

Local Institutional landscapes and Information challenges as a crucial element for climate change adaptation: A case of Mara River Basin, Kenya

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ABSTRACT

The paper reviews the local institutional landscape, information challenges and opportunities for climate change adaptation that institutions within the Mara River Basin can utilize to support communities. At the local level, government, civil society and private sector institutions are at the frontline in harmonizing adaptation practices towards resilience to climate change. Local institutions act as the bridge between the national institutional frameworks and facilitation of local adaptation practices. The socio-political institutional landscape at the local level and its linkages provide institutions with climate change adaptation governance frameworks to enable undertake adaptation. However, information is a major challenge that hampers smooth uptake of adaptation knowledge and skills. This includes scarcity of information; limited access to available information; technical presentation of information; the cost of information; and poor flow of information in institutions. There are information opportunities within the landscape which can enhance institutions' internalization and application of adaptation practices.

Key words: climate change adaptation, institutional landscape, information, opportunities

1.0 INTRODUCTION

1.1 Background

Communities must build their resilience, including adopting appropriate technologies while making the most of traditional knowledge, and diversifying their livelihoods to cope with current and future climate stress. Local coping strategies and traditional knowledge need to be used in synergy with public policies and local interventions. Ansu-Kyeremeh (2005) maintains that indigenous communication systems remain at the heart of community social interactions, information, education, development and entertainment. Indigenous communication in Africa, is largely interactive and participatory and closely linked with community activities. According to UNFCCC (2006), adapting to climate change entails adjustments and changes at every level - from community to national and international levels. ADB (2009) is in agreement and observes that adaptation options and their supporting policies should be adopted by the appropriate level of government and implemented by institutions in direct contact with beneficiaries. For example, adaptation responses such as changing planting dates and tillage practices will be implemented by farmers but might be facilitated through the provision of technical services from local extension agents, research institutions and regional universities. Adaptation is not new among the local communities in the Mara River Basin but for the institutions in climate change adaptation programs, this is an emerging area of interest and concern.

Kenya like many other countries in Africa is currently bearing the burden of climate change impacts and the related socio-economic losses. All this is worsened by the population's high dependence on climate sensitive natural resources. Within the planned adaptation action, there is need to understand the institutional landscape within which climate change adaptation functions, the potential challenges and possible opportunities that have not been exploited. The overall institutional landscape for climate change adaptation operates at four levels; international level, regional level, national level and local level. There is strong evidence on the practices at the first three levels, however at the local level, there is need to grasp the practices on adaptation and the opportunities offered. At the local level, government institutions, civil society and private sector institutions are at the frontline in harmonizing local adaptation practices towards building resilience among community members. However, this institutional landscape is faced with information challenges. While there are elaborate institutional

arrangements to address climate change at the international and national levels; the institutional landscape at the local level for addressing climate change adaptation is still shaping itself out and has limits in terms of the linkages and information for addressing climate change adaptation challenges. There is a large amount of information on adaptation policies but little information on local institutions' integration of these policies in their adaptation practices. Moser, Ekstrom, & Kasperson (2010) established that information-related barriers have to do with how information is created, how it is communicated, and who delivers and receives it.

1.2 Objectives

Broad Objective

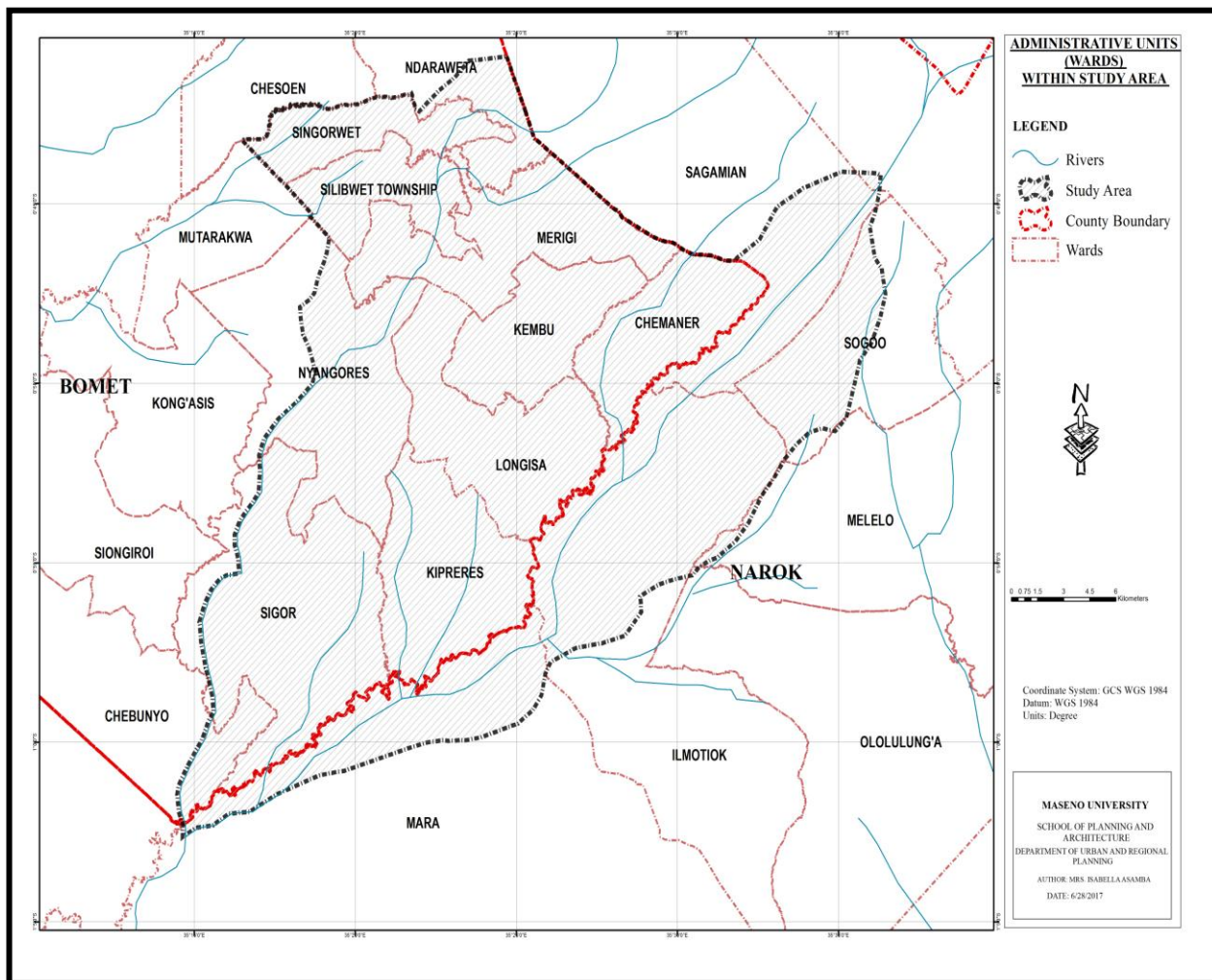
Evaluation of the institutional landscape, information challenges and opportunities for climate change adaptation within the Mara River Basin, Kenya

Specific objectives

1. Examine the institutional landscape for engagement in climate change adaptation in the Mara River Basin, Kenya
2. Determine the key information related challenges faced by local institutions in the Mara River Basin institutional landscape
3. Assess the available opportunities in the institutional landscape to address the climate change adaptation information challenges identified

1.3 Methodology

The research for this paper was undertaken in the Mara River Basin in Kenya (see map 1) covering parts of the administrative counties of Bomet and Narok. The Basin is named after the Mara River which originates from the Mau Escarpment (2,932 m asl) and flows through farmlands into the plains of Masai Mara National Game Reserve in Kenya and Serengeti National Park in Tanzania before entering Lake Victoria (1,134 m asl). The study adapted a cross sectional research design. To enable generate reliable data, a total of one hundred and thirty seven institutions drawn from four sub counties of Bomet Central, Chepalungu, Bomet East and Narok South were interviewed using a predetermined questionnaire. Only institutions with links to climate change adaptation practices and working directly with communities were interviewed. Within each institution, the officer/committee member in-charge or their assistants were the respondents. In addition, one hundred and sixty one persons drawn from different institutions took part in the focus group discussions, this enabled triangulation to cross check facts from more than one source thus maximizing on knowledge availed. For the focus group discussions, an institutional challenges mapping was used to map out major information challenges affecting institutions in climate change adaptation. The mapping process involved developing a matrix with the identified challenges, providing each institution present with equal number of stickers and asking each to identify which was the most pressing challenge for each category of institution.



Map 1: Selected Wards in the Study area

2.0 RESULTS

2.1 The institutional landscape for engagement in climate change adaptation

Institutions form the point of connection, providing mechanisms for communities to cope with climate change and build resilience; together with communities, institutions have responded to climate induced vulnerability by fostering adaptation and mitigation at multiple levels ranging from global to local level. The paper views the institutional landscape as a socio-political model looking at the five major categories of local institutions in the Mara River Basin as government institutions, non-governmental organizations (NGOs), community based organizations (CBOs), faith based organizations (FBOs) and private sector institutions (refer to figure 1).

The above institutions working on climate change adaptation related issues are spread across different administrative locations in the counties of Bomet and Narok and cascade to the lowest level – the wards. The key variables that were used to look at these institutions were their institutional mandate, structures, operational goals and institutional culture. Using the foregoing variables was necessary to minimize on the complexities and enable systematic classification to expound on the types of institutions according to adaptation practices and temporal existence. As established by Schlager & Blomquist (2008), watersheds have both physical and institutional landscapes. Like their physical counterparts, institutional landscapes shift, sometimes almost imperceptibly and at other times

dramatically. In the Mara River Basin the shifts in terms of socio-political aspects can often be dramatic especially among the CBOs and FBOs who are highly dependent on well-wishers to finance their climate change adaptation work. When the institution is termed not to be politically correct they lose support putting their adaptation work at jeopardy.

This works well in line with Plott (1994) who noted that the institutional landscape, must be defined in operational terms, consistent with the limitations of human perceptions and understanding, as well as the limitations imposed by both the physical world and the availability of resources. Schlager & Blomquist (2008) in studying watersheds states that the institutional arrangements in a watershed are likely to be complicated and, on initial view, even confusing. The institutional landscape of a watershed, like its physical and ecological landscape can be and often is complicated. Additionally institutional complexity can be viewed as an intrinsically undesirable trait to be minimized or desirable trait to be maximized, and the extent and kinds of complexity will vary from one watershed to another. This notwithstanding, the institutions in the Mara River Basin undertaking climate change adaptation have managed to operate within administrative localities and development sectors within specified mandates thus bringing some level of order and enabling rationalization of their existence within this landscape.

This has entailed the national government putting in place mechanisms to address climate change adaptation. The mechanisms include policies at the national level that are being cascaded to the county. The institutions are guided predominantly by the following seven key public polices:

1. The Constitution of Kenya 2010
2. The Climate Change Act 2016
3. Vision 2030
4. The National Climate Change Response Strategy (NCCRS) of 2010
5. National Climate Change Action Plan (NCCAP) 2018 – 2022
6. National Adaptation Plan 2015 – 2030
7. County Climate Change Policy (currently in draft form)

Government of Kenya (2016) sets out action points for different institutions acting on climate change; the National Government Sectoral Agencies role is to integrate the NCCAP into sectoral strategies, action plans and other implementation projects; and designate a unit with adequate staff and financial resources to coordinate the mainstreaming of the NCCAP and other climate change statutory functions and mandates into sectoral strategies for implementation.

Government Institutions have the key mandate to effect and ensure climate change adaptation takes place in each county, the broad objective of government ministries and their agencies is to oversee development through provision of services, regulatory services, and research (refer to figure 1). The County level institutional landscape for adaptation includes key government ministries and departments acting on climate change adaptation in the Mara River Basin these include the Ministry of Agriculture - Soil & Water Conservation Department, Ministry of National Development, Ministry of Energy, Ministry of Health, Ministry of Water, Ministry of Lands – Physical Planning Department, Ministry of Environment and Ministry of Gender and Sports - department of Social Services. All these are county and sub county level institutions are supported by their national level counterparts who are based within the counties. Others are National Environment Management Authority, Water Resources Management Authority and Kenya Research Institute and learning institutions. All these institutions are governed by rules and regulations that determine their role in climate change activities. County

Government with the County Climate Change Units are expected to spearhead actions on climate change.

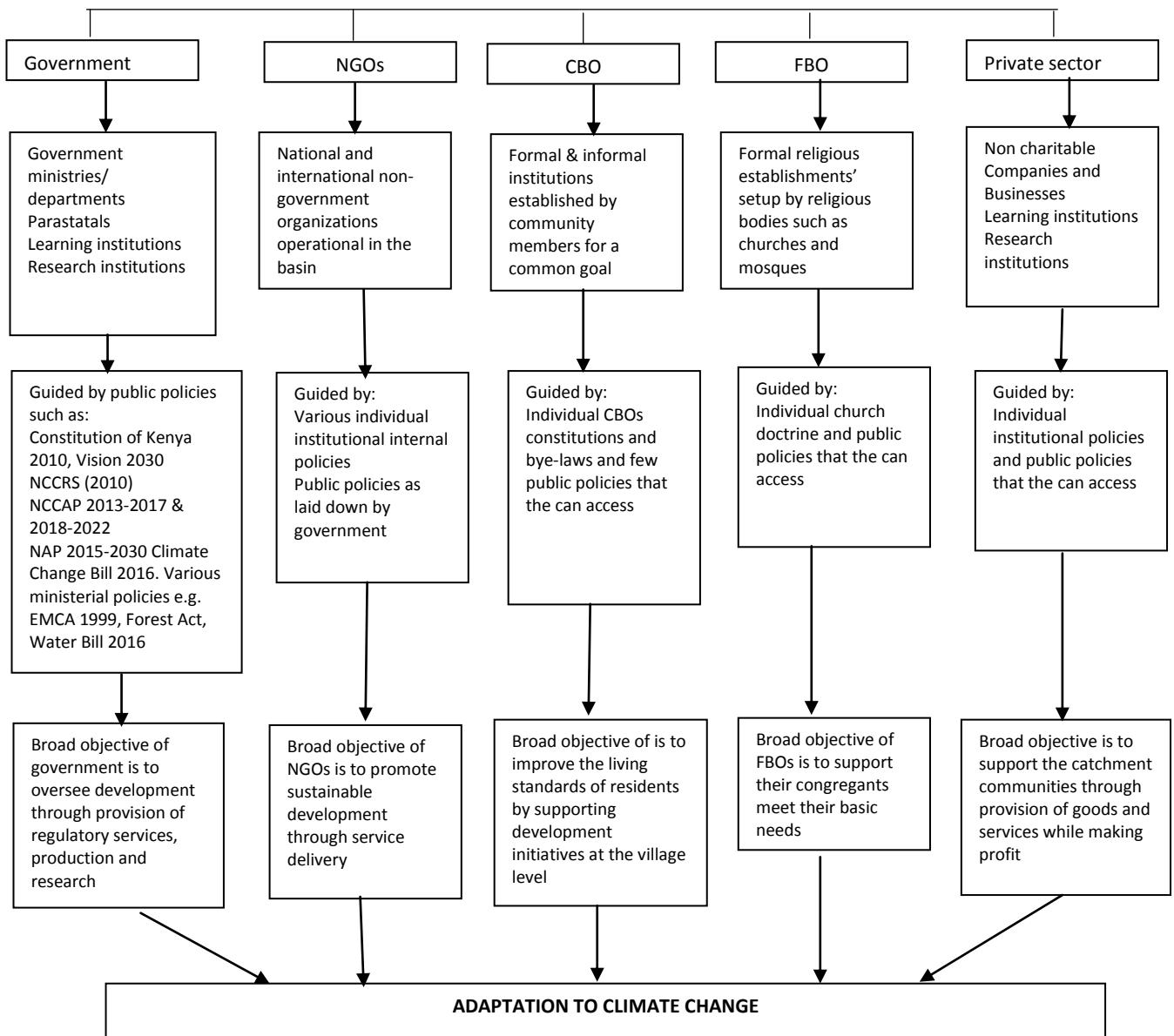


Fig 1: Mara River Basin institutional landscape

The County Government’s role is to integrate and mainstream climate change actions, interventions and duties into County Integrated Development Plans (CIDPs); and designate a County Executive Committee member to coordinate climate change affairs. While this has been documented since 2013, counties are only recently starting to embrace the important role that climate change policies play in addressing climate impacts on society. The counties within the Mara River Basin are engaging the stakeholders as they develop their County Climate Change Policy. The Climate Change Policy provides evidence of the key climate risks at the county, climate change impacts on the sectors, climate adaptation activities that are planned and those being implemented, mechanisms for the integration of climate change adaptation into relevant new and existing sector policies, planning and budgetary processes for climate change. Most government institutions are still sectoral, and operate

by borrowing from past experiences or from public policies they are aware of at national and international levels. The most critical adaptation measures are in-house and not clearly linked to other institutions. The national government has strong influence locally with technical expertise, financing, policy formulation skills and ability to regulate on issues of climate change adaptation.

Non-governmental organizations (NGO) are institutions that are part of the civil society. In the Mara river basin the non-governmental organizations in the institutional landscape for adaptation is composed of both international and national NGOs. These include Worldwide Fund for Nature (WWF), World Vision, Kenya Red Cross, Actionaid, and Forest Action Network among others. NGOs are governed by their specific institutional rules and regulations. However, these regulations have to fit into the public sector policies as laid down by the national government. The NGOs working on climate change are guided by international climate change policies and national public policies on climate change and adaptation priorities. Each NGO uses these to design its own internal adaptation policies for implementation. The international policies are primarily anchored in the United Nations Framework Convention on Climate Change (UNFCCC) adaptation practices with four broad priority areas (1) Assessing impacts, vulnerability and risks, (2) Planning for adaptation through identification of adaptation activities and their appraisal, (3) Implementing adaptation measures at national, regional and local levels and (4) Monitoring and evaluating adaptation. NGOs especially those that have an international base are able to influence policy and access financing at international, regional and national levels for their work in promoting sustainable development which include action on climate change.

At the community level, the institutional landscape is set through Community Based Organizations (CBO), these are formal and informal institutions that are found close to households in the community and established by community members coming together with a common goal aimed at supporting development initiatives at the village level. CBOs generally gain their mandate from their immediate population, thereafter they get registered by the government under the Department of Social Service for purposes of regulation. Among these are local welfare groups - inclusive of women groups, youth groups, societies and associations. CBOs have rules and regulations that govern them mostly written as simple constitutions or bye-laws.

The overall goal of CBOs is to improve the living standards of residents, these CBOs are exclusively managed by local people who reside in the vicinity of their operations. Often the persons running the operations are not formally employed but serve on voluntary basis. CBO leadership is charged with sourcing for funds from members and well-wishers. Within this landscape are established CBOs who generate budgets based on their interactions with the community and external stakeholders such as government, the private sector institutions and NGOS. Their role is to encourage members to contribute for work to be done on climate change adaptation as they coordinate and manage the resources at their disposal for sustainable development. In terms of climate change action, CBOs are noted to be strong in mobilizing community members to participation in identification of development needs of the community, implementation and management of community development plans and projects, and representing community interests. The Mara River Basin Water Users Association (MRWUA) is the largest association in the basin, it is an umbrella organization composed of over thirty three CBOs tackling environmental and climate change issues. This collaborative engagement

allows for various community institutions to come together and support households build resilience through various adaptation practices.

The third category of institutions in the institutional landscape are Faith Based Organizations (FBO). Faith based organizations are establishments setup by religious bodies such as churches and mosques to support the immediate congregation meet their basic needs and are guided by their specific doctrines. These basic needs include actions towards access to clean water, access to food and access to shelter. In the last decade many FBOs have widened their mandate to reach all persons within their catchment on issues pertaining to livelihood security, within these climate related issues have become prominent. In terms of climate related action, FBOs are inclined towards support on awareness creation activities. There is a close link between management of the development activities and the religious institution's spiritual leaders, the larger institutions for instance the Catholic Church, recruit staff whose skills are built to enable them handle issues of climate adaptation. Some FBOs support schools with activities related to climate change adaptation such as setting up tree nurseries and tree planting.

In the institutional landscape, the Private sector institutions are primarily businesses/companies that are based in the community and support climate related activities inclusive of telecommunication companies and their dealers; Agrovets and chemists; Agribusinesses - Cereal Stores, Community Forest Management, Bomet Traders association; learning institutions - schools; clinics and hospitals e.g. Tenwek Mission hospital and large companies such as Kenya Tea Development Authority. The private sector institutions have clear regulations that govern their operations and ultimately aim to make some level of profit. Private sector institutions influence ranges from local to regional levels. While Kenya Tea Development Authority, Tenwek hospital and the telecommunication companies (Safaricom, Airtel) have a wider influence covering the county and beyond. The smaller businesses such as the chemists and agrovets have a local influence within the Wards and villages. The Government of Kenya, (2018), noted that the private sector is an active partner in adaptation, providing technologies, insurance products and climate information services, many of which are facilitated by smart phone applications. Various companies have worked to build the climate resilience of farmers in their supply chains.

2.2 Existing information challenge that provide opportunities in the institutional landscape

One of the key challenges in the institutional landscape that has led to delayed climate change adaptation by institutions in the Mara River Basin relates to climate change adaptation information. Analysis of information challenges among the institutions in the study presented the following specific issues faced by different institutions.

1. Scarcity of information on climate change adaptation to support decision making
2. Climate change adaptation information is available but the institution has limited access to it
3. Climate change adaptation information is available but it is presentation in a technical manner making it difficult to understand
4. Climate change adaptation information is available but the cost of accessing it is high
5. There is poor flow of information on climate change adaptation within the institution

Tackling these challenges will lead to increased and streamlined adaptation practices by institutions in the Basin. The focus group discussions indicated areas of greatest challenge for each set of institutions as shown in figure 2.

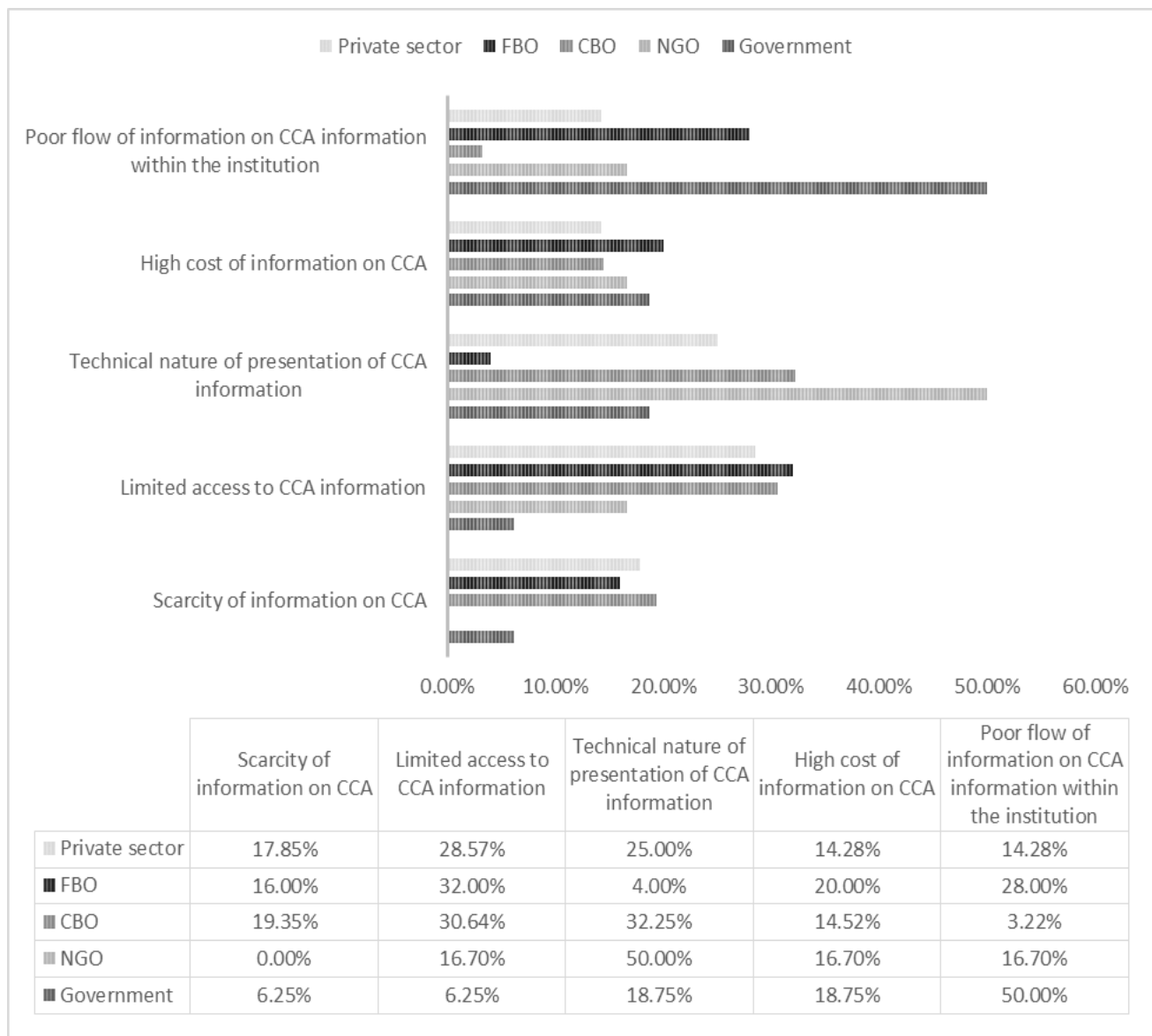


Figure 2: Key challenges associated to information on climate change adaptation action

For government institutions (Figure 2), the highest challenge is in relation to poor flow of information on climate change adaptation within the institution. Half the government institutions (50.0%) that were interviewed indicated this as a critical challenge that needs to be addressed. It is evident that the government institutions have adequate information on climate change but this information is not reaching all the relevant persons working on issues of climate change adaptation. Government of Kenya (2013) NCCAP recommends the development of a climate change knowledge management system which will serve as a one-stop electronic space where most climate change-related information and knowledge in Kenya will reside. While NCCAP has made this recommendation, information is still held in few offices within the counties.

For NGOs, 50.0% indicated that the principal challenge they face is in relation to the technical nature of most information they are able to access on climate change adaptation. Armah, Luginaah, Hambati, Chuenpagdee, & Campbell (2015) notes that providing individuals with scientifically sound information will not necessarily translate to information assimilation, increased knowledge, action and

support for policies based on this information. This is in line with the outputs from NGOs in the Mara River Basin who noted the complexity of most climate change information they access. The NGOs find this a challenge as they often need to repackage this information in order to share it out to their stakeholders taking up resources and time.

CBOs face two critical challenges in relation to information. The first is the technical nature in which climate change information is presented faced by 32.25% of the responding CBOs (refer to figure 2). Given that most CBOs do not have climate change experts this has proved a major problem. Information that is overly technical takes longer to internalise prior to sharing with their stakeholders. Often this information in the process of being interpreted loses the initial meaning. Secondly, 30.64% of the CBOs in the study specified that they have limited access to the available climate change adaptation information within the county. The foregoing reinforces Armah, Luginaah, Hambati, Chuenpagdee, & Campbell (2015) outputs from a study in done in Tanzania which states that the lack of information, the lack of resources, institutional limitations, poor communication, and the deeply held values and beliefs that show how people respond to climate risks and their management often act as barriers to adaptation. This inability by the Mara River Basin CBOs to access information was associated with inability to identify the right offices to acquire the information from, the lack of equipment for example computers and poor internet connectivity all these putting them at a disadvantage.

For FBOs, 32.0% have major challenges in accessing climate change adaptation information that is available, but even with the information that is at their disposal, FBOs still have a problem as 28.0% indicated that there is poor flow of information on climate change adaptation within their institutions. This leaves many staff members with inadequate information to make quick decisions or share pertinent details with their stakeholders. With limited funding many FBOs have to make a choice of whether to take the risk and implement the activities they know or spend money acquiring additional information on climate change adaptation. This supports Francisco (2008) who found that risks are not easy to predict with the limited information available. He further states that building on local institutions is one way to reduce the cost of adaptation.

For the private sector institutions 28.57% of those interviewed stated that climate change adaptation information is available but the institutions have limited access to it mainly due to structural issues, such as poor internet connectivity, size of the institutions, distances to the county. The technical presentation of climate change adaptation information is another challenge faced by 25.0% of the private sector institutions especially the small businesses that directly link with farmers, however, once these institutions have information they share widely in order to improve their contacts with clients.

The overall analysis from the outputs (figure 2) of the mixed focus group discussions, shows that the primary challenge in the Basin ranked by two categories of institutions – NGOs and CBOs - as top priority was climate change adaptation information that is available being but is presented in a technical manner and is difficult to understand. Traditionally, information used by communities to address livelihoods and resilience was easy to share and implement thus the current technical information tends to be heavy and can lead to institutions feeling they are overloaded.

Two of the institutions that is faith based organizations and private sector institutions, stated that they have limited access to climate change adaptation information. The government agencies were the set of institutions that indicated that they have adequate information on climate change adaptation but there is poor flow of information within the institution with few people who have internalised and are able to utilize the information for decision making while others have little appreciation on what the information can guide them to undertake. A growing body of literature highlights the importance of effective communication of climate change information to increase awareness and understanding, provide continuity, and constructively engage policy-makers, stakeholders, and the public (Moser, Ekstrom, & Kasperson 2010). Barnett, Evans, Gross, Kiem, Kingsford, Palutikof, & Smithers (2015) notes that often it is said that many barriers to adaptation are institutional, implying that they are socially created and so within our power to remove.

2.3 Information opportunities that supports climate change adaptation practices

Climate change is a cross-cutting issue with impacts across sectors. Reviewing the capacity of institutions to handle adaptation practice requires having access to information on regulations and practices to enable planning to take place and smooth implementation. Adaptation to climate change happens at the local level, addressing the knowledge gap that exists will be achieved partially by addressing the challenges in the institutional landscape. For institutions in the institutional landscape to enhance community resilience, there is need to not only address access to information but to holistically look at the specific factors hampering information utilization for transformative change. Ahmed & Fajber (2009) noted the same when stating that development of livelihood options requires access to training and skill development, and information on technologies and ways of adding value to create a profit.

There is a large amount of information on adaptation policies but little information on local institutions' integration of these frameworks in their adaptation practices. Yet the institutions are required to make decisions on adaptation practices on a regular basis by ensuring they have the information. The information should guide them to identify and reach beneficiaries, finance for adaptation practices, indicators for monitoring and evaluating adaptation and gauging of impact of adaptation on households in their catchment. This is an area that the institutions especially CBOs and FBOs need to address within their operations. Berke & Lyles (2013) note that integrating information generation with public engagement expands prospects for seeking new opportunities to produce co-benefits that have a positive effect on multiple interests to a wider section of communities. Thus the ability of the Mara River Basin institutions to access and utilize climate change adaptation information in their activities from project conceptualization to completion increases benefits. This concurs Jantarasami, Lawler & Thomas (2010) who concluded that adaptation projects are hindered by insufficient climate change impacts information at a scale relevant to regional level or local level management.

Four opportunity clusters are identified to address information challenge and foster climate change adaptation practices. The first is to create an overall increased access to information on climate change adaptation. This can be achieved by creating county and sub county level resource centres with climate change information available to all actors at the local level. The information can be in print or electronic forms as well as physical models and artefacts. The information availed should include

statistics and maps for the Mara River Basin. This will require addressing the structural impediments that exist such as acquisition of equipment and internet connectivity.

The second set of opportunities should focus on ensuring access to user friendly information on climate change adaptation to institutions working in climate change by review climate change adaptation of information available and repackaging of this information for local institutions and communities to use. For the public policy documents it may be necessary to develop abridged versions for CBOs, FBOs and private sector institutions. These are the institutions that have few or no climate change expertise and yet work directly with the community, therefore requiring the deepest understanding on climate change adaptation issues. In the Mara River Basin, the government institutions have the highest number of officers who have been trained or sensitized on climate change adaptation. This can serve as an excellent pool for the county to cascade knowledge to other institutions.

A third set of opportunities should look at enhancing affordability of climate change adaptation information. Based on copyright laws the government can design abridged versions of policy documents for sharing with local institutions, the local institutions ability to access climate change related funding will increase their purchasing powers of climate change adaptation information.

The fourth cluster of opportunities should look into increasing the number of interactions within institutions discussing climate change adaptation, this will ensure climate change adaptation discussions are mainstreamed into daily institutional activities. The foregoing can be achieved by ensuring climate change adaptation is planned and budgeted for on an annual basis and implementation undertaken; posters on climate change adaptation practices should be displayed on institution walls to generate discussion among staff; supervisors need to be accountable for reporting on their division/section on climate change adaptation actions among staff and volunteers. Weekly meetings/ seminars on emerging climate change adaptation issues and practices should be mainstreamed into institutional work plans and work. Information flow within the institution is vital as once this is internalized it can be shared with partners. Documentation of all adaptation processes needs to be done by the responsible officers/volunteers. Information on climate change has a disconnect especially with local institutions who do not necessarily view the information as climate change adaptation information but as a set of practices that are affecting their target communities' livelihoods. Pelling & Manuel-Navarrete (2011) undertook a study in Mexico that showed that information networks that might have been pathways for learning and spreading alternative visions and challenging discourse were informal and personalized but extensive. In the study climate change was not present but investment in waste recycling was a key element.

Tapping on indigenous knowledge for uptake of adaptation practices as it will also support in reducing cost of information that has to be acquired from afar. The data and information required for planning for adaptation action can thus be easily availed through knowledge of local traditions. A study by Eriksen, O'Brien & Rosentrater (2008), notes that there is a rich set of indigenous strategies to deal with multiple threats, variability and environmental change, but they are not sufficient for reducing the impacts of climate change. One of the reasons that indigenous strategies are inadequate is the fact that they largely have to operate without any formal government support or facilitation. Responding to the multiple issues posed by adaptation require a coordination mechanism that brings together information

on the impacts of climate change, adaptation activities, and financial disbursements from donors for aiding such activities (Morris & Krishnan 2012).

3.0 CONCLUSIONS

The institutional landscape in the Basin offers an excellent framework within which climate change adaptation activities can systematically be channeled. This enables the transfer of information within a specified period and in an institutional context to translate into knowledge and skills required for adaptation. Generally the smaller institutions face more complex information challenges in the institutional landscape compared to the larger institutions.

The opportunities offered can be integrated into regular information sharing activities through seminars and meetings at the workplace, exchange visits to other institutions within the institutional landscape to increase learning, designing of appropriate climate change adaptation learning materials and documenting lessons learnt. Balancing internal lessons gained from access and use of adaptation information and external accountability will enhance climate change adaptation practices across the Basin.

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