



Post Covid-19 Pandemic Economy: Climate Adaptation Financing in Kenya

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ABSTRACT

Prior to Covid-19 pandemic, the climate change adaptation concerns in Kenya were being raised that funding was inadequate to meet the objectives and goals of the Paris Agreement and Sendai Framework. To leverage climate adaptation finance, especially during the Covid-19 response, is likely exacerbate the problem of climate adaptation financing in the country. Kenya's economy is highly dependent on its natural resource base. This makes the economy highly vulnerable to climate change and threatens the Vision 2030 goal to create a globally competitive and prosperous nation with a high quality of life. The areas of concern is how to develop covid-19 recovery plans which will integrate climate adaptation and development plans on strengthening the existing financing efforts; development and implementation of devolved climate finance mechanism; ensure that the financiers get back on track in leveraging finance towards climate change adaptation and consideration of the private sector interests in their involvement in the climate finance. This paper focuses on the overview of the climate adaptation financing, the main financiers and challenges of climate adaptation financing in a post covid-19 pandemic era in Kenya.

Keywords: Covid-19 pandemic, climate change, Climate finance, ecosystem services

1.0 INTRODUCTION

Climate change adaptation is one of the main strategies to address global climate change (Dzebo, Shawoo, & Kwamboka, 2020; Mungai, 2021). Climate finance typically consists of grants, loans, debt relief, and increasingly, private investments (Langat, 2017). Private through value chains, market development, risk transfer and sharing mechanisms, and insurance/reinsurance are also becoming attractive for scaling-up much needed innovations for adaptation and resilience (Naeku, 2020). The least developed countries and the small island states lack adequate financial resources to adapt to climate change and are the most vulnerable nations to climate change (Govinda, 2021). There is growing momentum in the international community to ramp up climate finance for adaptation actions (Govinda, 2021; Usman, et al., 2021; Obergassel, Hermwille, & Oberthür, 2020; Quevedo, Peters, & Cao, 2020). Undoubtedly, a focus on climate change adaptation in the developing world must be a priority for the financing. At the same time, there is a rallying call for countries to focus post-COVID-19 recovery investment on green and resilient pathways that take into consideration urgency to address climate change priorities through climate adaptation financing (Obergassel, Hermwille, & Oberthür, 2020; Usman, et al., 2021).

Prior to Covid-19, concerns were being raised that funding for climate and disaster resilience was insufficient to meet the goals of the Paris Agreement and Sendai Framework. Since the pandemic, initial signals are that the funding gap will widen. Opportunities exist to harness co-benefits for pandemic recovery and climate and adaptation. To leverage climate and disaster resilience finance, especially during the Covid-19 response, decision-making needs to be more risk-informed and incorporate risks from multiple threats (Quevedo, Peters, & Cao, 2020). One year after COVID-19 spread across the world, the 2021 edition of the Global Report on Food Crises (GRFC) confirms dire projections. The pandemic and related containment measures have aggravated the impact of pre-existing drivers of fragility, notably conflict and climate change globally. According to the report, in 2020, Africa remained the continent most affected by food crises, accounting for 63 percent of the

global total number of people in Crisis or worse (IPC/CH Phase 3 or above) or equivalent, up from 54 percent in 2019.

According to Quevedo, Peters and Cao (2020) on the trend and signals in relation to the impact of Covid-19 on climate change and disaster resilience funding, noted that the impact of Covid-19 on donor countries' economies is expected to lead to a fall in climate financing in absolute terms due to the depth of the crisis and the economic recession it has triggered. The effects of the Covid-19 pandemic are crippling economies, inverting development trajectories and stunting economic growth. For example, the donor budgets could rise to meet the needs created by the Covid-19 pandemic; budgets could hold steady at recent levels despite the global slowdown in economic growth; budgets could decline in line with contracting donor economies. It should be noted that donor countries have to get back on track in leveraging finance towards climate change adaptation and disaster risk reduction and ring-fence such commitments, including those within the 0.7% gross national income targets (Oberghassel, Hermwille, & Oberthür, 2020).

The pandemic (COVID-19) has also indicated the importance of focusing on climate change (Usman, et al., 2021). The surprising COVID-19 epidemic has demonstrated how the problems of the human race are linked with each other. As per the recent SDGs (Sustainable Development Goals) statement, climate change is the most crucial and serious matter on the 2030 agenda because it could bring future catastrophic incidents and can have irreversible effects. One key challenge to climate change adaptation is financing. Lack of finance is one of the main factors behind slow economic growth in developing countries (Govinda, 2021). While many developing countries are striving to get the necessary funding for their basic infrastructural and human needs, how can they afford climate-resilient infrastructure, which requires higher upfront investment a post-covid 19 pandemic era? This implies that developing countries need the increased financial resources for climate change adaptation to come through additional funding (in addition to the traditional overseas development assistance). This paper focuses on the overview of the climate adaptation financing, the main financiers and challenges of climate adaptation financing in a post covid-19 pandemic era in Kenya.

2.0 Global Perspective on Climate Adaptation Financing

Numerous actors play a role in providing finance for adaptation, ranging from national and international to public and private institutions. Public climate finance providers include donor governments and agencies, multilateral climate funds and development finance institutions (DFIs). The latter essentially comprise the MDBs, further national and regional development banks (e.g. the members of IDFC) and other financial institutions. National governments can themselves raise and provide financing for adaptation, both on the national and the sub-national levels, e.g. through legislative action or through allocating budget to specific instruments such as national climate funds. The private sector includes project developers, corporate actors, households, commercial financial institutions and more. The nationally determined contributions (NDCs), which set out individual countries' efforts to help meet the goals of the Paris Agreement, clearly reiterate the importance of adaptation. The Tool for Assessing Adaptation in NDCs (TAAN) provides concrete numbers in that regard: In 2018, 131 NDCs (75% of all countries who submitted NDCs) referred to adaptation. Besides the NDCs, national adaptation plans (NAPs) constitute another key mechanism under the UNFCCC that enables countries to identify medium- and long-term adaptation needs and to develop and implement strategies or programmes to that end. Moreover, national adaptation programmes of action (NAPAs) provide an instrument for least developed countries (LDCs) to identify priority activities that respond to their urgent and immediate needs with regard to adaptation to climate change. Successful implementation of adaptation activities for example in the context of NDCs, NAPs and NAPAs necessitates finance from various sources, including the private sector (IISD and GIZ, 2017). Especially developing countries require significant amounts of finance to help them adapt to the changing climate and follow a path of low-carbon and climate resilient development.

According to UN Environment's Adaptation Finance Gap Report (UNEP, 2016), USD 140 billion to USD 300 billion annually may be required for adaptation in developing countries alone by 2030. These finance needs could reach USD 280 billion and USD 500 billion by 2050 (UNEP, 2016). Yet, finance for adaptation constitutes only a fraction of overall global climate finance according to current estimates. The UNFCCC Standing Committee on Finance's 2018 Biennial Assessment states that climate finance flows in 2015–2016 increased by 17 per cent since 2013–2014, reaching totals of

USD 680 billion in 2015 and USD 681 billion in 2016. However, finance for adaptation still falls short of mitigation finance, as seen for example when looking at the public funding provided by developed countries to developing countries through bilateral, regional and other channels. While approx. USD 24 billion have been dedicated to mitigation in 2016, adaptation finance from these sources only amounted to approx. USD 5.15 billion. Another source of information regarding the measurement of global climate finance flows are the Climate Policy Initiative's (CPI) Finance Landscape Reports (CPI, 2018 b) – notably, they indicate slightly different numbers than the UNFCCC 2018 Biennial Assessment due to differences in measurement methods. According to CPI, the annual average over the 2015-2016 period is estimated at USD 463 billion, with adaptation flows accounting for only USD 22 billion per year in the 2015-2016 period (CPI, 2018 b).

3.0 Climate Adaptation Financing in Kenya

According to the UN Environment Programme's Adaptation Gap Report 2020, adaptation cost is expected to be \$140 - \$300 billion annually by 2030. The growing commitment to adaptation by the international financing institutions could play a crucial role in helping developing countries attract private capital. For example, the African Development Bank recently launched the Africa Adaptation Acceleration Program (AAAP) to mobilize \$25 billion to scale up and accelerate climate change adaptation actions across Africa. The funds can be deployed to help governments unlock and enable private capital by addressing institutional, policy, and investment barriers. Climate Finance is critical to Kenya's full realization of the policy goals as set out in the Sustainable Development Goals (SDGs), the 2015 Paris Agreement and the African Union Agenda 2063. For developing countries, such as Kenya, where impacts of climate change are severe, climate finance remains critical to catalyse actions through mitigation and adaptation. Kenya is one of the most vulnerable countries in Africa, experiencing vast, interlinked and widely documented impacts of climate change. The country has low but growing levels of greenhouse gas emissions, although Africa only produces 5% of global emissions. An effective response to the challenge of climate change requires robust financial mechanisms that include systems, initiatives and programmes supporting mitigation and adaptation measures. As global implementation of climate policy progresses under the Paris Agreement, there has been an increased realization that developing African countries, such as Kenya, will require effective and enabling financial and technical support

While climate change mitigation has attracted diverse options such as carbon taxes, carbon offsets, payments for ecosystem services, and 'cap and trade,' financing for adaptation is still very limited. The current global architecture for climate finance, with the Global Environment Facility and Green Climate Fund at the core, can play a major role in mobilizing the financing to meet the resources needed for adaptation. In accordance with the obligations to the UN Framework Convention on Climate Change, Kenya being one of the developing countries have identified and established her National Adaptation Plan (NAPs) (GoK, 2018). Priority areas identified for action in these plans include agriculture, water resources management, disaster risk management, climate information services, sustainable land and forest management, urban development and infrastructure, energy, health, and coastal zone management. Specific actions for adaptation and resilience include "climate proofing" major components of the economy and sustainable development, protecting livelihoods and enhancing adaptive capacity, achieving and safeguarding food and water security, enhancing ecosystem structures and functions, and supporting and enhancing human health and safety.

Kenya has established various innovative projects financed from climate change adaptation funds hosted by the Global Environment Facility: the Least Developed Countries Fund (LDCF), which supports urgent, medium and long-term adaptation needs in least developed countries (LDCs), and the Special Climate Change Fund (SCCF), accessible by all developing countries. The GEF financing supports priorities ranging from integration of appropriate adaptation measures into development plans and policies at multiple scales, to introduction of climate-resilient management practices across urban, production, and natural landscapes. Although some of the achievements have been possible, much more needs to be done to scale-up adaptation in the country. Significant levels of financing are needed to address the most pressing and urgent needs in the country. Mobilizing the financing needed has been an important aspect of the evolving national discourse on climate adaptation finance (Dzebo, Shawoo, & Kwamboka, 2020).

Over the past decade, Kenya, like the rest of the world, has been and continues to experience impacts

of climate change which is estimated to negatively impact 3 - 5% of the GDP annually. Besides Covid-19, climate change is the major existential threat of our time, with impacts already being felt on all facets of our lives including the environment, economy, health, water supply, finance, security and agriculture (GoK, 2021).

Kenya is most vulnerable to climate change since the key drivers of the economy such as agriculture, livestock, tourism, forestry, transport and fisheries, are climate-sensitive (Govinda, 2021; Dzebo, Shawoo, & Kwamboka, 2020). This scenario has made the country highly vulnerable to the impacts of climate change. As a result, the country has developed climate action project vehicle to mobilize climate finance funds through the Financing Locally-Led Climate Action (FLLoCA) Program. The program aims at strengthening local resilience to the impact of climate change, natural hazards, and other shocks/stressors by building capacity to plan, implement and monitor resilience investments in partnership with county governments and communities. The program focuses on capitalizing the National and County Climate Change Funds; building county level capacity for planning, budgeting, reporting and implementation of local climate actions in partnership with communities and strengthening of national level capacity for coordination, monitoring and reporting. The World Bank (2021) being part of the financiers for the program is the largest source of climate finance among the Multilateral Development Banks for developing economies and for adaptation finance , with 30 percent of the WBG financing (US\$17.8 billion) being climate change-related in 2019. Combined with climate finance from trust funds, the WBG contributed US\$18.8 billion in total climate finance alone. The WBG also remains the largest source of adaptation finance among the multilateral development banks, accounting for 52 percent of the total adaptation finance flow.

According to Government of Kenya (2021) , the implementation and delivery of the FLLoCA Program components and objectives heavily rely on continuous consultation to strengthening stakeholder engagements at the community, counties, national and the international levels. At the same time, the access, management and dissemination of knowledge and information play a crucial role across these levels for informed decision-making processes, access to locally appropriate information and communication for effective climate change responses.

4.0 Literature Review

The novel coronavirus has been declared a pandemic by the World Health Organization after spreading to most parts of the globe. Whereas the influenza virus shows some alteration with seasons, it is unknown if COVID-19 has any seasonal influence (Bukhari et al. 2020). According to the World Health Organization, the pandemic could even affect tropical countries that have scorching temperatures (Acosta et al. 2020). Alternatively, several other theories have also been presented regarding the effects that will cause a change in the widespread COVID-19. Some other viruses of the same family (respiratory syndrome viruses) are unlikely to survive in hot, humid, and warm climates. Therefore, scientists had believed that the virus (COVID-19) would not last until June-July or August (Khan et al. 2020).

Extreme weather combined with COVID-19 in a double blow for millions of people in 2020. However, the pandemic-related economic slowdown failed to put a brake on climate change drivers and accelerating impacts, according to a new report on the State of the Global Climate (2020) compiled by the World Meteorological Organization (WMO) documents indicators of the climate system, including greenhouse gas concentrations, increasing land and ocean temperatures, sea level rise, melting ice and glacier retreat and extreme weather. It also highlights impacts on socio-economic development, migration and displacement, food security and land and marine ecosystems. 2020 was one of the three warmest years on record, despite a cooling La Niña event. The global average temperature was about 1.2° Celsius above the pre-industrial (1850-1900) level. The six years since 2015 have been the warmest on record. 2011-2020 was the warmest decade on record.

The growing rate of COVID-19 around the world is negatively related to warm and humid seasons. Transmission of the virus from one person to another is affected by temperature. Moreover, Pakistan, a tropical country, found fewer COVID-19-positive cases than the cold and dry regions (Bukhari et al. 2020). It is also under consideration that high temperature kills most viruses, but few claims are being made regarding no effect or, in relation to warm and humid temperatures, to the multiplication of the virus (Khan et al. 2020). While the spread of the virus may be slowed down because of warm weather, it is not sufficient to depend on climate change alone (Brassey et al. 2020).

Govinda (2021) indicates that climate change adaptation is one of the main strategies to address global climate change. The least developed countries and the small island states that lack financial resources to adapt to climate change are the most vulnerable nations to climate change. Although it would be more economical to adapt to climate change compared to the anticipated damage of not doing so, the demand for capital is estimated to range to hundreds of billions. The recent trends of climate finance indicate that much of the climate finance (more than 80%) committed to date has gone towards climate change mitigation activities (MDB, 2019). The smaller share of climate finance going towards adaptation can be attributed to two reasons. First, results from mitigation investment can be realized now; for example, investments in energy efficiency improvements offer immediate energy cost savings. On the other hand, the results of investment in climate change adaptation might be beneficial in the future but not necessarily immediately, although some investment benefits can be seen in the short-term as well.

Abraham and Fonta (2018) study examined the farmers' perceptions of their exposure to climate change in rural northern Nigeria. It also examines whether there is a significant relationship between the exposure of farmers to climate change and their need for financial access as an adaptation strategy. Descriptive analysis shows that rural farmers were affected by climate change through increased temperature, prolonged dry seasons, floods, and drought, which lead to low harvest and, in turn, low income. The study established an association between exposure to climate change and the need for finance, since those seeking credit to mitigate these impacts would be unable to do so due to financial exclusiveness.

The findings from Ochenje et al. (2016), Munthali et al. (2016), and Roco et al. (2015) show that farmers' perceptions of how climate change affects their farming activities have a direct link with how they perceive the kind of adaptation they need. This deduction is also consistent with Elum et al. (2017), who examined how farmers' perceptions of climate change formed their adaptation strategies. Analysis of the farmers' perceptions of climate change showed that most farmers indicated that they had experienced higher temperatures, drought, and lower crop yields attributable to changing weather conditions over time. Other studies also report similar findings. For instance, Arshad et al. (2016) examined farmers' perceptions of climate change and the impact on farm productivity in rural Pakistan. Their study showed that farmers' adaptation strategies were highly influenced by the way they perceived the impact of climate change on the productivity of their farms. The increased need by farmers for extension services as well as financial services, they argued, were also found to be influenced by farmers' perceptions of climate change and its effects on their farm productivity.

5.0 Financiers of Climate Adaptation in Kenya

Multilateral climate funds play a vital role in using international public finance to stimulate investments shifts of other public and private finance institutions that are necessary to drive a broader economic and societal transformation. During the past two decades, the number of international funds providing climate finance has been constantly grown; with each new fund responding to needs that emerged at different times (WRI, 2017). Some of these include; Green Climate Fund (GCF). It is a country-driven projects in developing countries that create a 'paradigm shift' in both adaptation and mitigation projects, and to achieve a balance between the two (GCF). All developing country Parties to the Convention are eligible to receive resources from the GCF. The GCF gives recipient countries access to funding through accredited national, sub-national and regional implementing entities and intermediaries, but countries can also access funding through accredited international and regional entities. One of the Green Climate Fund's distinctive features is the provision for developing countries to access financial resources through national entities, meaning that climate finance can be channeled to the country directly (GCF, 2018).

Adaptation Fund (AF) is a climate adaptation and resilience activities through 'concrete' adaptation projects within all signatory developing countries, targeted precisely at those communities that are most vulnerable to climate change. (AF, 2018). The financing from the AF can be accessed via different channels, including through international and regional access (where implementing functions are performed by accredited international and regional entities) and direct access (where implementing functions are devolved to designated national bodies. The third financier is Least Developed Countries Fund (LDCF) which is a funding for the preparation and implementation of National Adaptation Programmes of Action (NAPAs) and National Adaptation Plans (NAPs) of Least

Developed Countries (LDCs) under the UNFCCC. Usually, the LDCF is administered by the Global Environmental Facility (GEF). Before a LDCF Project Proponent can access financing for an adaptation project, a country NAPA must be completed and sent to the UNFCCC Secretariat for publication.

The fourth financier is Pilot Programme for Climate Resilience (PPCR) is a grant and loan financing of technical assistance and investments to support developing countries, especially small island developing states (SIDS) (PPCR). The World Bank serves as the Trustee and Administrating Unit of the PPCR. The World Bank Group, the African Development Bank, the Asian Development Bank, the European Development Bank, and the Inter-American Development Bank are the implementing agencies for PPCR investments. The Climate Investment Fund Administrative Units, through MDBs, inform prospective countries and invite expression of interest. Special Climate Change Fund (SCCF) is another MCF funding climate adaptation in the country. The funds are accessed by the country through the Global Environmental Facility (GEF). The access to finance under the SCCF follows a similar procedure as the LDCF.

The other group of financiers includes the Bilateral climate funds in which the developed countries can provide resources to finance adaptation actions in developing countries through a multitude of channels – inter alia through bilateral climate funds. These include; German International Climate Initiative (IKI). It finances climate and biodiversity projects in developing and newly industrializing countries, as well as in countries in transition (IKI, 2018). It supports programmes carried out in partner countries by federal agencies, NGOs, business enterprises, universities and research institutes, and by international and multinational organizations and institutions, e.g. development banks and United Nations bodies and programmes (IKI, 2018). The second bilateral climate financier is UK International Climate Finance (UK-ICF). International Climate Finance is a UK government commitment to support developing countries to respond to the challenges and opportunities of climate change.

The third group of financiers include the Multilateral development banks (MDBs) which provide a mix of instruments including debt, equity, quasi-equity (or mezzanine finance), Islamic finance, local-currency loans, guarantees and political-risk insurance. Most MDBs limit their participation in projects, companies and investment vehicles in order to encourage the participation of local and international co-investors and funders. On average, MDBs tend to focus on comparatively large deal sizes. Large companies in a growth phase, infrastructure projects, investment funds, financial institutions, and projects in the energy, financial-services or manufacturing sectors are attractive targets due to their ability to absorb large amounts of financing and their potential to have a positive impact on growth and development. Small-scale private-sector activities are often ineligible for MDB support (GIZ, 2018a). The MDBs include; World Bank Group (WBG) provides non-concessional as well as concessional lending and grants to governments in middle income countries and low-income countries. The International Finance Cooperation (IFC), the private-sector arm of the WBG, invests in companies, mobilizes capital for development and provides advisory services to companies, investors and governments (GIZ, 2018a). Asian Development Bank (ADB) is another MDN to climate finance to member countries through partial credit guarantees, technical assistance, equity investment, grants and loans.

African Development Bank (AfDB) has a private-sector arm with the rest of the organization providing developmental loans and grants to governments and state-owned entities (GIZ, 2018a). The AfDB established the ClimDev-Africa Special Fund (“CDSF” or the “Fund”) and administers its resources for demand-led interventions. The fund supports operations in the following three main areas: Generation and wide dissemination of reliable and high quality climate information in Africa; Capacity enhancement of policy makers and policy support institutions to integrate climate change information into development programmes; and Implementation of pilot adaptation practices that demonstrate the value of mainstreaming climate information into development.

European Investment Bank (EIB) is a MDB involved in climate financing. The EIB counts with a private-sector arm, whereas the remaining funds go to governments and state owned entities in form of developmental loans and grants (GIZ, 2018a). The EIB’s 2015 Climate Strategy is structured around three strategic action areas that serve as guiding orientations for the Bank’s climate action: reinforcing the impact of EIB climate financing, increasing resilience to climate change, and further integrating climate change considerations across all of the Bank’s standards, methods and processes.

EIB is committed to best practice in adaptation, which includes risk screening to enhance resilience of its projects, and to strengthen its support to investments in specific adaptation activities. (GIZ, 2018a).

6.0 Challenges of Climate Adaptation Financing

Kenya is also highly vulnerable to the impact of climate change, particularly its main economic sectors. The Stockholm Environment Unit (SEI) estimated that the costs of climate change in the country could be equivalent to a loss of almost 3% of GDP by 2030, impacting negatively on long-term growth. However, set against a background of political transition and ongoing governance and development challenges, climate change remains a driving force for development in Kenya. To date, there has been limited (though increasing) understanding of climate change in Government, with priority being given to supporting the development of clean energy as Kenya seeks to diversify its energy production and reduce costs. As a result, Kenya has developed a close engagement with the international carbon market, whilst moving much more slowly on responding to its needs for adaptation.

The government is yet to develop and implement a national framework for reporting on climate change is in place at this time (Abraham & Fonta, 2018). The majority of climate change financing is not yet sufficiently earmarked as such nor is it captured in the government's budget (Langat, 2017). It is therefore difficult to track and monitor climate related expenditure (GoK, 2021). Financial reforms are currently underway to strengthen public financial management (PFM) systems and to allow more detailed project reporting in the future. A number of donors supporting PFM are also engaging in climate change (for example Sweden, CIDA and DFID); it is hoped that climate change financing will be a part of this process.

There is no formal donor group for climate change coordination although informal relationships between donors are relatively strong and informal divisions of labour have already begun to emerge (Dzebo, Shawoo, & Kwamboka, 2020). External finance for climate change is provided both bilaterally and through global funding mechanisms and is delivered as grants, loans, and technical assistance to projects and government departments at the sector level (Pauw & Dzebo, 2016). There is also no formal commitment from donors to align their climate change support behind government priorities, although individual donors acknowledge the importance of the NCCRS as a basis for such alignment. Current plans to embed climate change within the Vision 2030 and to develop an action plan for delivering the NCCRS are expected to strengthen harmonization at all levels. PFM reforms will also make it easier for donor commitments on climate change to be recorded and monitored through national systems.

It is arguable that the focus of Kenya's activities to date has not been in the area of funding adaptation to the potential impacts of climate change, but rather the opportunities that new international financing streams bring in the context of the country's need for increased diversity in its energy supply and reduced costs (Dzebo, Shawoo, & Kwamboka, 2020). Awareness of climate change within the Ministry of Agriculture has also begun to grow as adaptation needs are highlighted (Renner, 2020). However, domestic knowledge on the amount of global funding available and how it can be accessed remains limited (Naeku, 2020).

The political interference is a challenge to climate adaptation financing in the country. At the very least Kenya's politics over the next couple of years are expected to overshadow "business as usual", thus limiting opportunities to drive the climate change agenda (Mungai, 2021). Those stakeholders currently raising awareness and interest around climate change are yet to work collectively and in a focused way around shared plans to ensure a strong foundation for climate change activities and financing is in place before, and after, the national elections (Michaelowa, et al., 2021).

The Kenyan government could encourage more private-sector investments in adaptation (Pauw & Dzebo, 2016). By stimulating a shared public-private awareness and understanding of adaptation, the government could improve enabling environments for private adaptation; mobilize more private investments; and improve the tracking of private investments in adaptation remain a challenge (Dzebo, Shawoo, & Kwamboka, 2020). Moreover, the government and development partners are yet to have adaptation criteria in project selection and EIAs in order to reduce private maladaptation and increase private adaptation (Govinda, 2021).

Most adaptation efforts are required at the local level, but current climate finance mechanisms are not flowing at the scale and speed necessary to address the climate crisis in vulnerable regions (Langat,

2017). For the funding that is available, national centralized institutions for implementing financing and planning adaptation are rare, and are often not well positioned to incorporate the existing climate resilience strategies of communities especially when investing at the local levels (Naeku, 2020). New and integrated adaptation planning and financing systems, that can mobilize and deliver climate funds where they matter most, are needed to tackle the drivers of vulnerability in communities facing chronic poverty, resource degradation and climate change (Pauw & Dzebo, 2016). Such systems require a combination of multiple complementary approaches centralized and localized (Martin, et al., 2018), public and private to successfully enable citizens to anticipate and adapt to climate shocks, and support them in building long-term resilience (Mungai, 2021).

7.0 CONCLUSION AND RECOMMENDATIONS

One of the big challenges of climate change adaptation in Kenya as one of the most vulnerable countries to climate change is that there are neither adequate financial resources nor technical and institutional capacities to adapt to climate change. Existing studies estimate that climate change adaptation will require hundreds of billion dollars of investment each year in the next decade. While this amount is small when compared to global economic output (GDP), the asymmetric distribution of climate change impacts (that is, higher impacts on countries with a lower capacity to cope with it), does not leave an alternative to building a globally cooperative action to finance climate change adaptation activities. In this regard, the international development financial institutions, relevant agencies of the United Nations, donor countries, and even the private sector or philanthropic organizations, are playing a role in establishing various funds to finance climate change adaptation project activities in the country.

It was established from the existing literature and findings that the private sector is the major source of finances; the government is exploring innovative ways to engage the private sector to finance climate change adaptation activities. One of the big challenges to engage the private sector on climate change adaptation finance is that the private sector is a profit-making entity and climate change adaptation falls under the good public category (Govinda, 2021). Therefore, unlike in climate change mitigation activities (such as clean energy projects), climate change adaptation activities do not offer direct incentives to the private sector. Climate change bonds attractive to the private sector but dedicated to climate change adaptation could be a solution to channel private finance to climate change adaptation and resilience. Innovative insurance products against climate change impacts, such as weather index insurance, could be developed by private sector-owned insurance companies. Like in the clean energy project activities, the private sector might be interested in financing infrastructure project activities (e.g., power plants, transmission lines, roads, ports, bridges) as long as governments or donors provide guarantees on their expected rate of return on their investments. This situation might change if Kenyan private actors could tap into several funding opportunities. At the same time, this might also provide an incentive to monitor and quantify private investments in adaptation. A comprehensive enabling environment for adaptation financing is still lacking. Raising awareness of adaptation is an important step, both at ministries and among private actors, who often deal with adaptation without being aware of it. The creation of an enabling environment that is more effective in mainstreaming adaptation is a task for public and private actors alike. This paper presents an overview of various funds available for climate change adaptation in developing countries. Kenya in a post covid-19 pandemic era.

For funding that is available, national centralized institutions for financing and planning adaptation are rare and often not yet well positioned to incorporate the existing climate resilience strategies of communities, especially when investing at the local levels. At sub national levels, few formal structures for government planning exist that can incorporate local knowledge, flexible traditional planning systems or customary natural resource management regimes. While a wave of devolution and decentralization measures has placed responsibility for local development in the hands of sub national and local government authorities (LGAs), it has not always been accompanied by the necessary financial authority or capacity to deliver it in practice. LGAs typically have weaker technical capacity and struggle to retain staff with the most up-to-date skills and knowledge, undermining learning processes. There is need to establish innovative mechanisms to have donors trust the financial and technical capacity of local government actors to handle climate funds or use them effectively which is a key barrier to enabling finance to flow to the local level. There is need to

more studies on the mechanisms of funding and the impact of climate financing and adaptation to establish the status of climate financing in a post-covid 19 pandemic era in an emerging economy context.

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