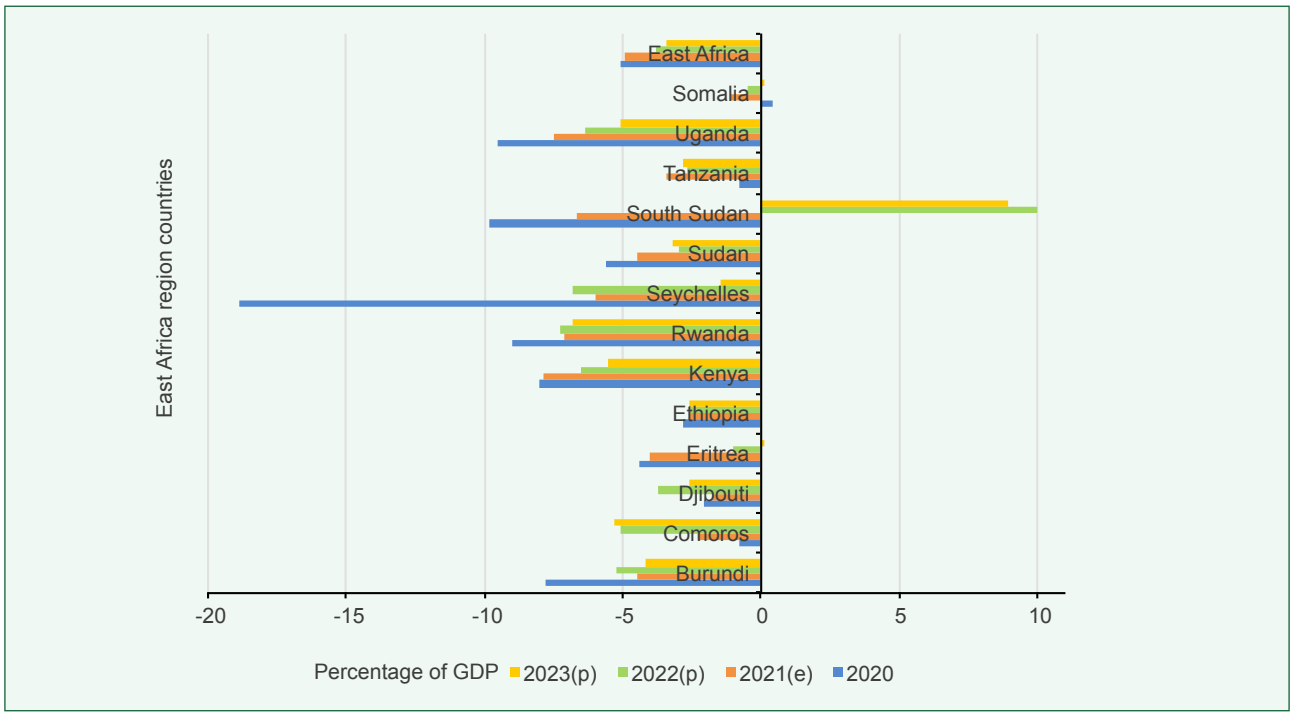
East Africa region registered a lower fiscal deficit at 4.9 percent of GDP in 2021 compared to 5.1 percent of GDP in 2020 (Figure 1.8) due to better revenue performance. However, the fiscal deficit was higher compared to Central and Southern Africa at 1.9 and 4.8 percent of GDP respectively, with these two regions benefiting from better commodity prices and the recovery in tourism in Southern Africa, respectively.

Whereas no country in the region recorded a double-digit fiscal deficit in 2021, five of the countries recorded above regional average deficits. These are Kenya, Rwanda, Seychelles, South Sudan, and Uganda. Kenya's high deficit was caused to a large extent by the rising commercial debt servicing obligations, which absorbed more domestic revenues amid sticky spending requirements on large public infrastructure projects. Despite remaining above the regional average, Kenya's fiscal deficit marginally reduced from 8.0 percent of GDP in 2020 to 7.9 percent of GDP in 2021 due to normalization of economic activities following the easing of containment

measures, reversal of tax cuts, and expenditure rationalization. Kenya's fiscal deficit was mainly financed by domestic and external borrowing. In Seychelles, the fiscal deficit narrowed to 6.0 percent of GDP in 2021 from 18.9 percent in 2020 owing to a rebound in tourist arrivals and resumption of economic activities during 2021. It remained elevated above the regional average due to incomplete recovery in the tourism sector. Similarly, Rwanda's fiscal deficit moderated to 7.1 percent of GDP in 2021, from 9.0 percent in 2020, but this was still higher than the regional average, due to sustained COVID-19-related spending and the lagged effects of the pandemic on economic activity caused by containment measures. South Sudan's fiscal deficit on the other hand resulted from the reduction in oil revenues as some oilfields reached maturity as well as the other negative effects of like floods and locust invasions which affected the country in 2021. However, the deficit of 6.7 percent of GDP was lower than the 9.8 percent of GDP recorded in 2020, due to fiscal consolidation. The deficit was financed by oil-backed loans and development assistance. In Uganda, the large spending on infrastructure projects and health-related costs to mitigate COVID-19 effects negatively affected fiscal performance. At the onset of COVID-19, Uganda prioritized spending on public health measures such as equipment and vaccines, as well as support to businesses. In 2021, the financing from external borrowings and the reprioritization of public spending helped to reduce the fiscal deficit to 7.5 percent of GDP from 9.5 percent of GDP in 2020. The external financing increased with support from multilateral development partners amounting to $1.8 billion in 2020 and 2021.

Compared to 2020, most of the East African countries recorded fiscal deficits below the regional average of 4.9 percent in 2021 due to recoveries in revenues and expenditures reprioritization. For instance, the fiscal deficit including grants decreased in Ethiopia to 2.6 percent of GDP in 2021 from 2.8 percent in 2020, due to expenditure reprioritization and a 24.8 percent increase in tax revenue in 2021.

Figure 1.8: Overall Fiscal balance, including grants, 2020–2023 (as percentage of GDP)



Source: African Development Bank statistics.

In summary, expenditure reprioritization turned out to be an important policy measure to contain the fiscal deficits in East Africa. However, weak revenue performance in a majority of countries prevented a more significant narrowing of the fiscal deficits. The sustained spending on large infrastructure projects and health helped to consolidate the gains made in mitigating the impacts of COVID-19 while laying a foundation for sustained and diversified growth. Controlling commercial debt and the expensive debt servicing obligations is equally important to contain public expenditures and fiscal deficits.

1.2.6 The region's debt increased slightly in 2021 and the debt servicing burden remains a challenge

Total debt levels in East Africa are high, driven by arrears accumulation, fiscal deficits, exchange rate depreciations, and worsened by the impacts of COVID-19 on revenues. The average total public debt-to-GDP ratio reached 87 percent in 2021 from 79 percent in 2020 in the region (Figure 1.9) driven mainly by strong growth in Sudan and Eritrea. Several factors explain the high debt levels in East Africa.

Legacy loans, arrears, and exchange rate depreciations

Sudan's high debt-to-GDP ratio, which stood at 135.4 percent of GDP in 2021 from 143.3 percent in 2020, was a result of arrears the country accumulated with several creditors. Sudan reached "Decision Point" under the Heavily Indebted Poor Countries Initiative (HIPC) in June 2021 but remains in debt distress. The 724 percent depreciation of the Sudanese pound in 2021 aggravated the debt burden in local currency terms, increasing the interest payments in 2022 from 400 million to 14,800 million Sudanese pounds in 2021 (a 3,600 percent growth). In Eritrea, the public debt-to-GDP ratio, which has been historically high, decreased from 185 percent in 2020 to 175.6 percent in 2021, largely due to government efforts to accelerate debt servicing.

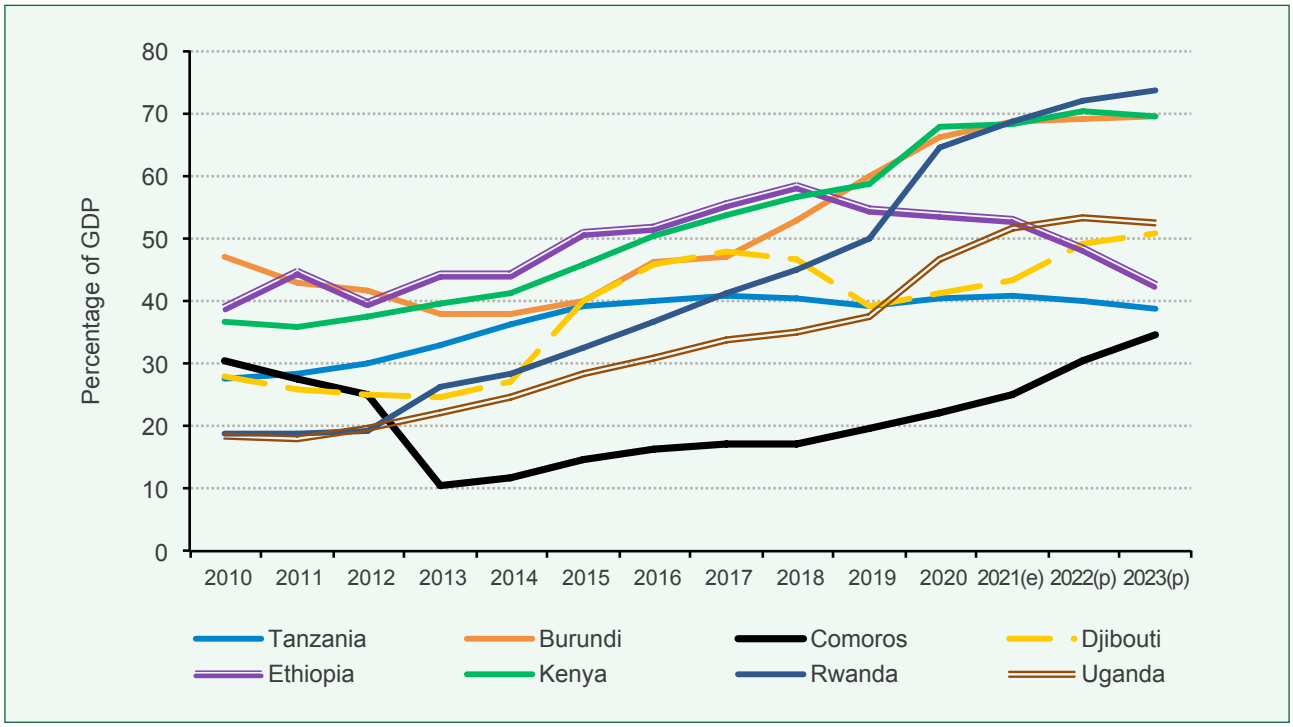
Limited economic diversification and vulnerability to external shocks

In Seychelles, the total debt stock declined but was still high at 72.5 percent of GDP in 2021 from 89.1 percent in 2020, having rapidly increased from 54.2 percent of GDP in 2019. Seychelles high debt levels had reached about 200 percent of GDP during the global financial crisis in 2008, illustrating the economy's vulnerability to external shocks, and its limited economic diversification.

Expensive commercial debt and high primary deficits

In Kenya, public debt surged to 68 percent of GDP in 2021 from 63 percent in 2020, driven mainly by primary deficit and exchange rate depreciation. Kenya has recently accumulated expensive commercial debts whose maturities are falling due and are being paid off using even more expensive commercial debt. The first Eurobond amounting to $750 million with a coupon rate of 5.88 percent, issued in 2014, matured in 2019 and was paid off using a new Eurobond issue. In May 2019, Kenya raised $2.1 billion from international capital markets to pay off other loans including the $750 million Eurobond that matured in June 2019, and other debt obligations. The second one, amounting to $2.0 billion issued in 2014 with a coupon rate of 6.88 percent will mature in 2024. With the maturities of the loans and weak revenues (wider primary deficit), Kenya was forced to borrow more, at even more expensive terms, to repay the commercial loans, adding to the debt burden. With the risk of debt distress changing to high from moderate in 2021, new loans became more expensive, increasing the debt servicing obligations. Continued reliance on (mainly) external debt to finance fiscal deficits on the other hand is another reason for the persistent rise in debt levels.

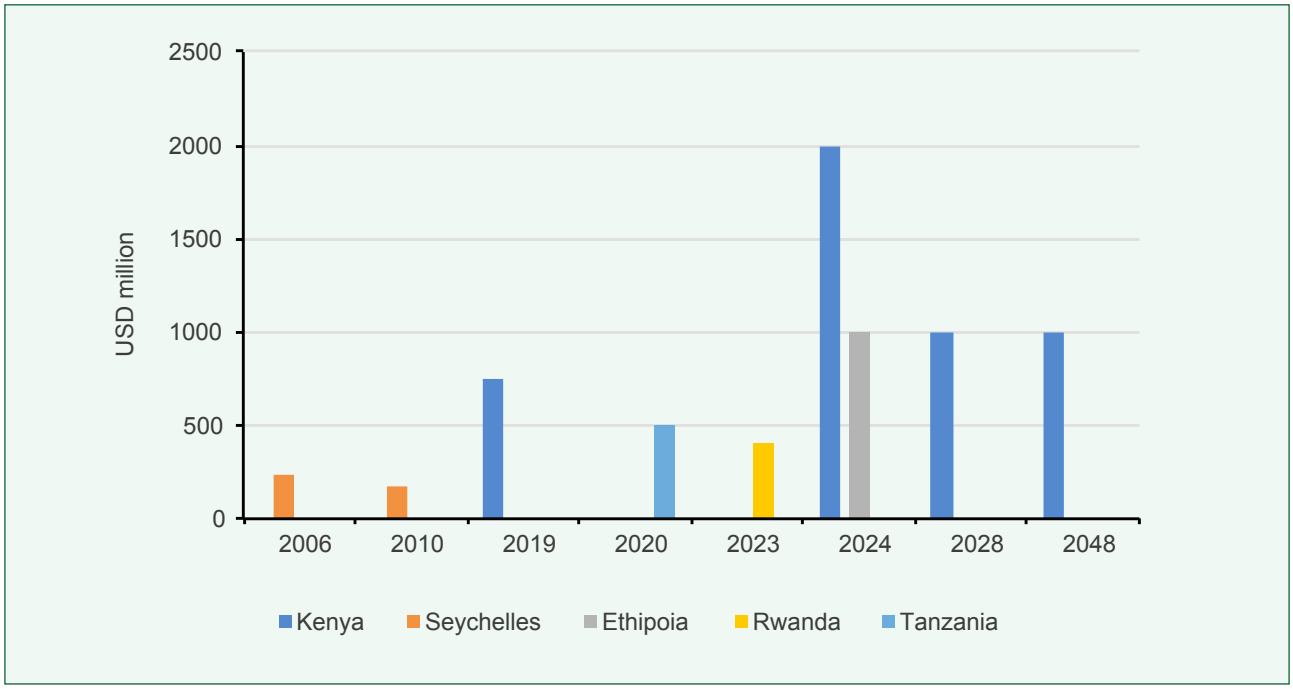
Figure 1.9: Total public debt, 2010–2021 (percentage of GDP)



Source: Staff calculations based on IMF World Economic Outlook database April 2022.
Note: Excludes Sudan and Eritrea due to very high numbers.

Looming maturities of recently issued Eurobonds are increasing countries' external debt distress risks. In 2021, external debt accounted for 60.7 percent of the total debt in the region, while domestic debt accounted for the remaining 39.3 percent of the total. In all countries, except Eritrea and Burundi, external debt was larger than domestic debt. In Tanzania for instance, external debt accounted for 72.4 percent of total public debt in 2021. In the recent past, the non-concessional portion of the total debt has increased significantly, increasing the debt repayment burden of the region's countries. An increasing portion of non-concessional debt consists of Eurobonds. The reduction in concessional funds due, among other things, to the impact of COVID-19 on the economies of the traditional providers of concessional funds, has pushed countries to tap into domestic markets and more expensive commercial debt to finance development. The claims from commercial banks in many of these countries have increased through Treasury bonds and bills as well as overdrafts from the central banks. For Eurobonds, several countries are facing maturities of their first issuances in the next one to three years (Figure 1.10). Ethiopia and Kenya have Eurobonds issued in 2014 with respective coupon rates of 6.624 percent and 6.88 percent, respectively, maturing in 2024, while Rwanda's $400 million Eurobond with a coupon rate of 6.63 percent issued in 2013 is maturing in 2023. These obligations are expected to add pressure on the countries' debt service requirements.

Figure 1.10: Recent Eurobond maturity dates in East Africa



Source: African Development Bank statistics

Debt servicing obligations have increased and put pressure on debt sustainability. Even though the external debt among East African countries has declined in recent years, external debt service as a percentage of tax revenues has increased. More worrisome is the fact that the countries' export capacity was battered by the impacts of COVID-19, which increased the external debt service to export ratios, an important measure of debt sustainability. Several countries in the region experienced a change in their risk of debt distress classification in 2021 due to higher solvency and liquidity risks associated with weak export performance.

In Ethiopia, the total external public sector debt service was 60.0 percent of total merchandise export earnings in 2021, which contributed to the country remaining at high risk of debt distress due to weak export performance. Djibouti and Ethiopia benefited from the G20 Debt Service Suspension Initiative (DSSI) which ended in December 2021. This DSSI support to Ethiopia helped to postpone debt servicing. Similarly, Kenya was assessed at high risk of debt distress in 2021 on account of heightened solvency and liquidity risks. Kenya's external public debt service increased and added pressure to the country's risk of external distress. In Uganda, debt service increased from 15.6 percent of tax revenues in 2019 to 21.8 percent in 2021, consequently, leading to a downgrade from low to moderate risk of debt distress. Similarly, Tanzania's risk of external debt distress deteriorated from low to moderate in 2021 due to vulnerabilities from a narrow export performance.

Debt restructuring was instrumental in helping some countries to navigate external debt vulnerabilities. In South Sudan, the Debt Sustainability Analysis (DSA) rating improved from debt distress to high risk in 2021 following debt restructuring. However, the present value of external debt-to-GDP ratio increased from 31.4 percent in June 2020

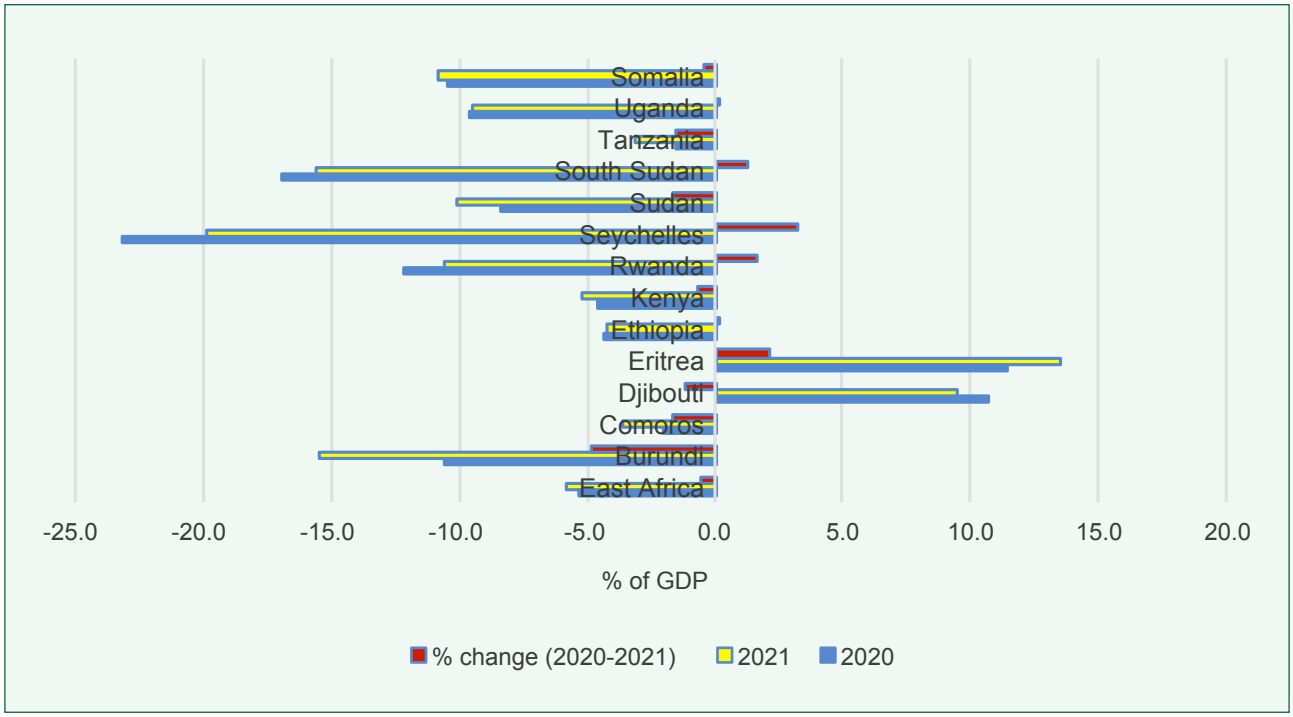
to 46.9 percent in June 2021 resulting from the inclusion in the country's debt statistics of the sum of $539 million (10 percent of GDP) as an oil advance made in 2018. This pushed the debt service from 5.5 percent of GDP in 2020 to 7.8 percent in 2021.

1.2.7 The region's current account balance continued to deteriorate in 2021 due to the sluggish recovery of exports, in spite of some countries benefiting from higher commodity prices

The current account deficit increased to 5.9 percent of GDP in 2021 from the 5.3 percent in 2020 (Figure 1.11), attributed to higher import bills caused by rising commodity prices (particularly oil prices), high imports because of weak domestic production, and weak recovery of earnings from exports. The aggregate figures however mask the differences across the region.

While 7 out of the 13 countries in the region recorded deteriorations in their current account balances, the remaining 6 recorded improvements. Burundi, Comoros, Djibouti, Kenya, Sudan, Tanzania, and Somalia all recorded deteriorations in their current account balances. Out of these, Burundi, Sudan, and Somalia recorded double-digit current account deficits balances in 2021. Comoros, Djibouti, Kenya, and Tanzania all recorded single-digit current account balance deteriorations (reduced surplus in Djibouti and widening deficit in the other three countries). Trends in current account balances are explained by diverse factors.

Figure 1.11: Current Account Balance, 2020–2021 (percentage of GDP)



Source: African Development Bank statistics.

High import demand due to weak domestic production

In Somalia, despite the recovery in livestock exports and remittances, strong import demand caused by low domestic production increased the current account deficit to 10.8 percent of GDP in 2021 from 10.4 percent in 2020. The current account deficit was financed by remittances which increased to 31.3 percent of GDP in 2021 from 30.8 percent of GDP in 2020. Foreign direct investment (FDI) on the other hand dropped from 9.4 percent of GDP in 2020 to 9.2 percent in 2021 due to political uncertainty. In Sudan, the current account deficit increased to 10.0 percent of GDP in 2021 compared to 8.3 percent in 2020, resulting from higher import demand, due to the lifting of COVID-19 restrictions, which offset the pickup in exports following improved commodity prices.

Weak recovery of export earnings

In Tanzania, the current account deficit widened from 1.5 percent of GDP in 2020 to 3.1 percent in 2021 due to subdued tourism receipts, which shrunk from 4.0 percent of GDP in 2019 to 1.0 percent in 2021. However, the deterioration in the current account deficit was mitigated by higher earnings from gold, the leading export in Tanzania. The current account deficit was financed largely by external commercial debt as other financial flows including FDI and grants declined. In Seychelles, the current account deficit narrowed to 19.8 percent of GDP in 2021 compared to 23.1 percent in 2020, still the highest in the region, due to lower than pre-COVID-19 tourism earnings. Similarly, Burundi recorded the largest deterioration in the current account deficit to 15.4 percent in 2021 from 10.5 percent of GDP in 2020 caused by the slowdown in mining and tea exports and increased imports.

Rising oil prices

Kenya, which is a net oil importer, experienced a widening current account deficit to 5.2 percent of GDP in 2021 from 4.6 percent in 2020 caused by a rising import bill following sharp increases in oil that constituted about 18 percent of Kenya's merchandise imports. As of end-August 2021, fuel and non-food imports, accounting for 58 percent of the total import bill, grew by 63 percent and 51 percent, respectively.

Higher metal prices

Eritrea's current account surplus increased to 13.5 percent of GDP in 2021 from 11.4 percent of GDP in 2020, supported by the rise in global demand and prices for metals. Copper, gold, and ores constitute about 50 percent of Eritrea's total exports. However, export market concentration remains a key source of external vulnerability, as China accounts for about 60 percent of Eritrea's total exports. Eritrea's trade with other African countries is limited, accounting for 19 percent of the country's total trade.

Financial flows

Rwanda's current account deficit narrowed from 12.2 percent of GDP in 2020 to 10.6 percent of GDP in 2021 on account of high remittances and grants, which offset the impact of a negative balance of trade. In South Sudan, the current account improved from 16.9 percent of GDP in 2020 to 15.6 percent of GDP in 2021 following the reduction in financial outflows to Sudan as part of the "Transitional Financial Arrangement" (TFA) signed in 2012, in which the Republic of South Sudan committed to make financial contribution to Sudan over a period of 42 months to ameliorate the adverse economic effects of the secession.

1.2.8 The 2021 IMF's Special Drawing Rights (SDR) allocation to the region has helped to boost reserves and ease pressure on fiscal and current account balances

The East Africa region secured SDR 2.92 billion, equivalent to $4.1 billion, from IMF's general SDR allocation in 2021. The Board of Governors of the IMF approved a general allocation of SDR 456 billion (equivalent to $650 billion) in August 2021, to boost global liquidity, which was the largest SDR allocation in the history of the IMF. The SDR allocation

aims to boost the global need for reserves, build confidence, foster the recovery, and stability of the global economy. It also aimed at helping developing countries that are struggling to deal with the effects of COVID-19 to accelerate the recovery from the shock. The region's SDR allocation represents about 12.4 percent of Africa's allocation. Africa's total SDR allocation of about $33 billion on the other hand, represents only 5.1 percent of the total SDRs. Africa's low share is largely a reflection of its insignificant share in world GDP that informs the SDR quota-based allocation system. The African allocation itself is, thus, heavily skewed towards the largest economies on the continent, namely Egypt, Nigeria, and South Africa. Together, these three countries accounted in 2021 for over 30 percent of the continent's total SDR allocation, with South Africa receiving the largest amount of $4.2 billion.

East Africa's SDR allocation (12.4 percent of the continental share) is almost equal to South Africa's allocation. Within the East Africa region, Sudan received the largest share equivalent to 20 percent of the total regional allocation. Together with Kenya, the second highest recipient of SDRs in the region, the two countries alone received 39 percent of the total SDR allocated to countries in the region (Table 1.1). Five countries in the region (Ethiopia, Kenya, Sudan, Tanzania, and Uganda) received about 74 percent of the total SDR allocated to the region showing the concentration of the allocation in the hands of only a few countries in the region.

Table 1.1: The IMF Special Drawing Rights allocation to East Africa, 2021

Country	SDR allocated (million)	USD equivalent (million)	Share in GDP (percentage)	Share of SDRs in international reserves (percentage)
Burundi	154	215.337	6.6	200.0
Comoros	17.1	24.3	1.8	7.0
Djibouti	30.5	43.3	1.2	9.0
Eritrea	15.2	21.51	0.9	6.0
Ethiopia	288.2	409	0.4	13.4
Kenya	520.2	737.6	0.7	8.4
Rwanda	153.5	219	1.9	12.8
Seychelles	19	30	3.3	13.3
Somalia	156.6	203	4.1	128.6
South Sudan	235.8	334	6.9	177.0
Sudan	604	857.7	2.6	262.0
Tanzania	381.3	543	0.8	10.4
Uganda	346	493	1.3	13.0
East Africa	2,921.4	4,130.7	2.5	66.2

Source: Authors, based on data extracted from IMF and AfDB documents.
Note: SDR data are both from the IMF and AfDB Country Notes; USD equivalent and share in reserves are based on the latter. GDP is based on AfDB statistics for 2021.

The SDR allocation significantly enhanced the international reserve position of the region's countries, increasing their ability to absorb balance of payment shocks. The allocation was equivalent to 66 percent of the annual international reserves of countries in the region in 2021. There was however wide variation across countries. For Burundi and Sudan, their respective allocations were equivalent to over 200 percent of their international reserves while, for South Sudan and Somalia, SDRs constituted 177 and 128.6 percent of their international reserves, respectively. For relatively big countries (in terms of population and economic size) in the region, such as Kenya, Ethiopia, Tanzania, and Uganda, the share of SDR allocation in international reserves was equivalent to about of 8.4 percent for Kenya and about 13 percent for Uganda. Countries in the region generally recorded their SDR at their central banks to boost international reserves. These included Djibouti, Kenya, South Sudan, and Uganda. The only exception was Comoros. The Comoros central bank exchanged the allocation for foreign currency, which was deposited in the French Treasury with the country's other reserve assets, where they earn interest of 2.5 percent per year.

Some of the countries in the region used the SDR allocations to finance fiscal deficit. Burundi for instance used their SDR allocations to improve international reserves and also finance public infrastructure in strategic sectors. Similarly, Rwanda used about 70 percent of its SDR allocation to offset the COVID-19-related 2021/22 budget deficit, buy vaccines and support the economic recovery. The remaining 30 percent was used to boost the country's reserve position and pay off the maturing Eurobond. Uganda also used its SDR allocation to finance the budget deficit and boost international reserves. Kenya also outlined in the 2022 Budget Policy Statement that it would use about half of the SDR allocation to finance the 2021/2022 fiscal deficit.

Concerns regarding increased indebtedness following the SDR allocations have emerged but, given East Africa's small share of the allocation, the impact on debt accumulation is expected to be small. The SDRs are small relative to countries' GDP and could raise the debt to GDP ratio of the region only by 2.5 percentage points with limited effect on debt sustainability. Most governments in the region saw the SDR allocation as important support to boost their reserves and address their fiscal and current account balance deficits.

1.3 SOCIOECONOMIC EFFECTS OF COVID-19 IN EAST AFRICA

Despite abating, the impacts of COVID-19 on many economic sectors globally continue to be felt, with differentiated impacts across sectors and countries. In East Africa, some of the sectors that were most severely affected including tourism have recorded notable recovery, but a return to pre-COVID-19 levels will take time. The next sub-sections highlight some of the lingering impacts of COVID-19 on tourism, poverty, employment, education, and health in East Africa.

1.3.1 The COVID-19 pandemic has resulted in a drastic drop in tourist movements, which the region is still struggling to fully restore

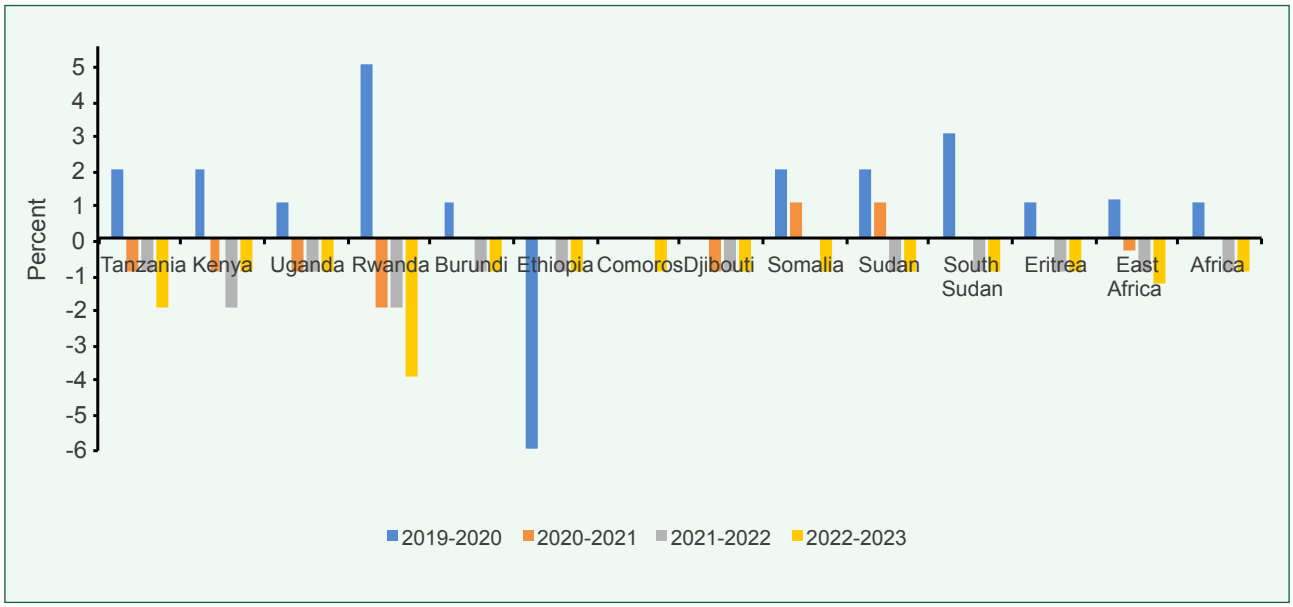
Despite the removal of several travel restrictions, and the recovery of the tourism sector in many East African countries, tourist numbers are yet to return to the pre-COVID-19 levels. In Tanzania which is one of the countries in the region with a relatively big tourism sector and where tourism receipts shrunk from 4 percent of GDP in 2019 to 1 percent in 2021 the recovery has been slow. Data from the Tanzania National Bureau of Statistics show that the number of international tourist arrivals rebounded to 922,692 in 2021 up from 620,867 in 2020, signaling a recovery in tourism activities, but still well below the pre-COVID-19 level of 1,510,151 in 2019. The recovery is expected to be boosted further by the removal of COVID-19 negative test result requirements for international arrivals instituted in Kenya and Tanzania in March 2022. However, tourism arrivals may be affected by political instability and the pace of COVID-19 vaccination roll-out, a key factor in mitigating the spread of the pandemic.

1.3.2 Poverty and income inequality reduction momentum in East Africa region has been severely set back on account of COVID-19

Poverty vulnerability and persistence

About 12.32 million persons in the region (equivalent to 3.4 percent of the 2019 population) drifted into extreme poverty (World Poverty Clock) on the account of COVID-19 and its aftermath in 2021. With exception of Djibouti, Comoros, and Ethiopia, which showed notable resilience to the COVID-19 shock due to sustained social safety nets and subsidies on basic goods, the remaining 10 countries in East Africa recorded an increase in the number of people in extreme poverty at the height of COVID-19 in 2020 compared to 2019 (Figure 1.12). The most vulnerable of the East African countries were Rwanda and South Sudan, where the number of those living in extreme poverty increased by 5 and 3 percentage points respectively. In Rwanda, the share of those living in extreme poverty increased from 47 percent in 2019 to 52 percent in 2020. Despite ebbing, the adverse impacts of the pandemic on extreme poverty are still expected to linger in the medium term. For instance, the World Data Lab's World Poverty Clock projects that Kenya's population living in extreme poverty will decrease to 17 percent and 16 percent in 2022 and 2023 respectively from 20 percent and 19 percent in 2020 and 2021 respectively.

Figure 1.12: Projected change in poverty levels between 2019 and 2023 (percentage points)



Source: World Poverty Clock (2022).

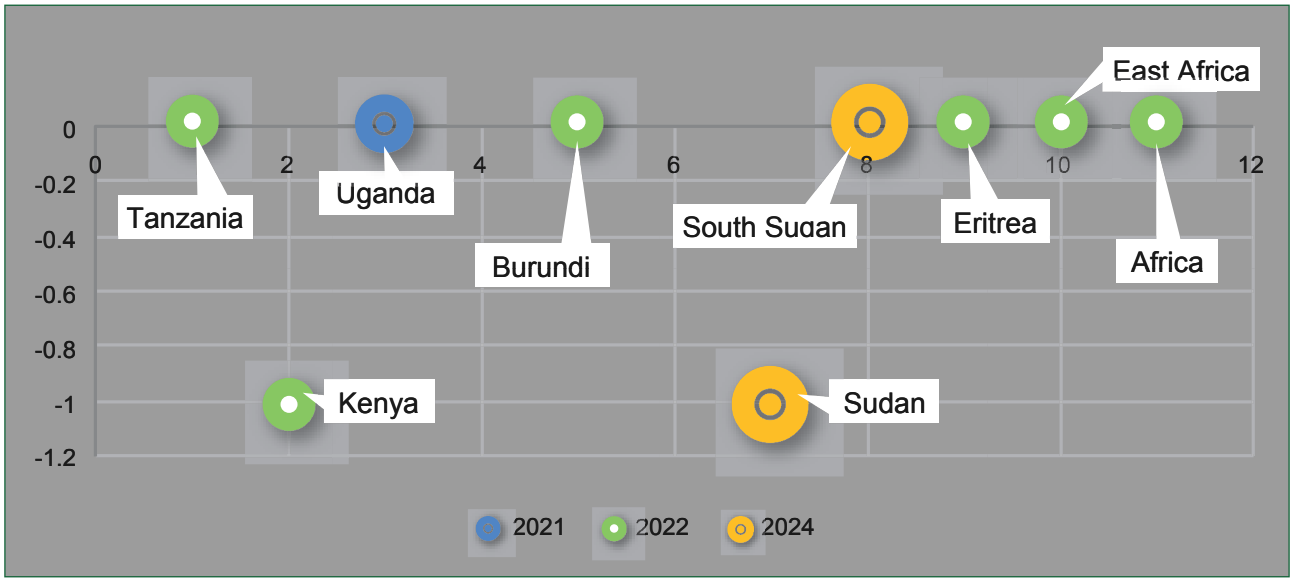
Poverty persistence in East Africa

Following the easing of COVID-19 restrictions, recovery of the global economic activity and roll-out of vaccinations in 2021, five countries in East Africa (Djibouti, Kenya, Rwanda, Tanzania, and Uganda) recorded a decline in the number of people living in extreme poverty compared to 2020. However, poverty persisted in five countries, namely Burundi, Eritrea, Somalia, South Sudan, and Sudan in 2021, largely reflecting the combined effect of political instability, subdued economic recovery and high inflation.

Adjustment to pre-COVID-19 poverty levels

Among the countries that were impacted by COVID-19 (exceeded only by Comoros, Djibouti, and Ethiopia), one of the fastest to adjust to pre-COVID-19 poverty levels was Uganda, whose extreme poverty rate dropped to 35 percent in 2021, the same level as in 2019, compared to 36 percent in 2020. Some East African countries, namely Burundi, Eritrea, Kenya, and Tanzania are expected to return to the pre-COVID-19 poverty levels in 2022 (Figure 1.13), and Rwanda by 2023, with Sudan and South Sudan projected to return to those levels by 2024. Extreme poverty in Somalia on the other hand is projected to remain elevated beyond the pre-COVID-19 levels until 2026 when it is expected to drop to 53 percent, the 2019 level.

Figure 1.13: Year of return to pre-COVID-19 poverty levels



Source: Authors' calculations based on data from the World Poverty Clock

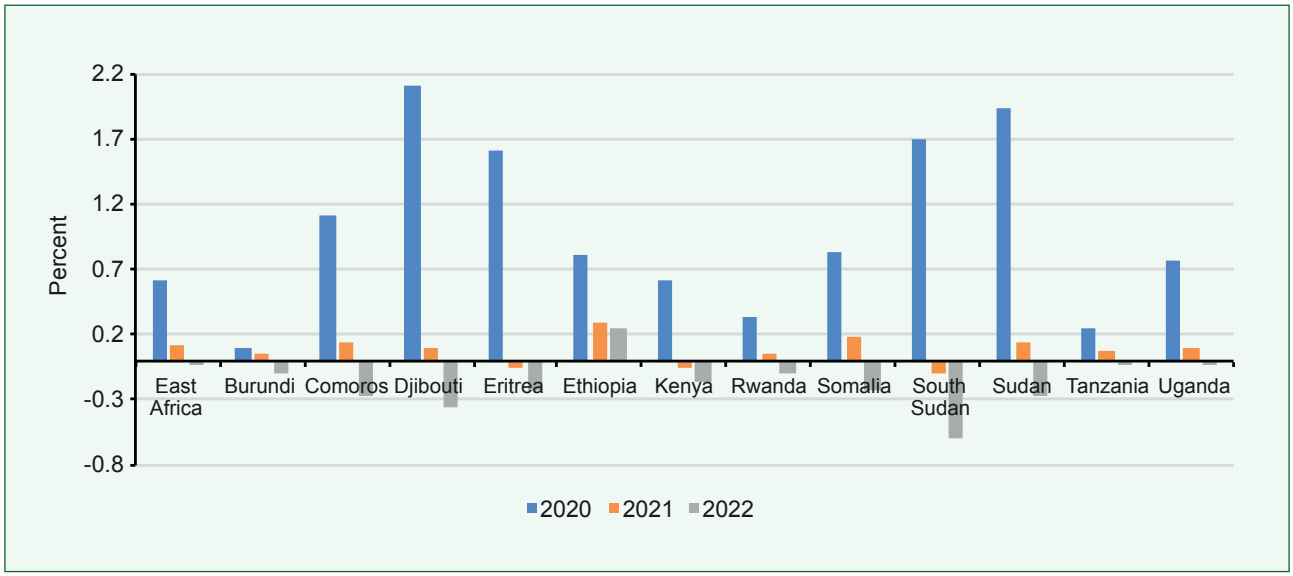
The COVID-19 pandemic has widened income inequality in the East Africa region. Despite the rebound in economic activity, inequality is expected to persist as poverty sluggishly abates and returns to pre-COVID-19 levels. In their "Commitment to Reducing Inequality Index", Development Finance International and Oxfam rank 158 governments across the world on their commitment to reducing inequality. Their "Commitment to Reducing Inequality Index: Africa Briefing", published in February 2022 shows that the richest 10 percent of East Africans are earning an average of 47 percent of pre-tax national income while the poorest 50 percent of citizens earn 13.3 percent. The document notes that, in Rwanda, the richest 1 percent of the population earned 20 percent of national income, nearly double the share earned by the bottom 50 percent.

1.3.3 The COVID-19 pandemic disturbed the labor market in the East Africa region and employment is yet to recover in most countries

The growth recovery experienced in East Africa in 2021 has helped to reduce job losses and to restore jobs for people who had lost employment in 2020. At the height of the

pandemic in 2020, businesses in the tourism, entertainment, and transport sectors were the most severely affected. The International Labour Organization's ILO Monitor, 6th edition (2020) estimated that about 38 million jobs were lost in East Africa in 2020. Figure 1.14 shows that unemployment rates (as a percentage of the total labor force) increased in all countries of East Africa, but the increase was steeper in economically and politically vulnerable countries, including Sudan, South Sudan, and Eritrea. Despite the steep losses in employment experienced in 2020, Eritrea, Kenya, and South Sudan recorded reductions in unemployment in 2021. The rest of the countries continued to experience increased unemployment in 2021. In 2022, unemployment rates in all countries of the region are projected to remain higher than their pre-COVID-19 2019 levels.

Figure 1.14: Change in unemployment in East Africa 2020–2022 (percentage)



Source: ILOSTATS, March 2022,

1.3.4 The COVID-19 pandemic has disrupted the education systems in the East Africa region and heightened the risks of unequal access to education

After the widespread school closures in 2020 across East Africa, schools in several countries were reopened in 2021. However, in Uganda the school closures lasted longer, only reopening in January 2022. Some private schools in many of the region's countries were able to circumvent the closures through online learning, while public schools largely sent learners home except for graduating classes. School closures widened inequality gaps between rich and poor, as the latter had limited means to access any form of educational materials during school closures. A blog published by the Institute of Economic Affairs showed that nearly 70 percent of school children in Kenya live in rural areas where there is a shortage of well-funded schools, trained teachers, and books and supplies, and are therefore more disproportionately affected (Gathuru & Mweyeri, 2020).

According to the World Bank's World Development Indicators (WDI), about 9.5 million primary school children were out of school in 2020 in East Africa, up from about 8 million prior to COVID-19 in 2018, partly attributed to the

closure of schools at the height of the pandemic. About 2.1 million of these children were in Sudan, and 2.2 million in Ethiopia. Kenya, South Sudan, and Tanzania had more than one million each while Seychelles and Comoros had the lowest of 135 and 22,667 out-of-school children respectively. These numbers are expected to reduce in 2022 as schools resume fully.

1.3.5 The COVID-19 pandemic has shaken the health system in the East Africa region, but it has also served as an opportunity to strengthen this system

As the severity of the pandemic fades, reflections from its impacts show that the pandemic helped to strengthen East Africa's health systems, making them more ready to deal better with possible similar pandemics in the future. As part of the measures to boost the preparedness for COVID-19 mitigation, health systems have been boosted in many of the region's countries. For instance, the number of intensive care unit (ICU) beds have significantly increased in many of these countries, as well as isolation centers. The capacity of testing laboratories has improved as well as the staffing in health facilities.

1.4 MEDIUM-TERM ECONOMIC OUTLOOK AND RISKS

This section assesses the medium-term economic outlook and risks for East Africa. While the region's growth outlook is positive, key downside domestic and external risks including political instability and the Russia-Ukraine war, respectively, remain a major concern According to the International Monetary Fund (IMF)'s World Economic Outlook (April 2022), global economic growth is projected to decline to 3.6 percent in 2022 and 2023 due to war-induced food and energy price increases, and disruptions to supply chains. This would have a significant impact on exports and economic growth in the region. Furthermore, the IMF report also shows that global inflation is estimated to rise to 7.4 percent in 2022 from 4.7 percent in 2021 before moderating to 4.8 percent in 2023. This rising inflation could heighten imported inflation in the region.

1.4.1 The region's medium-term outlook remains positive

The recovery of the East Africa region that began in 2021 is projected to be sustained at 4.7 percent in 2022 before strengthening to 5.5 percent in 2023. The effects of the Russia-Ukraine conflict are expected to slow the pace of recovery in 2022, but continued reopening of economies globally could mitigate the effects of the war in 2023, returning the region to pre-COVID-19 growth rates above 5 percent, and reclaiming its pre-pandemic leading position among the regions of the continent.

The projected strong growth is, however, not homogenous across the region, largely reflecting security concerns in some countries. Top performers in the region will be Kenya, Rwanda, Seychelles, South Sudan, and Uganda. In Rwanda, the recent acceleration of COVID-19 vaccination has reduced the likelihood of pandemic-induced lockdowns in 2022. This coupled with the relatively strong external demand, continued government support to small and medium enterprises, and expected good performance in agricultural production will keep estimated real GDP growth strong at 6.9 percent in 2022. Similarly, estimated real GDP in Seychelles will remain strong at 5.0 percent in 2022 as tourism activities continue to rebound amid the global drive for vaccinations, global economic recovery, and easing of travel restrictions. Rising oil prices and demand will be the primary driver of growth in South Sudan with real GDP expected to rebound to 5.3 percent in 2022, from a contraction of 6.0 percent in 2021. The other strong projected growth performers in the region in 2022 will be Kenya (5.9 percent) and Uganda (5.0 percent). Growth in these two countries will be driven by a combination of factors including, supportive macroeconomic policies, strong sentiments (reflected in the Purchasing Managers' Index (Investopedia, 2020) and indicators of consumer confidence), strong services and industry sector performance.

Although Ethiopia's growth in 2022 is expected to be subdued at 4.8 percent, it will be among the top growth performers in 2023. Economic growth is expected to be

driven by the industry and services sectors on the supply side and private consumption and investment on the demand side. Industrial growth is expected to be driven by agro-industrial parks, with services and private consumption being stimulated by the gradual stabilizing of supply and value chains, and ongoing reforms that are expected to support private-sector activities. Sporadic conflicts, macroeconomic imbalances, and the country's exclusion from the USA's African Growth and Opportunity Act (AGOA) are downside risks to Ethiopia's growth outlook, especially in 2022. Despite the projected improvements for Burundi, Comoros, Djibouti, Somalia, Sudan, and Eritrea in 2022 and 2023 relative to 2021, real GDP growth will remain below the region's average in 2022 and 2023. This is mainly because of expected external shocks that may slow growth in these countries and the lingering effect of the political instability in Sudan and South Sudan.

Inflation in the East Africa region is expected to decline slightly to 36.0 percent in 2022, from 40.6 percent in 2021. This notwithstanding the projected increases in inflation in most countries in the region in 2022 due to the enduring effects of the expansionary macro policy stance pursued in 2020 and 2021, droughts in 2022 and the impact of global shocks that emerged following the Russia-Ukraine conflict. Countries such as Ethiopia, Eritrea, Djibouti, and Somalia that are experiencing drought and pockets of conflict will have increased inflationary pressures, while the projected increases in inflation in Kenya, Tanzania, Rwanda, and Uganda are mainly attributed to rising prices of energy and other commodities. The biggest expected deceleration in inflation in the region will be in Sudan (246.4 percent in 2022, from 358.9 percent in 2021), attributed to the effect of monetary policy tightening and ebbing base effects. In Sudan, inflation is projected to decline to 5.3 percent in 2022, from 24.0 percent in 2021, due to ongoing reforms aimed at reducing fiscal deficit, and monetization.

The impact of the Russia-Ukraine conflict on prices is not homogeneous across the East Africa region. In fact, the analysis of the last seven months of inflation in the region (see Figure 1.7 on page 10) reveals three main trends: (i) countries experiencing sharp rise in prices because of the Russia-Ukraine conflict that escalated in February 2022 (Burundi, Ethiopia, Kenya, Rwanda, and Uganda); (ii) countries experiencing mild price spikes due to this conflict (Djibouti, Somalia, Tanzania); and (iii) countries that have not experienced soaring prices resulting from this conflict (e.g. Seychelles, South Sudan). The extent of the implications of this conflict on prices depends on the trade ties that the countries of the region have with the countries at conflict, and the reliance on the goods supplied by these countries such as crude oil and wheat (for more details, see sub-section 1.4.3). For instance, the price spike is large in Kenya because Kenya is a net importer of crude oil, petroleum products, and grain coming partly from the countries at conflict: the country relies on Russia and Ukraine for 89 percent of its wheat imports, and fuel imports account for 20 percent of the country's total import bill. Similarly, a significant surge in prices in Ethiopia was recorded because Russia and Ukraine accounted for a significant share of Ethiopia's imports from Europe (16.6% in 2020/21), comprising mainly food items. Lastly, Figure 1.7 also reveals that it was from April 2022 that prices soared in the region as the result of the Russia-Ukraine conflict, with the exception of Rwanda, where the surge in prices started from March 2022 and which has so far recorded the largest monthly price surge in the region.

Compared to 2021, fiscal balances are expected to improve slightly in most countries in 2022. The fiscal balance is expected to weaken in 5 of 13 countries in 2022, with the highest projected rise in Comoros (2.8 percentage points) and Djibouti (1.9 percentage points). In Comoros, the projected rise in fiscal deficit is partly attributed to increased spending on infrastructure projects. Djibouti's fiscal deficit will increase in 2022, before easing in 2023. Fiscal balance improvements are expected in South Sudan and Eritrea. More specifically, fiscal deficit is expected to narrow in Eritrea to 1 percent of GDP in 2022 before settling at a surplus of 0.1 percent in 2023. This improvement will be mainly driven by fiscal consolidation and expected improvement in revenues from metal exports. In South Sudan, the fiscal balance is expected to register a surplus of 10 and 8.9 percent of GDP in 2022 and 2023, respectively, mainly due to higher oil prices.

The average current account deficit for the region is projected to increase slightly in 2022 but to ease in 2023. Except for Eritrea, Sudan, and South Sudan, all the other countries in the region are projected to record deteriorations in their current account balances, attributed to external shocks, including the effect of the Russian-Ukraine war on import bills. In particular, elevated oil prices will negatively affect all countries in the region, except oil-exporting South Sudan, which is expected to benefit. In addition, the high stock of external debt and its servicing is expected to put pressure on the current account balances in a few countries in the region such as Djibouti, Ethiopia, and Kenya. For instance, in Kenya, the current account deficit is estimated to widen in 2022 and slightly improve in 2023 because of the sustained structural trade imbalance, which is expected to be aggravated by the pickup in the oil import bill in 2022 and 2023. Other oil importers in the region are also expected to experience similar trends.

The current account outlook is positive for some countries in the region including Eritrea, Sudan, and South Sudan. Eritrea's current account balance is expected to benefit from the uptick in global demand and prices for metals. Sudan's current account deficit is expected to improve to 6.4 and 3.9 percent of GDP in 2022 and 2023, respectively, from 10 percent of GDP in 2021. Following resumption of oil production and improved global prices, South Sudan's current account deficit is expected to improve by nearly 50 percent from 15.6 percent of GDP in 2021 to a deficit of 7.6 percent in 2022 and a surplus of 9.5 percent in 2023. These improvements also reflect the expected reduction of imports in the medium term due the scaling back of import-intensive public infrastructure in line with South Sudan's fiscal consolidation strategy. The improved peace outlook is also expected to catalyze FDI, including in South Sudan's non-oil sectors.

Wide fiscal and current account deficits and the impact of the Russia-Ukraine war will keep the risk of debt distress and the burden of debt service elevated in 2022 and 2023. In most countries in the region, the risks of debt distress are not expected to ease over the next two years. For instance, Kenya was assessed at high risks of debt distress, with, public debt increasing to 68 percent of GDP at end of June 2021 from 63 percent in 2020, driven by primary deficit, interest rate, and exchange rate depreciation. This trend is not expected to change much in 2022. Ethiopia's public debt indicators are expected to continue reflecting weak export performance and increased public spending related to the war in the northern part of the country. In Comoros public debt is expected to continue to increase in the medium term, but at a slower pace. In addition, the country has committed to using only concessional borrowing to minimize the burden of servicing expensive debt, as has been the case for Ethiopia over the last two years. Yet, rise in public debt and elevated debt servicing needs will remain a challenge in both Comoros and Ethiopia in 2022. In Djibouti, debt to GDP ratio is expected to decline slightly in 2022, yet the risk of debt distress is expected to remain high. Similarly, Eritrea is expected to remain in debt distress, although public debt-to-GDP ratio is projected to decline slightly in 2022 due to government efforts to accelerate debt servicing. Elevated debt vulnerabilities are expected across most countries in the region in 2022 and 2023.

1.4.2 A number of key domestic and external downside risks could moderate the positive outlook

Economic risks

The short-term risks include the Russia-Ukraine war, which has increased global food and energy prices and could already be slowing global and East African economic growth. A continuation of the war could place additional upward pressure on food and energy prices and weigh heavily on the region's commodity importing countries, exacerbating food insecurity. Governments in the region could face two difficult policy trade-offs at a time when policy space is limited: tackling inflation, which could delay the economic recovery; and cushioning the most vulnerable against higher prices, which could add to fiscal and debt vulnerabilities.

In the medium term, the outlook in several countries such as Kenya, Uganda, and Ethiopia could be affected by the

pressure from rising risks of debt distress, widening fiscal and current account deficits, and rising inflation, which have persisted due to structural weaknesses. This situation has been worsened by the COVID-19 pandemic and the Russia-Ukraine war. Consequently, economic and export diversification remains a binding constraint, as illustrated in Box 1.1.

Furthermore, with fears of a sixth wave of COVID-19 infections in the USA and a surge of infections in South Africa, East Africa remains vulnerable to escalation of new infections from new variants of the pandemic, which could lead to further travel restrictions and lockdowns. This would negatively affect the economic outlook. However, prudent fiscal management and continued support to small and medium enterprises coupled with the digitalization drive and its expected economic benefits are expected to ameliorate these downside risks to the growth outlook.

In the long term, limited economic diversification remains a major risk, particularly in tourism-dependent countries like Seychelles. Insufficient economic diversification and concentration of Seychelles' earnings from a few export destinations, sources of FDI, and tourists (the Eurozone, Russia, and the Middle East) as well as its vulnerability to external shocks remain the key downside risks to the country's growth outlook.

Social risks

Poverty and inequality remain prevalent in many countries of East Africa and a threat to long-term sustainable growth. In the short to medium term, the adverse impacts of COVID-19 on poverty are expected to linger and negatively affect private consumption and growth outlook in the region. High income inequality on the other hand is expected to undermine the region's growth through its adverse effects on access to social and economic opportunities. Empirical evidence has shown that inequality negatively affects growth by undermining access to education for children in poor backgrounds (Cingano, 2014).

Political risks

Despite the de-escalation of hostilities, lingering political instability, notably in Ethiopia, Somalia, South Sudan, and Sudan, could weigh down the region's outlook. A quick and peaceful resolution of conflicts and social tensions in these countries and successful completion of the August 2022 general elections in Kenya are critical to sustain the region's economic recovery. Given the significant share of Ethiopia and Kenya in East Africa's GDP (about 50 percent over the last three years), these headwinds are major downside risks to the region's growth outlook.

Environmental risks

Several countries in the region are faced with different climate change vulnerabilities. Specific vulnerabilities are manifested through the effects of drought on agricultural production and employment, considering that the sector remains the largest employer in the region. Furthermore, several countries in the region including Ethiopia, Kenya, Somalia, and Tanzania have reported receiving torrential rainfall events that are often accompanied by flash floods and landslides. These extreme weather events have resulted in loss of lives and triggered the locust outbreaks experienced in the region during 2019-2021.

Tailwinds

The tailwinds to the outlook include the improved global economic outlook of 3.6 percent in 2022 and 2023 compared to the contraction of 3.1 percent recorded in 2020 (IMF World Economic Outlook April 2022), rebound of tourism, reforms to improve economic and financial governance, including for state-owned enterprises, and an increase in FDI inflows. The impending issuance of a second telecoms license in Ethiopia should bolster FDI and expansion of digital financial services, with broader benefits for competitiveness and private-sector development.

Box 1.1: Vulnerability of Kenya's Growth Outlook in the Absence of Structural Anchors

Both private and public investments have had a historical importance in driving Kenya's growth from the demand side. This is confirmed by the decomposition of the drivers of Kenya's growth from the supply side, which shows the dominant role of factor accumulation (World Bank, 2020a). Growth in Kenya has recovered dramatically to 6.7 percent in 2021 from -0.3 percent in 2020. This recovery is attributed, inter alia, to relaxation of the COVID-19 related restriction, the resumption of normal activity and the fiscal stimulus (and hence higher spending) of the government. The latter is, however, attained at the cost of rising domestic and external debt as domestic revenues dropped from 18.1 percent of GDP in FY2013/2014 to 16.1 percent in FY2018/2019. Kenya's debt to GDP ratio has nearly doubled, from 40 percent of GDP in 2012 to 60 percent in 2019 and further to 67 percent in the first half of 2021. The burden of servicing the debt has also increased and accounted for 33.8 percent of tax revenues in 2019, compared to 16.5 percent in 2012.

However, the fundamental problems of this growth stems not just from the borrowing, but from the country's structural trade deficit problem where export growth cannot cope with the growth of imports that is partly stimulated by the high growth and the associated indebtedness (and its distributional implication that spurred private consumption that includes high imports). Government policy did not curb the high growth of imports (or did not stimulate import substitution industries either) to address the chronic structural trade deficit problem either. This has eroded the debt carrying capacity of the economy and the sustainability of the drivers of the high growth attained so far. That is, the debt-driven investment and growth was not accompanied by addressing the structural trade deficit of the country. What Kenya failed to do, however, has been done in some of the emerging economies of East Asia with astounding success. One such experience is the "export-growth based stabilization strategy" of Vietnam that transformed that country and from which Kenyan policy makers need to draw lesson for sustained recovery and sustainable growth. To sustain a positive outlook, structural anchors including a rapid export growth, growth of the consumption of the majority of poor Kenyans and support to the development of import-substituting industries should remain key focus areas.

Extract from Geda (2022).

1.4.3 The Russia/Ukraine conflict has increased global food and energy prices, and could slow down the global and East African economic recovery

The Russia-Ukraine crisis has triggered an international response, including wide-ranging economic sanctions on Russia, which have catalyzed global economic shocks, including commodity price rises, instability in the financial sector and disruption of supply chains. The conflict is still evolving, which indicates that these shocks are expected to weigh on the global economy for quite some time. East African economies are expected to be impacted through several channels requiring appropriate policy responses.

1.4.3.1 Probable short-term effects

In the short term, the increase in the global oil prices is expected to elevate the cost of production in 12 East African countries, but not South Sudan which is a net oil exporter. This has already led to increases in food prices, a major driver of inflation in the region. The war is expected to trigger a migration of global investors from East Africa, resulting in portfolio outflow and currency depreciations. The depreciation of currencies in countries like Ethiopia and Kenya may elevate inflationary pressure through exchange rate pass-through and also increase the cost of debt service.

1.4.3.2 Probable medium-term effects

In the medium term, financial sector distortions will be experienced in East African countries such as Kenya and Rwanda due to their high integration with the global financial systems. For example, over the last decade, Kenya has issued sovereign Eurobonds amounting to $8 billion, which attracted significant investment from Europe. Financial sanctions against Russia may hamper access to the foreign financial markets and make it more expensive for East African countries to participate in the global financial markets. The Russia-Ukraine war is likely to trigger trade distortions affecting both export revenue and import bills. Kenya being the first and fifth exporter of flowers and tea to Russia respectively will experience a reduction in trade revenue. The country also imports 10 percent of its fertilizer from Russia. Trade between the two nations was estimated at $450 million in 2020. In Ethiopia, Russia and Ukraine are key sources of edible oil, cereals, mills, iron and steel, and chemical imports, with those two countries accounting for 16.6 percent of Ethiopia's imports from Europe (12.8 percent and 3.8 percent, respectively) in 2020/21.

1.4.3.3 Probable long-term effects

A new geopolitical landscape between East Africa and Russia is evolving. African countries comprised about half of the abstaining votes at recent United Nations (UN) resolutions castigating Russia's aggression against Ukraine. In East Africa, only Comoros, Kenya, Rwanda, Seychelles, and Somalia voted in favor of Ukraine. Eritrea voted in favor of Russia, while the rest abstained. The voting patterns may indicate Russia's increasing engagement with and influence on the region, with implications for economic and trade relations.

1.5 POLICIES TO BOOST POST-COVID-19 ECONOMIC RECOVERY IN EAST AFRICA

Several strategies can be considered to boost the post-COVID-19 economic recovery. These include short-, medium-, and long-term measures as detailed below.

Short-term policy measures

1.5.1 Building macroeconomic stability through debt restructuring

One of the immediate policy measures that countries could take is debt restructuring and prioritizing concessional borrowing to regain macroeconomic stability. This is critical in ensuring fiscal and debt sustainability in the short-to-medium term. Discussions on debt restructuring should take place not just with multilateral lenders, but also with emerging partners such as China, given the diversified composition of the region's debt profile.

1.5.2 Temporary fiscal and monetary buffers to mitigate the effects of the Russia-Ukraine conflict

Mitigating the effects of the Russia-Ukraine conflict will require appropriate temporary fiscal and monetary policies in the short-to-medium term. These measures could include temporary targeted transfers to the most vulnerable where safety nets exist, or temporary subsidies on food and fuel to contain inflation in the short term. However, countries face complex policy trade-offs: while containing inflationary pressures without unduly undermining growth, cushioning vulnerable groups against the surge in energy and food prices without adding to fiscal and debt vulnerabilities, and managing exchange rate adjustments in response to tightening global monetary and financial conditions In the longer term, there is need for East African countries to identify alternative commodity markets to enhance market diversification and cushion the region's trade against future external shocks. The African Continental Free Trade Area offers an important option in this regard. Energy security is also critical including through investments in renewable energy. During the transition, harnessing the region's natural gas potential, for instance in Tanzania, will promote the development of gas as an alternative transition fuel.

1.5.3 Accelerating the roll-out and uptake of COVID-19 vaccines

The COVID-19 vaccination rate in East Africa, at 20 percent of the population, is quite low compared to the rest of the

world. A sustained recovery in the East Africa region will depend on how fast the population can develop herd immunity against the virus through vaccination. Recent relaxation of COVID-19 protocols in some countries in the region has led to laxity in awareness among the population. Steps towards a continued increase of public awareness to encourage those who are not fully vaccinated to become so may be helpful in increasing the vaccination rates in East Africa.

Medium-term policy measures

1.5.4 Addressing climate shocks and other vulnerabilities

The impacts of COVID-19 can be aggravated by macroeconomic vulnerabilities, and political instability and climate change. East African countries should diversify their export portfolio to cushion themselves against exogenous shocks such as the Russia-Ukraine war that has hampered delivery of tea exports to those countries. There is need to strengthen political institutions geared towards entrenching democracy in resolving political differences. Although the East African countries have stepped up efforts on climate change adaptation and mitigation, there is need for this to be undertaken across all countries in order to build increasing resilience against negative shocks that affect food security in the region (See Figure 1.7, page10).

1.5.5 Accelerating domestic resource mobilization and strengthening spending efficiency

Restoration of fiscal stability, which has been eroded by the impacts of COVID-19, requires accelerating domestic resource mobilization. The East African countries need to narrow their fiscal deficit through accelerating export performance and diversification of products and markets to enhance their trade revenue base. Consequently, attention should be directed towards improving the efficiency of tax administration to improve compliance while reducing rent-seeking. This should be done strengthening the existing revenue authorities and mapping out regions for revenue collection. Furthermore, spending efficiency remains a challenging area that requires further improvement. Many countries in the region still have scores lower than the region's average on transparency and governance.

Long-term policy measures

1.5.6 Supporting economic diversification, especially of exports

The region's balance of payments position remains structurally locked in unprocessed and undiversified commodity exports amid growing imports. This has increased debt vulnerabilities and, in some countries, led to persistent currency depreciation, inflation and lower growth. These risks were aggravated by the COVID-19 pandemic in 2020 and 2021. Key remedial structural reforms include export diversification, increasing productivity, and expanding access to regional and global markets for exports. Substituting imports by boosting domestic production is another medium-term policy priority. This is important because exports largely average about 20–30 percent of imports in many countries in the region.

CHAPTER 2

CLIMATE RESILIENCE—ENERGY TRANSITION NEXUS IN EAST AFRICA

Key Messages

- **Climate change will exacerbate vulnerabilities to current and emerging challenges facing the East Africa region** including effects of the COVID-19 pandemic, the Russia-Ukraine conflict, food insecurity, energy poverty, and socioeconomic underdevelopment. Climate change presents significant strategic risks to the region that could undermine current efforts to address poverty and foster socioeconomic development.

- **East Africa has abundant renewable energy potential presenting a huge opportunity for just transition but this needs to be harnessed in a coordinated manner at national and regional levels** to better address climate change and socioeconomic development. Regional efforts are needed to harness the available renewable energy resources at the required scale to transform the region.

- **East Africa needs a just energy transition framework, which should incorporate three core elements:** (i) transition towards renewable energy; (ii) transition that is equitable, inclusive, and distributes costs and benefits fairly while being responsive specifically to poor, rural, and conflict regions; and (iii) transitions that create new socioeconomic opportunities for marginalized and under-represented groups, while also creating social protection for those that will be adversely impacted by shifts in regional economic systems.

- **A just transition policy framework or guidelines that realign existing climate mitigation targets to incorporate poverty and economic development goals and timelines can help facilitate regional synergy in current renewable energy development efforts.** The current energy transition efforts provide an important platform to better address energy and climate change mitigation goals. However, just transition needs to be better mainstreamed in the existing initiatives. In addition, a regional just transition knowledge and policy hub needs to be incorporated into the existing climate change decision-making bodies to mainstream just transition into climate-resilient development.

2.1 CLIMATE CHANGE AND SOCIO-ECONOMIC IMPACTS IN EAST AFRICA

2.1.1 Sectoral impacts of climate change in East Africa

The East Africa (EA) region, like most of the rest of Africa, is highly vulnerable to climate change due to the sensitivity of the region's livelihood and economic sectors. Across the region, there has been a temperature rise of about 1.2°C since the 1960s, with highest rise recorded in Tanzania at 1.3°C and lowest in Kenya at 1.0°C. The impact of this change on various sectors is widely documented, with key livelihood and economic sectors such as agriculture, water, health, energy, and natural resources among the worst affected. The agriculture sector has been hit by droughts and unreliable rainfall. Over 70 percent of EA's population consists of small-

scale farmers dependent on rain-fed agriculture both for economy and livelihoods. Successive failures in rainy seasons from 2018 to 2022, especially in arid and semi-arid regions of Kenya, Ethiopia, Somalia, and Sudan, has affected agricultural productivity, food, and nutritional security with harvest in parts of Somalia being the worst since records began (UNFCCC, 2020a). In the absence of appropriate remedies, yield declines of crops such as wheat could be as much as 72 percent across EA by 2080 (Stuch et al., 2021). Such yield declines would be expected to further constrain food access due to increases in prices of major food crops such as wheat, rice, and maize. The risks associated with food insecurity have socioeconomic impacts such as increased conflicts, food price increases, and forced migration. For instance, droughts had a significant impact on communities living in arid and semi-arid areas of southern and south-eastern Ethiopia, northern Kenya, and Somalia including reductions in household purchasing power because of cumulative livestock mortalities (Reliefweb, 2022).

Frequent droughts often alternate with extreme flash floods in many parts of the region e.g., Ethiopia, Kenya, Somalia, and Tanzania (UNFCCC, 2020a). Other climatic impacts include sea level rises especially in the coastal states of the region such as Comoros, Kenya, Seychelles, Somalia, and Tanzania and with risk of flooding in low-lying cities notably Mombasa and Dar es Salam (World Bank, 2021). Additionally, significant shifts in biodiversity are becoming eminent across terrestrial and marine ecosystems. An increase of 10–15 percent of the number of species in the International Union for Conservation of Nature (IUCN)'s critically endangered or extinct categories is projected by 2050 while mass coral bleaching and collapse of entire reef systems is anticipated in the next 50 years, especially in countries such as Comoros and Seychelles (Obura et al., 2021).

Impacts on the water sector are imminent both in terms of quantity and quality. The major EA water sources such as Lakes Edward, Albert, Kivu, Victoria, Tanganyika, and Malawi have experienced temperature rises of between 0.2 and 0.7°C since the early 1900s, affecting water quality, while climate variability imposes pressure on water availability and accessibility with an increasing number of people experiencing water stress. Climatic impacts on EA's health systems, especially primary health care are progressively becoming important. Rising temperatures are catalyzing transmission of vector-borne diseases and altering the geographic distribution and epidemiology of vectors. For instance, the resurgence of malaria in the highlands of East Africa is attributed to shifting rainy seasons that favor mosquito breeding. More broadly, primary healthcare systems in EA are increasingly becoming overstretched during climate-driven shocks such as floods and drought, thereby affecting the affordability and access to health services especially for the poor who are worst hit by climate impacts. Consequently, major actors in the primary healthcare sector such as the World Health Organization are calling for enhanced adaptation of health-care systems.

The energy sector is prone to climate impacts, despite also promoting sustainable development and green growth. Most EA countries have a high level of dependence on traditional biomass above the African average of 67 percent, with Uganda recording the highest level at 97 percent, followed by Kenya at 84 percent. Clean energy options such as hydropower are most affected by climate change due to drought that has caused loss in hydropower potential for electricity generation and siltation of infrastructure following flooding and erosion. For instance, the drop in water levels in Lake Victoria to 10.4m below the 2004–2006 average of 11.5m reduced hydroelectricity generation by over 100 MW (Besada & Sewankambo, 2009). The Mtera Dam in Tanzania also reached its lowest water level between 1997 and 2005 resulting in a 17 percent drop in hydropower generation, necessitating power load-shedding with adverse effects on industrial production. There are several other documented impacts such as melting glaciers in key EA mountains such as Mt Kenya and Mt Kilimanjaro with implications for tourism a major contributor to the GDPs of both Kenya and Tanzania.

Climate impacts in the EA and wider Africa are widely documented. The recent report of the Intergovernmental Panel on Climate Change (IPCC, 2022) revealed that the impacts are becoming dynamic and compounded by other

shocks such as disaster risks, COVID-19, and the Russia-Ukraine conflict. Investing in contextual risk and vulnerability assessments can support a clearer understanding of the changing and cascading climatic risks, and inform appropriate policy and programmatic responses.

2.1.2 Economic implications of climate change in East Africa

Climate-induced hazards are generating direct economic costs in the East Africa region. The impacts of climate change are becoming more complex and are compounded by the region's dependence on climate-sensitive sectors such as agriculture. The macroeconomic implications of climate change have increased the need and demand for urgent adaptation and resilience-building to save livelihoods and protect the economy. The demand for socioeconomic development adaptation is happening at a time when most EA countries have committed to reduce emissions by an average of 30 percent mainly through transition towards more sustainable, clean, and renewable energy sources, as well as through low-carbon economic systems. The impacts of climate change on economic growth and development are dire in the region. For instance, the agriculture sector accounted for an average of 28 percent of GDP in East Africa during 2017–2019, with its contribution to the GDP highest in Somalia at 60.2 percent, and above 30 percent in Burundi, Comoros, Ethiopia, Tanzania, and South Sudan. This poses significant macroeconomic vulnerability to climate-related stresses like droughts and flash flooding. For instance, over 800,000 people in South Sudan were affected by flooding in October 2021, and intercommunal clashes in part due to scarcity of water triggered internal displacement of over 1.7 million people, increasing humanitarian needs to an estimated $1.68 billion (approx. 33 percent of GDP) and aggravating socioeconomic deprivation for the most vulnerable (UN Office for the Coordination of Humanitarian Affairs, 2020, 2021).

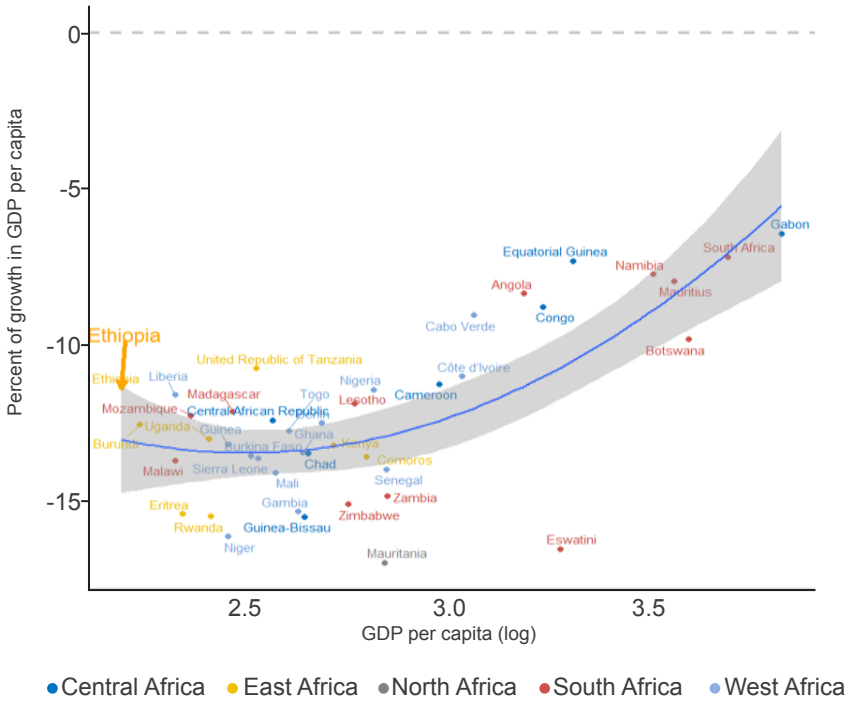
Country experiences reflect diverse economic effects of climate change. For instance, the economic cost of floods and droughts on the Kenyan economy is estimated to create long-term fiscal costs equivalent to 2 to 2.8 percent of GDP each year. Specifically, the estimated costs of floods are projected to reach up to 5.5 percent of GDP every seven years, with the costs of droughts reaching 8 percent of GDP every half a decade (Government of the Republic of Kenya, 2018). In Uganda, it is estimated that the costs of climate change on agriculture and infrastructure sectors alone could reach between $273 billion and $437 billion during 2010–2050 (Ministry of Water and Environment Uganda, 2015). Ethiopia's GDP growth rate could shrink by about 3 percent if the current trends characterized by declines in agricultural productivity were to continue (Woetzel et al., 2020). Regionally, estimates indicate that climate change could reduce long-term growth in the region by about 5 percent annually by 2030 (Baarsch, 2019). Climate impacts are also expected in relation to the region's fisheries sector because of shifts in marine biodiversity coupled with other pressures such as overexploitation of fisheries resources, with serious implications for nutrition and livelihoods.

Reduced GDP growth due to climate change is responsible for multiple microeconomic impacts especially on small and medium enterprises (SMEs), which are over 80 percent of businesses in EA. They are largely confined to agriculture and agri-processing activities, which are typically highly vulnerable to climate change. Vulnerabilities and fluctuations in natural capital such as forage and water resources and dwindling crop and livestock yields expose SMEs to climatic risks including loss of business assets and reduced business growth. For example, in Kenya, loss of livestock products emanating from low or zero birth rates, reduced milk production, and diminished market value of animals are associated with drought impacts on pastoralist communities (Atela et al., 2020).

Without a significant uptick in adaptation measures, climate change will continue to have negative impacts on the region's GDP. For instance, Rwanda's GDP is projected to decline by up to 4.9 percent by the 2030s (AfDB, 2019a). Ethiopia on the other hand could lose up to 3.8 percent of its GDP, with Tanzania and Kenya projected to experience declines of up to 6.0 percent and 4.4 percent, respectively, under a high warming scenario (AfDB, 2019b). Climate change holds back GDP per capita growth (Figure

2.1), with the impact varying according to economic structure and exposure to climate change (AfDB, 2022d). This indicates that East African economies are not only highly vulnerable to climate change, but that these risks are also imminent and require the adoption and implementation of rapid-response adaptation and mitigation actions.

Figure 2.1: Average annual climate-driven losses relative to GDP per capita growth in Africa, 1986–2015



Source: African Development Bank statistics, 2022.

2.1.3 Social implications of climate impacts in East Africa

East Africa's social context is critical in determining the ability of livelihoods and economies to adapt to the impacts of climate change. Climate change affects vulnerable groups differently due to prevailing dynamic vulnerabilities in the region. The most exposed among the vulnerable groups include women, children, and youth. Due to their social contexts, these groups are highly vulnerable to climate-induced risks because of various factors including culture, limited access to resources, and gender imbalances.

Climate change impacts manifest differently across gender, with women being more susceptible. Societal norms coupled with the different roles for men and women are critical factors in exacerbating women's vulnerability to climate change especially in rural areas. For instance, in Ethiopia, these factors are further exacerbated by high poverty rate, socio-political instability, unresponsive government

policies, and limited socioeconomic support for the most vulnerable groups (Abebe, 2014). In Kenya and Uganda, where rural women have fared worse in dealing with climate change due to several factors including how it impacts their primary economic activity, i.e., agriculture climate change has imposed more burdens on women especially concerning management of both climate impacts and other key activities like child rearing (Acosta et al, 2015; Nzengya & Maguta, 2021). About 80 percent of women in EA participate in micro, small and medium enterprises (MSMEs), most of which are highly susceptible to climate change and other shocks such as COVID-19 (ARIN, 2020) and suffer from a 5.9 percent higher risk of business closure than male-owned enterprises (World Bank, 2020a). Female entrepreneurs in East Africa and Sub-Saharan Africa are also generally confined to micro-enterprises, mainly in the informal and climate-sensitive sectors such as agriculture. Whereas female-owned SMEs are recognized as key in promoting climate and economic resilience at both household and macro levels, their ability to cope with climate risks is relatively weak. A World Bank survey (World Bank, 2020a) reported that most women in Africa and EA countries depend on short-term coping mechanisms such as stock reduction and reduced production, measures that are relatively counterproductive to enterprise development and cannot build longer-term adaptive capacity.

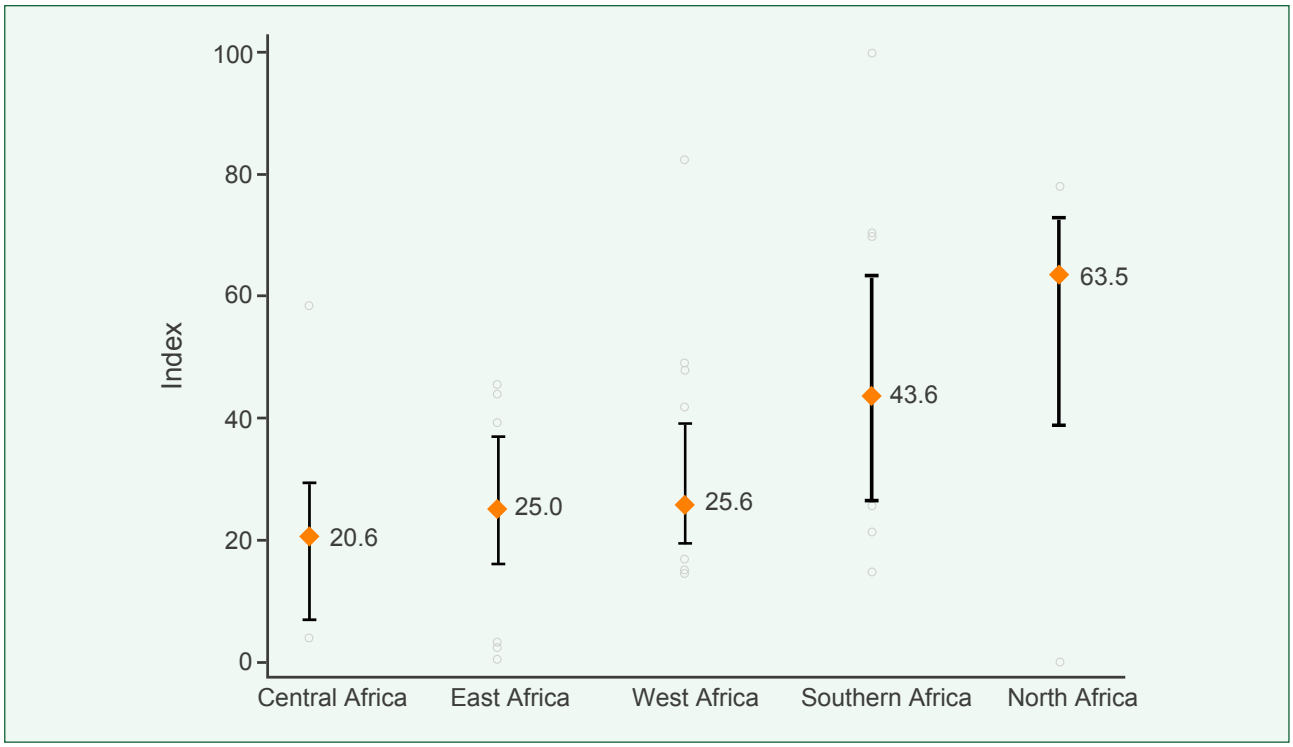
The implications of climate change for children are enormous, with young people constituting about 60 percent of East Africa's population. Between 2017 and 2050, the child and youth population in Sub-Saharan Africa is expected to more than double to 945 million (UNICEF, 2020). This will affect health and education services and water security. Approximately 10 million children in East Africa live around Lake Victoria and are exposed to flooding (UNICEF, 2020), increasing risks of vector- and water-borne diseases like malaria, and malnutrition through temperature changes in water systems as well as reduced crop, livestock, and fish production. Food insecurity, increased disease burden, and destruction of homes and schools from adverse climate events affect learning and increase the risk of poverty across the region (UNICEF, 2020).

For the youth, climate change significantly affects job opportunity and security in various affected sectors such as agro-industries, tourism, health, and energy. In most EA countries, more than 50 percent of the population is under the age of 35. Uganda, for instance, has about 80 percent of its population under 35 years, Kenya at 75 percent, South Sudan at 70 percent, Burundi at 65 percent and Rwanda at 40 percent (UNDESA, 2017; UNICEF, 2019). Climate impacts on Uganda's coffee industry for instance risks over 12 million casual and permanent jobs (Global Center on Adaptation, 2021). Climate-related risks also extend to other aspects of the job market including reduced productivity because of unreliable power supply, heat stress, and low labor productivity (Global Center on Adaptation, 2021). While there is a general lack of detailed information on the full extent of current and future climate impacts, continental trends paint a grim picture, with agriculture expected to account for more than 90 percent of the working hours lost across East and Central African countries in 2030 due to heat stress, with the youth bearing the heaviest burden (Global Center on Adaptation, 2021).

2.1.4 The state of climate resilience and readiness in East Africa

Climate-resilient readiness can be measured across various dimensions including policies, economic status, infrastructure development, and institutional arrangements (Epule et al., 2021). Consistent with the rest of Africa, the East Africa region has relatively low levels of climate resilience, as measured by the Climate Resilience Index (CRI), relative to the rest of the world (AfDB, 2022d). East Africa, with a CRI score of 25.0, lags behind Southern Africa and North Africa, which scored 43.6 and 63.5, respectively (Figure 2.2).

Figure 2.2: Climate Resilience Index score across regions in Africa, 2010–2019



Source: African Development Bank statistics, 2022

Policy readiness

All 13 East African countries have submitted their revised Nationally Determined Contributions (NDCs) signaling their enhanced commitments to adapt to and mitigate the effects of climate change. The NDCs have triggered increased investment in transitioning to renewable energy options e.g., geothermal, natural gas, building green infrastructure, and developing common regional markets to foster cross-border trade and enhance connectivity, among others. However, the countries in the EA region are at different levels in the implementation of climate policies and actions. Apart from the NDCs, it is encouraging that they have developed several climate-relevant policies at national and regional level. National Adaptation Plans for example are a common policy feature across the region shaping the direction of adaptation actions, triggering climate investments towards the region's adaptation needs and linking these to developmental goals. Adaptation plans vary across countries depending on specific country needs. Additionally, climate laws and policies have also been enacted by legislatures across several EA countries to support NDCs and climate adaptation policies. Not all East African states have enacted climate legislation despite having relevant policy arrangements. For instance, Burundi, Comoros, Somalia, and South Sudan have not yet enacted climate legislation to support their national policies (LSE Grantham Research Institute on Climate Change and the Environment, 2022). Others, such as Ethiopia, Kenya, Rwanda, and Tanzania, have comparatively well-advanced climate legal frameworks, which include several pieces of legislation to support adopted policies. It is expected that there will be varying degrees of implementation given the diverse regulatory nature of the region. Countries with comparatively higher economic and governance capacity,

e.g. Kenya, Ethiopia, and Rwanda, are better placed to implement and develop their regulatory arrangements compared to others like Somalia and South Sudan, which are also burdened with persistent conflict, severe poverty, and underdevelopment.

Regional coordination

The East African Community (EAC) Secretariat has established its Climate Change Unit to coordinate climate resilience actions across member states. The EAC has prepared several strategies including climate finance strategies and an information and outreach plan, although these frameworks are yet to be operationalized. Most EA countries pursue their individual programs with limited opportunities for regional coordination because most climate-change systems are yet to be adequately operationalized. Table 2.1 summarizes the EAC's preparedness to address climate change impacts across various dimensions.

Data and climate information

There is limited availability of climate data and capacity to analyze these data are key constraints to regional and continental readiness. Additionally, there are significant policy and regulatory barriers which dis-incentivize climate-compatible adaptation and development or lead to perverse incentives for initiatives or activities that do not necessarily enhance climate readiness. There are serious challenges to enhancing and securitizing small-scale projects to required levels to attract investment towards climate action (Global Center on Adaptation, 2021).

Economic readiness

Overall, EA countries have moderate economic resilience to climate-related impacts. Recent studies based on the Composite National Climate Resilience Index indicated that several EA countries scored between 9.12 and 32.03 (with higher scores indicating stronger resilience) (Sono et al., 2021). Countries like Somalia (2.6) and South Sudan (10.6) have relatively low scores on economic readiness compared to Seychelles (32.1). Kenya and Rwanda have more climate-resilient infrastructure compared to conflict-affected countries like South Sudan (Sono et al., 2021). East African countries have moderately low resilience when it comes to institutional preparedness compared to other regions like Central Africa which has low resilience and South Africa which has comparatively higher resilience (Sono et al., 2021).

Adaptive ability

East Africa lies between Southern and North Africa, which have higher capacities, and West and Central Africa, which have the least level of readiness. Readiness is measured using key metrics including literacy levels required to respond to climate change (Epule et al., 2021). Higher literacy levels signal more efficient use of relevant climate-specific information for better preparedness, and ability to adopt sustainable production technologies. Overall, most East African countries have high levels of vulnerability and low readiness (Figure 2.3) whereas Djibouti and Seychelles exhibit low vulnerability and high readiness. This emphasizes the need to enhance climate adaptation and finance to support these countries, which historically have little emissions contribution.

Figure 2.3: Classification of countries by climate vulnerability and readiness characteristics, average 2010–2019

Source: African Development Bank statistics, 2022.

Financial readiness

According to the Global Center on Adaptation (2021), most EA countries expected key components of their climate actions to be financed from international sources. The share of domestic financing for climate actions is relatively low. Countries such as Ethiopia, Kenya, and Rwanda have developed national climate frameworks that help mobilize blended financing through various domestic and external governance mechanisms. For instance, Kenya's Climate Change Act of 2016 provides for a climate change fund vested in the National Treasury (see section 3.3.4). These countries are better placed to attract funding than those without national climate finance frameworks. There is need to urgently enhance domestic finance for climate action in EA over the coming decade, especially considering that most actions currently target external funding. A vast majority of the $6 billion in adaptation finance in East Africa comprises grants and concessional debt. Major beneficiary sectors include agriculture, forestry, land-use and natural resource management, and water and wastewater management, which received 62 percent of the total adaptation finance during 2017–2018. This is consistent across East Africa and other regions across the continent, with global and African development finance institutions accounting for up to 67 percent of the cumulative adaptation finance. However, country-level information concerning the link between overall and per capita climate vulnerability and adaptation finance is limited.

Table 2.1: East African Community preparedness to address climate impacts in East Africa

Preparedness dimension	Status	Recommendations
Mandate and duties	Clear mandate set under the Climate Policy 2011.	Need to reorient mandate more to outreach forums. Strengthen human and financial resources to meet mandate.
Human resources	Human and financial resources currently do not meet the mandate and stakeholders' needs.	Achieve accreditation to various standards and mobilize additional funding for the EAC Secretariat.
Climate finance	Available funding not aligned with expected mandate. Fundraising mechanisms not yet properly in place although the EAC is expecting funding from the European Union and the Global Climate Change Alliance, among others, to support its climate resilience programs.	Operationalize the EAC Climate Finance Strategy.
Information	Climate Change Information Network (CCIN) was established at the Climate Change Unit.	Operationalize the CCIN. Publicize the information portal and, through the CCIN, the Climate Change Unit could strengthen its networking role.
Communications and outreach	Currently no communication and engagement strategy, which impedes preparedness for partnerships.	Use the CCIN to pursue active communication and outreach with various stakeholders.
Broader institutional issues	Institutional alignment and performance standards as well as capacity are still inadequate.	Pursue a capacity needs assessment to determine skills requirement for the climate change team and participate in a quality service improvement program.

Source: EAC (2018)

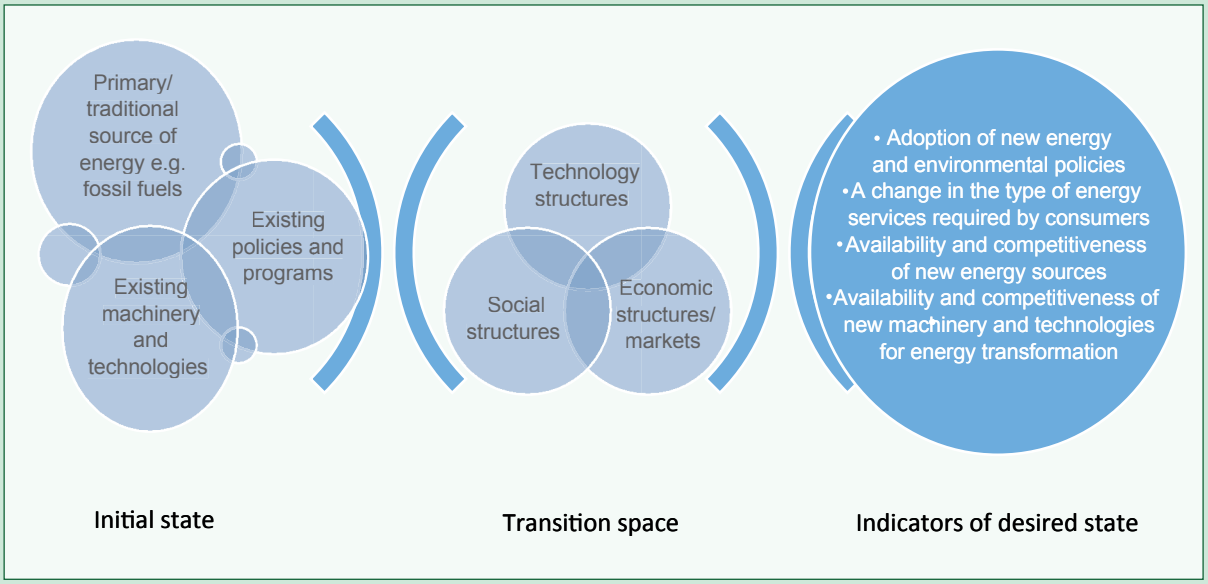
2.2 ENERGY TRANSITION AS AN OPPORTUNITY TO BUILD RESILIENCE

The East Africa region has several opportunities for building climate resilience through clean energy transition. Energy is central to building climate resilience and addressing climate risks. Energy intersects the achievement of mitigation and adaptation goals and is central to addressing the urgent development goals in the region. East African countries have identified energy transition in their NDCs as a key area of climate action and investments. At the same time, countries have prioritized adaptation actions in their NDCs, with emphasis on ensuring that transition also responds to national development goals.

Box 2.1: What is Energy Transition?

Energy transition refers to the move towards sustainable economies, by using renewable sources of energy, adoption of energy saving technologies and sustainable development. In the context of climate change, this transition has been conceptualized as a move from "dirty" fuels e.g., fossils to clean options such as renewables with beneficial environmental, social, and economic effects. As illustrated in Figure 2.4, energy transition requires changes in technology, social and market structures to catalyze the change from fossil fuels to new and clean energy options.

Figure 2.4: Conceptualization of energy transition



Source: Author's conceptualization based on definitions of energy transition.

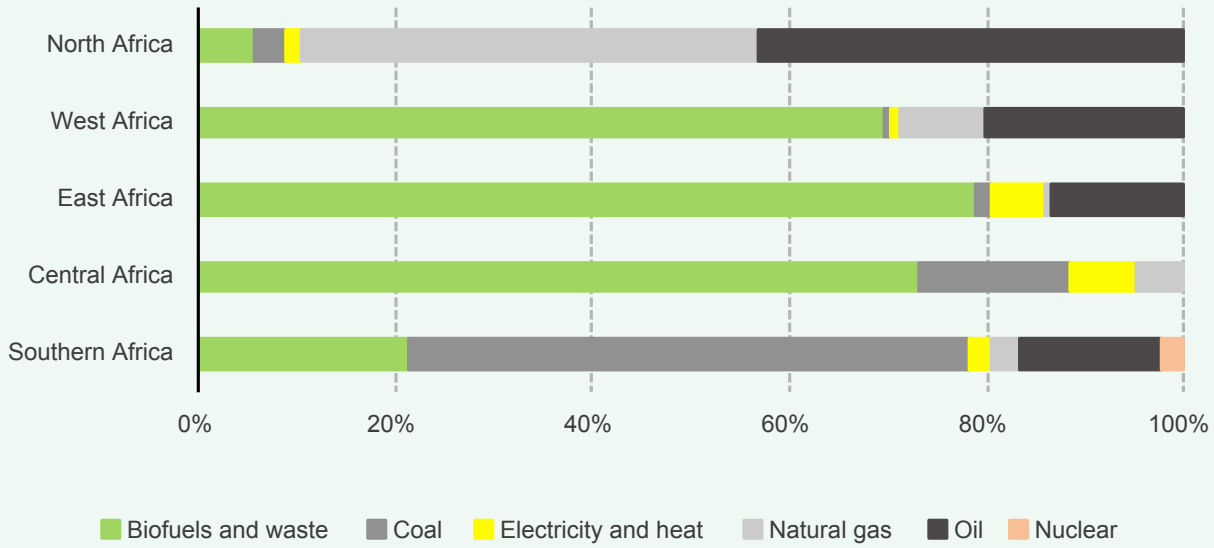
2.2.1 Energy transition in East Africa: status and trends

Globally, the transition towards a sustainable energy system has gained momentum owing to the reduction in renewable energy costs and the pursuit of Sustainable Development Goal (SDG) 7 and the Paris Agreement. This transition has presented opportunities to modernize and transform energy systems globally. However, the impacts of COVID-19 particularly in Sub-Saharan Africa have slowed down the gains that had been made towards modernizing energy systems and realizing energy transition in Africa. Despite this, EA countries are endowed with immense natural resources, and stand a chance to gain from this transition particularly in terms of affordable low-carbon energy system development and universal access to electricity.

East, West, and Central Africa regions still have more than 60 percent of their population reliant on traditional biomass, while North Africa and South Africa are dominated by natural gas and coal, respectively. Traditional biomass is still the dominant source of energy in many African countries, although the continent has rich and diverse primary energy resources, with substantial gas, coal, geothermal,

hydro, solar, and wind resources. While oil and natural gas account for more than 80 percent of North Africa's primary energy usage, most of Africa still relies heavily on traditional and inefficient biomass to meet energy needs, especially West Africa, East Africa, and Central Africa, where biomass accounts for over 60 percent of primary energy supply (Figure 2.5). Traditional biomass is predominantly used domestically, mainly for cooking.

Figure 2.5: Energy mix in Africa's regions, 2018



Source: African Development Bank statistics.

Countries are making efforts towards attaining energy transition by adopting a mix of renewable technologies and policies. In terms of renewable energy sources, the transition is dominated by access to electricity for industrial and household utility. Most East African countries have set targets around achieving universal access to electricity by 2030 in line with SDG 7. The region is pursuing a diversified energy mix as part of transitioning energy demand and supply to renewable energy options in the future. These ambitions are pursued as part of low-carbon pathways (Annex 1). Solar energy markets in East Africa have expanded, mainly driven by Kenya, Sudan, and Uganda, which contributed a total of 374.33 MW from solar photovoltaics (PV) in 2021. Kenya leads the geothermal power sector with 863 MW of installed capacity, with potential of more than 10,000 MW of geothermal energy. Most of the renewable energy is consumed in households with East African countries accounting for 996,500 TJ. Only Ethiopia is harnessing renewable energy in the transport sector, accounting for 161 TJ. Recently, in Burundi, a private-sector firm (Gigawatt Global) financed and commissioned a 7.5 MW solar PV plant. Burundi is also developing large-scale hydropower such as the Jiji Mulembe hydropower, the Regional Rusumo Falls and Ruzizi III Hydropower plants. Nonetheless, some of the Least Developed Countries such as South Sudan are lagging behind in terms of energy transition, which could be attributable to political instability and lack of

adequate investment in renewable energy infrastructure. Burundi currently lacks a clear plan on enhancing transition to various or specific renewable energy options (e.g., electricity). The country's Decentralized Rural Electrification Strategy (2015–2017) faced implementation challenges due to lack of adequate infrastructure and systems.

Access to electricity averaged 55.81 percent of the region's population, but with high variations across countries. Seychelles, Comoros, and Kenya have the highest percentage of population with access to electricity. This can be attributed to a favorable policy environment that is driving investments, rapid urbanization, and availability of renewable energy resources. According to the International Renewable Energy Agency (IRENA), Ethiopia, Kenya, South Sudan, and Uganda have shown immense commitment towards the use of renewable energy and are at the forefront of clean energy transition. Other countries like Burundi, Djibouti, Rwanda, and Seychelles have set ambitious renewable energy targets. For instance, Rwanda targets at least 60 percent of its total energy mix to be powered by renewable energy sources by 2030 (Ministry of Infrastructure, Rwanda, 2019). Tanzania expects to reduce greenhouse gas (GHG) emissions by 10–20 percent by 2030 using a business-as-usual baseline scenario of 138–153 MtCO2-equivalent gross emissions (International Energy Agency, 2019).

Overall, energy transition is largely dominated by electricity access. However, countries are performing poorly in terms of "clean cooking" where an average of only 15 percent of the entire region have access to clean cooking solutions compared to average electricity access rates of 47 percent. Renewable energy capacity is relatively higher among countries with more stable economies like Ethiopia, Kenya, Seychelles, and Uganda. Similar trends are illustrated in terms of finance flows to renewable energy with Kenya and Uganda having significant amounts of finances allocated to renewable energy. As illustrated by Figure 2.5 and Annex 1, there is a considerable variation across several EA countries in terms of the state of renewable energy. Significant investments have gone into renewable energy with Seychelles, Uganda, Kenya, and Ethiopia leading other countries in the region. While this progress is encouraging and points to significant commitment towards building renewable energy, the substantial disparity across countries according to economic size is a key concern, with some countries lagging behind in terms of renewable energy provision. Similarly, efforts towards reducing the relatively high costs are also essential to enhancing affordable access to clean energy across the region. A regional approach to transition towards cleaner energy will need to address this shortfall, with emphasis on building a comprehensive, interconnected, and synergistic renewable energy system that delivers benefits for the entire region. Such a regional approach will also need to address the conceptualization and measurement of energy transition. The current focus on access, with limited attention to increasing the share of renewable energy in the energy mix weakens the transition agenda.

2.2.2 Enablers for energy transition

East African countries have implemented several energy sector reforms over the last decade, leading to improvements in institutional, regulatory, policy, and strategic frameworks. These include the Kenya Power and Lighting Company's Last Mile Connectivity Project financed by the Kenyan Government, and development partners—namely the AfDB, the World Bank, the European Investment Bank (EIB), and the French Development Agency (AFD). This Project and the Off-grid Solar Access Project have enhanced electricity access in Kenya from about 20 percent in 2012 to above 75 percent in 2021. In Tanzania, more than 85 percent of the population uses traditional fuels to meet domestic energy needs. Only 35 percent of Tanzania's population had access to electricity in 2018, but this increased to 39.9 percent by 2020 with more than 60 percent of those connected residing in urban areas. Trends over the last six years indicate that there has been a significant uptick in the use of renewable energy across EA with solar, wind, and hydropower benefiting from political will and investments. Rwanda for instance has seen an increase in hydroelectricity supply from about 300 to approximately 400 GwH annually (International Renewable Energy Agency, hereafter IRENA, 2021d). While modest, Somalia has seen an almost tenfold uptick in solar energy from negligible use in 2014 to almost 10 GwH in 2019 IRENA,

2021d). Kenya has also seen notable increases in geothermal energy from about 2007 GwH in 2014 to 5620 GwH in 2020 (Energy & Petroleum Regulatory Authority, 2021; International Energy Agency, 2019). Uganda on the other hand primarily relies on biomass, which accounts for 94 percent of the country's energy consumption followed by hydropower despite significant hydropower potential, estimated at 2,000 MW, largely along the river Nile. This potential was further enhanced by the discovery of large oil deposits in 2006, which is expected to progressively cause significant shifts in Uganda's energy mix. Despite the increased electricity connectivity in most EA countries, the inequalities between rural and urban connectivity remain glaring, with rural areas lagging significantly behind.

Three main policy enablers of energy transition emerge from analyses, namely long-term strategies, fiscal incentives, and appropriate regulatory framework. The EA countries have adopted these levers in diverse ways over the last decades. Whereas most countries have enacted general policy regulations that guide actions towards clean transition e.g., Kenya's National Energy Policy 2018 and Ethiopia's National Energy Policy 2012, countries with longer-term strategies and fiscal incentives for specific renewables seem to perform better in terms of energy transition. For instance, Seychelles has achieved universal access to electricity mainly because of robust tax exemptions on renewables. Similarly, Kenya and Djibouti are performing relatively better compared to other countries in terms of electricity access due to enabling policy and strategic frameworks. Kenya has developed a Power Development Plan 2017–2037, while Djibouti has a 25-year Least Cost Electricity Master Plan 2010–2035. The Kenya Last Mile Connectivity Project, launched in 2015, aims to achieve universal access to electricity by 2030, with emphasis on informal settlements in urban areas and low-income households in rural areas. The long-term strategies provide opportunities for investments and innovative approaches such as public-private partnerships in designing and executing energy projects.

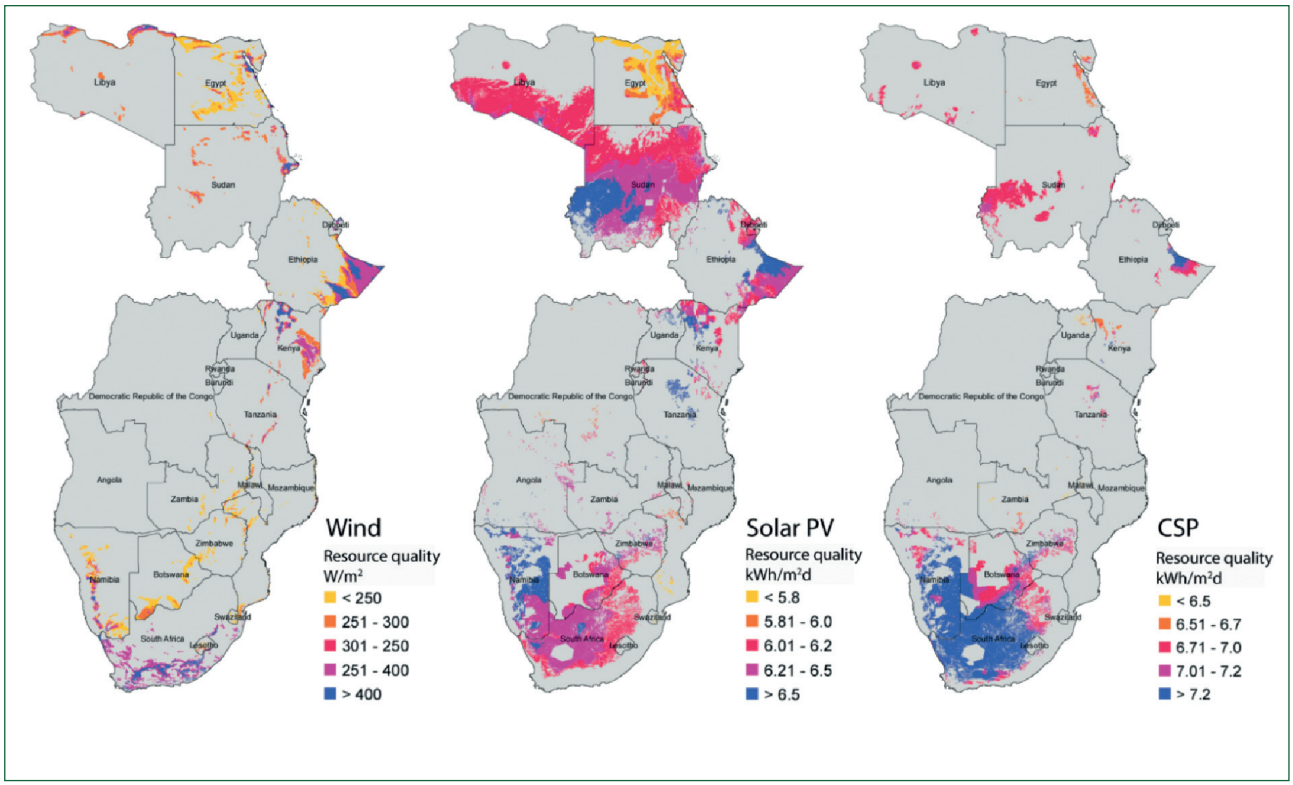
2.2.3 Opportunities for clean energy transition

East Africa has several opportunities to achieve clean energy transition considering the abundant renewable energy resources, energy utility diversification, and emerging innovative financing options.

Abundant renewable resources

EA has abundant renewable energy sources with strong potential for attracting investments. Resources such as hydropower, geothermal, solar, wind, and ocean wave energy present promising areas for investment for the future (Figure 2.6) The potential for electricity generation from hydro is highest in countries such as Ethiopia at 4071.28 MW but the country is currently exploiting less than half this potential. Similarly, Kenya generates the majority of its grid electricity from hydro and geothermal, ranking eighth globally in geothermal production, but with huge untapped potential that could catalyze clean energy transition in the country. Whereas East Africa has scaled up ambitions towards accelerating energy transition, access to relevant financing options remains a challenge (see Chapter 3). Most countries in East Africa use sovereign borrowing to finance renewable energy development, but this financing option has limitations considering the rising debt vulnerabilities. Consequently, diversification of financing sources is urgently needed.

Figure 2.6: Renewable energy potential in the East and Southern Africa regions across renewable energy options



Source: University of California, Berkeley (2017).

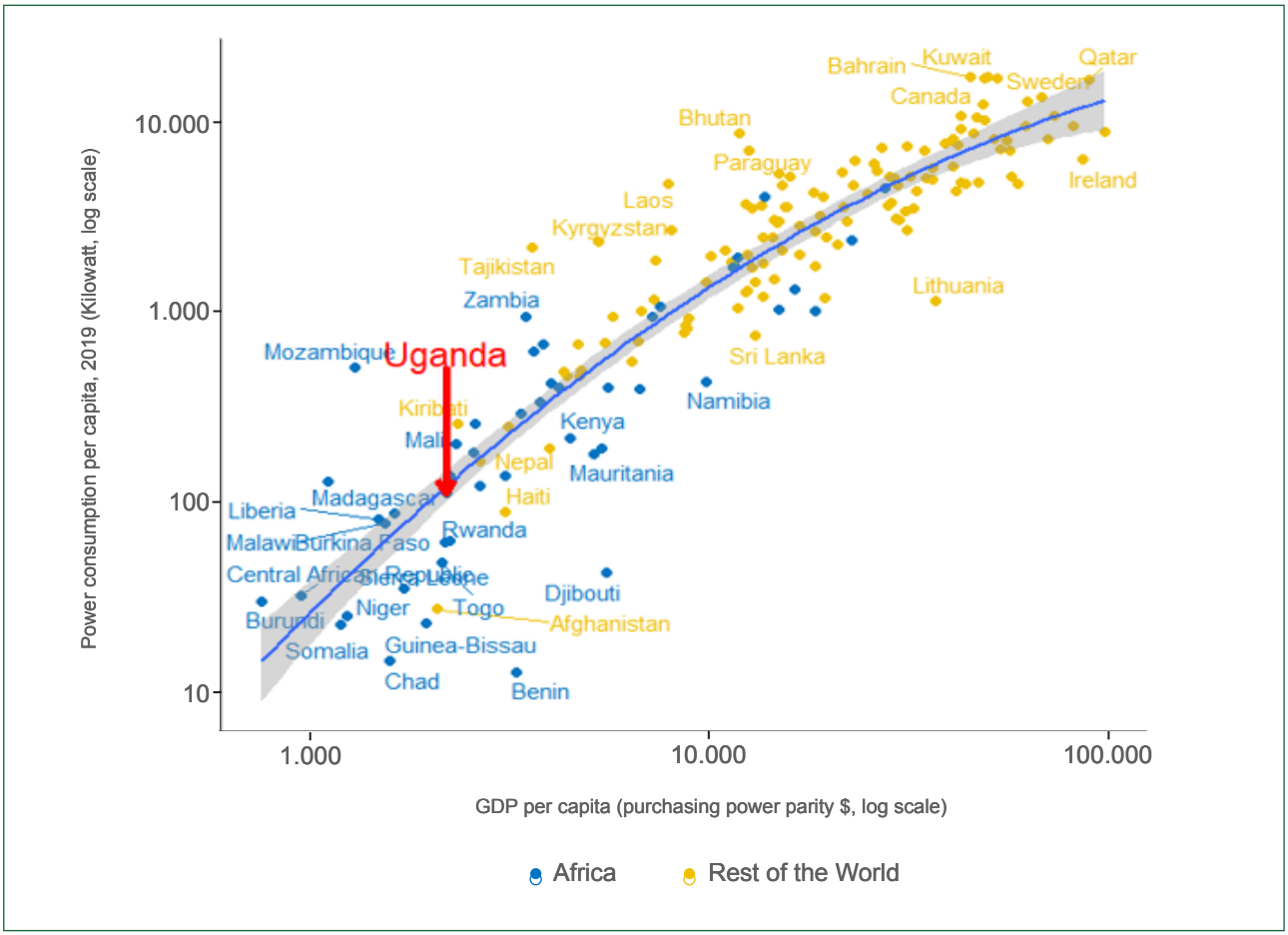
Diversifying energy utility and investments in clean cooking interventions

Currently, industrial consumption constitutes the bulk of renewable energy consumption in EA while other uses such as clean cooking remain relatively low at about 15 percent of the EA population. Cooking in EA provides a strategic opportunity for energy transition. Residential energy consumption dominates household energy consumption with cooking as the primary energy utility for most households. Out of the 4 billion people globally with lack of access to modern energy cooking services, more than 95 percent are from Sub-Saharan Africa where over 70 percent of the population still depends on biomass energy for cooking (ESMAP, 2020), with most of the fuels being burned in inefficient cooking stoves, in turn affecting the health and well-being of the population through indoor air pollution.

The World Health Organization noted that Household Air Pollution (HAP) is a significant driver of premature death in various parts of Africa. In East Africa, poor indoor air quality is the second most important environmental driver of premature deaths after water contamination and greenhouse gas emissions through deforestation and subsequent emission of 13.6 MtCO2e/year. Vulnerable social groups such as women and girls are most disadvantaged by HAP due to their greater exposure to cooking smoke, the drudgery of collecting fuel, and missed educational and economic opportunities. Access to clean energy is a critical enabler for industrialization and

economic transformation. A strong correlation exists between GDP per capita and modern energy consumption in terms of electricity across diverse countries (Figure 2.7). However, Africa and East Africa in particular remain the world's least industrialized regions with low access to modern energy, which is holding back the pace of structural transformation.

Figure 2.7: Per capita electricity consumption and GDP per capita 2019



Source: African Development Bank statistics.
Note: Blue line represents a linear projection.

Building on the increasing electrification could help countries overcome challenges to utility diversification such as resistance to transition from biomass and other traditional cooking options. This will require Governments and other relevant stakeholders to identify policy and financing niches that closely link electrification with clean cooking ambitions.

Emerging innovative financing options

Chapter 3 defines various financing opportunities to support energy transition and unlock the existing potential for EA countries to accelerate clean energy transitions. These include emerging innovative financing such as private-public partnerships, notably the Africa Adaptation Initiative (ADI), which is led by the Global Center on Adaptation in collaboration with the AfDB. The ADI aims to mobilize private-sector investments in just transition by linking mitigation and adaptation financing. The new global financing architecture such as the Green Climate Fund is championing equitable funding for mitigation and adaptation, which presents opportunities for EA countries to catalyze their energy transition agenda. Several financing options are discussed in Chapter 3, and these will require EA countries to put in place the necessary institutional capacity including skills, training, and partnerships to leverage these opportunities.

2.3 FROM ENERGY TRANSITION TO A "JUST" ENERGY TRANSITION IN EAST AFRICA

Facilitating energy transitions will be key to building climate resilience in East Africa. In the context of climate change, energy transition has been prioritized as a key option towards achieving mitigation targets i.e., through reducing greenhouse gas emissions. At the same time, most EA countries have developed strategies to guide their transition from low-income to middle- and high-income status. Furthermore, these countries have prioritized adaptation mainly through socioeconomic development due to the disproportionate rise in climate-change vulnerabilities. The question that remains is how EA countries can embrace the transition from primary fossil fuels to renewables without compromising their rights and ability to achieve socioeconomic transformation. Key to this discussion is the nexus between required investments and the impacts on socioeconomic development, including the emerging social vulnerabilities. Estimates reveal that developing economies will need to invest up to $1–$2 trillion annually to achieve net zero emission targets by 2050 (Carney, 2021). Significant economic risks also abound from the anticipated downturns in the demand for fossil fuels, which could severely impact fossil-fuel-dependent EA countries, including those at advanced stages of oil and gas exploration. Consequently, "just energy transition" is critical for EA countries to balance their development ambitions with energy transition concerns.

2.3.1 Just energy transition-the triple nexus: climate change, energy, and economic development

Climate change, energy, and economic development are intertwined, with ambitions to scale-up access to energy also having implications for climate resilience and economic development. The Paris Agreement introduced the concept of just transition, with a particular focus on a just energy transition, which aims to protect jobs as economies transition from fossil fuel to renewable energy. It affirms Africa's right to development and industrialization based on the Paris Agreement-negotiated language of equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances. A successful transition to a low-carbon, climate-resilient future must be inclusive. The concept of just energy transition emanates from two key fundamental elements: the first involves the impact of energy transition on the quality of life, social organization, economic development, and environmental conservation; and the second relates to complexity and structural changes in the production and utilization of energy. Conceptually, a just energy transition is therefore one that achieves climate change goals of 100 percent clean and renewable energy, while being responsive to the social and economic concerns of EA countries.

Three broad components are necessary to transform energy transition to just energy transition.

- Shifting from unclean, unreliable energy systems to systems that are accessible, clean, incorporate renewables with cleaner transitional options like natural gas, and reduce energy poverty.
- Energy transitions that are equitable, inclusive, distribute costs and benefits fairly while being specifically responsive to poor, rural, and conflict regions.
- Energy transitions that create new socioeconomic

opportunities particularly for marginalized and underrepresented groups in society and enhance social protection for those adversely impacted by shifts in energy and economic systems.

Several international frameworks have recognized and framed just transition along the lines of climate action that incorporates social justice. The Preamble to the Paris Agreement reflects the close links between climate action, sustainable development, and a just transition, with Parties to the Agreement "taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities" (UNFCCC, 2015). Commitments to a just transition were also set out in the 2018 Silesia Declaration in Poland and the Climate Action for Jobs Initiative. Similarly, the International Labour Organization also produced Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies for All (ILO, 2015). These Guidelines provide a practical tool to help countries at all levels of development to manage the transition to low-carbon economies. They articulate a global understanding of the term "just transition", described as a process "towards an environmentally sustainable economy", which "needs to be well managed and contribute to the goals of decent work for all, social inclusion, and the eradication of poverty". Governments also agreed to the Just Transition Declaration at the UN Climate Summit in Glasgow in 2021 (COP26), where over 30 countries signed the Just Transition Declaration developed by the COP26 Energy Transition Council.

Consequently, a just energy transition supports opportunities for a carbon neutral society, ensuring that diverse groups in society equally benefit from the transition. It requires that alternatives are provided to people and regions trapped in fossil fuel dynamics through new economic opportunities, education and skills training, and adequate social safety systems. While it is widely accepted that just energy transition is embedded in stronger social considerations in pursuing clean energy, some interpretations have focused on delivering ecological outcomes with minimal attention to socioeconomic and developmental concerns. These latter conceptualizations posit that for the sake of addressing climate change, we must transition as quickly as possible from fossil fuels to renewable energy sources (350Africa.org, 2022). Evidently, this transition imperative is narrow, focusing merely on exchanging fossil fuels for renewable energy, without aiming to transform the underlying structures, achieving environmental and climate justice, or to prioritize worker and community protection. Consequently, such an approach could deliver unjust transition.

In the context of clean energy, a just transition requires that existing transitions to renewable energy are linked to adaptation and developmental initiatives like the Africa Acceleration Adaptation Program (AAAP). This was launched by the Global Center on Adaptation and the African Development Bank in 2021 to enhance climate change adaptation by leveraging $25 billion by 2025, among other actions. Just energy transition thus sits between ensuring low-carbon transition, securing social protection for affected communities, and delivering clean energy goals (AfDB, 2022b). To achieve just transition, several key actions are required:

- Facilitating inclusive and participatory decision-making through multi-actor partnerships (MAPs), which should reflect all relevant stakeholders; assessment of the needs and motivation of workers, labor unions, community-based groups, the private sector, and other actors;
- Anchoring political decisions for just transition on empirical evidence and setting clear, obligatory phase-out and phase-in targets;
- Providing assistance (political, conceptual, structural, and financial) to regions and communities affected by just transition, including through sustainable and fairly paid jobs, social protection, more training opportunities, and greater job security for all workers affected by global warming and climate change policies;
- Monitoring and measurement of what is considered and agreed upon to be "just" in the East African context; reconciliation of local priorities with other climate-related conceptualizations of just transition is equally essential.

2.3.2 Just energy transition in the context of poverty and inequality in East Africa

Just energy transition reflects how the implementation of energy plans and projects impact people, especially the most vulnerable. The concept of just transition has a broader meaning in the African context, and the African Development Bank Group is developing a definition of just transition as a framework for facilitating equitable access to the benefits and sharing of the costs of sustainable development such that livelihoods of all people, including the most vulnerable, are supported and enhanced as societies make the transition to low-carbon and resilient economies. While boosting development is essential, wealth distribution and overall social well-being must also be at the forefront of the development process. Similarly, sustainability and climate action must be prioritized. A just transition can enable African countries to achieve greater redistribution of wealth and ensure that climate action occurs alongside development. East African countries are still plagued by high levels of poverty and income inequality, which impede development and resilience to climate change. It is therefore important that a just energy transition be framed in the context of both energy and socioeconomic considerations to respond to the region's specific needs. Consequently, conceptualizations of just energy transition need to address current and emerging drivers of poverty and economic stagnation having regard to, for instance, universal electricity access. This conjures up some of the key pillars of other key environmental principles such as "environmental justice", "climate justice", and "common but differentiated responsibilities and respective capabilities" (Alemayehou et al., 2021). Achieving these ambitions will require prioritization of key issues including: universal electricity access; job creation and economic diversification; enhancing climate resilience; and building a foundation for a low-carbon future.

Diverse pathways to just energy transition could be adapted to suit East African countries. Walsh et al. (2021) emphasized that regional and international development partners will play a key role in enabling African governments to implement their national development plans while also addressing the goal of phasing out carbon emissions by, among others, provision of the technical and financial assistance required to fill in the gap between available domestic resources and investment required to fully realize just transition. However, support from development partners needs to be aligned with ongoing institutional, legal/regulatory, and policy reforms to ensure that just energy transitions are consistent with national and regional developmental goals. In this context, just energy transition should go beyond externally driven mitigation goals and re-position regional efforts to realize climate resilience and developmental objectives.

2.3.3 Why just energy transition is significant for East Africa's development plans

Finding a just balance: Estimating carbon debts and credits

The East Africa region, like the rest of Africa is owed significant amount of carbon debts created by industrialization in the developed world such as USA, the EU among others. Meeting the net-zero emissions target by 2050 requires allocating the remaining carbon budget set out by the Intergovernmental Panel on Climate Change (IPCC) to achieve equitable and fair global commitments (AfDB, 2022d). Yet, there is no universally agreed carbon allocation framework that accounts for or offers a just balance between countries' historical responsibilities and other countries' development needs. Drawing from Meyer (1999)[1], AfDB (2022d) adopted a pragmatic approach of the "contraction and convergence" framework. Limiting temperature increases to 1.5^{0}C is among the most important issues in global climate

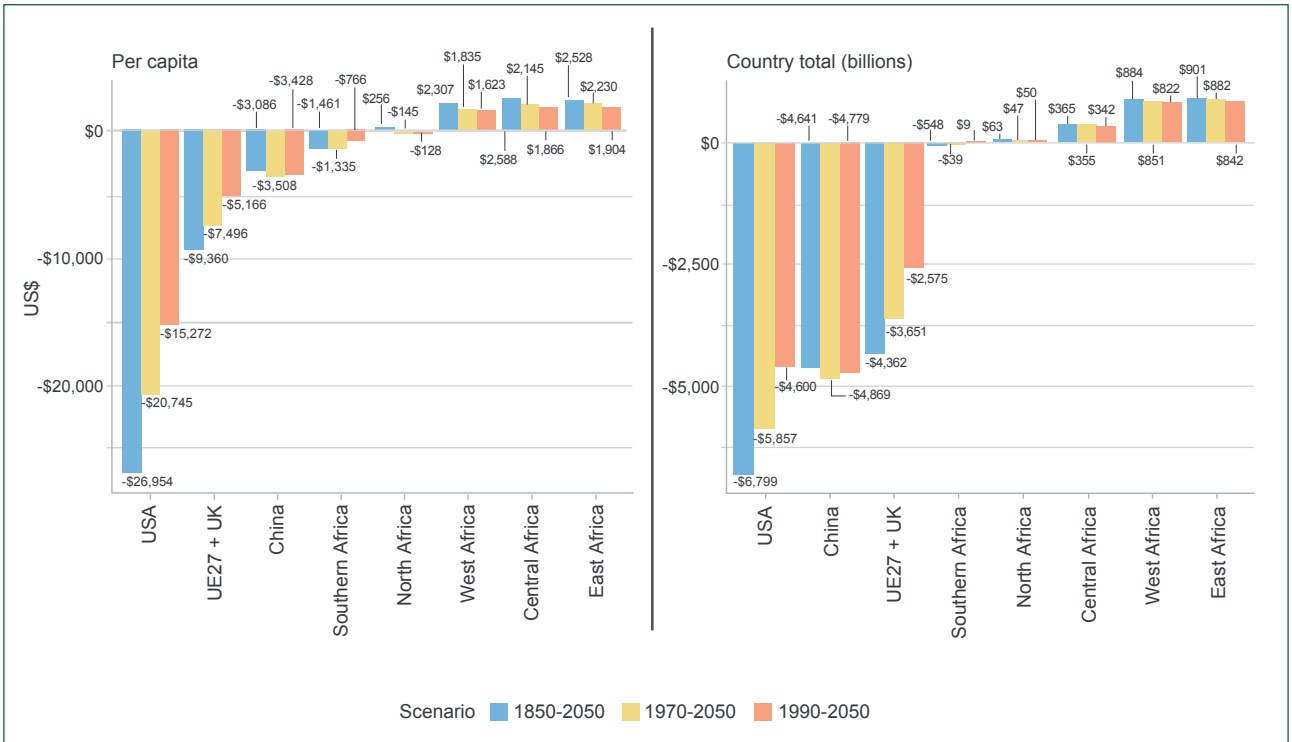
[1] This approach proposes a two-phase future emission rights allocation that balances environmental effectiveness, equity, national capacity and ability, political feasibility, economic efficiency, and technical requirements.

commitments, whereas attributing the amount of carbon that countries emitted in the past and allocating the remaining carbon budget is critical to climate finance negotiations. The global consensus seems to be that by limiting future emissions and setting commitments equitably, including those for finance, countries can quantify the "common but differentiated responsibilities" for historical climate damage, referred to as carbon debt or credit (AfDB, 2022d).[2]

Drawing from AfDB (2022d), the amount of carbon debt and credit is quantified using the 2020 average international energy market carbon price of $31 a ton and the average social cost of carbon of $70 per ton, as suggested by the High Commission on Carbon Prices, for three cut-off years: 1850, 1970, and 1990.

East Africa's estimated carbon credit at the international average carbon market price is $882 billion, with a lower limit of $842 billion and an upper limit of $901 billion (Figure 2.8). On a per capita basis, the estimated carbon credit amounts to $2,230 on average, with lower and upper bounds of $1,904 and $2,528, respectively. Furthermore, East Africa's carbon credits are on average higher than those in the other African regions.

Figure 2.8: Cumulative carbon emission debt/ credit at international average carbon price of $31 per tC02, Africa regions

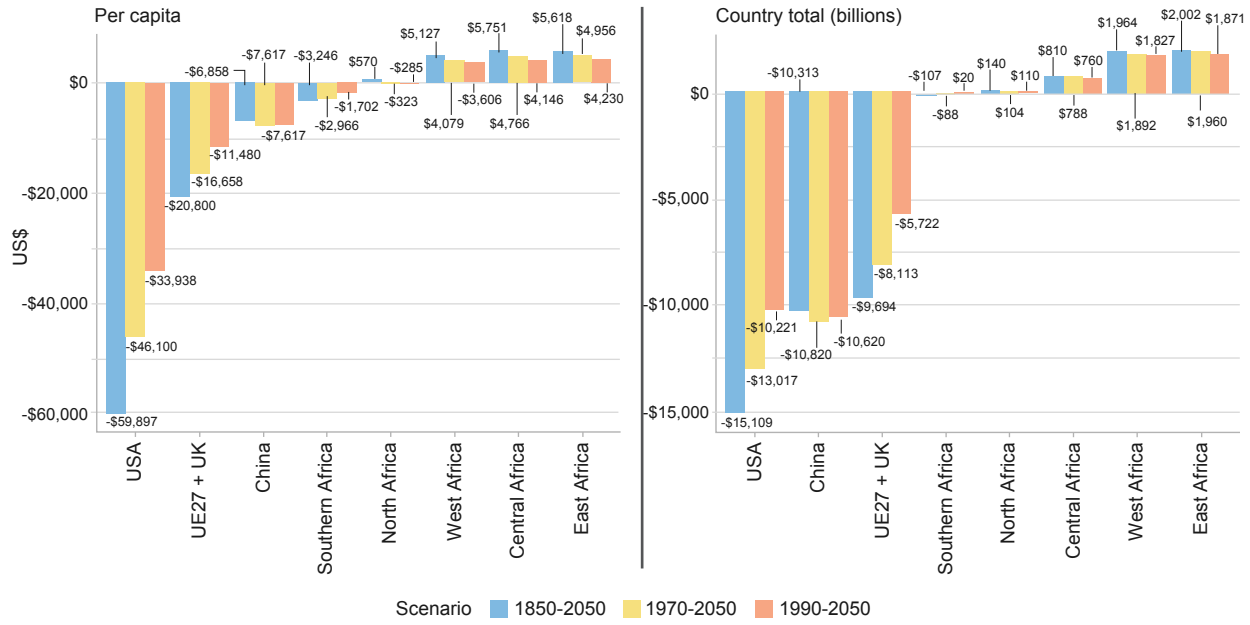


Source: African Development Bank statistics.

[2] The Intergovernmental Panel on Climate Change (IPCC) puts cumulative carbon dioxide (CO_2) emissions at around 2,400 gigatons of carbon dioxide equivalent (GtCO_2 eq), the estimated remaining carbon budget from the start of 2020, with a 67 percent chance of limiting temperature increases to the 1.5^{0}C target by 2050, is only 400 GtCO_2 eq.

The discounted average social cost of carbon ($70 per tCO2) helps to quantify the actual cumulative damage due to climate change by accounting for market failures, which distort market prices on the global commons, including carbon emissions. East Africa's estimated carbon credit using the discounted social cost carbon is $4,956 on a per capita basis, implying that the region is owed $1,960 billion (Figure 2.9). Compensated annually during 2022–2050, East Africa should receive an estimated $67.59 billion per year in climate change compensation under "common but differentiated responsibilities" principles accounting for historical climate damage. East Africa's carbon credit at the social cost of carbon exceeds that for Africa's other regions.

Figure 2.9: Cumulative carbon emission debt/ credit at social cost of carbon of $70 per tCO2, Africa regions



Source: African Development Bank statistics.

Linkages between energy, industrialization and economic development have been well captured in several national and regional developmental policy instruments including the East African Community Industrialization Policy of 2012–2032 (EAC, 2012). Current efforts to facilitate the energy-industrialization-economic development nexus have been accelerated through investments in enabling policies, infrastructure (including energy) and institutions as illustrated below.

Enabling policy frameworks

The region has seen significant uptick in policy arrangements intended to develop economies of scale, create larger markets for industrial goods, and bolster technological capacity for enhanced economic development, productivity, and investment in the region (EADB, 2020). There are several examples of policy mechanisms established to support desired economic growth in the EA countries while promoting energy

access (Annex 2). Tanzania, for instance, enacted several laws and policies such as the amended Petroleum Act 2015, Oil and Gas Revenue Management Act 2015, Tanzania Mining Act 2017, and the Petroleum (Local Content) Regulations 2017—to secure the local oil and gas sector. Furthermore, the Natural Wealth and Resources Contracts law was enacted in 2017 to allow for renegotiation or removal of questionable terms from agreements that are perceived to be hostile to Tanzania's interests. Kenya's National Energy Policy of 2018 on the other hand captures key energy sufficiency and socioeconomic development concerns. The Policy contains several policy recommendations for various aspects of energy access and development of renewable energy including geothermal, solar, and hydroelectricity, energy efficiency and conservation, and long-term energy financing, among others. The Policy set the platform for not only achieving energy security but links energy security goals with long-term development plans such as Kenya's Vision 2030. Despite relatively well-developed laws and policies, the region's governance and political climate has made it difficult to harness the full potential of the region's energy markets. This has inevitably had knock-on impacts not only on the socioeconomic well-being of the region but also climate readiness and investor confidence. According to Transparency international's 2021 corruption perception index, Kenya ranked 128th out of 180 countries globally, behind Tanzania at 87th and Rwanda at 53rd. Uganda and Burundi were ranked at 144th and 169th, respectively. High rates of corruption have created mistrust among communities in the ability of governments to fully harness current and new resources to deliver socioeconomic transformation. Governance and institutional inefficiencies including lack of effective regulation, excessive red-tape, enforcement challenges and political constraints have been well known to not only undermine growth and development but also drive marginalization and inequality, increase costs of doing business, and curtail innovation. Attempts towards just transition will not be successful without an enabling institutional environment that addresses chronic problems like corruption and inefficient regulation, while also promoting inclusive renewable energy transitions.

Investments in infrastructure

There has been a clear shift towards driving infrastructure transformation across the region including roads, rail, and power access and distribution, among others. While this may increase the risks of indebtedness and crowd out financing to social sectors, the potential socioeconomic benefits justify the public infrastructure investments considering the importance of economic development to climate adaptation. Recent reports show that up to $2.5 billion was invested in infrastructure in 2018 in East Africa which, although far short of the projected investment of $78 billion per year, represents significant intent by regional governments.

A vibrant regional energy market requires financial investments to harness the region's wealth of natural resources. The region still struggles to enhance energy access and is plagued by inadequate infrastructure that holds back economic activity and global competitiveness. Energy poverty has hindered available economic opportunities, with alternatives such as biomass creating health risks from smoke inhalation. Similarly, energy poverty has contributed to operational problems in households, hospitals, businesses, and overall quality of life. To address energy poverty, Africa needs to invest far more than it currently appropriates towards energy infrastructure. Recent studies have shown that only $8 billion was allocated to energy infrastructure in 2017 leaving a financing gap of $45 billion (Nyamongo & Nyamongo, 2019). There was a heavy reliance on traditional development assistance and domestic public finance to fund these projects. Addressing these shortfalls requires unlocking new and innovative financing opportunities to tap into the region's massive renewable energy potential. The region needs to improve its institutional capabilities to facilitate access to new markets and spur the required innovation to unlock creative initiatives to bridge the infrastructure financing gap. Regional integration efforts in East Africa have mostly focused on economic cooperation with limited emphasis on interconnected renewable energy systems. Therefore, it is important to build on existing regional infrastructure investments

to lay the foundation for holistic approaches to more inclusive transitions towards clean or renewable energy.

East Africa's oil and gas sector offers opportunities for accelerating the quest for realizing just energy transition and energy security. Discovery of relatively sizable reserves of oil and gas in countries such as Uganda (in 2006), Tanzania (in 2010), and Kenya (in 2012) changed the status of the sector and the calculus for future energy security in the region. For instance, Uganda's oil reserves are estimated at about 6 billion barrels of which 1.4 billion are recoverable. Kenya's oil reserves are estimated at 600 million barrels, Tanzania's natural gas reserves are projected at 57 trillion cubic feet, and South Sudan's oil reserves are estimated at 3.75 billion barrels. Tanzania is projected to be a major natural gas exporter globally over the next two decades and has attracted significant investment attention among the region's member states and international investors. Investment in these reserves has already been identified as a major part of Tanzania's long-term development under the National Natural Gas Utilization Master Plan (2016–2045). The country's liquefied natural gas project that is linked to exploitation of these reserves is expected to start in 2022 and conclude around 2028. While it may seem contradictory, opportunities presented by new fossil fuel discoveries like natural gas are representative of the need to have transitional energy sources that can power regional economies, reduce energy poverty, and bridge the gap between current systems and 100 percent clean or renewable energy systems. It will take several years to achieve these goals across the region and harness the full renewable energy potential.

Natural gas deserves particular attention as a pathway to the transition towards cleaner energy sources. The versatility of natural gas is one of the key reasons why it is expected to play an important role in facilitating energy transition in East Africa, powering several sectors including cooking, heating, and industry. Additionally, natural gas has a lower carbon emissions rate compared to other fossil fuels such as coal (International Energy Forum, 2021). Further, it is an easy-to-store option that can serve as a good candidate for reliable energy supply in conjunction with other sources like wind and solar (UNECA, 2019). Fully harnessing the regional benefits that gas can provide will need significant penetration across the region and not just in the gas producing countries (UNECA, 2020). East African countries, including oil-dependent nations like South Sudan could benefit from a diversified energy mix through, among other possibilities, the introduction of natural-gas-based electricity generation. Managed integration of natural gas into the region's energy and economic system requires coordination and long-term planning across East African countries to construct and integrate regional natural gas infrastructure in producing and non-producing countries. Notable examples from other regions of Africa include the Mozambique-South Africa pipeline (865 kilometers long, run by Sasol) and the West African Gas Pipeline (WAGP) connecting Nigeria to Ghana, Benin, and Togo. Such initiatives can be enhanced in East Africa to connect countries that do not have access to this energy source (UNECA, 2020). Upcoming projects also require significant investment support geared towards inter-state natural gas infrastructure. Efforts to connect gas supply between the United Republic of Tanzania and Kenya, and the United Republic of Tanzania and Uganda present promising starts for a regional-scale approach to natural gas development, creating an added opportunity to enable transition to a clean energy system across the region.

East Africa will therefore need to consider using a stepwise approach in its transition to renewable energy and making allowance for cleaner, readily available resources like natural gas to enable the region to achieve developmental goals. Additionally, the Ukraine crisis has demonstrated the central role that natural gas could play in shaping the short- and mid-term global energy landscape by illustrating the importance of exploring new markets. There has been a renewed focus on Africa's natural gas energy reserves, a significant segment of which is situated in East Africa, as a potentially viable alternative to replacing Russian natural gas supplies. This has presented new incentives for the region that would be hard to ignore in terms of potential economic opportunities, while also accelerating efforts to realize just transition. Countries such as Tanzania stand to benefit from these new opportunities, which would be vital for addressing

immediate developmental concerns. Recently, the Tanzanian government has been in negotiations with several energy firms to develop liquefied natural gas with up to $30 billion investments which include building a mega liquefied natural gas plant at Lindi. The negotiations are expected to be a precursor to the development of Tanzania's massive gas reserves in offshore blocks 1, 2, and 4. Uganda and South Sudan have the opportunity of harnessing their existing oil resources to achieve their developmental goals. Uganda for instance recently announced the Final Investment Decision (FID) for the country's oil and gas projects, supported by a consortium of energy stakeholders including TotalEnergies EP Uganda, CNOOC Uganda Limited, the Uganda National Oil Company (UNOC), and the Tanzania Petroleum Development Corporation (TPDC).

The FID indicates the commitment by the Ugandan government and other major energy sector stakeholders to invest approximately $10 billion to develop its oil and gas resources through several projects including the Tilenga Project situated in Buliisa and Nwoya districts; the Kingfisher Project located in Hoima and Kikuube Districts and the East African Crude Oil Pipeline (EACOP). It is a signal that the Ugandan government views such investments as a meaningful pathway to achieving long-term socioeconomic development while positioning Uganda as a major energy producer in the region. Further, efforts to realize SDG-7 for instance have been slowed down over the last three years because of the economic impacts of COVID-19 on global financing and investment flows to Sub-Saharan Africa, which has slowed the transition towards an energy system that can accelerate poverty reduction. Blanket bans on the development of fossil fuels may work for regions that have achieved much higher levels of development but not necessarily East Africa where a more diverse energy mix would be most desirable. However, use of fossil fuels should be transitionary to facilitate the strengthening of requisite institutions and investments in infrastructure to address energy poverty and achieve 100 percent renewable energy. This implies that East Africa will need to reconsider how it approaches renewable energy by making allowance for cleaner, readily available resources like natural gas to enable the region to achieve its developmental goals.

East Africa's ongoing energy access initiatives present key platforms for developing a synergistic energy system that responds to climate and socioeconomic development goals. Enhancing regional electricity grids and market integration while improving the regional integration of energy markets can support the cost-effective development of renewables. Simply constructing a grid and establishing the technical means of an electricity connection by building a transformer or power lines for instance does not automatically translate to access and usage. Resolving barriers to access and usage, such as insufficient infrastructure to connect those living in informal housing, fragmented distribution, and failure to tackle poverty, is equally important. Significant gains in solar technologies have enabled stand-alone solar home systems (SHS) and mini-grid options to develop rapidly. However, on-grid infrastructure is still important in providing electricity access. Efforts to facilitate regional electricity grids, market integration of East Africa's power markets, and support to harness variable renewable energy such as the East Africa Power Pool (EAPP) present opportunities for maximizing energy potential for sustainable economic development (IRENA, 2021d). The EAPP was established in 2005 as a special purpose vehicle for enhancing energy access and security across the Common Market for Eastern and Southern Africa (COMESA). Its aim is to achieve its tasks by facilitating the pooling of the participating countries' current and future energy resources to satisfy increasing energy demand and coordinating energy exchange among constituent countries. The EAPP project is supported by several agencies including the World Bank, the African Development Bank (AfDB) and the United States Agency for International Development (USAID).

2.4 ASSESSING JUST TRANSITION IN EAST AFRICA

The ambition of just transition was underscored by East African and other developing countries during COP26

(under the Glasgow Pact) in 2021. East African countries submitted revised Nationally Determined Contributions (alongside other policies e.g., National Adaptation Plans) in 2021 with enhanced ambitions and renewed efforts aimed at fast-tracking clean energy transition in a just way i.e. by increasing national financing for mitigation and resilience building. The revised plans have identified mitigation targets mainly in the clean energy sector and emphasized adaptation as a priority for achieving sustainable development. The need to simultaneously achieve clean energy transition and resilience is central to just transition (see section 2.3). For most East African countries, the concept of just transition is key to their new climate ambitions especially in the context of high vulnerabilities to climate risks amid relatively low contribution to global greenhouse gas emissions.

2.4.1 Status of just energy transition in East Africa

Considering the components of just energy transition, EA countries have made efforts to adhere to some of these principles. There has been considerable institutional development over the last decade to facilitate a just energy transition through the enactment of several laws and policies that address issues of climate and development, and significant investment towards development of renewable sources like geothermal, solar, and hydropower. Additionally, there are considerable national and regional efforts towards reducing poverty, accelerating economic growth, and enhancing socioeconomic inclusion. All these efforts are key to achieving just transition, as discussed earlier. However, East African countries are still lagging behind because of several challenges. First, it is unclear how the region is pursuing just energy transition as a strategic and normative aspiration even though several relevant actions have been initiated at individual country level that can contribute to realizing this objective. Several countries have initiated actions and policies relevant to just transition with varying degrees of implementation. Relevant themes incorporated into existing policy arrangements include broad participation, renewable energy financing, and monitoring and reporting (Annex 3).

Most East African countries have put in place measures to intervene in just transition practices and have confirmed these intentions in their Nationally Determined Contributions (NDCs) and commitments to the Paris Agreement (Annex 3). However, operationalization of these plans in practice remains a challenge in most countries. Seychelles performs better than other countries in the region across several just-transition indicators, and this is attributed to strong institutions and social safety nets to cushion citizen's livelihoods from climate change. Countries that have experienced political and governance instabilities such as Burundi, Somalia, South Sudan, and Sudan lack clear frameworks for citizens' engagements and, even where such frameworks exist, their implementation is relatively inadequate. A key gap in pursuing just transition in EA countries relates to lack of monitoring and enforcement of frameworks to ensure that a transition is happening. Instead, there are several actions and interventions pursued by various government agencies and stakeholders e.g., civil society organizations, but their contribution to just transition is not recorded, measured, validated, or reported. Absence of monitoring frameworks at the country and regional levels means that countries are unable to clearly define progress in the pursuit of just transition and to attract investments to support such progress. Consequently, there is need to develop national frameworks and standards for assessing, measuring, and reporting just transition in tandem with the global standards.

2.4.2 Challenges to just energy transition

Several challenges impede just energy transition in the EA countries, including policy/institutional, technological, political, and financing constraints, among others as discussed below.

Policy/institutional challenges

While countries have developed different policies towards clean energy transition, most of these policies do not

clearly espouse the need for just transition. Instead, the quest for just climate action has been widely equated to the call for financial support. In the updated NDCs, most EA countries have called for increased funding for adaptation (see Chapter 3) and have also pegged most mitigation actions on financial support from developed countries. However, there is no analysis of what the actions would trigger a just transition. Key considerations that are yet to be analyzed include: What energy assets already exist and how will changing technologies to renewable energies affect the value of such assets? What livelihoods and jobs are likely to be lost through renewable energy actions? What is the magnitude of revenue losses for EA oil producing countries and how will this affect the national budgets and development aspirations of those countries? Responses to these questions are lacking in the current climate policies including NDCs. At the regional level, East Africa currently does not have a well-defined long-term just transition framework that specifically focuses on the concept as an aspirational, normative, and strategic pathway to climate compatible development. This severely hinders the capacity to define just transition in a way that can harness and coordinate existing initiatives across the region. The overall implication is that countries implement actions which could potentially generate unjust outcomes. There is need to institutionalize just transition audits within various policies, programs, and projects. Engaging marginalized groups including women and rural communities, urban immigrants, workers, and government agencies will be important to transforming energy transition into just transition and ensuring that this transformation is inclusive.

Technological and infrastructure challenges

Several EA countries have established energy infrastructure to support development pathways. Shifting the existing infrastructure to achieve clean energy transition is bound to face various challenges including resistance from investors who are concerned about investment risks such as abandoned/stranded energy assets and depreciated value, among others. New technologies required for just energy transition also remain unclear in addition to relatively high costs of reliable energy storage facilities and technologies for harnessing energy from the different renewables.

Political challenges

With significant economic gains at stake, political disagreements concerning rent payments, and sovereignty of transboundary hydrocarbon resources could prevent investors from financing exploration and development activities. In this case, while regional ambitions are admirable, their implementation could be hindered by the lack of a holistic approach to increased energy access, other infrastructure services, and development. At the national level, political instability in some countries might derail attention to just energy transition or implementation of associated programs. Furthermore, political costs associated with just transition including relocation and resettlement of affected persons to create room for the construction of renewable energy infrastructure, as well as business and job losses, could result in political resistance.

Increasing political attention on the critical role of oil and natural gas investments in the region presents a policy major dilemma for East African countries. On one hand, the potential to meet immediate socioeconomic needs is one that cannot be ignored by the region's political and economic stakeholders. They also represent a pathway to addressing some of the energy poverty concerns that have burdened the region and undermined economic growth. Additionally, oil-dependent countries like South Sudan and Sudan are yet to be presented with viable alternatives that can effectively substitute for the economic contributions made by the sector. Tanzania and Uganda on the other hand have committed themselves to long-term investment in newly found gas and oil reserves, respectively, to drive economic development. Consequently, East African governments will have the additional challenge of balancing climate mitigation goals with harnessing their natural resources. In the absence of ready-to-implement alternatives to oil and gas, there is little incentive to accelerate the shift from these resources.

Resource challenges

East African countries have emphasized that, for their enhanced ambitions to be achieved, financing a just transition is critical, and mitigation actions (e.g., in the

clean energy sector) should be tailored to support poverty reduction and resilience building. Most importantly, financing the just transition is a critical part of the debate, especially in a context where much of the funding has been directed at mitigation rather than adaptation. A recent report by the Climate Policy Initiative (CPI) (Odhengo et al., 2021) on the landscape of climate finance in Kenya revealed that 78.9 percent ($1.94 billion) of climate finance flows into Kenya during 2017–2018 went towards mitigation-oriented goals while only 11.7 percent went to adaptation. Mitigation interventions identified in Ethiopia's updated NDC require $275.5 billion compared to $40.5 billion required for adaptation actions until 2030. These examples are indicative of under-resourcing of the climate-change adaptation required to enhance climate readiness and facilitate just transition. It is also illustrative of the gap between climate mitigation and other non-mitigation actions, signaling the potential pitfalls of focusing on energy transition actions at the expense of other important interventions required to achieve just energy transition.

Even with the imbalances in mitigation and adaptation funding, the current investment in the energy sector is still insufficient to develop the current and future conventional and renewable energy resources, which are capital- and technology-intensive. Recent World Bank estimates indicated that only 1 percent of private-sector capital flows for energy reaches Africa compared to 34 percent for Asia and 26 percent to Latin America. Electricity demand projections in Africa highlight the challenges and opportunities of enhancing the transition to a low-carbon energy supply. Studies indicated that 318 gigawatts (GW) are required in North Africa by 2030, 63 GW in West Africa, 24 GW in Central Africa, 55 GW in East Africa, and 150 GW in Southern Africa to match the high economic growth and high electricity demand scenarios (Nyamongo & Nyamongo, 2019). The projected electricity demand presents a huge opportunity for enabling the transition because of the yet to be optimized renewable energy resources such as solar, wind, and even critical battery minerals such as graphite that might help drive energy transition in the region. Satisfying this demand across Africa will require an average of $45 billion annually in investment for generation capacity until 2030, with an additional annual investment of $25 billion for transmission and distribution lines.

Other challenges include limited financial resources and inadequate technical capacity to develop investment proposals and to manufacture power components and equipment. There are various private experts from international firms with capacity to develop energy projects that account for just transition, but again the private initiatives are not connected to the national grid. Beyond financial limitations, most countries face systematic challenges such as weak implementation capacity, low absorption, and governance issues around accountability. These systemic issues need to be sorted to ensure that resources are effectively utilized to support just energy transition. Options such as effective public-private partnership policy frameworks that serve the public interest may help address these underlying concerns.

2.4.3 Opportunities for just energy transition in East Africa through value chain investments

The East Africa region has vast opportunities to achieve just energy transition especially in the context of green growth. More broadly, Africa is home to some of the mineral reserves that are critical for energy transition and creation of new products, services for green growth and green jobs (Figure 2.10).

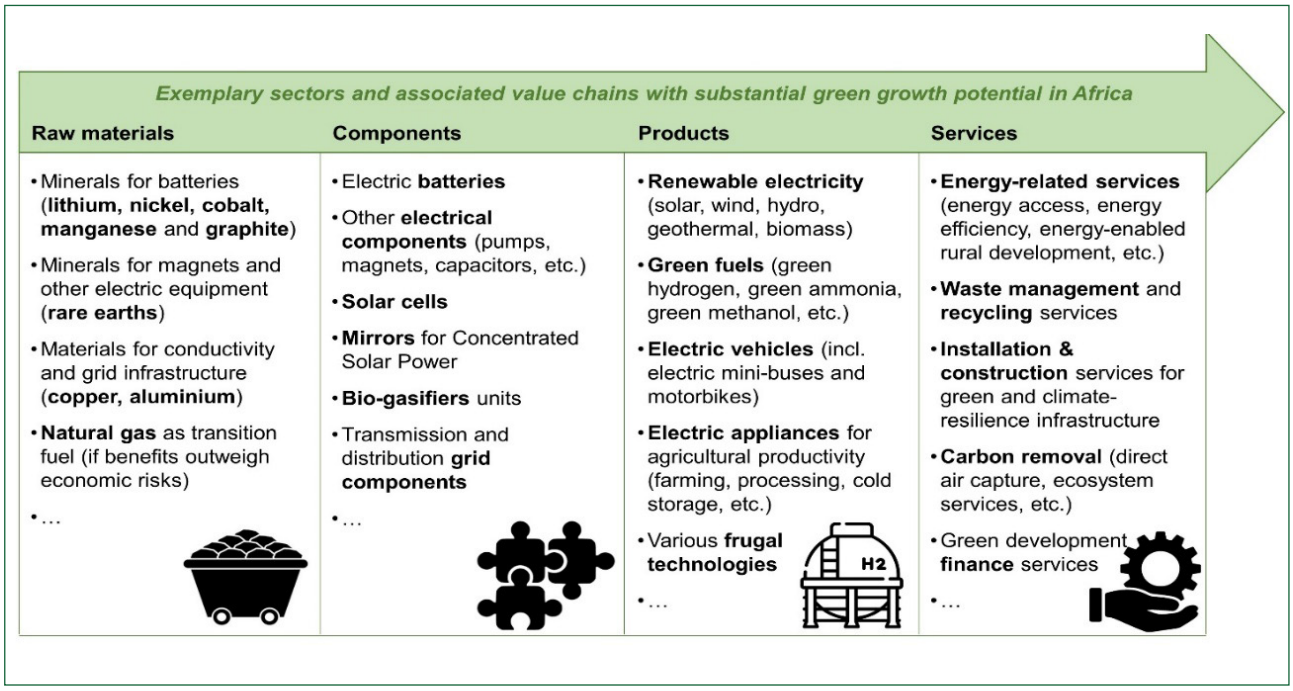
As already highlighted, the place of rare earth minerals in East Africa's transition to a clean energy is critical. Rare earth minerals are vital for several modern and emerging technologies, especially when considering the emergent industries like electric vehicle batteries, wind turbine blades, and semi-conductor manufacturing, among others. The push towards clean energy and low-carbon development is largely accepted across the world, which has increased the global demand for rare earth elements including cobalt, copper, and lithium essential for emerging technologies that will shape future economic growth and development. The global annual demand for rare earth minerals is expected to rise from about 208,250 metric tons in 2019 to approximately 304,678 metric tons by 2025 (Garside, 2021). China currently dominates

the global market, producing over 60 percent and processing approximately 80 percent of the world's rare earth minerals. However, the increasing demand can position East Africa to tap into this global market while reinvigorating current efforts to transition into renewable energy.

East African countries like Burundi, Uganda, and Tanzania have significant rare earth deposits that could be developed to position the region as an important player in the global rare earth supply chain. As things stand, the full economic potential of the region's resources is still yet to be fully harnessed.

There are a few examples of significant extraction activity including the Gakara Rare Earth Project in Burundi, and several others are being developed including the Ngualla Rare Earth Project in Tanzania and the Makuutu Project in Uganda. However, several concerns around extraction of these minerals will need to be addressed if the region is to fully harness this potential. These include inequitable labor practices, mining concessions that are inimical to East Africa's long-term interests, environmental and carbon emission concerns, and inequitable distribution of costs and benefits to marginalized and impoverished groups among others. Addressing these issues to optimize the benefits of this emerging technology will require significant political input from government and non-governmental stakeholders to ensure the destructive impacts of rare earth extraction are minimized.

Figure 2.10: Opportunities for green growth through energy resources value chain development in Africa and East Africa



Source: AfDB (2022d).

2.4.4 Rethinking just energy transition in East Africa—what needs to be done

Rethinking just energy transition in East Africa will require the strengthening of just transition initiatives in the region.

Just transition to low-carbon and climate-resilient development will require the creation of opportunities for environmental sustainability, social and economic equity, and prosperity. The African Development Bank Group has defined the concept of just transition as a framework "for facilitating equitable access to the benefits and sharing of the costs of sustainable development such that livelihoods of all people, including the most vulnerable, are supported and enhanced as societies make the transition to low carbon and resilient economies" (AfDB, 2022b). In this context, the African Development Bank affirms Africa's right to development and industrialization within the context of the global climate goals enshrined under the Paris Agreement.

The concept therefore has resonance to the specific challenges facing East Africa especially given its high socioeconomic vulnerability to climate change. Against that backdrop is East Africa's slow economic recovery from the COVID-19 pandemic that has further exposed these vulnerabilities and underlined the importance of facilitating climate action that is not only green but responsive to the region's needs. The need for a just transition has been further buttressed by the fact that the region's economies remain undiversified, agriculture dependent, primary-commodity export-oriented, with limited local value-addition (AfDB, 2022b). There have been few incentives to formalize labor laws and improve social well-being, which has held back East Africa's progress on addressing wages, social security, and other development and equity aspects. This socioeconomic fragility translates into poverty traps, high vulnerability to social unrest, and economies vulnerable to external shocks, further exacerbating the continent's economic and social vulnerability to climate change. Consequently, any concept of transition towards a green energy sector cannot be sustained on such precarious social foundations.

Security of livelihoods and other socioeconomic considerations is therefore central to the concept of just transition. Enhancing jobs and livelihoods is key to achieving sustainable and inclusive transition and development pathways in East Africa. The tight linkages between rural and urban areas, the agri-food sector and the non-agriculture economy, and between agriculture, industrialization and the energy landscape indicate that holistic socioeconomic, climate, and energy transitions are interdependent. Therefore, while the concept of just transition is relatively new to the East African context, it offers important foundations that can be contextualized to accommodate the region's specific socio-economic concerns via the development and clear articulation of the concept, associated norms, and principles appropriate for the East African context.

There are key areas that application of the concept will need to address to move closer to the region's context. First, this chapter has clarified the key components of just energy transition in the East African context. However, political-level action will be required to effectively incorporate and implement the disparate actions already occurring in a coordinated, synergistic manner at both national and regional levels. Without this strategic direction, just transition initiatives while decentralized, will struggle to be synergistic. Second, there is a gap in detailing how best to pursue, identify, monitor, and measure the "just" in just energy transition within the context of East Africa. Third, there is a need to incorporate heterogeneity and diversity across and within respective countries to better define, invest in, and monitor just energy transition in the region. Finally, there will be a need to reconcile diverging political, economic, and social interests among countries in the region, and incorporate these interests within a broader normative and regional strategic understanding and application of the concept.

Consequently, renewed political initiatives that reconceptualize just transition to suit the East African perspective are critical and would amplify existing allocations and help mobilize resources for new programs. This will inevitably involve international and regional developmental partners

such as the African Union, the African Development Bank, and the International Renewable Energy Agency, among others. Only a concerted synergistic and regional approach has the potential to leverage this critical mass of support commensurate with East Africa´s energy and developmental challenges. Achieving just transition will need to be rooted in countries' ongoing energy transitions, be owned by countries, and oriented towards specific national and local contexts. Such initiatives must also consider countries´ readiness, capacities, and needs. A just transition strategic framework, based on the dimensions summarized in Table 2.2, can thus assist East African countries to achieve greater equity and ensure that climate action occurs alongside regional developmental goals.

Table 2.2: Key considerations in East Africa's pursuit of just transition

Ecological/Climate dimension	Transition towards low-carbon climate compatible development, green renewable energy systems, green infrastructure, and enhancing climate change adaptation.
Social dimension	Rights, equality, and access to services, such that the pursuit for climate action does not compromise the specific social and developmental needs of the region.
Economic and developmental dimension	Securing livelihoods, job security, and development of economic systems that work for all, addressing poverty and transforming the regional economy towards achieving developmental goals.

Source: Author's compilation (using inputs from section 2.4.4).

2.5 CONCLUSION AND POLICY RECOMMENDATIONS

This chapter examined just transition and just energy transition, why it is important for East Africa and what needs to be done to tap into opportunities associated with it. The chapter has provided a foundation upon which just energy transition can be contextualized and applied in East Africa and the required interventions to accelerate the transition. The following actions will be important in advancing the just energy transition agenda in the region.

2.5.1 Short-term policy actions

Development partners should initiate a multilateral development bank dialogue/roundtable on just energy transition to support the East Africa region in developing a common position on just energy transition, building on the African Ministerial Conference on the Environment and the African Group of Negotiators. This dialogue/roundtable will (i) inform policy development on just energy transition at regional and national level; (ii) inform the development of financing modalities for the just energy transition; and (iii) catalyze technology development and transfer.

Development partners, in collaboration with Regional Member Countries, should agree on just energy transition guidelines to ensure that the current energy sector portfolio and pipeline projects also deliver "just" outcomes. Such guidelines could comprise, among others: (i) phased approaches for transitioning from fossil-enabled (notably South Sudan and Sudan) and energy prospecting (such as

Kenya, Tanzania, and Uganda) countries to more diversified economies; and (ii) the repurposing of fossil-fuel infrastructure and investments as fossil fuels are scaled back.

2.5.2 Medium-term policy actions

A regional just transition knowledge and policy hub needs to be incorporated into the existing climate change decision-making bodies to mainstream just transition into climate resilient development. Research institutions, regional and continental finance and policy entities, national and subnational governments among others will be key stakeholders in this regard by creating room for both technical and policy innovation towards realizing the just transition. A knowledge and policy hub can influence, strengthen, and enable mitigation and adaptation actions to be more responsive to equity, inclusivity, and developmental needs through responsive policy alignment, research, developmental plans, and programs while also coordinating and ensuring harmony between different country needs. The hub can also be a platform for policy innovation that can help anticipate climate and emerging stresses that pose threats to current efforts towards climate resilience, such as pandemics, economic recessions, and conflicts. The hub can also be a platform for supporting, coordinating, and catalyzing both national and regional level innovation and rapid advances in renewable technologies to bolster socioeconomic development and climate resilience.

Capacity development and technical assistance for countries on just energy transition and opportunities it posits for achieving countries' development blueprint are needed. Currently, most countries do not have a clear understanding of just energy transition and how it can be harnessed for their developmental aspirations. This is coupled by lack of clarity on what just energy transition entails in practice and on associated investment/funding opportunities. Consequently, there is need for governments in the region, with support from development partners, to develop a just transition framework to help mainstream just transition considerations in emerging development programs and to track progress on the same. Countries could be assisted by research entities, development partners and regional financial institutions to develop applicable tools for mainstreaming and assessing just transition in climate and other development initiatives.

A just transition policy that realigns existing climate mitigation targets to incorporate poverty reduction and economic development goals and timelines can help facilitate regional synergy in current renewable energy development efforts. Current energy transition efforts provide an important platform to better address energy and climate change mitigation goals. However, just transitions need to be better mainstreamed within these initiatives. A just transition policy developed by East African governments in conjunction with development partners can help provide required emphasis to harness existing policies and strategies on climate change and other development priorities. Targeted initiatives to support EA governments and regional bodies can be built into this policy to help advance existing coordination mechanisms, and generate cutting-edge knowledge to inform the design, adoption, and implementation of technologies that are aligned with the region's energy mix. This can help EA countries to harness their existing renewable energy resources towards realization of their long-term development goals, while also prioritizing areas that need urgent financing and infrastructure development. This can also potentially enhance adaptability by harnessing internal variation within East African countries and thus help ensure that low-carbon energy technologies are also responsive to specific country development needs.

2.5.3 Long-term policy actions

Enhancing regional electricity grids and market integration, while improving the regional integration of energy markets, can support the addition of various renewables at a lower cost. This could be achieved through resource complementarity, which in turn can help balance the power system and increase cost efficiency. This includes enhancing support to regional energy infrastructure and providing technical assistance to develop the required institutional and human capacities. As noted above, constructing a grid and establishing the means of an electricity connection by building a transformer

or transmission lines does not automatically translate to access and usage. Other barriers to access such as lack of policy to connect those living in informal housing, fragmented distribution infrastructure, and poverty are important factors holding back access and usage. Important gains in solar technology have enabled stand-alone solar home systems (SHS) and mini-grid options to develop rapidly. However, grid infrastructure is still important in providing electricity access. Efforts to facilitate regional electricity grids and market integration of East Africa's power markets and scaling up variable renewable energy through the EAPP present opportunities to harness energy potential for sustainable economic development. The EAPP and related initiatives are indicative of the kind of scale and approach that can position the region's energy potential to better address current and future developmental needs.

Just transition will also need to be incorporated within existing and upcoming financing programs for renewable energy initiatives. However, this is likely to be beyond the capacity of individual countries. Entities such as the African Development Bank, East African Community, African Union and its agencies, and the New Partnership for Africa's Development can be leveraged to help focus new and additional investment towards climate-compatible just energy transition. These stakeholders can also help in lobbying for more resources at the global level to assist East African countries to access the financing required to facilitate just transitions. Supporting just transition initiatives that are responsive to the region's development aspirations will be necessary to facilitate long-term success of low-carbon development pathways. This will impact the pursuit of low-carbon energy supply, access, and use. In doing so, a pathway to addressing development and climate needs can be enhanced to secure the future of millions of East Africans amid climate-related risks.

Technologies like geothermal, solar, wind and hydropower should be better harnessed at regional level to synchronize and scale-up already abundant opportunities for addressing energy poverty in the region. These technologies also present opportunities for decentralized supply options and greening of the main electricity grid. While decentralized electricity services at household and enterprise levels have continued to expand, natural gas is expected to play a significant role in the region's energy mix in the medium term. However, solar technologies have improved, which is fostering decentralized services especially because of the recent and continuing declines in the manufacturing costs of photovoltaics (PV) and battery storage technologies. These decentralized interventions offer primary electricity to unserved customers and benefit households and businesses with unreliable grid connections. A just transition research hub can therefore facilitate a fundamental restructuring of the energy landscape in the region, thereby expanding electricity access to both unserved and underserved areas by enabling innovative power-generating technologies, including combinations of two or more technologies as well as off-grid renewable energy systems. These options could also be combined with other enabling technologies such as green hydrogen, the Internet-of-Things, and renewable energy mini-grids to unlock energy potential in the region. However, these actions will need to be incentivized throughout the electricity sector.

CHAPTER 3

FINANCING CLIMATE RESILIENCE AND A JUST ENERGY TRANSITION: INNOVATIVE STRATEGIES AND INSTRUMENTS

Key Messages

- **Mitigation still dominates the climate funding mix for the East African (EA) countries while adaptation remains relatively low, signaling impediments to a just transition pathway.** Efforts should be directed at scaling up adaptation funding or leveraging beneficial socio-economic outcomes from mitigation activities, and this requires innovative financial and structural adjustments in the existing climate financial architecture.

- **Funds from international sources constitute the largest portion of climate finance.** Historically, the conditions for accessing these funds have supported mainly mitigation, with a limited percentage going to adaptation and resilience building. There is an emerging consciousness in the new funding windows such as the Green Climate Fund on the need to balance equitable funding for mitigation and adaptation to deliver climate justice.

- **There are multiple funding windows available for the EA countries to pursue just transition** including general and special funds targeting resilience initiatives in the Least Developed Countries, but access to these funds is held back by limited capacities to prepare bankable proposals.

- **While most debates have equated financing just transition to balancing mitigation and adaptation funding,** new and innovative sources are required to strengthen the synergies. Innovative business models are widely results-based, demanding measurable outputs. While such outputs are clear for mitigation, EA countries will need to invest in developing clear contextual but globally aligned indicators against which returns on investments can be accessed.

- **Just transition plans and strategies should be factored in as a key component of climate change investments** to earmark specific resources for the just transition agenda. Also, governments should introduce fiscal incentives policies to mobilize finance into energy transition investments. Incentives will allow funds to be diverted away from carbon-intensive projects into green economy initiatives.

3.1 CLIMATE CHANGE COMMITMENTS AND FINANCING GAPS IN EAST AFRICA

3.1.1 The role of Nationally Determined Contributions and Climate Resilient/Green Growth strategies in addressing climate change

Cognizant of the threats posed by climate change, weather variability, and other environmental challenges, the world is now taking more rapid action towards transitioning to a low-carbon and climate-resilient development pathway. The key enablers for the East African countries to transition to a low-carbon and climate-resilient development pathway include capacity building, technology transfer, and financial support. Climate finance is an integral part of the UN's Sustainable Development Goals (SDGs) in diverse ways as the impacts of climate change, especially in Africa, are causing substantial loss and damage to economies, infrastructure, and livelihoods, which impede sustainable and inclusive growth. Climate finance is also a key aspect in bridging the gap between current and future generational equity with regards to climate impacts, and in line with SDGs.

Several multilateral and bilateral partnerships have emerged to support financial mobilization for climate action, with outcomes beneficial to multiple SDGs. As countries continue to pursue the links between climate finance and SDGs as part of just transition, there is increasing focus on the need for equity in mitigation and adaptation funding as part of a just transition and broader compliance with SDGs. For instance, most countries in the region need funding to double their renewable energy generation capacity by 2030. At the same time, these countries' GDP will need to grow fivefold by 2050 to achieve their SDG on energy (IRENA, 2012). To implement the national pledges officially known as Nationally Determined Contributions (NDCs), $65.96 billion is required each year during 2020–2030. At the national level, the climate financing gap in the East Africa region is between $0.06 billion and $29.95 billion for the period 2020–2030 (Figure 3.3). These current trends demonstrate that African conditional NDCs are likely not to be delivered, alongside lack of achievement of multiple SDGs. Achieving the expected energy transition and SDGs simultaneously would require scaling up innovative funding mechanisms that can exploit synergies.

Building on the momentum created by the Paris Agreement (PA) and the SDGs, and recognizing the urgent need to "build back better" from the COVID-19 crisis, countries in East Africa are committing to mitigate and adapt to climate change through their NDC pledges. All the countries in the East Africa region submitted their revised NDCs for the period 2020/21 to strengthen policy and political commitment towards triggering and catalyzing resource mobilization (domestic and international) for building resilient economies by the year 2030. However, some countries were explicit in their commitments whereas others provided mitigation and adaptation options but with no or little detail on budgetary commitments. Rwanda, Somalia, and South Sudan provided disaggregated data on budgetary commitments in their NDCs (2020/2021–2030), with Rwanda providing the most detailed budgetary commitments for each mitigation and adaptation option in each identified sector.

Beyond the NDCs, several of the region's countries have also developed additional policies and financing structures to guide and facilitate actions and strategies in renewable energy investments and enabling a just energy transition. For example, countries such as Ethiopia, Kenya, Rwanda, Seychelles, and Uganda have specific green growth-related development strategies, which focus on enabling accessible, reliable, and affordable energy for the population using renewable energy sources. Further, facilities such as Rwanda's Green Fund (RGIF/FONERWA), Ethiopia's Climate Resilient and Green Economy Facility, and Uganda's Climate Finance Unit (currently under development) have been established to mobilize resources to deliver a green and climate resilient economy.

Opportunities for a just energy transition in East Africa

Several opportunities for a just energy transition in EA exist include the falling costs of renewable energy (IRENA, 2017), a relative abundance of the region renewable energy potential, and high economic and population

growth (see Chapter 2). The Paris Agreement has also ushered in the concept of just transition. The just transition in energy emphasizes the need to achieve decarbonization and resilience in emerging and developing economies. The East African countries have prepared revised NDCs (alongside other policies e.g., National Adaptation Plans) with enhanced ambitions and renewed efforts to fast-track clean energy transition in a just way, for instance, by raising national financing for both mitigation and resilience building. The revised plans have identified mitigation targets mainly in the clean energy sector, and emphasized adaptation as a priority for achieving sustainable development. The need to achieve clean energy transition and resilience simultaneously is central to just transition (see Chapter 2). For most East African countries, the concept of just transition is key to their new climate ambitions, especially in the context of high vulnerabilities to climate risks, even considering their relatively low contribution to global greenhouse gas emissions.

In the recent past, the ambition of a just transition was underscored by East Africa and other developing countries during the 26th Conference of Parties (CoP) to the United Nations Framework Convention on Climate Change (UNFCCC)—under the Glasgow Pact. Specifically, countries emphasized that for their enhanced ambitions to be achieved, financing a just transition is critical and that mitigation actions (e.g., in the clean energy sector) should be tailored to address poverty and resilience building. Most importantly, financing this just transition is a critical part of the debate, especially in a context where most of the funding has been directed to mitigation rather than adaptation. A recent report by the Climate Policy Initiative (CPI) (Odhengo et al., 2021) on the landscape of climate finance in Kenya reveals that 78.9 percent ($1.94 billion) of climate finance flows into Kenya between the year 2017 and 2018 was mobilized to finance mitigation measures, while only 11.7 percent went to adaptation. Mitigation interventions identified in Ethiopia's updated NDC require $275.5 billion compared to $40.5 billion required for adaptation actions until 2030. In other words, considering the disproportionate financing of mitigation measures in East Africa, and the lack of dedicated adaptation/climate resilience, the transition to low-carbon economy has not been just.

Chapter 2 has highlighted some key opportunities for just energy transition. These include:

- First, abundant renewable resources especially renewable energy sources with potential investments in EA countries; such resources include hydropower, geothermal, solar, wind, and ocean wave energy, which present promising areas of investment for the desired just transition;
- Second, diversifying energy utility and investments in clean cooking interventions where opportunities such as modern clean cooking could be exploited to enhance not just access to renewable energy but also scale-up utility for enhanced transition;
- Third, emerging innovative financing options present a key opportunity especially private-public partnerships—e.g., the Africa Adaptation Initiative (ADI)—that seek to support and scale-up resilience as part of just transition in African countries;
- Fourth, the falling costs of renewable energy, which could enhance access and utility;
- Fifth, high economic and population growth, and the fact that over 140 million people still lack access to electricity in the region despite the region's electricity generation potential.

3.1.2 Climate finance needs, commitments, and gaps in East Africa

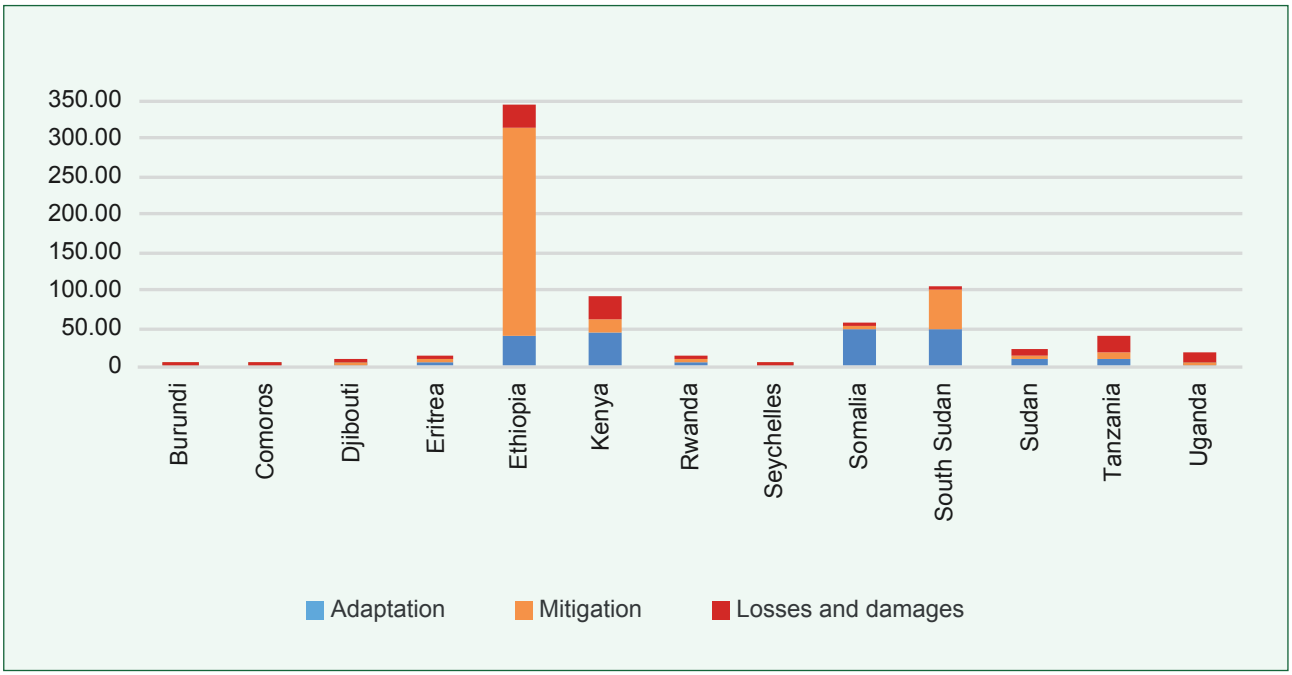
Mitigation still dominates the climate funding mix of the EA countries while adaptation remains relatively low, signaling impediments for a just transition pathway. Efforts should be directed at scaling up adaptation funding or leveraging beneficial socioeconomic outcomes from mitigation activities, and this requires innovative financing and adjustments to the existing climate financial systems.

The Paris Agreement (PA) reaffirms that developed countries should take the lead in providing financial assistance to countries that are less endowed and more vulnerable, while for the first time also encouraging voluntary contributions by other Parties. In 2015, the PA established climate finance commitments of up-to $100 billion per year,

mainly from industrialized countries, to support developing countries whose contribution to greenhouse emissions is relatively minimal. All African NDCs have incorporated two targets: an unconditional target that will be met by African countries with their own resources (about 15 percent), and a conditional target, subject to financial support from the international community (about 85 percent). Developed countries have failed to meet their commitment to provide $100 billion to developing countries annually by the year 2020. Climate Funds Update (CFU, 2019) data indicates that $5.9 billion was approved for 827 projects and programs throughout SSA during 2003–2020. However, the current levels of climate finance directed to SSA are likely to be insufficient to meet the region's demonstrated need for mitigation and adaptation finance, estimated to reach $50 billion annually by 2050. There is a wide agreement that rapid and successful deployment of international public finance is a critical first step in allowing developing countries, including Sub-Saharan African countries, to adapt to climate change.

Nationally Determined Contributions are positioned as concrete policy tools for unlocking climate finance at local and international levels, as provided for by the Paris Agreement. Africa-wide, the revised NDCs stipulate enhanced climate ambition with financial needs of up to $1,564 billion during 2020–2030. Similar ambitions are reflected in the East Africa region where the revised NDCs submitted by the East African countries illustrate enhanced ambition (Table 3.1, Figure 3.1) and financial needs to achieve mitigation and adaptation targets by 2030. East Africa's NDC climate financing need is estimated at $725.61 billion on average during 2020–2030, with adaptation and mitigation financing needs estimated at $219.04 billion and 389.95 billion, respectively (Figure 3.1). On average, $65.96 billion is required each year, during 2020–2030 to implement the NDCs. Financing needs for adaptation exceed those for mitigation only in Eritrea, Kenya, Seychelles, Somalia, and Sudan (Figure 3.1), an indication of a just transition pathway, although this depends on whether systemic barriers to adaptation such as social inequalities and institutional weaknesses are addressed.

Figure 3.1: East Africa NDCs' climate financing needs, 2020–2030 (USD, billion)



Source: African Development Bank statistics.

Table 3.1: Climate Commitments captured in the revised NDCs submitted by East African countries

Countries	Climate Commitments
Burundi	Target values for the baseline indicator—relative reduction of greenhouse gas (GHG) emissions compared to "business as usual" (BAU): • Unconditional scenario, 2025: 1.58% • Unconditional scenario, 2030: 3.04% • Conditional scenario, 2025: 11.40% • Conditional scenario, 2030: 12.61%.
Comoros	Abate GHG emissions by 84% by 2030 relative to reference scenario emission levels in the same year.
Djibouti	Abate GHG emissions by 40% compared to the BAU scenario.
Eritrea	Reduce the CO2 emissions from fossil fuels by 4.2% in 2020, 6.2% by 2025 and 12.0% by 2030 compared to the projected BAU of the reference year of 2010.
Ethiopia	The combined mitigation target (unconditional and conditional elements) corresponds to a reduction of 68.8% compared to the BAU projection by 2030.
Kenya	Abate GHG emissions by 32% by 2030 relative to the BAU scenario of 143 MtCO2eq.
Rwanda	Unconditional contribution: a reduction of 16% relative to BAU in the year 2030. Conditional contribution: an additional reduction of 22% relative to BAU in the year 2030.
Seychelles	Abate GHG emissions by 26.4% compared to BAU scenario.
Somalia	Abate GHG emissions by 30% by 2030 compared to BAU scenario (107.40MtCO2eq in 2030).
South Sudan	Reduce GHG emissions by 18% compared to 2017 level (agriculture).
Sudan	Emission avoidance of 3,574,580 tCO2e by utility-scale grid-connected solar and wind power plants.
Tanzania	Reduce greenhouse gas emissions economy-wide 30–35% relative to the BAU scenario by 2030.
Uganda	Implementation of a series of policies and measures in energy supply, forestry, and wetland sectors, estimated as a 22% reduction below a 77.3 Mt MtCO2eq BAU in 2030.

Source: Institute for Global Environmental Strategies NDC database (2021).

Rwanda, Somalia, and South Sudan provided disaggregated data on financial commitments in their NDCs (2020/2021–2030), with Rwanda providing the most detailed financial commitments for each sector contributing to mitigation and adaptation. Table 3.2 shows that significant financial estimates were committed to the energy sector for

mitigation in the NDCs for East African countries. Specifically, Comoros, Rwanda, Seychelles, Somalia, South Sudan, Sudan, and Uganda are explicit in their NDCs on financial estimates for energy as a mitigation option. There are some sectors like the energy sector which was also identified by the East African countries as a key contributor to mitigation and adaptation. Burundi and Somalia made specific financial estimates for energy as an adaptation option (Table 3.2).

Table 3.2: Estimated financial needs (USD billion) for the energy sector and electricity generation under mitigation for NDCs in East Africa, 2020–2030

Sectors	Comoros	Rwanda	Seychelles	Somalia	South Sudan	Sudan	Uganda
Electricity generation	-	552	-	-	-		-
Energy total	313.85	2,655	329.68	1,290	4,602.5	3,938.5	5,400

Source: Author's Compilation from Countries' Nationally Determined Contributions.
Note: Data not available for Burundi, Comoros, Djibouti, Ethiopia, Kenya, and Tanzania.

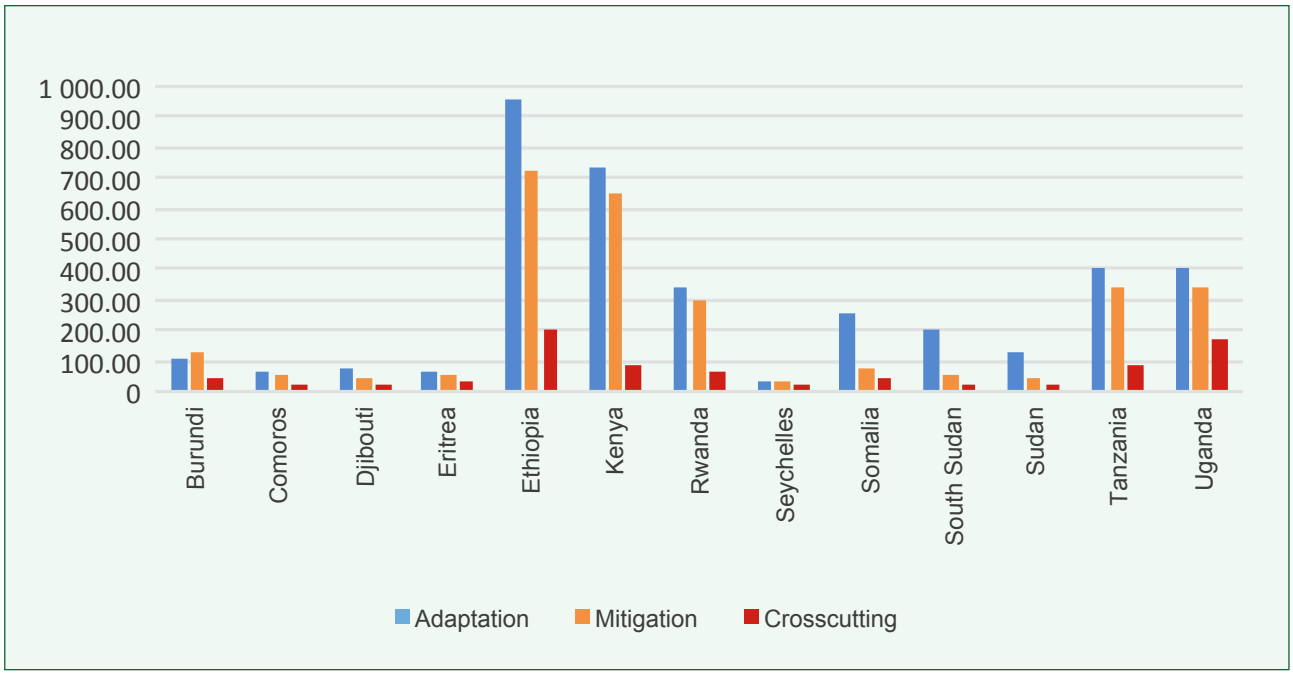
Disparities exist between adaptation and mitigation needs across East Africa. Some East African Countries (Burundi, Ethiopia, Rwanda, South Sudan, Sudan, and Uganda) still have significantly higher mitigation funding needs than adaptation (Table 3.2). This could have implications for just transition where emphasis on funding mitigation could negate socioeconomic needs around adaptation. Investments in mitigation such as energy options can break-even, attracting more attention, while adaptation options such as climate-smart agriculture take time to break even. Therefore, there is a risk of over-investment in mitigation, which is likely to attract the private sector, although adaptation is an urgent priority for the region. Efforts to bridge such gaps will require innovations that leverage adaptation benefits from mitigation actions to attract both public and private investments. Eritrea, Kenya, Seychelles, Somalia, and Sudan are the only countries whose adaptation needs exceed mitigation (see Figure 3.1 and Annex 4), an indication of a just transition pathway although this depends on how best it can address systemic barriers to adaptation such as social inequalities and institutional weaknesses. Other challenges that impede funding shifts towards adaptation, and thus a just transition, include non-articulated adaptation priorities, unclear costing models, returns, viability, and timelines of adaptation projects, and lack of clear adaptation indicators. These challenges persist even as most East African countries face undeniable climate-change-induced disasters, losses, and damage that warrant compensation. In addition to already low adaptation financing, the quest for compensation for loss and damage stalled during COP 26 due to global disagreements over liability and compensation and lack of clear definition on loss and damage finance (Daniel, 2021). Therefore, concerted global efforts are needed to affirm funding for a just transition.

3.1.3 Climate finance gap

East Africa received approximately $5.77 billion in climate finance annually between 2016 and 2020 (Figure 3.2). The majority of this finance went to adaptation, which is the

continent's greatest need. Ethiopia attracted the highest amount of funding in the region for adaptation and mitigation between 2016 and 2020, followed by Kenya. There is need to significantly scale up and balance the amounts of mitigation and adaptation finance to realize a just energy transition and climate-resilient development.

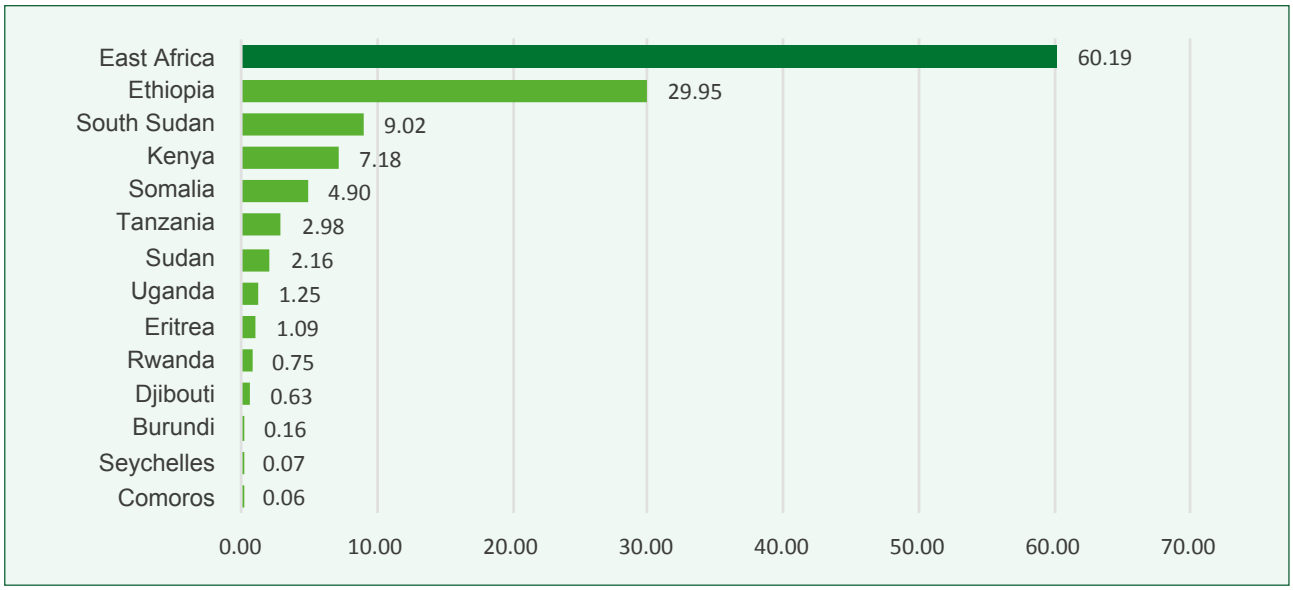
Figure 3.2: Average annual climate finance inflows, 2016–2020 (USD million)



Source: African Development Bank statistics.

Overall, there is a deficit in climate financing flows required to meet the NDC goals. If East Africa receives the same annual amount of climate finance as was received over 2016-2020 (USD 5.77 billion per year), the resulting financing gap is estimated at $60.19 billion a year during 2020-2030. Ethiopia has the largest annual climate finance gap followed by South Sudan and Kenya (Figure 3.3). On renewable energy (RE) investment needs for both unconditional and conditional NDC implementation, there is still a considerable gap in climate financing in the region. East Africa needs $72 billion for total energy generation, according to IRENA (2018), with $36 billion for hydropower and $21 billion for other renewables compared to the $5 billion in clean energy investment that was realized in 2018, underscoring the shortfall (UNFCCC, 2020b).

Figure 3.3: Annual climate finance gap, average 2020–2030 (USD, billion)



Source: African Development Bank statistics.

3.1.4 Financing energy transitions in East Africa and associated risks and barriers

Funding clean energy transition is increasingly becoming dependent on sovereign borrowing thus holding back just transition due to rising risks of unsustainable debt.

Within East Africa, Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Somalia, South Sudan, Sudan, Tanzania, and Uganda are classified as Least Developed Countries (LDCs) according to the United Nations. Such countries tend to be extremely vulnerable to both economic and environmental shocks. Whereas Kenya and Seychelles are not among the LDCs, they are still extremely vulnerable to the impacts of climate change. As a Small Island Developing State (SIDS), Seychelles is vulnerable to sea level rise, tropical cyclones, and floods. Kenya is also vulnerable to extreme weather events such as floods and droughts, which cause significant food insecurity. Due to this context of EA countries, resources for climate action are limited. In addition, competing development priorities such as health, water and sanitation, and education often result in limited resources being allocated for climate action. With COVID-19 impacts severely affecting economies in East Africa, the availability of public funds has been affected and climate funding could have taken a back seat in many countries.

Over the last few years, East African countries have been receiving investments for renewable energy development, which enables a just energy transition. In 2019 for example, Kenya was ranked as the fifth country globally in terms of investments and opportunities in clean energy (KenInvest, 2019). Whereas investments across the region are increasing, several risks and barriers to local and foreign investments persist, which limits the amount of climate finance flows to enable a just energy transition.

Associated risks and barriers.

Several countries in the East Africa region are perceived as high-risk countries for investment due to reasons such as lack of clear laws and policies that protect investors,

as well as weak governance structures. East Africa is also home to many countries which are considered fragile, and political instability is a major impediment for attracting investors to the region. To address these risks, governments need to undertake various actions to attract private investors and enhance climate finance flows.

Governments can strengthen their laws and policies to ensure that investor interests are safeguarded, and rules, procedures, and rights clearly articulated to provide security to investors. In collaboration with development partners, incentives can also be provided to domestic and foreign investors such as concessional financing, feed-in-tariff policies, credit and political risk guarantees, and tax relief for renewable energy technologies.

Another significant barrier towards accessing finance for climate action among East African countries is the lack of capacity of government officials to develop bankable proposals that qualify for financing from international climate funds such as the Green Climate Fund (GCF), the Global Environment Facility (GEF) and the Adaptation Fund (AF). To address this challenge, there is need for capacity building among officials to generate and collate the relevant data and information required to articulate rigorous climate rationales to buttress the case for mitigation and adaptation financing.

Financing for renewable energy investments from local banks is also a challenge among investors and entrepreneurs in East Africa. As the renewable energy industry is relatively new, local banks have limited knowledge about the business models used and therefore view investments as high risk. As a result, high interest rates and unfavorable collateral requirements are imposed, which makes financing inaccessible to entrepreneurs who would like to start or scale up innovations and business models that enable a just energy transition.

Furthermore, traditional community-based institutions are rarely consulted and excluded from official planning processes, resulting in a mismatch between government and community planning. Additionally, most centrally imposed budget guidelines limit the ability of subnational governments to promote local interests during the annual budget cycles (Odhengo et al., 2019).

Countries rely on institutional arrangements to support better synergy between different sources of finance and different investment portfolios. Lack of coordination between line ministries and agencies is also a challenge in most EA countries, impeding access to climate finance, and increasing the likelihood of duplication of efforts (Atieno et al., 2021). Enhanced coordination among multi-sectoral actors is required to achieve better results in climate finance. Detailed information on planned investments by governments, including costs, timelines, technology needs, applicable laws, and investor requirements is limited, which hinders private-sector engagement due to lack of information.

As highlighted in the previous section and in Chapter 2, renewable energy is a central focus for achieving just transition in East Africa. The EA countries have adopted the initiative of the UN partner Sustainable Energy for All (SE4ALL) which is expected to trigger investment in green energy. Clean energy transition is anticipated to generate direct and indirect benefits including reductions in emissions and poverty. Most countries have made significant commitments for renewable energy but only Uganda has projected costs i.e., $5.4 billion over the next 10 years to finance 2471 MW of renewable energy from hydro, solar, biomass, and geothermal sources.

Chapter 2 has shown that there are evident abundant renewable energy sources and potential investments in EA countries. Achieving the transition to renewables is pegged on adequate financing for technologies, skills, and innovations. However, this transition risks failure without adequate and relevant green finance (Xolisa, 2021). As indicated in Chapter 2, whereas the EA region has witnessed increased interest in accelerating the just transition, through environmental and social governance (ESG), these ambitions are mainly financed by sovereign borrowing. Kenya, for instance, is on the verge of setting up requisite structures including the sovereign green bond framework that will facilitate sovereign

borrowing. However, this could impede just transition due to the rising risks of unsustainable debt. Furthermore, uncertainty in funding due to reductions in Official Development Assistance (ODA) could derail the transition to renewable energy (Dodd et al., 2021). Other barriers to climate finance for energy transitions in EA include political instability, macroeconomic imbalances (including inflation and uncompetitive exchange rates), policy and regulatory shortfalls, institutional weaknesses, and fiduciary risks (IMF, 2021).

3.2 EXISTING FINANCING INSTRUMENTS AND INITIATIVES FOR CLIMATE RESILIENCE AND ENERGY TRANSITION

3.2.1 Global, continental, and regional climate finance architecture, challenges, and limitations

Global climate finance architecture

The Paris Agreement provides a framework for financing climate change mitigation and adaptation activities. Article 9 of the Paris Agreement states that "Developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention." In that regard, developed countries pledged to mobilize $100 billion per year until 2020 to assist developing countries on climate action and to sustain the same until 2025. However, this pledge is far from being fulfilled. According to the Organisation for Economic Cooperation and Development (OECD), in 2019 developed countries mobilized $79.6 billion out of the $100 billion. This represented a 2 percent increase from 2018 (OECD, 2021). As of 2020, climate finance from developed countries to developing countries was $20 billion short of meeting the $100 billion goal (OECD, 2020).

The majority of global climate finance comes from public sources, largely channeled through development finance institutions (DFIs). Other sources of public climate finance include state-owned financial institutions, government budgets/agencies, and multilateral climate funds such as the GCF, GEF, and AF. In 2019, DFIs contributed 68 percent ($219 billion) of global climate finance, while state-owned financial institutions contributed 14 percent. Direct finance flows from governments (local and foreign) accounted for 12 percent of financing from public sources, while multi-lateral climate funds contributed $3.5 billion (Climate Policy Initiative, 2021). The main instruments used for public climate finance are debt, equity, and grants. In 2019, debt (including low-cost and concessional debt) accounted for 61 percent of climate finance, while equity investments accounted for 33 percent. Grant financing accounted for 6 percent of total climate finance flows (Climate Policy Initiative, 2021). In 2019, investments from the private sector stood at $310 billion, a 13 percent increase from 2017/2018. Corporations accounted for the largest share of private-sector climate finance and contributed to 40 percent of the investments. Commercial banks on the other had significantly grown their contribution to private-sector climate finance from 18 percent to 39 percent, contributing $122 billion (Climate Policy Initiative, 2021).

Continental climate finance architecture

At a continental level, the African Development Bank remains the major source of climate-related funding. The Bank's approach to climate financing involves mainstreaming amelioration of climate risks in development projects, thus promoting just transition through green growth. Nonetheless, Africa as a continent receives a relatively small share of the global climate finance, despite being one of the most vulnerable continents to the impacts of climate change. It is estimated that the continent receives only 3 percent of global climate finance yet contributes the least to greenhouse gas emissions. The majority of this climate finance goes towards mitigation, mainly investments in renewable energy and energy efficiency projects. International private-sector engagement in the renewable energy sector in Africa is quite active. Financing for adaptation action associated with just transition in Africa significantly lags behind the need. According to the Joint Report on Multilateral Development Banks' Climate Finance, of the $13.9 billion of adaptation

finance committed to low- and middle-income countries, Sub-Saharan Africa received only 3.57 billion (African Development Bank et al., 2019).

Regional climate finance architecture

In the context of East Africa, countries have access to a variety of climate finance sources for resilience and energy transition. These sources can be categorized either as public or private. Public sources include: (i) UNFCCC financing mechanisms such as the GCF, AF, and GEF; (ii) DFIs that include MDBs and bilateral and national development banks; (iii) international climate finance initiatives; and (iv) national and subnational climate finance sources and initiatives. Private climate finance sources accessible to EA countries include: (i) commercial banks; (ii) institutional investors such as insurances, pension funds, private equity, philanthropists; and (iii) strategic and corporate investors.

Challenges and limitations

- Adaptation finance is very low, yet this financing is the continent's greatest need.
- Lack of strong business case for investment in adaptation projects, which are largely viewed as public goods.
- Many countries in the region lack pipelines of investment-ready projects, which discourages investors due to the long period of time it takes to prepare these projects.
- Lack of capacity among government officials to develop bankable proposals hinders access to financing from international climate funds.
- Low allocations for climate funding in national budget lines.
- Tracking adaptation finance faces several severe obstacles, including definitions, accounting issues, confidentiality limits, and lack of universal adaptation metrics (Climate Policy Initiative, 2020).
- Limited knowledge of available sources of climate finance, and their suitability for different investment contexts and/or actions.
- The "complexity and technicalities" of gaining access to some of the global climate funds is a challenge for many countries given the bureaucracy, long delays, and long list of standards and data required.
- Fragmentation of the climate finance architecture presents the challenge to the effective and efficient use of financial resources in terms of transparency and accountability.

3.2.2 Climate finance initiatives and instruments targeting East Africa

There are multiple funding windows available for EA countries to pursue just transition including general and special funds targeting resilience in Least Developed Countries, but the challenge lies in capacity to access these funds.

East African countries have benefited from various global funds with emerging opportunities for supporting just transition. Key funds flowing into the region include the GCF, Least Developed Countries Fund (LDCF), and the Adaptation Fund, among others. The key opportunity for the region is the availability of special funds that target Least Developed Countries e.g., the LDCF and Special Climate Change Fund (SCCF), among others. However, the portfolio of special funds that support resilience is relatively low compared to general funds. To decarbonize the cooking sector, access to clean cooking has also received attention from funders. For instance, the World Bank Rwanda - Energy Access and Quality Improvement Project, co-financed by the Clean Cooking Fund through a $10 million grant and $10 million loan, targets 2.15 million people. The project is expected to attract an additional $30 million from the public and commercial sectors (World Bank, 2020b).

The Green Climate Fund continues to be a promising option for EA countries. It is one of the new international funding mechanisms that seeks to balance funding for mitigation and adaptation and thus provides an opportunity to support a just transition. The GCF emphasizes the need to harness synergies between mitigation and adaptation in its projects In Sub-Saharan Africa, and, compared to other funds, it has approved the highest funding at $1,201.2 million.

The GCF promotes blended financing that attracts commercial capital towards projects that contribute to sustainable development. Its financing model allows governments to work closely with several intermediaries such as MDBs to manage and disburse funding, thereby tapping into the various innovative financing approaches of other funders. As indicated in Annex 5, Kenya and Ethiopia are leading recipients of GCF funding. These two countries, alongside Rwanda, have developed National Climate Finance Frameworks that facilitate access to diverse funding sources. However, even with the promising GCF framework, the adaptation portfolio remains low compared to mitigation. A case study of Kenya (Odhengo et al., 2019) showed that lack of a strong business case and metrics for adaptation remains a major impediment to access equitable adaptation funding.

Multi-country funds have the potential for scaling up resource mobilization and impact but accessing them is constrained by shortfalls in institutional capacity and legal and policy frameworks. While EA countries have access to diverse funds and opportunities for mitigation and adaptation, the number of intra-country initiatives varies from country to country depending on the institutional capacity, legal, and policy frameworks, and level of country preparedness to receive and manage the finances. In special cases however, there are financing initiatives that are multi-country and targeted at clean energy transition. Such multi-country funds have the potential for scaling up resource mobilization and impact. For instance, the Sustainable Energy Fund for Africa (SEFA) is a multi-donor special fund managed by the African Development Bank and provides catalytic finance to trigger private-sector investments in renewable energy and energy efficiency. The fund offers technical assistance and concessional finance instruments to remove market barriers, build a more robust pipeline of projects and improve the risk-return profile of individual investments. The Modern Energy Cooking Services (MECS) project funded by the Foreign, Commonwealth and Development Office (FCDO) also operates in Kenya, Uganda, and Rwanda to support transition from biomass-based to modern and cleaner cooking fuels such as electricity, ethanol, and liquid propane gas.

3.2.3 Options for improving climate finance architecture

Improving climate finance architecture requires structural shifts in financial systems at both global and national levels. Global systems need to be clearer and more inclusive in terms of adaptation portfolios, while national systems require structural reforms to enhance technical and institutional capacity towards innovative funding mechanisms.

There is a substantial funding portfolio available for EA countries to support mitigation and adaptation in the context of just transition. However, access to these funds remains a major challenge due to multiple systemic barriers including funding mechanisms and technical capacity gaps, among others. These barriers are not only country specific but are also driven by the global processes. As noted above, at the global level the funding pledge of $100 billion a year by developed nations to support developing countries is yet to be realized. The financing system around this pledge faces difficulties some of which have been addressed in Article 2.1(c) of the Paris Agreement. These include disparities between mitigation and adaptation portfolios, bureaucratic financial instruments, and lack of clear prospects for new and additional finance. The architecture of the global financial system still excludes adaptation from playing a central role in these funding portfolios, especially due to lack of measurable outputs from adaptation engagements. This has meant that, while there is some knowledge on adaptation action required in developing contexts such as East Africa, there is limited clarity on how these actions can be funded. Studies show that most actions stipulated in climate plans cannot be financed due to misalignment with the financial instruments and governance structures of most available funding[3]. There are

[3] Infectious Diseases Research Collaboration-funded NDC Financing Fellowship Programme.

suggestions that private-sector funding for instance, could be made more inclusive to support communities that need adaptation and socioeconomic growth as part of a just transition. At the global level therefore, the need to ensure that financial systems are pro-poor is key to achieving just transition. Furthermore, greater trust, transparency and accountability including setting up a sub-target for different instruments e.g., how much will be mobilized as grants, credits or loans is equally important.

At the national level, EA countries still face internal structural challenges including institutional weaknesses, and weak technical capacity that do not align with the emerging innovative financial instruments. Consequently, addressing internal structural bottlenecks and institutional strengthening will be critical, with emphasis on adoption of new and innovative financing instruments, strengthening climate risk assessments and data, investing in digital financial and communication systems, establishing regulatory structures for private investment, and capacity building, among others as discussed below.

- ***Adoption of new and innovative financing instruments:*** the barriers to financing just transition partly lie in weak adoption of innovative financial instruments, especially those that can support private-sector investments in just transition. These innovative instruments provide new and strategic approaches and mechanisms to acquire, structure, govern, and allocate financial resources. However, most EA countries are yet to fully embrace these instruments and thus continue to rely on traditional sources that are not aligned with the emerging funding opportunities e.g., multilateral development banks.

- ***Strengthening climate risk assessments and data:*** the EA region is experiencing an increasing amount of adaptation research, but significant gaps exist in climate risk assessment to warrant clear linkages with the clean energy transition. For instance, average temperature increases of 1^0C - 3^0C by 2050s are expected in the central and northern parts of East Africa (USAID, 2020). However, there is still lack of comprehensive data to support forecasting and development of relevant adaptation metrics (ARIN and UKRI, 2021). As such, investing in data and in-depth climate risk assessment could provide opportunities for building functional adaptation metrics for a diversity of funding sources and instruments.

- ***Investing in digital financial and communication systems can be used to leverage impact by highlighting the opportunities for climate action in the following areas:*** climate impact and vulnerability maps, early warning systems, monitoring, reporting and verification methodologies, climate modeling and simulation (Füssler et al., 2020). All financiers should be required to publish what they fund and contribute to a regularly updated digitized mapping of all activities in beneficiary countries. This will assist governments and other financiers in minimizing duplication, and enhance transparency.

- **Establish regulatory structures that encourage private investment:** legal and regulatory frameworks for private investments are poor or non-existent in many African nations (World Bank, 2019). This limits market participation for domestic and international investors.

- **Capacity building, stakeholder engagement and collaboration:** there is need to organize capacity building training and workshops for financing institutions to improve their awareness of climate finance and to assist them in appraising investment-ready projects and designing appropriate financing instruments such as structured financing approaches and risk-sharing mechanisms.

3.3 NEW FINANCING SOURCES TO SUPPORT CLIMATE RESILIENCE AND JUST ENERGY TRANSITION IN EAST AFRICA

While most debates have equated financing just transition to balancing mitigation and adaptation funding, new and innovative sources are required to strengthen the synergies.

As debates on just transition gain international momentum, attention is shifting to options for financing such transitions.

This is important because currently there are no funds dedicated to support synergies between mitigation and adaptation. Instead, existing funds seek to either support mitigation or adaptation as distinct actions even though there are efforts to leverage adaptation benefits from mitigation actions and vice-versa. Clean energy transition is interlinked with multiple socioeconomic benefits and thus an emerging area for funding just transition. Despite Africa's huge potential to generate energy from renewable sources, only 2.1 percent ($59.5 billion) of the $2.9 trillion spent on renewable energy globally between 2000 and 2020 was channeled to the continent as shown in Table 3.3. In the coming years and decades, large-scale investments will be required to support an African energy transition path aligned with the SDGs, in terms of expanding renewable energy capacities and creating the structures required to support the energy transition. The landscape of climate resilience financing sources has evolved in 2022 with the creation of the International Monetary Fund (IMF)'s Resilience and Sustainability Trust, which is funded by rich countries' unused Special Drawing Rights (SDRs). The Trust will provide concessional loans to low- and middle-income countries for long-term structural reform, especially in the areas of climate action and health.

Table 3.3: Overall renewable energy investments in Africa (USD billion)

	2000–2009	2010–2020
North Africa	1.9	17.5
West Africa	0.5	3.9
East Africa	2.0	9.7
Central Africa	0	1.3
Southern Africa	0.3	22.4
Global	587	2,254

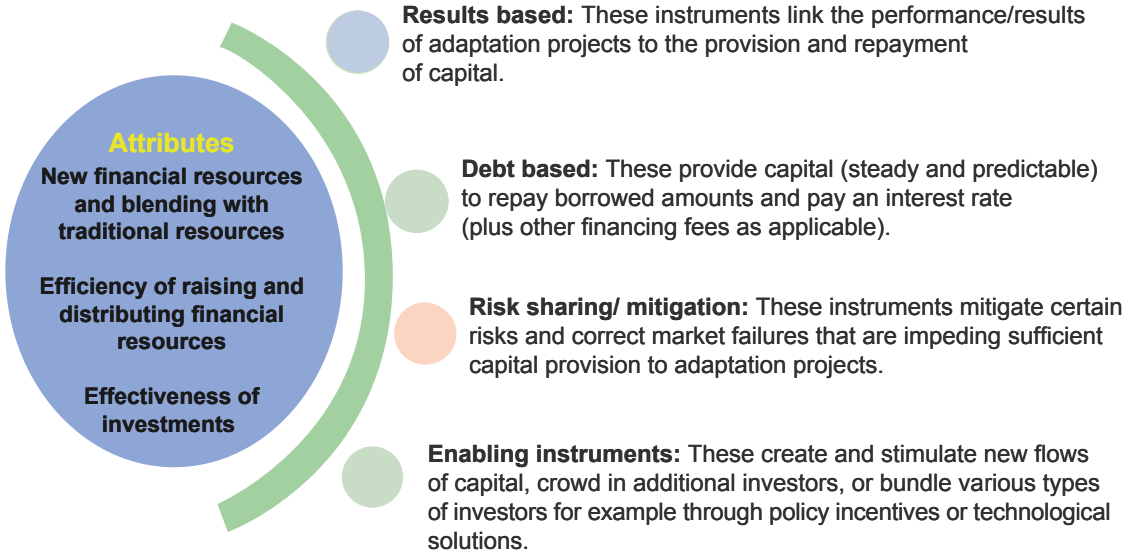
Source: Bloomberg New Energy Finance (2021).
Note: Data excludes investments in large hydropower (>50 megawatts).

3.3.1 Innovative finance instruments for enhanced climate resilience and just energy transition

East African countries need to implement institutional reforms in the financial sector, notably climate finance tracking systems and better coordination to significantly domesticate innovative financial instruments.

Transitioning to 100 percent renewable is a necessary precondition for achieving the Paris Agreement targets. Such a transition requires considerable adjustments to infrastructure, technology, and socioeconomic frameworks and additional investments to integrate "the leave no one behind principle" in the transition. To exploit and maximize potential opportunities from clean energy transition to just transition, innovative financial instruments could help address barriers to traditional financing sources. Innovative climate financing implies new and strategic approaches and mechanisms to acquire, structure, govern and allocate financial resources. Instruments that can be applied to finance adaptation actions can be classified as: (i) debt-based where repayable loans are availed to finance adaptation actions; (ii) results-based where funding is based on measurable and verifiable results based on agreed results frameworks; (iii) financial risk management-based instruments that focus on securing the market for private-sector investments; (iv) enabling instruments, which basically create enabling conditions for more funding including promoting innovative partnerships for funding (see Table 3.4).

Table 3.4: Key features and types of innovative financial instruments



Source: Atieno et al. (2021).

A key feature of innovative instruments is their ability to trigger new funding and new opportunities. Several innovative instruments are being adopted by EA countries including green bonds, impact bonds, carbon offsetting, public-private partnerships, and energy performance contracting among others. Some of these instruments, e.g., the green bonds, are being piloted in East Africa. Kenya's experience shows that institutional reforms will be critical including strengthening the tracking system to align these with climate risks and improve coordination (Atieno et al., 2021). The section below presents a brief typology of some of the financing instruments in EA.

Typology of innovative financing instruments and their application in East Africa

Partial Risk Guarantee: The African Development Fund Partial Risk Guarantee (ADF-PRG) was provided in the Turkana, Kenya wind project to mitigate the financial risks associated with the construction of a transmission line and associated substations to connect energy from the project to the national electricity grid. The project added approximately 300MW of electricity to the national grid (i.e., approximately 18 percent of the country's installed capacity) and contributed to emission avoidance of 2 million tons of CO2 per annum.

Concessional financing: Concessional loans were provided by the AfDB to enhance project bankability by mitigating credit risk for co-lenders in the Kopere Wind Project (50MW) in Kenya, a project owned by the European company Voltalia. Total project cost including the transmission line was $63.9 million. The project milestones include generation of 101.9 GWh per year, benefiting approximately 600,000 people through the grid and emission avoidance of 1,081kt CO2 equivalent of GHG emissions per annum (AfDB, 2020b).

Public-private partnerships (PPPs): AfDB is supporting the first regional power project in East Africa to be established as a PPP the Ruzizi III Hydropower Plant Project. This project is part of the Programme for Infrastructure Development in

Africa (PIDA) and involves Burundi, the Democratic Republic of Congo (DRC), and Rwanda. AfDB PPP enhancing tools and initiatives include the African Legal Support Facility (ALSF), African Development Fund Partial Risk Guarantee (PRG), African Development Fund Partial Credit Guarantee (PCG) and the African Financing Partnership (AFP) (AfDB 2020c).

Blended financial mechanisms were employed in the Kenya microfinance water service project. The project was implemented by Sidian Bank (formerly K-Rep) and World Bank. The financial mechanism within the project was innovative as it comprised of community equity contributions, commercial financing, and output-based aid in form of subsidies and a partial credit guarantee from USAID (Atieno et al., 2021). In total the project supported 35 community water schemes (improved access to clean water), mobilized $1.2 million of community equity, loaned $3.4 million, and granted output-based aid of $2.8 million (Advani, 2016).

Green Bonds: Seychelles issued a blue bond in 2018 ($15 million) followed by Kenya's green bond in 2018 ($37 million). Proceeds from the Seychelles bond were used to support the expansion of marine protected areas, while for Kenya proceeds were used to provide 5,000 university students with environmentally friendly, affordable housing in Nairobi.

Innovative financing for green hydrogen

Innovative instruments such as the use of partial credit risk guarantee can be used to mobilize commercial financing for low-carbon hydrogen projects through allocating and mitigating risks. Green hydrogen is still more expensive than conventional hydrogen derived from fossil fuels, as it requires significant investment in production, delivery, and use. Blended financial instruments can be used to mobilize additional sources to distribute financial burdens across multiple financiers. Green hydrogen also does not have an established customer base, thus, use of subsidies can encourage uptake of green hydrogen projects.

Case studies of innovative climate funding in East Africa

The Adaptation Benefit Mechanism (ABM) is an innovative financing mechanism established by the African Development Bank in partnership with African governments and relevant stakeholders to support climate change adaptation. The fund which is currently in the piloting phase from 2019–2023 seeks to mobilize new and additional public and private-sector finance through a results-based financial model. The mechanism provides incentives to investments through proving payments for delivery of verifiable adaptation benefits that help in meeting adaptation needs of developing countries by reducing costs of investments and opening opportunities for private-sector investment in adaptation. The ABM model can be utilized in EA countries to contribute to the achievement of: the Sustainable Development Goals; the adaptation and climate finance goals of the Paris Agreement; the UNFCCC long-term finance goal; and adaptation and resilience goals and needs of developing countries expressed in, among others, Nationally Determined Contributions, national adaptation plans, technology action plans and long-term strategies for low-emissions, resilient and sustainable development.

The Rwanda Green Investment Facility (RGIF/FONERWA) is collaborating with the Rwanda Development Bank (BRD) to establish the Rwanda Green Investment Facility to help the country mobilize private-sector investment into climate finance opportunities. The goals of the RGIF are to address local market gaps and strengthen Rwanda's ownership through a specialized green finance facility. The facility has contributed to the avoidance of 126,000 tons of carbon dioxide emission and facilitated improved access to electricity by 88,000 Rwandan households with improved access to off-grid clean energy. Furthermore, the investment facility has created more than 176,000 green jobs. The fund has an opportunity to open windows for additional private-sector investments to spur green growth in Rwanda.

The Sustainable Energy Fund for Africa (SEFA) is a multi-donor Special Fund managed by the African Development

Bank. The Fund's primary purpose is to provide catalytic finance to unlock private-sector investments in renewable energy and energy efficiency. It offers technical assistance and concessional finance instruments to ease market barriers, build a more robust pipeline of projects and improve the risk-return profile of individual investments. In 2020, SEFA approved $54 million towards new projects and completion of six legacy projects, which has triggered an additional $90 million in new financial commitments (SEFA, 2020).

3.3.2 The role of development partners in supporting climate resilience and a just energy transition

Development partners play a major role in mobilizing resources, skills, and technology transfer for just energy transition but clear targeting of support to just transition that delivers net zero is required.

Consistent with the NDC financing projections where a bulk of resource requirements are anticipated from external funding, development partner financing is expected to play a pivotal role in Africa's just energy transition. Currently, development partners are heavily involved in supporting climate action in Africa either directly or through mechanisms that mobilize private-sector investment. Official Development Assistance (ODA) from European countries is an important source of development financing. A significant amount of EU financing to Africa goes to the energy sector, especially renewable energy sources (OECD, 2018). Development partners have also been at the forefront of supporting the mainstreaming of climate actions in the EA region. For instance, in Kenya, during 2010–2018, the country received $1.26 billion in climate finance from bilateral donors led by Japan, France, and Germany $828 million for mitigation, 281 million for adaptation, and 150 million for both mitigation and adaptation (Africa Practice, 2021).

In the energy sector, some examples of Development Partner initiatives include the East Africa Energy Program by USAID (USAID, 2022) that seeks to optimize the region's power supply, increase grid-based power connections, strengthen utilities, and increase the region's power trade; the World Bank funded the Somalia Electricity Recovery Project ($150 million) (Khalif, 2021) and the East Africa Regional Energy Project, $5.5 million, approved in 2022 (Khalif, 2021) (see Annex 6).

3.3.3 The role of philanthropists in supporting climate resilience and a just energy transition

Not-for-profit philanthropists present a good opportunity for supporting just transition although such resources should be channeled to adaptation and mitigation actions that maximize socioeconomic outcomes.

Climate-change-conscious philanthropists like Jeff Bezos, the Rockefeller foundation, and IKEA collaboratively founded the Global Energy Alliance for People and Planet (GEAPP). The Alliance has resources and agreements to catalyze the transformative investments, technical support, and regulatory changes required to scale up emerging developments in green energy technology globally and to stimulate private-sector investments that could create green jobs among others.

The African Climate Foundation (ACF) is the continent's first African-led strategic climate-change grant-disbursing foundation whose goal is to provide a mechanism for philanthropies to contribute to Africa's efforts to address climate change. According to the ClimateWorks report, out of a total of $730 billion of philanthropic funds donated by individuals and foundations in 2019, approximately $5–$9 billion was channeled to climate mitigation. In 2020, out of a total of $750 billion, approximately $6–$10 billion was channeled to climate change mitigation actions. This indicated a rise in the philanthropic finances put towards climate change mitigation (ClimateWorks Foundation, 2022). To ensure that these funds are leveraged to support just energy transition, some guidelines will be required to monitor and safeguard investment choices. These guidelines could inform policies and regulations to provide an enabling environment, functional financial market, and incentives to enhance opportunities for investment.

3.3.4 Innovative business models/markets that East Africa should explore to accelerate sustainable inflows for climate finance

Innovative business models are largely results-based, demanding measurable outcomes and outputs. While such outputs are clear for mitigation, the EA countries will need to invest in developing clear contextual but globally aligned indicators against which return on investments can be accessed.

Carbon offsets

Carbon offsets can be used to support climate actions that build adaptive capacity or mitigate further carbon emissions. Offsets will allow the East Africa's businesses to contribute to decarbonization beyond their own carbon footprint, accelerating the transition to net zero emissions. They also assist in the financing of climate mitigation initiatives. Carbon offsets are however highly market-driven, requiring robust technical and market institutions to ensure legitimacy, reporting and verification. There are often technical and institutional capacity gaps in East African countries (and wider Africa) with regards to the ability to develop bankable proposals for the carbon markets. The new paradigm shift under the Paris Agreement Capacity Building Initiative provides an opportunity for countries to strengthen their capabilities towards tapping into the increasing carbon markets. There are also notable examples of innovative initiatives (e.g., various low-carbon investments and development funds) that seek to support technology transfer for enhanced access to carbon markets by EA countries (Box 3.1). By and large, carbon markets are widely linked to mitigation but there are opportunities to harness co-benefits and resilience benefits for a just transition. The Clean Technology Fund is an example of carbon offsets with targeted resilience co-benefits. This is reflective of most offset projects, where resilience benefits are secondary and sometimes only claimed at the proposal stage and not monitored during the implementation stage.

Box 3.1: Financing Low-carbon Investments and Development in East Africa: The Clean Technology Fund (CTF)

Aim: To promote scaled financing for low-carbon technology transfer with long-term GHG emission reduction potential

Climate actions:

i. Incentivize low-carbon development through public and private-sector investments;
ii. Accelerate transition to clean technologies by funding low-carbon programs and projects;
iii. Achieve environmental and social co-benefits, demonstrating how low-carbon technologies can help to achieve sustainable development;
iv. Make use of the MDBs' skills and capabilities to mobilize additional resources, such as official and concessional funding.

Case: 50MW Tulu Moye Geothermal Power Plant, Ethiopia

Funding amount: **$10 million**

Business model: **Build, Own, Operate and Transfer (BOOT) scheme**

Equity/Other Investors: **$239.9 million**

Emissions reduction targets: **420,480 tCO2 eq. per year.**

Source: AfDB (2020a).

Green hydrogen

Green hydrogen can provide long-term solutions to universal access to energy and decarbonization objectives. The extraction of hydrogen from more complicated chemicals utilizing "clean" (zero carbon) techniques is referred to as "clean hydrogen". Most hydrogen is currently produced by extracting hydrogen from fossil fuels, resulting in carbon emissions. Africa is well-positioned to establish a green hydrogen economy. The East Africa region has huge potential to adopt green hydrogen to drive the economy due to the abundance of wind and sunlight, the two main sources of renewable energy. Furthermore, the ability of green hydrogen to operate as a storage device for excess renewable energy could assist in overcoming the current anomalies and deficiencies in renewable energy supply.

Regional energy trade

Regional energy trade can be utilized to remove market barriers, lower energy costs for consumers, and increase competitiveness of firms and improve resilience and reliability of energy supply.

3.3.5 Domestic resource mobilization and climate finance in East Africa: the role of state and non-state actors

National climate finance frameworks in EA countries are mainly geared towards consolidating different funding sources to support adaptation and mitigation. They provide an opportunity for innovation through blending. However, better institutional coherency and tracking is required to strengthen blending and learning for just transition.

The majority of East African countries are dependent on international support to finance clean and just energy transition and resilience. Domestic funding sources are evolving fast. Some countries such as Ethiopia, Kenya, and Rwanda have established domestic climate finance mechanisms: RGIF/FONERWA in Rwanda (see section 3.3.1); the County Climate Change Fund (CCCF) in Kenya, which finances locally identified and prioritized climate resilience projects to a tune of $3.2 million annually; and the Climate Resilience Green Economy Facility in Ethiopia, which has attracted resources from several bilateral and multilateral development partners. The Facility provides a unified engagement point where government, development partners, civil society, and other stakeholders can engage and make decisions about climate finance. It has also led to the development of a tracking and projection methodology. Other countries could be progressing in developing such mechanisms, but there is limited literature available.

Domestic mechanisms help to facilitate the blending of multiple sources of finance in a coordinated way to mobilize new and additional resources to support climate action. The funds allow for coordination of domestic, public, and private financing sources besides the global climate finance flows. For example, RGIF/FONERWA has mobilized funds from bilateral donors and multiple domestic sources including environmental, forestry, and other natural resource fees (CDKN et al., 2013). Uganda is exploring the creation of a climate-dedicated national financing vehicle (NFV) as an innovative mechanism to mobilize both national and international climate finance resources directed at high impact climate action. The creation of an NFV is aligned with the Government of Uganda's national planning objectives and green-growth development goals. The low-carbon sector currently faces a substantial investment gap, with related implications for economic growth.

Box 3.2: Leveraging Natural Resources for Climate Financing

East Africa is rich in biodiversity and natural resources such as crude oil, natural gas, minerals, forests, and wildlife. The region's biodiversity is vital to its nature-based tourism sector, which contributes significantly to the GDP of most countries in East Africa.

Particularly, natural capital accounts for between 30 and 50 percent of the total wealth of East Africa and is thus critical in supporting green transition in the face of climate change.

The Natural Capital for African Development Finance Programme (NC4-ADF) spearheaded by the African Development Bank is an example of an initiative that seeks to integrate natural capital approaches into development financing in Africa.

Source: AfDB (2021c) and UNEP (2016).

East Africa has some good examples of financing arrangements that have enhanced mobilization of domestic resources, including the green Village Savings and Loans Association (VSLA) a microfinance model that mobilizes funds. By integrating environmental protection standards into micro group loans, VSLAs incentivize local communities to take environmental action. It also suggests a self-sustaining funding strategy that encourages local businesses to supplement a VSLA's loans. In 2010, the Government of Uganda committed $0.53 million (equivalent to UGX 1.2 billion) as seed funding, with a World Bank grant of $3.5 million and a GEF grant of $3.1 million to the Uganda Energy Credit Capitalization Company (UECCC). This allowed the Company to unlock private-sector investments for three products namely: Standby or Refinance facility, Partial Risk Guarantee Facility, and Solar Refinance to MFIs/Banks (Bakiika et al., 2021).

The potential for the EA countries to mobilize domestic finance for climate actions is also reflected in their revised NDCs. For example, in its 2020 NDC, Kenya intends to mobilize domestic resources to cater for 10 percent of the adaptation cost, while 90 percent of the adaptation cost will require international support. Overall, Kenya will mobilize resources to meet approximately 13 percent of the total budget estimate for mitigation and adaptation up to 2030, which is estimated to be over $62 billion. The Climate Policy Initiative report of 2021 indicates that the Government of Kenya disbursed $752.4 million in climate-related development expenditures in the fiscal year 2017/18, with 55 percent being external resources from international development partners channeled into the national budget. Less than 60 percent of financing in 2018 came from international public and private sources. Implementing Kenya's climate policy requires that international partners will sustain at least 87 percent of the costs by 2030, a goal not met in 2018. Development partners provided less than one third of all climate financing in Kenya. Investment from the private sector totaled KES 98.9 billion ($979 million), 34.4 percent originating domestically from Kenyan companies and 65.6 percent from overseas private companies investing in domestic projects. Private finance represents almost 41 percent of total climate finance in Kenya, and most of this was directed to renewable energy generation.

Local financial resources represent a large source of local currency funding that could well meet the investment needed towards just transition although this local financing has not been fully utilized. The key impediments include the perception of significant credit risks, such as concern over the credit quality of end-use customers, undercapitalization of off-grid enterprises, and lack of understanding of off-grid sector business models and risks (GreenMax Capital Advisors

& Energy4Impact, 2020). Participation of domestic (local banks) finance in large-scale renewable energy projects due to the foreign currency denominated Power Purchase Agreements (PPA), which requires long-term foreign currency loans that most local banks are not able to provide Local currency dominated PPAs could support the mobilization of domestic climate financing. Furthermore, climate finance can be used to capitalize local financial institutions through local currency-denominated credit lines; direct financing to Independent Power Plant (IPPs) in local currency; or credit enhancements to incentivize finance from local banks to support the renewable energy sector (Climate Focus, 2018). Due to insufficient levels of capitalization, most domestic financial markets and state budgets are unable to deliver the volumes of project finance required. International financiers typically assist in closing the funding gaps, notably for IPPs; end-consumer electricity tariffs are denominated in a local currency, which creates exchange rate risks. Annex 2 discusses regional coordination for enhanced climate resilience and a just energy transition in East Africa.

3.4 CONCLUSION AND POLICY RECOMMENDATIONS

Overall, this chapter outlines the financing opportunities for supporting energy transition and climate resilience in the context of just transition. The funding opportunities for just transition for East Africa are increasing with diverse conditions. However, accessing these funds remains a major challenge for most EA countries mainly due to technical capacity and institutional gaps. Understanding the existing financial instruments and exploring options for innovative resources that are relevant to just transition actions is key to addressing East Africa's climate finance needs. Several international funding opportunities such as GCF, Adaptation Funds, and MDBs require robust and innovative institutional and technical processes. For adaptation, which is a key component of just transition, the bottlenecks are significant for the EA countries due to lack of data and measurable adaptation indicators to quantify investment and associated returns. In the context of just energy transition, clean energy investments provide a strategic opportunity for just transition due to the sector's role as a development catalyst and driver of resilience to climate change. Several funding sources have potential to spur just energy transition. However, currently, the just transition idea is broadly conceptualized in terms of synergy between mitigation and adaptation, but it should include actions that promote broader climate justice and net zero. Importantly, the current conceptualization of just transition could impede the mobilization of innovative financing. Consequently, efforts are required to increase awareness in the region about innovative funding instruments and developing the required capacities at regional and national level to harness these resources for a transparent and trustable just energy transition. The role of MDBs in bridging these gaps is paramount. For instance, the AfDB supports economic and infrastructure development in EA and other Regional Member Countries (RMCs) including large-scale and multi-country energy and climate change projects. These opportunities can be leveraged to strengthen the capacity of EA member states to mainstream mitigation and adaptation actions in regional and national development plans and strategies, and harness applicable financing.

The following are some of the areas of interventions that could be considered in this pursuit.

3.4.1 Short-term actions

- **Project preparation facilities supported by MDBs should be enhanced to improve bankability of adaptation projects.** Increased access to project preparation resources will accelerate the development of a pipeline of bankable projects, thereby increasing the likelihood of attracting climate financing.

- **Re-aligning national budgets to respond to climate change.** Public spending reprioritization is necessary to support just transition. Public resources could support just transition components such as community empowerment, enhanced representation, subsidies, and support to affected businesses, among others. It is important to note that the current international financing architecture does not consider many elements around just transitions

because they are not measurable. Consequently, national commitments to climate action, including through public spending allocation, can crowd-in international support towards just transition.

3.4.2 Medium-term actions

- **Technical support and capacity building is required to develop expertise and skills of governments and other stakeholders on how to access, manage, and track climate finance.** This ambition can be supported by MDBs by scaling up funding for technical assistance for countries in the EA region.

- **Governments, in collaboration with development partners, should provide incentives to mobilize private-sector finance for adaptation and energy transition investments.** Incentives, including feed-in-tariffs, tax credits, and loan guarantees, among others, can motivate the repurposing of funds away from carbon-intensive projects, thereby enabling for the just transition to a green economy.

3.4.3 Longer-term actions

- **Strengthening the integration of climate change and just transition actions in national development frameworks.** Governments should mainstream climate action in national development plans including infrastructure development as critical paths to just transition. Climate action and development should be espoused as complementary objectives, with scaled-up efforts to mainstream climate risks into development actions, with support from MDBs. Greater emphasis on tracking of transformative climate outcomes from inclusive development processes is equally important. In this context, there is need to develop effective tools and frameworks for profiling and reporting climate-related benefits from development projects. This is consistent with efforts to achieve universal access to affordable, reliable, sustainable, and modern energy for all (SDG7).

- **Diversifying the financing mix for just transition.** Governments could establish pooled funding schemes for climate finance with clear processes on how funders can channel their resources. The climate finance architecture remains highly fragmented, which poses a challenge to governments in tracking and reporting on climate finance. MDBs could help curb the associated risks and barriers to a just energy transition by deploying risk sharing and mitigation instruments. These innovative financing instruments de-risk climate-related interventions and have the potential to incentivize private investment and finance.

- **Building capacity to design bankable funding proposals, access, and manage climate finance.** Technical support and capacity building is required to enhance the capacity and skills required to access, manage, and track climate finance. Development partners can support this through technical assistance programs. Furthermore, civil society and technical institutions should support capacity building especially for national development banks (NDBs) to be more proactive in supporting climate action. Provide funding in local currencies, NDBs have high potential in meeting climate finance needs as they are ideally positioned to understand country-specific obstacles to climate initiatives, due to their proximity to the domestic market and linkages with local actors.

ANNEXES

ANNEX 1:

Table A.1: Indicators of renewable energy status in East Africa													
	Kenya	Ethiopia	Uganda	Sudan	Somalia	Burundi	Rwanda	Djibouti	Tanzania	Eritrea	Sey-chelles	South Sudan	Comoros
Access to electricity (% of population)	61	45	43	52	34	11	35	61	35	49	100	6	82
Access to clean cooking (% of population)	16	6	<5	52	<5	<5	<5	9	<5	9	>95	<5	7
Per capita renewable capacity (Watts/ person)	39.235	40.738	20.103	51.196	0.707	5.135	11.144	0.378	12.053	3.183	97.823	0.05	1.74
Public flows renewables (2018 USD million)	257.6	34.7	236.3	2.5	3.5	10	16.1	31	13.2	0	N/A	0.3	N/A
Energy efficiency (Megajoules per $1 of GDP)	5.4	7.9	10.1	4.5	N/A	7.7	3.9	2	6.2	N/A	2.9	N/A	3.1
Renewable energy (% of total final energy consumption)	72.3	89.9	90.3	61.4	94.9	85.5	85.7	27.8	83.7	73.2	1.2	33.2	55
Total primary renewable energy supply (Terajoules)	761,102	1,394,969	844,120	245,888	143,131	56,485	86,364	3,505	732,588	26,680	73	6,941	3,816
Wind Installed capacity (Megawatts) 2019	436.1	-	N/A	N/A	3.55	N/A	N/A	20	2.4	0.825	6	N/A	N/A
Solar installed capacity (Megawatts) 2019	146.7	21.18	91.73	135.9	23.54	5.103	38.34	0.362	23.64	24.46	8.688	1.278	N/A

	Kenya	Ethiopia	Uganda	Sudan	Somalia	Burundi	Rwanda	Djibouti	Tanzania	Eritrea	Sey-chelles	South Sudan	Comoros
Biogas and biofuels installed capacity (Megawatts) 2019	87.2	335	96.2	199	N/A	4	0.835	N/A	70.03	N/A	N/A	N/A	N/A
Geothermal installed capacity (Megawatts) 2019	863	7.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hydropower installed capacity (Megawatts) 2019	851.28	4,071	1,010.60	1,482	N/A	48.283	119.56	N/A	589.12	N/A	N/A	N/A	1.448

Source: Africa Energy Outlook (2019).

ANNEX 2:

A.2 REGIONAL COORDINATION FOR GREATER CLIMATE RESILIENCE AND A JUST ENERGY TRANSITION IN EAST AFRICA

Cooperation between East African (EA) countries through established political and economic cooperation structures provides an opportunity for scaling up funding for just energy transition, integration, and minimizing externalities that threaten investments in just energy transition.

A.2.1 Making the case for regional coordination: the role of regional organizations

East Africa is endowed with natural resources that transcend natural boundaries. Several countries in East Africa have had at least one border conflict with a neighbor. Transboundary resources amid security-related concerns are the most common causes of these disputes. This calls for the need to strengthen regional coordination to protect and manage East Africa's shared environment and natural resources. Partner states in East Africa can mobilize green investments through regional integration and trade agreements to promote trade in environmentally sound technologies and resilience co-benefits (Hansen & Nygaard, 2019). Through existing regional policy frameworks and master plans, EA countries have an opportunity to build stronger regional coordination for enhanced clean energy and resilience financing strategies. Several policies and frameworks have been established in the region that can be used as a pathway to catalyze, scale up and sustain funding (Box A.1).

Table A.2: Continental and regional frameworks driving energy transition

Policy/ Plan/ Strategy	Objective
East Africa Power Master Plan	The East African Power Master Plan is a long-term strategy for the East African Community's power development. From 2013 through 2038, it identifies a low-cost generation and transmission expansion strategy to fulfil the region's expanding power demand. The Master Plan considers technical requirements as well as economic viability, considering the region's generation resources as well as prospects for electricity exchange among EAC Partner States and with other regions.
East African Centre for Renewable Energy and Energy Efficiency (EACREEE)	The East African Centre for Renewable Energy and Energy Efficiency (EACREEE) goal is to contribute towards increased access to modern, clean, affordable, and reliable energy services, energy security by providing an enabling environment for renewable energy and energy efficiency investments.
EAC Regional Strategy on Scaling-Up Access to Modern Energy Services	The EAC Regional Strategy on Scaling-Up Access to Modern Energy Services aims to increase access to modern energy services by adopting High-Impact, Low-Cost scalable approaches. The objectives of the strategy include access to modern cooking practices for 50 percent of traditional biomass users; access to reliable electricity for all urban and peri-urban poor; access to modern energy services for all schools, clinics, hospitals, and community centers; and access to mechanical power within the community for all productive services.

Policy/ Plan/ Strategy	Objective
Energy Security Policy Frame-work	To improve energy security across the EAC.
Eastern Africa Power Pool	The EAPP was established by the Common Market for Eastern and Southern Africa (COMESA) in 2006 with the goal of assisting member nations in increasing electrification rates through coordinated development of power production projects and energy grid interconnectivity.
African Continental Power Systems Master Plan (CMP)	The CMP is one of the efforts to integrate renewable energy through a sustainable integrated continental power transmission network in the context of Agenda 2063. The Master Plan will further strengthen: (i) power sector value chains through building enabling infrastructures; (ii) employment creation opportunities; (iii) leveraging technology for improved planning, governance, and institutional capacity.

Sources: EAC (n.d.b); East African Centre for Renewable Energy and Energy Efficiency (n.d); Eastern Africa Power Pool (n.d); IRENA (2021c).

Regional coordination and integration have the potential to fast-track the just energy transition process and mobilize investments to address cumulative investment needs in the energy sector as shown in Table A.3.

Table A.3: Cumulative investment needs in the energy sector in East Africa, 2015–2030 (USD billion)

Region	All generation	Large hydro	Other renewables	Transmission and distribution
East Africa	72	36	21	49

Source: IRENA (2015).

Box A.1: Leveraging Regional Economic Communities for Climate Finance in East Africa: East African Community (EAC), Common Market for East and Southern Africa (COMESA), South Africa Development Community (SADC), Africa Financial Alliance on Climate Change (IFAC), Intergovernmental Authority for Development (IGAD), and African Continental Free Trade Area (AfCFTA)

The EAC Climate Change Master Plan (2011–2031), EAC Climate Change Policy (2011), and EAC Climate Change Strategy are critical in influencing the Climate Finance Access and Mobilization Strategy in the region.

COMESA's Medium Term Strategic Plan 2021–2025 calls for the mainstreaming of climate change into the programs, operations, and processes of COMESA as part of its regional integration agenda.

SADC has a Climate Change Strategy and Action Plan which calls for establishment of an SADC Regional Development Fund (RDF) to leverage and attract climate finance.

The goal of IFAC is to mobilize private capital flows towards achieving a low-carbon and climate-resilient development pathway across the continent. It brings together Africa's key financial institutions, as well as commercial and development banks to support climate action.

AfCFTA creates a large market with free trade, attracting private-sector investment and development finance organizations. Increased commerce can also function as a stimulus for innovative financing alternatives and schemes, as well as strengthen financial institutions to support low-carbon and climate-resilient development projects and incentivize investment in climate by lowering investment risks.

Source: SADC (2015), COMESA (2020), AfDB (n.d), World Bank (2020a), and EAC (n.d.a).

Regional approaches to addressing the energy deficit are not new considering that Regional Power Pools exist, through which African countries oversee power generation and distribution. Power pools have managed to install a capacity of 33.8 GW, with 28 percent from renewable energy technologies (S&P Global Platts, 2019). By 2065, the EAPP is predicted to be the continent's second most populous area (United Nations, 2014). However, the region's economic growth is expected to lag behind: the projected population growth will not be matched by corresponding economic growth, since the region's GDP is projected to increase by about five times between 2015 and 2065, a rate lower than any other power pool. Kenya and Ethiopia are on track to achieve universal access to electricity by 2030. Box A.1 presents some of the regional initiatives for climate finance.

A.2.2 The African Development Bank, climate resilience, and just energy transitioning

The African Development Bank plays a key role in bridging the gap between Regional Member Countries (RMCs) and private-sector investments in just energy transition. For the Bank to champion this ambition, it must continue to earmark funds for just energy transition in its strategies and programs in addition to investing in capacity development for RMCs.

The African Development Bank, through its Ten-Year Strategy (2013–2022), focuses on two objectives: inclusive growth, and the gradual transition to green growth, with the green growth agenda aligned with just energy transition ambitions. According to the AfDB, green growth involves the

promotion and maximization of opportunities from economic growth through building resilience, managing natural assets efficiently—including improving agricultural productivity—and promotion of sustainable infrastructure. Some of the green-growth funding instruments at AfDB include the Sustainable Energy Fund for Africa, the Africa Renewable Energy Fund, and the ClimaDev Africa Special Fund. The green-growth agenda is aligned to the aspirations of just energy transition. Green growth advocates for socioeconomic development that is sustainable, creates justice for current generation to achieve developmental benefits, and safeguards the rights of the future generation. As part of the gradual transition to green growth, the AfDB is keen to promote a just energy transition. Through the SEFA program, the Bank is mobilizing private-sector funding for universal access to sustainable, affordable modern energy services for all in Africa.

The Banks's New Deal on Energy for Africa strategy and its Sustainable Development Goals provide a broader framework for supporting RMCs in achieving just energy transition. The New Deal on Energy for Africa is a collaborative endeavor with the goal of providing universal energy access to Africa by 2025. The continent must meet four goals in order to reach its objective of giving energy access to over 645 million people and sufficiently power businesses: (i) increase on-grid generation by 160 GW by 2025; (ii) increase on-grid transmission and grid connections by 130 million new connections by 2025, 160 percent more than today; (iii) increase off-grid generation by 75 million connections by 2025, 20 times more than today; and (iv) increase access to clean cooking energy for around 130 million households. Across EA, some of the results of the program include establishment of the Menengaï Geothermal Development Project in Kenya with $108 million in funding from the African Development Bank, which has added 105 MW of geothermal production capacity to the national electricity grid. Box A.2 highlights some of the achievements under the New Deal on Energy for Africa.

Box A.2: Harnessing the New Deal on Energy for Africa

The African Development Bank's New Deal on Energy for Africa focuses on five key principles: raising aspirations to solve Africa's energy challenges; establishing a Transformative Partnership on Energy for Africa; mobilizing domestic and international capital for innovative financing in Africa's energy sector; supporting African governments in strengthening energy policy, regulation, and sector governance; and Increasing the AfDB's investments in energy and climate financing.

To implement the New Deal, the African Development Bank established a New Vice Presidency Complex on Power, Energy, Climate Change, and Green Growth, which is staffed by worldwide energy, climate change, and green growth experts. The AfDB is the first multilateral development bank to do so, putting it in a position to lead Africa's energy transformation. Five directorates have been established under the Vice Presidency Complex;

Selected achievements of the New Deal on Energy (2016–2018)

- Additional 1843 MW installed generation capacity of which 1703 MW is sourced from renewable energy: 80% on grid and 20% off grid (solar systems and green mini grids)
- Approval of innovative programs of off-grid and mini-grid energy access
- Leveraged $7.56 billion for energy projects from the Bank's co-financing facilities
- Mobilized $560 billion for energy projects from the Bank's co-financing facilities
- $840 million non-sovereign energy lending
- 2.4 million electricity connections, with 11.5 million beneficiaries

To enhance the attainment of the aspirations of the New Deal on Energy for Africa a significant increase and mobilization in private-sector investments is required.

Source: AfDB (2017).

ANNEX 3:

Table A.4: Just energy transition tracker

Just transition principles ---------- Countries	Inclusive participation	Assessing communities and workers needs in energy changes	Data and evidence	Financial Assistance targeting just transition	Monitoring and evaluation
Burundi	L	M		M	L
Comoros	M	M	M	H	M
Djibouti	M	M	M	L	L
Eritrea	M	M	M	M	L
Ethiopia	M		M	M	L
Kenya	M	M	H	M	L
Rwanda	M	M	M	M	L
Seychelles	H	H	M	H	M
Somalia	M	L		L	L
South Sudan	M			L	L
Sudan			M	L	L
Tanzania	M	M	M	M	L
Uganda	M	M	M	M	L

Source: Authors' compilation from various reports.

Table A.5: Estimated financial needs (USD billion) across sectors under adaptation in East Africa's NDCs, 2020–2030

Sectors		Burundi	Comoros	Djibouti	Ethiopia	Eritrea	Kenya	Rwanda	Sey-chelles	Somalia	Sudan	South Sudan	Uganda	Tanzania
Water		20.19	-	-	-	1,575.8	-	534.3	-	15,000	-	117	-	-
Agriculture & food security		179.7	-	-	-	2,235.3		2,943.7	25.72	10,000	-	25.5	-	-
Land & forestry		-	-	-	-	331.3	-	201.9	-	300	-	0.5	-	-
Biodiversity, ecosystem & sustainable wetland management		-	-	-	-	-	-	-	18.1	-	-	200.5	-	-
Tourism & recreation		-	-	-	-	-	-	-	-	-	-	1	-	-
Human settlements		-	-	-	-	-	-	800	-	200	-	-	-	-
Health		113.55	-	-	-	-	-	785	10	-	-	20	-	-
Waste		20.49	-	-	-	-	-	-	-	-	-	-	-	-
Mining		-	-	-	-	-	-	59.3	-	-	-	-	-	-
Disaster risk reduction (DRR)	Disaster risk monitoring	7.3	-	-	-	-	-	20	-	10,000	-	10	-	-
	Early warning system & disaster-response plans	-	-	-	-	-	-	10	-	-	-	-	-	-
Coastal marine environment & fisheries		-	-	-	-	249.2	-	-	140.83	3,000	-	-	-	-
Energy		343.37	-	-	-		-	-	-	5,000	-	-	-	-
Infrastructure including roads bridges		71.31	-	-	-	-	-	-	191.35	5,000	-	1.8	-	-

Sectors		Burundi	Comoros	Djibouti	Ethiopia	Eritrea	Kenya	Rwanda	Sey-chelles	Somalia	Sudan	South Sudan	Uganda	Tanzania
Institutional capacity building & development for cross-sector NDC implementa-tion		608	-	-	-	-	-	6	-	-	-	-	-	-
Water, sanitation, & hygiene		82	-	-	-	-	-	-	-	-	-	-	-	-
Access to finance (resource mobilization)		-	-	-	-	-	-	3	-	-	-	-	-	-

Source: Author's Compilation from countries' Nationally Determined Contributions.

ANNEX 5:

Table A.6: Climate finance flows to East Africa through the Green Climate Fund (GCF), a UNFCCC financing mechanism (USD million)		
Countries	GCF (approx. USD million)	AF (approx. USD million)
Burundi	15.6	-
Comoros	0.3 (readiness only)	-
Djibouti	14.3	10
Eritrea	8.7	9.1
Ethiopia	273	-
Kenya	210	9.9
Seychelles	23.4	6.4
Somalia	17.4	-
South Sudan	0.3 (readiness only)	-
Sudan	44.4	-
Tanzania	253	10
Uganda	71.7	7.5
Regional (Uganda, Kenya, Burundi, Rwanda, Tanzania)	-	5

Source: Adaptation Fund (n.d); Green Climate Fund (n.d.).S

ANNEX 6:

Table A.7: Selected development partners in the energy sector in East Africa		
Selected development partners	Projects	Achievements
USAID	East Africa Energy Program (USAID, 2022) seeks to optimize the region's power supply, increase grid-based power connections, strengthen utilities, and increase the region's power trade.	As of 2021 the following has been achieved: 708,009 new on-grid connections for the Kenya Power and Lighting Company (KPLC); The 100-megawatt Kipeto Wind Power Project reached commercial operation, providing clean power to 250,000 Kenyans; 141 % increase in revenue for KPLC, resulting in an additional $92.4 million in revenue.
World Bank	The Somalia Electricity Recovery Project $150 million (Khalif, 2021).	The project targets to increase access to cleaner, lower cost electricity for 1.1 million households, or approximately 7 million people, of which 3.5 million are women; establish a stable electricity supply and support regional integration.
African Development Bank	East Africa Regional Energy Project $5.5 million approved in 2022 (Khalif, 2021).	The project will develop technical studies for regional solar parks and associated battery storage near regional energy interconnectors, high-voltage cables that connect the electricity systems of neighboring countries. The project will focus on Djibouti, Eritrea, Ethiopia, and Sudan.

Source: USAID (2022), The East African (2021), and AfDB (2022c).

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