CHAPTER 16

Climate Governance in Eastern Africa: The Challenges and Prospects of Climate Change Adaptation Policies

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Introduction

The recent Greenhouse Gas Bulletin by the World Meteorological Organization stated that the current rate of increase in greenhouse gas (GHG) concentrations indicates a temperature increase by the end of this century far in excess of the Paris Agreement targets of 1.5 to 2 °C above preindustrial levels (WMO 2021). Even if rapid climate action towards

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reducing emissions to net-zero is implemented, the current GHGs in the atmosphere point towards the persistence of temperature levels for decades. Therefore, irrespective of current mitigation efforts against climate change, there is a need to adapt to the impacts of climate change. The global adaptation goal was established at the twenty-first session of the Conference of Parties (COP 21) in Paris in November 2015, which was previously proposed by African nations. The Glasgow Climate Pact (2021) urges developed countries to significantly scale up tangible action in three main areas critical in climate change adaptation and governance: climate financing, technology transfer and capacity-building. However, these areas remain untapped in developing countries and are a big challenge to African countries generally, even in policy sectors that are not dealing with climate change directly (see, e.g., Bitrina Diyamett's chapter in this volume).

Even though Africa contributes only 4% of global emissions, it is the most affected by the impacts of climate change (UN 2006). And in response to this, the African Union (AU), through *Goal 7*, seeks to realise *environmentally sustainable and climate-resilient economies and communities* in the continent. In particular, the AU has called for a climate governance design that promotes local strategies. These should be based on grassroots knowledge, legislation to promote sustainability practices, prioritise grassroots approaches, and fast-tracking the promotion of grassroots environmental practices through established regional economic community (REC) protocols on transboundary and shared resources (AGR 2021, p. 22). The United Nations' SDG 13 further buttresses this continental policy agenda, showcasing the global growing policy concerns with climate change and efforts to address African climate governance deficits.

While there is a relative lack of policy commitment to climate change by most subnational governments or regional authorities in Africa because of

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several socio-political and economic challenges, the impacts are causing untold destructions in sub-Saharan Africa (SSA) alone. For example, 40% of the SSA population lack access to safe drinking water, and 68% lack improved sanitation facilities (WHO 2019). The 2019 Afrobarometer survey on perceptions of Africans on climate change established "widespread reports of worsening quality of life and deteriorating conditions for agricultural production", as well as "limited climate change literacy among average citizens" (Afrobarometer 2019). Most importantly, the survey found that "[t]wo-thirds (67%) say climate change is making life in their countries worse, reaching a high of 89% in East Africa, almost twice as many as in North Africa (46%)" (ibid., p. 2). Moreover, "[b]y more than 2-to-1, ordinary Africans say climate conditions for agricultural production have worsened in their region over the past decade. Overwhelming majorities see worse weather for growing crops in Uganda (85%), Malawi (81%), and Lesotho (79%)" (Afrobarometer 2019).

However, underlying these issues are also challenges pointing to governance deficits common to these countries' levels of political development, mainly underpinned by their state- and nation-building status. Regardless, African states are pressured to prioritise leveraging climate change adaptation strategies effectively. These connote actions to help communities and ecosystems cope with changing climate conditions, that is, by reducing the adverse consequences of climate change and harnessing any beneficial opportunities (Shi et al. 2016). For example, as seen from Afrobarometer (2019) findings, there is a growing realisation that climate change is causing adverse effects on ecosystems and livelihoods worldwide, requiring a global commitment. We should note that despite their commitment to leveraging climate change adaptation policies, East African states confront additional challenges in enhancing communities' social, economic and political stability of states with considerably porous borders.

Moreover, these states deal with problems of resource constraints to implement climate change adaptation policies effectively (World Bank 2011; UNEP 2021). The World Bank (2011) estimates that it will cost developing countries approximately US $70–100 billion a year within the 2010–2050 period to adapt to an about 2 °C warmer world by 2050. The UNEP Africa's Adaptation Gap report projected investments in Africa of approximately US $7–15 billion per year by 2020, US $35 billion by 2050 if global warming was limited to 2 °C (UNEP 2021). Current inflows to support adaptation are approximately US $1–2 billion; hence, significant effort is required to close the funding gap. But, in so doing, there is a need

to pursue a fit-to-context over a one-size-fits-all approach while dealing with African states on matters of climate change adaptation. This will ensure transparency, effective stakeholder and expert engagements, bureaucratic accountability, politico-administrative relations and coordination, especially between the local and national governments (Njuguna et al. 2022). In addition, the African climate change constituency needs to build on studies such as the UNEP adaptation gap report, link it to political realities of the African context and the African INDCs and propose appropriate and realistic financial targets. This requires considerable investments in environmental and climate economics and a better understanding of the different vulnerabilities and their economic implications.

This chapter focuses on such concerns in the East African region, one of the climate-vulnerable regions due to its fragile ecosystems. We map the general climate governance policy landscape or legal systems and efforts to realise them nationally. Most countries in this region are prone to extreme climatic conditions such as flooding and droughts. Severe droughts and floods are common in Kenya's Budalangi constituency near Lake Victoria, the Tana Delta on the East African coast and the northern Kenya plains. The Mbeya, Pwani, Arusha and Morogoro regions of Tanzania are prone to floods, while droughts are common in the Shinyanga, Dodoma and Singida regions. In Uganda, all Karamoja Subregion and Isingiro district are prone to drought, followed by districts in northern Uganda, parts of the Teso Subregion, and the Mbarara and Mitooma districts.

This chapter is organised as follows: the next section assesses the climate change governance trends in East Africa's regional and national policy frameworks. This explores the policy ecosystem of climate change adaptations and practices in Kenya, Uganda and Tanzania to address climate change responses explicitly. This is followed by a section on climate change governance challenges and prospects for enhancing climate adaptation. This section locates gaps between policy and practice of the Nationally Determined Contributions (NDCs) and climate-related management conflicts while moderately applying this volume's state transformation perspective regarding political conditions underlying climate change governance. Finally, the chapter recommends further courses of action to strengthen climate governance among the local communities.

Climate Change Governance in East Africa: The Policy Ecosystem

In light of the state transformation approach of this volume, a policy ecosystem analysis of climate change adaptations pays attention to the existing political and administrative systems and how they can generate and pattern joint efforts towards reducing the effects of climate change. Here, the collective efforts include organising and partnering with communities and other local and international stakeholders. According to Meadowcroft (2010), "Climate change governance requires governments to take an active role in bringing about shifts in interest perceptions so that stable societal majorities in favour of deploying an active mitigation and adaptation policy regime can be maintained" (p. 1). Undoubtedly, theories of climate change governance oftentimes place them within the capacity of administrative and political institutions and social systems to mitigate the effects of climate change, taking on contextual governance modalities regarding public policy outputs (e.g., Onyango 2022; Njuguna et al. 2022).

Therefore, climate change governance considers government agencies should have evolved to handle emerging challenges of climate change and other intractable governance problems through more politically inclusive approaches (e.g., Meadowcroft 2010; Klopp and Halakhe 2021). Effective climate change adaptation policies are underpinned by governance practices akin to control and steering aspects that bring together different government agencies, stakeholders and communities. In short, climate change governance requires conditions in advanced stages of state-building or where political conditions for nation-building are realisable.

In most cases, policy responses to climate change extremes are short and long term. Short-term policy responses include safety nets for food relief, temporary water supply and material support such as shelter for displaced communities whenever extreme events such as droughts and floods occur. These often take a multi-stakeholder approach steered by relevant agencies. The government often offers short-term assistance with the help of transnational actors and institutions. Apart from government-initiated responses, humanitarian networks such as The International Federation of Red Cross and Red Crescent Societies (IFRC) are often actively involved in relief efforts aimed at helping communities recover from climate shocks.

However, challenges to short-term climate change projects are many. These mainly include limited financial resources and geographical factors.

A lack of efficient early warning systems results in little or no resources being allocated to critical areas and programmes by the government or communities to respond to climate extremes. This would then lead to the governments declaring climate extremes as national disasters and requesting international support. Consequently, the global community provides humanitarian and development assistance through financial and technical support. Although humanitarian aid often has disadvantaged institutional capacity-building efforts in some fundamental ways, they do not engage in the capacity-building of local government agencies. Instead, they are often used as mere "operation shells" that collapse once aid resources flow stops (Onyango 2022). Secondly, foreign workers or aid agencies come with their own custom-made response frameworks devoid of local actors' contributions, knowledge or influence. Consequently, these policies suffer from policy legitimation crises and eventually fade away without generating lessons for future action (see Akello and Parker 2022).

Moreover, development-related problems like the lack of good road networks and bridges have hampered rescue efforts during floods. The same applies to water supply and relief food provision in Arid and Semi Arid Lands (ASALs) during emergencies like flooding and landslides. Climate Change Adaptation policy frameworks exist at different levels of state engagement—national, regional and international. However, to take stock of climate change governance in the region under focus, we examine the regional and national policy frameworks, as shown below:

Regional Policy Ecosystems

Over the past decades, several international and national organisations, funding agencies and alliances have implemented several climate change adaptation and resilience-building projects in many African countries. While many of these projects and programmes focus on improving reliable and accurate climate information, others focus on community-level capacity-building training, schemes and incentives. Accordingly, different initiatives for climate change adaptations exist at varying levels of governance in the East African region. For example, in 1963–1964, equatorial floods led to the hydromet data sharing agreement signed in 1967 by several countries within the Nile basin, including Uganda. Hydromet aimed to improve accessibility to real-time data, knowledge, tools and partnerships and enhance transboundary cooperation. Technical Cooperation for the Promotion and Environmental Protection of the Nile

Basin (TECCONILE) was launched in 1993 by several countries, including Uganda and Tanzania. The Nile Basin Initiative (NBI) was established in 1999 to promote interaction and shared understanding of basin issues among experts and recommends an all-inclusive cooperation mechanism to address common challenges. NBI monitors climate change explicitly and forecasts the possible impacts on water security. The African Flood and Drought Monitor (AFDM) is an example of recent climate change forecasting models that various governments can utilise for development planning and disaster preparedness.

The Intergovernmental Authority on Development (IGAD) Climate Prediction and Applications Centre (ICPAC), based in Nairobi, provides climate monitoring, prediction and early warning to various socio-economic sectors in the Greater Horn of Africa Region, including Kenya, Tanzania and Uganda. These regional policy frameworks have been adopted and complemented with related policy domains of member countries with varying implementation at national policy levels in the East African region. The next subsection looks further into these national policies in selected countries.

National Policy Ecosystems

At the national level, climate change adaptations involve those policies directly dealing with climate change frames and subsidiary policies that address shocks associated with climate change, albeit not part of adaptations. Secondly, climate change adaptations can be divided into long- and short-term policy frameworks. Long-term and short-term policy responses include development programmes and projects by various stakeholders, including governments and their international partners, nongovernmental organisations (NGOs) and the community. Some are development initiatives with a long-term aim of strengthening the resilience of communities, including Poverty Reduction Strategy Programs (PRSPs) targeting the poorest of the poor. For instance, in 2007, Kenya rolled out a cash transfer programme for the elderly to cushion them from poverty. Awojobi (2017) and Asfaw and Davis (2018) consider social protection programmes as cushioning beneficiary households from climate-associated shocks.

Climate insurance programmes have also been documented in East Africa, mainly among pastoral communities. NGOs working in semi-arid zones, such as Kitui County in Kenya, have supported climate-smart agriculture. The practice involves growing crops under limited water supply

through soil and water conservation technologies. Communities residing in ASALs have attempted to diversify their livelihoods. Some pastoral communities like the Maasai in southern Kenya and northern Tanzania have shifted from nomadic pastoral life to sedentary lifestyles. This is due to the shrinkage of community land, especially in the hinterland. Apart from pastoralism, some community members practice crop farming, while others engage in the trade of both livestock and crop yields. For example, camel trading among communities at the Kenya–Somali border has reportedly increased during dry seasons (Ng'asike et al. 2020).

In the first category of climate change-specific responses, climate data and forecasts are generated by national meteorological institutions, for example, the Tanzania Meteorological Authority (TMA), the Uganda National Meteorological Authority (UNMA) and the Kenya Meteorological Department (KMD). These organisations are responsible for collating data from different weather stations, analysing it and communicating to the public in utilisable formats. Weather and climate formats include forecasts for temperatures and rainfall daily, weekly or seasonal basis. Climate communication also promptly provides end-users with tailored climate-related information and knowledge products.

As an integrated approach, climate communication involves enhanced seasonal forecasts, the creation of climatological advisories and efficient communication channels. The latter include print and audiovisual media to reach key stakeholders—planners and managers at different levels, farmers and pastoralists. It starts with generating climate data and packaging it in usable formats. The generation of climate data also includes climate forecasting and early warning systems, followed by disseminating the information to intended users. Despite difficulties with the effective operations of these systems, East African countries are trying to realise effective climate change communication structures.

The policy interventions for environmental regulations began in the 1970s in East Africa, with countries like Ethiopia, and they have evolved recently towards governance orientations. The first formal plan for dealing with climate-related phenomena regarding selected cases was the National Action Programmes (NAPs) developed by Uganda and Tanzania in 1999 and Kenya in 2002. The NAPs were guiding frameworks for implementing the United Nations Convention to Combat Desertification (UNCCD) in 1994, which most East African countries ratified by 1997. The last decade has witnessed the enactment of legal and policy documents to combat climate change impacts in East Africa. The plans are contained in

the National Climate Change Response Strategies by Kenya (2010), Zanzibar (2014) and Tanzania (2012, 2021).

Others include the Kenya National Climate Change Action Plan (NCCAP) of 2013 and the Kenya National Adaptation Plan (NAP) of 2015, in line with Kenya's Development Vision 2030. Vision 2030 aimed to make Kenya a newly industrialising "middle-income country providing high-quality life for all its citizens by 2030". Tanzania's plans are contained in the National Adaptation Programme of Action (NAPA) of 2007, in line with the National Development Vision 2025. Tanzania's Vision 2025 is a multi-sectoral document whose function is to guide economic and social development efforts at the national level up to 2025. Uganda's NAPA was also submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in 2007 and was meant to be in line with Vision 2040, which seeks to achieve "a Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years".

Regarding policy and laws, Uganda developed the National Climate Change Policy in 2015 and the National Climate Change Act in 2021. Kenya enacted the National Climate Change Framework Policy and the Climate Change Act in 2016. To ensure the enforcement of the Climate Change Acts, the National Climate Change Council was established to mainstream climate change functions by the national and county governments and oversee the implementation of the NCCAP. The Council also ensured that climate change initiatives are included in national and county government budgets, plans and programmes. The President chairs Kenya's Climate Change Council, which draws its secretariat from the Climate Change Directorate. The Directorate was established under Section 9 of the Climate Change Act to lead climate change action plans. Several other legislative frameworks in Kenya support environmental protection and, by extension, climate change adaptation initiatives. Article 42 of the Kenya Constitution (2010) guarantees the right to a clean and healthy environment and requires the environment to be protected for present and future generations.

In addition, Article 70 provides a means for enforcement action and compensation for those deprived of the right under Article 42. The National Drought Management Authority Act was established in 2016 to be "Committed to Ending Drought Emergencies" by exercising overall coordination of all matters relating to drought risk management and establishing mechanisms in Kenya. Kenya is a legal pluralist state where it is common to find several laws and institutions governing the same

resource. For example, the land under a forest reserve may be governed by the Ministry of Lands under the Lands Act (2012), its plantations by the Kenya forest service under the Forest Conservation and Management Act (2016) and its natural tree species and wild animals may be managed by the Wildlife Service under the Wildlife Conservation and Management Act of 2013. The Ministry of Water may seek to protect the critical water catchments within a forest under the Kenya Water Act (2016). Such an arrangement is sometimes prone to disharmony in implementing environmental conservation.

Consequently, the Environment and Management Coordination Act (EMCA) (1999) was to harmonise the management of the country's environment and improve sustainability. Several institutions can implement climate adaptation programmes and plans with overlapping mandates. For example, in Kenya, the Ministry of Agriculture, county governments, the Ministry of Devolution, the Ministry of Water and the Ministry of Environment and Natural Resources. This legal pluralism landscape proves challenging to apportion responsibility to one single entity.

Tanzania's vulnerabilities to climate change are rooted in its exposure to climate risks, economic reliance on climate-dependent sectors, low adaptive capacities and ongoing development challenges, including high poverty levels. Addressing climate risks through adaptation will require good policies, strong institutions, significant funding, sufficient capacities and the support of national, regional and global partners.

The National Environmental Policy of 1997 and Environment Management Act of 2004 are the overarching policy documents responsible for creating and maintaining the institutional structures and mandates. Government entities are positioned and mandated to respond to climate change concerns (Daly et al. 2015). According to the 2004 Environmental Management Act, the Ministry in charge of the environment (currently under the Vice President's Office) takes on a national leadership role in climate change, thus setting the course of subsequent action on climate change in Tanzania. Consequently, all climate change issues are addressed using the existing environmental and institutional frameworks.

At the national level, the National Climate Change Steering Committee ensures coordinated actions and participation of various actors, sectors and institutions in addressing climate change concerns. There are officially appointed Environmental Management Officers and established Environmental Committees responsible for climate change adaptation at

the local level. The National Climate Change Strategy of 2012 and the Zanzibar Climate Change Strategy of 2014 are crucial for enhancing the country's climate change adaptation and mitigation agenda. The two climate change strategies aim to, among other objectives, build capacity for climate change, improve institutional and coordination arrangements to address climate change adequately, enhance participation in climate change mitigation activities and mobilise financial support to tackle climate change.

These legal instruments and institutions should enhance the implementation of climate change actions through plans, programmes and projects such as afforestation and reforestation, climate-smart agriculture and drought management. These activities are meant to ensure communities' environmental sustainability and resilience towards climate change impacts. Arguably, formal enactment of policies and laws fosters climate change adaptations in advance through early warning systems and resilience initiatives instead of knee-jerk reactions to the effects of climate extremes. However, hitherto formulations of laws specific to climate change adaptation, the East African governments had other policy instruments to help them implement climate change-associated programmes.

In addition, the East African NDCs were mainly submitted following the Paris Agreement during the Conference of Parties (COP) to the UNFCCC in 2015. Article 7.10 of the Paris Agreement underlines that each Party should submit and update periodically an adaptation communication, which may include its priorities, implementation and support needs, plans and actions, without creating any additional burden for developing countries. Kenya submitted its Intended Nationally Determined Contributions (INDC) in July 2015 but became NDC in December 2016 after signing the Paris Agreement and revising it in 2020. Tanzania ratified the Paris Agreement in 2018, submitted the INDC in 2015 and updated and (re)submitted in August 2021. Uganda also submitted its INDC in 2015 and the Interim Nationally Determined Contributions (NDC) in 2021. Most East African countries have sought external support to implement adaptation NDCs. For example, Kenya sought external help to finance 90% of its adaptation NDC, while Uganda requested 70% from its development partners.

The various adaptation NDCs as voluntary responses to climate change impacts are supposed to align with the different priorities, policies, plans and programmes of countries affected by climate change impacts. Whereas NDCs are not supposed to strain any developing country's economy, there is a need for commitment by appropriately allocating resources

Table 16.1 Climate resilience projects and programmes in Kenya, Tanzania and Uganda

Name of the Project	*Aim of the Project*	*Countries*	*Funding Agency*
BUILDING THE CAPACITY OF CIVIL SOCIETY ORGANISATIONS IN AFRICA AND ASIA (2010–2017)	To strengthen civil society organisations in ensuring food security and improving the livelihood opportunities of communities	Kenya Tanzania	Canadian Department of Foreign Affairs, Trade and Development and the Aga Khan Foundation Canada (CARIAA 2018)
CLIMATE-SMART VILLAGES (2011—UNKNOWN)	To build climate-smart villages able to ensure food security and build climate resilience. The methodology entailed a collaborative network of researchers, farmers' groups, policy-makers and other stakeholders	Kenya Tanzania Uganda	Consultative Group on International Agricultural Research (CGIAR) Research Programme on Climate Change, Agriculture and Food Security (CCAFS CGIAR 2020)
CLIMATE FOR DEVELOPMENT IN AFRICA (CLIMDEV) PROGRAMME (2012–2015)	To address the significance of improved climate information in building climate resilience	Kenya Tanzania Uganda	The European Union, Finland, the Nordic Development Fund, Sweden, UK Aid and USAID (ClimDev-Africa 2020)
PLANNING FOR RESILIENCE IN EAST AFRICA THROUGH POLICY, ADAPTATION, RESEARCH AND ECONOMIC DEVELOPMENT (PREPARED) (2012–2016)	To increase climate resilience through adequate management of transboundary freshwater resources and improved access to water supply and sanitation services	Kenya Tanzania Uganda	USAID East Africa-funded project (PREPARED 2016)
PATHWAYS TO RESILIENCE IN SEMI-ARID ECONOMIES (PRISE) (2014–2019)	To achieve climate-resilient development in semi-arid lands. The areas of involvement include climate risk, institutional and regulatory frameworks, natural and human capital and markets	Kenya Tanzania	DFID and IDRC through CARIAA (PRISE 2020)

(*continued*)

Table 16.1 (continued)

Name of the Project	*Aim of the Project*	*Countries*	*Funding Agency*
ADAPTING TO CLIMATE CHANGE IN THE LAKE VICTORIA BASIN (2018–2021)	Towards community-based approaches to climate change adaptation and knowledge management and learning to reduce the vulnerability and build the resilience of the Lake Victoria Basin countries	Kenya Tanzania Uganda	Adaptation Fund under UNEP's implementation (Adaptation Fund 2019)
AFRICAN ADAPTATION INITIATIVE PROJECT PHASE 1 (2015–2016), PHASE 2 (2017–2019), PHASE 3 (2020–2030)	The priority focus includes climate information services, advanced risk transfer, the Lake Chad River Basin early warning system and a knowledge management programme for adaptation planning	Kenya Tanzania Uganda	African Heads of State (AAI 2020)
WEATHER AND CLIMATE INFORMATION SERVICES FOR AFRICA (WISER) (2016—UNKNOWN)	To improve the governance of weather and climate services	Kenya Tanzania Uganda	UK Aid. The Africa Climate Policy Centre (ACPC) is the fund manager for the Policy & Enabling Environment Component (PEEC) (WISER 2018)
AFRICA DISASTER RISK FINANCING PROGRAMME (ADRIFI) (2019–2023)	To use finance mechanisms such as risk pooling and risk transfer to enable a pan-African climate response	Kenya Tanzania Uganda	The African Development Bank (AfDB), the African Risk Capacity (ARC)

Source: author

towards their implementation. Several climate-resilient projects are implemented in East Africa and are either completed or ongoing in Kenya, Tanzania and Uganda, as shown in Table 16.1.

Even though these projects and programmes have supported local communities, a sustainable and scaled-up solution towards climate adaptation is still lacking, leaving the poor and marginalised communities vulnerable to climate change-induced risks. The lessons learned from the short-term developmental projects, if fed into the long-term climate resilience planning of the respective countries and further augmented by strengthening its governing institutions, have the potential towards a more sustainable and resilient future. The next section discusses these challenges further to understand particular difficulties East African states experience regarding climate governance, which may be due to their political developments and the level of state transformation.

Climate Governance Challenges and Prospects for Improvement

Governance Deficits and Legacies of Bad Reforms

Governance deficits and policy legacies of previous institutional reforms, that is, Structural Adjustments Programmes (SAPs), have hindered the effective implementation of various climate change adaptation strategies and programmes in East Africa. Main challenges border on mismanagement of public resources, political patronage and conflicts. Arguably, agricultural extension services in East Africa collapsed in the 1990s following the implementation of SAPs (Due and Gladwin 1991). The impact of this has been long-lasting, influencing government policies to date. Public accountability deficits have also contributed to the collapse of some climate-related projects in Kenya. This primarily relates to misappropriation of public funds, nepotism and prebendalism by senior government officials. For example, the Arror and Kimwarer dams in Elgeyo Marakwet (Business Daily Africa 2021) and the Umaa dam in Kitui County were arguably opaque projects for corrupt dealings (The Standard 2011).

Also, Kenya's Galana Kulal maize farming project in the Tana River Delta collapsed due to inefficiency (The Star 2019). These projects were to transform dryland communities by making them food and water secure. Still, in Kenya, development resources have long been allegedly skewed in

favour of politically "correct" regions. Most climate-vulnerable areas, such as ASALs, have very low population densities and, hence, have been perceived as not among the "vote-rich regions". Political contests are based on the number of votes a party can garner. During campaigns, political parties make promises of how they will improve the livelihood of communities. Politicians also launch programmes in different parts to attract regional support. Such political pledges and programmes launching are often made in high-population regions. Thus, ASALs have lagged in development programmes such as infrastructure and health, remaining marginalised and vulnerable to climate change disasters.

A relationship exists between the general marginalisation in development and vulnerability to extreme events. For example, during flooding disasters, rescue efforts may be hampered by inefficient road networks characterising ASALs. To address the challenge of marginalisation in development discourse, Kenya introduced county governance to decentre public resources allocation and give different regions the leeway to draft their own development needs. With decentralisation, resources should be equitably distributed across the country for different communities to pursue development goals based on their needs and priorities. For example, the northern and lower Eastern counties were to invest heavily in climate change preparedness by developing water infrastructure and social protection programmes through devolution.

Undoubtedly, devolution has helped marginalised regions initiate and develop development programmes, such as infrastructure, industry and health. County governments have documented initiatives to establish local industries in Kitui and Makueni counties. The county government establishments have also created employment for community members who may have been discriminated against by the national government. Even so, governance challenges persist in climate governance within devolved units and how these units relate to the national government. For example, as a practice by the central government, marginalisation in development seems to have been transferred to devolved governance. Water projects (mainly groundwater) are predominantly initiated in urban areas within ASALs, whereas rural regions still grapple with water access. During East Africa's 2015 El Niño rain forecast, Kenya allocated financial resources towards disaster preparedness. But, media reports indicated that some county governments misappropriated El Nino funds (The Standard 2016). In one county, the cost of procuring wheelbarrows (for use during drainage works during El Niño events) was inflated by more than 90% (The Standard 2015).

Some county governments have been accused in public opinion courts of having misplaced priorities, for instance, by building offices and houses for county managers instead of expanding water provision in ASALs (The Daily Nation 2021). According to a recent round 9 national Afrobarometer (2022) survey in Kenya, county governments remain constrained in reaching their remote populations who lack good roads, clean water and fuel, remaining vulnerable to climate change-induced disasters. There is a need to deepen local government structures and increase the allocation of funds for relevant conditions that would curtail the severe impacts of climate change in rural areas.

Conditions of Limited Statehood and Failures to Regulate the Market

Like other regions in Kenya, loosely entrenched administrative structures or limited statehood conditions regarding the regulatory state (see Ondiek and Onyango 2022) have fostered cattle rustling and a state of insecurity in parts of Uganda. Arguably, this has accelerated due to frequent cycles of drought that have led to greater competition for scarce resources (Agade 2010). Sharp rises in food prices and hoarding by unscrupulous traders have resulted in urgent and immediate mechanisms of survival, which are often characterised by livestock raiding on neighbouring communities. NGOs have, to some extent, reduced the need for raids by providing intermittent relief food during frequent periods of drought and famine.

The readily available modern firearms in the region have made livestock raiding more efficient, complicated and deadly. The cattle corridor districts of Karamoja have experienced frequent droughts, decreased rainfall and increased temperatures, leading to the lowering of the water table. Other resultant impacts of climate change include severe weather-related disasters, reduced crop yields, exacerbated disease and political instability (Egeru 2016). These impacts have immediate consequences on food security, water resources, biodiversity and other socio-economic issues, such as human health, and threaten development investments and gains thus far made in poverty alleviation. They make the lives of vulnerable communities precarious, introduce a severe threat to traditional lifestyles and lead to severe economic losses and general human insecurity.

Within East Africa's ASALs, intermittent fighting of communities surrounding cattle theft and water and pasture is common. It is demonstrated in Karamoja in Northern Uganda and Northern Kenya that conflict has

escalated to ethnic violence over the past decades. The advent of automatic weapons in Karamoja during the early 1980s transformed cattle raiding into effective cattle rustling characterised by heavy fatalities. Moreover, there are cross-border tensions in the region due to disputes between communities in neighbouring countries, also arising from inadequate and ineffective government intervention to control porous borders. Failure by governments to deploy enough security personnel results in easy access and a proliferation of firearms and ammunition by rustlers from Kenya, Ethiopia, Sudan and Uganda. Retaliatory attacks due to extensive fatalities of community members during livestock raids and cattle rustling incidences lead to a perpetual cycle of conflicts and violence.

The Ugandan government responded by deploying military expeditions to punish cattle raiding and demilitarise the Karamojong. Demilitarisation has notably failed due to Karamojong's exposure to cross-border cattle raids from Pokot and Turkana peoples in Kenya and Sudan. Communities surviving on traditional lifestyles, mainly pastoralists, are under-prepared to deal with the impacts of climate change, resulting in survival mechanisms that lead to inter-community resource conflicts. Therefore, developing economic activities in rural areas that reflect sound climate change mitigation processes is part of the measures necessary to achieve a transition to climate-smart societies.

Poor Conditions of Public Goods and Climate Change Policy Communication

Locals have also suffered due to poor infrastructure and a lack of facilities, especially roads and railway lines, which has resulted in a rise in the cost of essential commodities. High illiteracy levels, estimated at approximately 70%, have a bearing on the capacity to understand the long-term benefits of negotiated peace formulas and the adoption of alternative livelihood methods. Government negligence of the region in terms of road and water network infrastructure development has retarded development in the area. The absence of infrastructure, entrepreneurial skills and low education has contributed to a lack of investments and industries and high unemployment rates. Health concerns resulting from inadequate food and pastoralist lifestyles are intertwined with the cycle of conflicts.

There exists a gap between data generation by meteorological institutions and uptake and utilisation by the people at the grassroots level. Without formal intermediaries responsible for interpreting weather data

and advising end-users, farmers lack trust in weather forecasts. The climate information services in Kenya are relatively well-developed; however, there are still challenges, especially concerning technical and institutional capacities and the sustainable scaling-up of existing climate information service models (World Bank 2016). In Tanzania, key challenges hindering access to climate information include lack of infrastructure, lack of information services, time of accessing information, access to outdated information, cost of accessing information, lack of power and language barriers (Mwalukasa 2013). Uganda's efficient uptake of climate information faces several challenges, including a lack of human resources and insufficient technical and infrastructure capacity (Irish Aid 2018).

Furthermore, there are gaps in the provision of climate information, mainly in the resource-poor communities in East Africa that tend to rely on indigenous knowledge by including meteorological and biological indicators to forecast weather and climate conditions. These indicators, among others, have enabled farmers to plan their cropping calendar, that is, planting dates, choosing seed types and managing the storage of yields. Several studies report the use of indigenous knowledge by East African farmers as climate adaptation strategies (Elia et al. 2014; Mugi-Ngenga et al. 2021; Nkuba et al. 2020; Radeny et al. 2019).

The policy implication is that, in designing food security policies, indigenous knowledge is crucial in integrating scientific knowledge and developing better adaptation strategies acceptable to local people (Mugi-Ngenga et al. 2021). However, much as donor-oriented agricultural policies are informed by scientific research, there has been a tendency to overlook indigenous knowledge and crops embedded in the culture and local's eating habits, hindering policy legitimation processes.

Conclusions

Working with the overall analysis of this volume—state transformation perspective—this chapter has examined the governance landscape of climate change in East Africa using the Kenyan, Tanzanian and Ugandan experiences. Overall, we show that climate change policies require advanced state-building conditions and can be most effective under nation-building structural features of politics and public policy, which East African state is still struggling to achieve. Therefore, challenges and prospects of addressing climate change governance deficits remain in the structure of state politics and its policy regimes that prioritise political actions,

which may lag effective climate change governance. The chapter explored many climate change adaptation initiatives in the region. It shows that while some respond to the need to communicate climate information in a timely and efficient manner to the end-users, others respond directly to the effects of climate change on both a short- and long-term basis. Long-term initiatives seek to empower communities, assuming that a generally resilient community is a climate change-resilient community. In terms of policy, there have been good prospects. The selected countries have relatively made significant progress. Unsurprisingly though, this has been in terms of the policy adaptation. The implementation story remains challenging.

Most importantly, there is a need to ensure that climate solutions catalyse building institutions to coordinate government ministries and share actions to reduce emissions across sectors. The implementation of INDCs will not be possible if these continue to be instruments developed by one sector and imposed on others. Therefore, countries can revisit and adapt their INDCs to enhance local ownership, reflecting a holistic developmental path if needed. Climate governance should prioritise fit-to-context approaches. There is a need to sensitise and design INDCs so that local community actors understand and integrate them into their environmental activities. There is a need to do climate change governance and talk about it, which requires socially, economically and politically equipping the citizens. This will generate explicit support for climate change efforts and address human resource challenges. In other words, there is a need for localised exploration and ownership of the identification of consequences of climate change and collaborative policy advocacy and information sharing on the benefits of environmental protection and its relationship to peace and rural development. Expanding awareness of the connections between building resilience to ecological and climatic changes can help reduce conflicts and vulnerability.

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