

Understanding Institutional structures and their role on climate change adaptation: A case of Mara River Basin, Kenya

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ABSTRACT

This study evaluates the institutional structures and their role in hindering or supporting adaptation to climate change. Structures are frameworks around which coordination, planning, management and logistics takes place and include rules, schemas, and strategies. Non-governmental organizations in the Mara River Basin have the most efficient structures to foster adaptation practices. Faith based organizations have the least efficient structures foster adaptation practices. The role of institutions in shaping adaptation entailed the existence of efficient and accountable systems, entrenched procedures that promote development, decision making, stakeholder confidence and ability to respond to change. The different structures are interlinked and influence each other to enhance greater delivery or hinder the institutions' ability to effectively support adaptation practices. The institutions in the Basin have structures related to function, information flow, flexibility and responsiveness to its environment. The existence of strong institutional structures is a prerequisite for sustainable adaptation to climate change.

Key words: climate change, adaptation, institutions, structures

1.0 INTRODUCTION**1.1 Background**

Climate change is a reality in Africa as evidenced by prolonged and intensified droughts in Eastern Africa; unprecedented floods in Western Africa; depletion of rain forests in equatorial Africa; and an increase in ocean acidity around Africa's southern coast. Vastly altered weather patterns and climate extremes threaten agricultural production, food security, health, water and energy security, which in turn undermines Africa's ability to grow and develop (Lisk 2009). Action to deal with climate change is taken through adaptation and mitigation. Adapting to climate change entails taking the right measures to reduce the negative effects of climate change by making the appropriate adjustments and changes in human practices. Adaptation is the process of changing behavior in response to actual or expected climate changes (McKibbin & Wilcoxon 2003). Institutions form the key support to local communities as they tackle climate change.

In this paper, institutions are viewed to encompass organizations, governance structures and social arrangements. This is in line with Scott (1995), who asserts that 'Institutions are social structures that have attained a high degree of resilience. They are composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life. Institutions operate at different levels of jurisdiction, from the world system to localized interpersonal relationships. Institutions by definition connote stability but are subject to change processes, both incremental and discontinuous. Mubaya and Mafongoya (2017) are in agreement and advance that essentially, institutions encompass on the one hand tangible governance and organizational structures (formal) and on the other hand 'rules of the game', cultural norms and tradition (informal or institutional arrangements) which shape behavior and the nature of human interaction.

Institutions with an interest and taking action on climate change are found at global, regional, national and local levels. Global level institutions such as the Intergovernmental Panel on Climate Change (IPCC), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), World Meteorological Organization (WMO) have been at the forefront of spearheading action on adaptation and mitigation to climate change. They have in place governance structures and social arrangement that guide their work towards climate change adaptation. Structures are frameworks around which coordination,

planning, management and logistics takes place, they include rules, schemas, and strategies. While there are elaborate institutional arrangements to address climate change at the international and national levels; local institutions' structure, mandate and capacity are not necessarily set up to foster adaptation. The institutional frameworks at the local level is vague with little understanding of how it works, who is involved and the capacity of those who are involved to deliver the adaptation. At the local level, it is still unclear how adaptation to climate change is conceptualized and practiced. Mubaya and Mafongoya (2017) are in agreement that despite indications that institutions play an important role in facilitating local adaptation, research in this context appears to still be in its infancy.

1.2 Objectives of the study

The main objective of the study was to establish the institutional structures that enable adaptation and those that hinder adaptation of local institutions to foster climate adaptation responses in the Mara river basin. Specifically the study objectives were to:

1. Assess the local institutional structures in the Masai Mara river basin that enable adaptation.
2. Assess the local institutional structures in the Masai Mara river basin that hinder adaptation

1.3 Methodology

This study was carried out in the Mara River Basin in Kenya, the basin is located between longitudes 33° 47' E and 35° 47' E and latitudes 0° 28' S and 1° 52' S. The study site receives 500mm to 1800mm of rainfall annually with two rainy seasons, temperatures range from minimum of 8°C to maximum of 28°C. The area is made up of three socio economic zones - forest, agricultural and park. The forest zone is sparsely inhabited by the forest community who have lived in a positive symbiotic relationship with nature for centuries, in the last two decades squatters have moved into the forest environs and are causing harm to the ecosystem. The agricultural zone comprises the bulk of the basin population that practice agriculture and pastoralism, the majority of the households practice subsistence farming on holdings below 8 hectares. Most anthropogenic activities in the Mara Basin takes place here, this has included deforestation, land use change and increased urban settlements. The need for adaptation is greatest here. The park zone is sparsely populated, comprising mainly large scale farms, grazing land, conservancies and the Masai Mara game reserve one of the world's renowned ecosystem. The focus of the study was on the middle catchment which is the agricultural zone where climate and people interaction is most intense (fig 1).

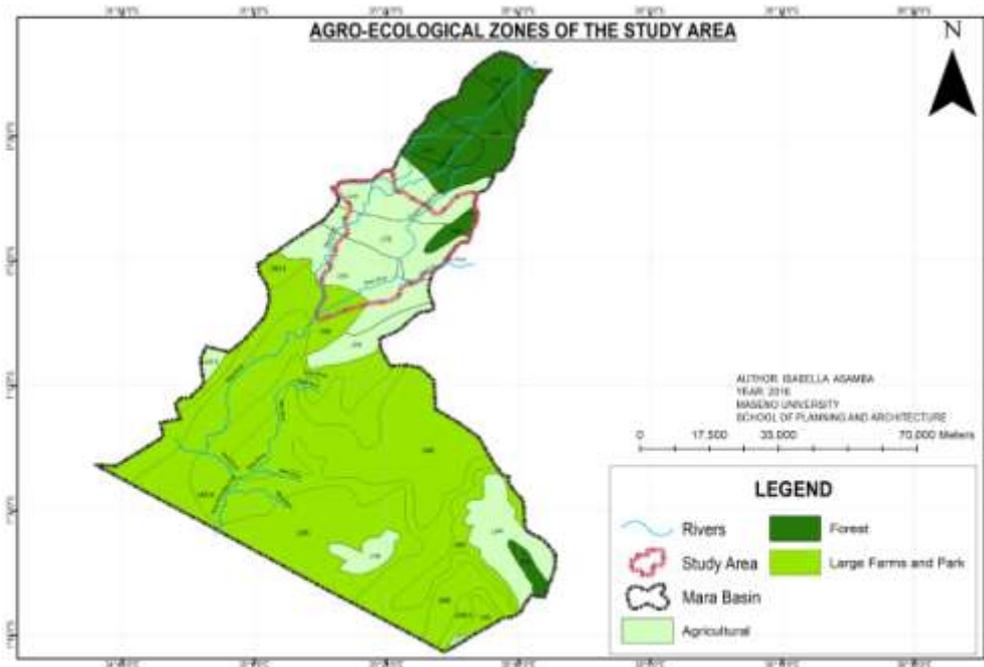


Fig 1: Map of study area

The institutions operating in the Mara River Basin (middle catchment) formed the unit of analysis for the study. Within the Basin there are seven hundred and eighty four institutions that have initiatives in adaptation to climate change these include government agencies, Non-governmental organizations, Community based organizations, faith based organizations and private sector institutions. The adaptation mechanisms they follow is majorly sectoral in nature and uncoordinated. A sample size of 137 institutions from the county, Ward and locations levels were purposively sampled and interviewed on their operations. Experiences in relation to understanding everyday phenomenon, internal working at the institutions and relation with community were the key focus.

The study methodology was grounded on Corlett (n.d) four thematic areas of developing processes, enabling processes, productive processes and energizing processes. The researcher then developed four quadrants from these thematic areas and looked at the set of potential objects, the relationships between those objects, and the relationship between sets of objects and their environments (table 1). This was followed by the Researcher designing questions linked to the quadrants in order to measure structures that enable or hinder institutions to function effectively. Institutions were interviewed and responded to the set of questions to enable gauge their state. The methodology had six steps as part of generating data.

Step 1: Each question was asked and the score noted beside the question (see table 2). A scale of 1 to 5 was used to respond to each question where 5 = very frequently, 4 = frequently, 3 = sometimes, 2 = rarely and 1= almost never.

Step 2: The scores were transferred to the analysis table against the question number (see table 3: Analysis Table)

Step 3: For each set of scores, totals were computed and an average made

Step 4: Each set of averages was converted to a percentage (see table 4). The averages were set as 1=20%, 2=40%, 3=60%, 4=80%, and 5=100%.

Step 5: The final quantitative analysis were used to draw conclusions. Where the scores are above 50% these were considered as structures fostering adaptation practices, below 50% were considered as structures hampering adaptation practices.

Table 1: Institutional quadrants

<p>The developing processes quadrant looked at institutional human resources in the context of inputs such as skills; knowledge; participation; effective communication; and how these translate to immediate outputs such as decision making and finally efficient service delivery towards adaptation to climate change. Strategy is the pattern of decision making which shape the institution and its delivery of services.</p>	<p>The energizing processes quadrant gauged the relationship between the institution and key stakeholders especially the community and the institution's sponsors and collaborators. It required assessing the institution's role areas of networking locally, nationally, regionally, and internationally; ability to lobby and advocate for adaptation to climate change; linking legitimacy to performance in the climate change arena.</p>
<p>The enabling processes quadrant reviewed the institutions as a system's ability to create stability in order to deliver on the required mandate. It requires managing resources at the institutions disposal by initiating plans and budgets; putting into place and working with rules/procedures, documentation that is accessible and useable; keeping financial records and human resource records</p>	<p>The productive processes quadrant assessed strategies used within the institution to enhance visible actions. Goals, objectives, actions, results in relation to adaptation were reviewed and timeliness of institution while taking action.</p>

Source: adapted from Corlett (n.d)

Table 2: Interview Questions

<ol style="list-style-type: none"> 1. Is participative decision making on climate change practices encouraged and widely used? 2. Do the staff members have pre-requisite knowledge and skills to handle climate change adaptation activities? 3. Within your institution, is there is a positive interpersonal environment? 4. In your opinion are issues related to climate change clearly communicated in the institution? 5. Are services related to climate change adaptation delivered on time? 6. Are climate change adaptation activities planned and budgeted for in advance? 7. Are the project goals clearly articulated by most members in the institution? 8. Are your targets on climate change adaptation achieved and/or surpassed? 9. Is the work process on climate change activities is well coordinated? 10. Does your institution have a stable predictable work environment? 11. Do you have rules and procedures that guide your climate change work process? 12. Does the institution put emphasis on quantification and measurement of work done on climate change adaptation activities? 13. Are you as an institution, able to develop creative solutions towards reaching out to external environment on issues of climate change adaptation? 14. Do you respond to external environment changes quickly? 15. You are seen to be legitimate by the community and your donors? 16. Do your stakeholders see you as a dynamic institution in relation to climate change adaptation action?
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Table 3: Analysis Table

Developing Processes			
Participation in decisions Skills and knowledge			Positive interpersonal relations Effective communication
Question 1			Question 3
Question 2			Question 4
Total	÷ 2 =		Total ÷ 2 =
Productive Processes			
Timely service delivery Planning and project execution			Direction, Goal Clarity Accomplishments
Question 5			Question 7
Question 6			Question 8
Total	÷ 2 =		Total ÷ 2 =
Enabling Processes			
Coordination Stability			Rules, Procedures Measurements
Question 9			Question 11
Question 10			Question 12
Total	÷ 2 =		Total ÷ 2 =
Energizing Processes			
Creative solutions Response to Change			Legitimacy from the community/donors Stakeholder confidence
Question 13			Question 15
Question 14			Question 16
Total	÷ 2 =		Total ÷ 2 =

Table 4: Analysis of the institutional structure

QUADRANTS	STRUCTURAL PARAMETERS	SCORES (%)									
		GOK		NGO		CBO		FBO		Private Sector	
		Indiv	Ave	Indiv	Ave	Indiv	Ave	Indiv	Ave	Indiv	Ave
DEVELOPING PROCESSES	Participation in decisions Skills and knowledge	40%	48%	90%	80%	70%	80%	50%	58%	30%	40%
	Positive interpersonal relations Effective communication	55%		70%		90%		65%		50%	
ENABLING PROCESSES	Rules, Procedures Monitoring	95%	97%	90%	85%	45%	53%	45%	46%	90%	85%
	Coordination, Stability	98%		80%		55%		48%		80%	
PRODUCTIVE PROCESSES	Timely service delivery	55%		70%	65	80%	74	78%	69	78%	79

	Planning and project execution		59%		%		%		%		%
	Direction, Goal Clarity Accomplishments	62%		60%		68%		60%		80%	
ENERGIZING PROCESSES	Creative solutions Response to Change	80%	61%	81%	70%	70%	73%	78%	78%	89%	70%
	Legitimacy from the community/donors Stakeholder confidence	42%		58%		75%		78%		50%	
Total			274		300		280		251		274
average			68.5		75		70		62.7		68.5

Key: *Indiv*= individual score, *Ave*= average score per quadrant, 50% or less is a hindering structures, 50% or more is an enabling structures

2.0 RESULTS AND DISCUSSIONS

From the study, structures was acknowledged as mechanisms of social order, structures take into consideration governance inclusive of rules, plans, roles and responsibilities; documentation, coordination and institutional stability; mandate and resource base and finally goals and project deliverables. This is in line with Bandaragoda (2000), who states that the basic minimum for institutions is to have laws, policies and administration which are three pillars of the institutional framework for integrated resources management in a river-basin context. Further to this, Agrawal *et al.* (2009) states that adaptation does not occur in institutional vacuum; institutional and social factors play a key role in shaping the extent to which rural households and communities become vulnerable to different environmental risks and respond to such risks.

Institution have various structures, these structures are indicative of how an institution functions and is managed; how information flows and is processed within an institution and flexibility or responsive of the institution to its environment. This paper views institutional structures as a System, with each of the four quadrants acting as a subsystem that is influenced and interrelates to the other quadrants. The aim was to understand how one quadrant influences action in another and the likely impact this has in terms of delivery on adaptation practices. Each of this served to observe the structures within the institutions in terms of delivery to the adaptation process. The structure of institutions within the quadrants, included issues related to planning, budgeting, project financing, governance, service delivery, procedures and documentation. These are critical in supporting effective planning for climate change response. This collaborates North (2003) who affirmed that institutions are made up of formal rules, informal constraints and their enforcement characteristics. It is reinforced by Scott (2004a) who stated that structures, include schemas, rules, norms, and routines, and how they become established as authoritative guidelines for social behavior. Scott (2004b) further notes that students of institutions must perforce attend not just to consensus and conformity but to conflict and change in social structures.

Agrawal, McSweeney & Perrin (2008) argue that, local institutions shape the effects of climate hazards in three important ways; they influence how households are affected by climate impacts; they shape the ability of households to respond to climate impacts and pursue different adaptation practices; and they facilitate the flow of external interventions in the context of adaptation. In the Mara River Basin the majority of the institutions are tackling issues related to food security, access to clean water, environment and energy which are heavily dependent on the climate, but the local institutions have not been able to fully embrace the UNFCCC protocol on climate change adaptation or Kenya's National Climate Change Response Strategy nor put mechanisms in place to include climate change in their mandate.

2.1 Government institutional structures in adaptation for climate change

Based on the interviews, it was established that the government institutions' most enabling structures fall in the enabling processes quadrant at 97%, here the government institutions are indicated as having strong coordination ability and are stable (98%) and they have rules and procedures that guide their activities and are measureable (95%) (See Table 4). Conversely, the government's weakest structures are found in the developing processes quadrant at 48% within which participation in decisions, skills and knowledge stands at 40% while positive interpersonal relations and effective communication stands at 55%. The enabling quadrant has many control mechanisms which include procedures, ability to coordinate internally and keep records thus ensuring institutional stability and memory. The ethics, standards and practices were found to be predictable and routine here, this has the potential to make an institution bureaucratic and slow to respond effectively to its constituency's need – in this instance adaptation to climate change. Correspondingly, this agrees with Catanese & Snyder (1988) who state that as systems become more complex, more attention shifts to control functions in order to avoid disruption among the many system interdependence. Self-regulation requires use of feedback loops in which part of an output of a feedback system component is used as a return signal to help it decide whether to increase or decrease the amount of its contribution.

The government as an institution in climate change is relatively weak in the area of developing processes. The structures here that were identified to hinder and slow down these two areas were low participation in decision making, timely service delivery and bureaucracy delaying decisions that need to be made fast. Climate change is dynamic and constantly evolving thus requiring institutions that have the ability to transform fast but remain stable resource wise. This makes government agencies strong institutions in putting in place structures that can deliver climate adaptation practices in a coordinated and consistent manner. Feldt (1988) agrees with the above that as systems grow and develop they become more complex i.e. components become more specialized and interaction increases among components both within and outside. This leads to higher connectivity but lower closure. Stability may also decline as the total system becomes more dependent upon adequate performance of each of its specialized parts and the completion of each critical interaction. The stability of complex systems maybe increased by providing any of a variety of safeguards against such breakdowns the most obvious protection against breakdown of a complex system is to devote more effort to administering the system itself. Specialization of system components tends to occur along 4 major dimensions: production allocation control and staffing.

Under Kenya's 2010 Constitution, devolution of climate change is not explicitly mentioned, rather it is subsumed in chapter five part two of the constitution that looks at environment and natural resource. Herein key areas covered are obligations in respect of the environment, enforcement of environmental rights, agreements relating to natural resources and legislation relating to the environment. The constitution assigns responsibility for environment and natural resources activities to the 47 established

Counties who can each address unique emerging issues. This is in line with UNDP (2010), who note that as local level service delivery units, Local governments are largely predicated on the principle of subsidiarity, which stipulates that government functions should be assigned to the lowest level of government that is capable of efficiently undertaking this function. In the Mara Basin, the local governments' are the County governments of Bomet and Narok. It is within these county level governments, that various institutions are found that interact with communities and can address issues of adaptation to climate change. The government agencies in the Mara River Basin have clearly defined structures within the separate government ministries/departments with clearly laid down rules, strategies for delivery, financing and formal communication channels.

2.2 Non-governmental organization structures in adaptation for climate change

From the discussions, Non-governmental organizations (NGOs) have structures that enable them be most effective in carrying out adaptation practices. The Non-governmental organizations greatest enabling structures are in the enabling quadrant that scores 85%, followed by the developing quadrant that scored 80%, energizing processes at 70%. Their weakest structures are found in the productive quadrant at 65% (Refer Table 4). Creating this balance was attributed to their ability to access public policies and use of these policies to plan and develop clear internal policy guidelines, they then use these policies to inform inside decisions making with elaborate reporting guidelines. The structures noted that hinder NGOs, to some extent are productive processes the element of direction and goal clarity (60%) while under energizing process is the element of legitimacy from community and sponsors/donors (58%). The foregoing is in agreement with Metin (2017b) who present that NGOs have some additional specific characteristics that make them different from governmental organizations (public sector) and private sector such as not seeking profit, having different sources of revenue from profit seeking organizations, having different kinds of objectives, having multiple stakeholders, and working with volunteers.

Metin & Coskun (2016) noted that NGOs are crucial for society with respect to their humanitarian, political, and social objectives and the economic activities that take place within them. NGOs are voluntary, non-profit private organizations whose diverse activity aims towards change, support or promotion of different social issues. While NGOs are independent from the government, there are NGOs who access and use government funds for some of their projects. Non-governmental organizations in the study area comprised of both international and national NGOs they are involved in diverse aspects of climate change work. The NGOs have in place professionals with knowledge of climate change and bring on board representation of all key players in developing the climate change agenda. Numerous opportunities that enable acquisition of skills in climate change exist among them. This level of openness towards inputting maximum in the individual translates into efficient service delivery (productive processes). Democracy and consensus, procedures and creative change are seen to be very high. NGOs were observed to be strong on internal perspective where they have most control of a situation. Metin, (2017a) point out that NGOs are organized institutions that have boards and professionals working for them, that NGOs have written rules and procedures, and they are responsible for their operations to appropriate authorities.

2.3 Community based organization structures in adaptation for climate change

The CBOs in the study showed affinity towards strong structures in the developing processes domain that scored 80%, the other quadrants with enabling structures are productive quadrant 74%, energizing quadrant 73% and enabling quadrant having a score of 53% (see Table 4).. It is worth noting that in

enabling quadrant, some of the CBOs' weakest structures relate to procedures, rules and monitoring being weak. CBOs are complex institutions composed of a grouping of like-minded individuals, this amalgamation of volunteers that are highly self-driven, tend to have strong cohesiveness towards people centered skills. Wilde et al (2008) shared the UNDP definition of community based organizations (CBO) as a form of organized citizens and have a role in mobilizing local people around community development actions and to act as a watchdog. CBOs are also important for reflecting the views, rights and interests of vulnerable or marginalized groups in communities.

CBO have group constitutions and rules/ bye laws guided by government policies and regulation and members deliberate to develop all-inclusive objectives. Consultative forums involving local people are used to reach out and ensure community stakeholders take a lead in decisions. However, translating this into efficient and effective services is still possess challenges, while it is apparent that CBOs have the required peoples' skills and interest they lack in their ability to deliver timely services and would need strengthening in order to enhance best adaptation practices. This is in complete contrast to Agrawal (2008) who states that local institutions working on climate change adaptation as having organizational rules that are simple and easy to understand, broad local involvement in the organization and its rules, fairness in resource allocation, clear mechanisms for enforcing rules, clear, broadly acceptable mechanisms for sanctioning rule infractions, availability of low-cost adjudication, accountability of decision makers and other officials.

2.4 Faith based organization structures in adaptation for climate change

Faith based organizations in the Mara River Basin are mostly churches and mosques and the programs they operate. While these institutions have a large spiritual following this has not translated itself into structured coordinative action. The enabling processes are weak scoring an average of 46%, (refer to Table 4), their highest score was in the energizing quadrant at 78% followed by the productive quadrant at 69%; the structures within the developing quadrant and enabling quadrant scores of 58% and 46% respectively. FBO productive quadrant that dictates their presence among the grassroots was strong making their development agenda in securing livelihoods through better adaptive practices resilient. A key aspect of poor accomplishment in the enabling quadrant was attributed to weak procedures and rules and inadequate/incomplete documentation (45%) all of which would enhance coordination and ultimately institutional stability (48%). Segura (2005) declares that for institutional development to take place, it will require defining, measuring, and monitoring performance indicators. In line with this, the enabling processes for the Faith Based Organizations would thus be strengthened.

Faith Based Organizations generally suffer from low financing and the government rarely considers them as a key player to be invited to consultative forums. Many FBOs are hindered by inadequate knowledge on how to drive climate change agenda internally and lack resources to support training on climate related issues. With no specific adaptation plans and weak understanding of existing public policies in climate change, the enabling and developing processes are under accomplished. However, Rose (2000) lists six characteristics of religious institutions that give them a unique role in the community: (1) they are in every community, (2) they are more stable than other institutions and have an enduring membership base, (3) religious institutions bring together a "cross-section of the community," (4) they promote activism, therefore strengthening social control, (5) they foster ties in the neighborhood, and (6) they aide in the development and maintenance of other organizations in the community.

The energizing processes are the strongest aspect of FBOs as a system, the boundaries within this system are permeable enough to allow interaction with the outside environment, however the exchange of ideas with the external environment is still inadequate to enable get adequate feedback from the households/community they serve. Poor procedural measures in place, limited skills in climate adaptation, inadequate information on climate change processes and international/ national strategies towards adaptation to climate change. This is inclusive of poor information flow, putting in place measurable parameters such as indicators to monitor success on adaptation of climate change. Among the FBOs, hindering structures include poor coordination especially when other actors are involved and have divergent views. Over consultation has also meant slow progress with weak execution of policies. Poor implementation of the decisions was attributed to the fact that FBOs tend to undertake too many divergent activities.

2.5 Private Sector institution structures in adaptation for climate change

Private sector institutions scored 85% in the enabling quadrant, 79% in the productive quadrant, 70% in the energizing quadrant and finally 40% in the developing quadrant (refer to Table 4). Uphoff (n.d). Differentiates the two sets of private sector institutions as, those with profit as its goal and those that are charitable or philanthropic (not-for-profit) institutions. The private sector institutions in the Mara River Basin which include agro businesses, telecommunications companies, health institutions and learning establishments are majorly profit making institutions with a corporate social responsibility aspect. The private sector was observed to have its strength in enabling processes scoring an average of 85% under this, procedures and rules are considered critical in enhancing the institutional performance within the sector. This relates well with what Scott (1995) specifies, that in order to survive, organizations must conform to the rules and belief systems prevailing in the environment, because institutional isomorphism, both structural and procedural, will earn the organization legitimacy.

The private sector institutions are high on enabling processes as evidenced by the high sense of record keeping thus ensuring that they make profits, share knowledge and keep abreast with best inputs for the different sub-catchments within the basin. They have a structured way of working guided by their set policies and regulations, this coupled with quick information flow enables them to coordinate activities well and reach decisions fast although one needs to note that decision making is not always consultative. Private sector institutions have created a niche around environmental issues guided by government legislation despite having inadequate information on climate change adaptation practices. These institutions also generally struggle with a component of energizing processes quadrant evidenced by less collaborative interests with the community and other institutions in the basin.

In comparison their score in developing process stood at 40% thus hindering optimal delivery in adaptation practices, this was partially attributed to skeletal staff. The institutions in this sector while not terming their action as adaptive practices, nevertheless they have been active in especially in the agricultural sector. Their adaptation actions comprise of acquisition and supply of inputs such as seeds, fertilizers, pesticides at the right time/season, providing farmers with knowledge of use of purchases from their stores/businesses and sourcing new inputs as requested by the farmers. They also have been active in environmental sustainability initiatives including controlled pollution of the environment, support to forestry related practices and use of telecommunication to share information on climate change. Private institutions can be more committed to sustainable development, depending on the values and priorities of the business persons or philanthropists involved. Concern with profit often gives precedence to short term

calculations. Usually private institutions cannot aggregate and dispose of such large amounts of resources as public institutions can. But what they have, can be used more flexibly, so this may offset the advantages of scale. (Uphoff n.d).

3.0 CONCLUSION

Overall all the institutions in the Mara River Basin have structures that enhance their capacity to foster climate change adaptation. The capacity of local institutions to foster climate adaptation responses in the Mara River Basin varies and relates more to their internal governance structures as opposed to being solely guided by the laid down international and national mandates. This capacity requires the institution to act on policies set up at different levels – international, regional, national, county and institution's - in order to operate efficiently and deliver the best adaptation practices. The existence of strong institutional structures is a prerequisite for sustainable adaptation to climate change. It entailed the existence of efficient and accountable systems, entrenched procedures and rules that promote participatory development, quick decision making, stakeholder confidence and ability to respond to change quickly.

Non-governmental organizations (NGOs) had the highest score of seventy five percent making them the best placed category of institutions to foster climate change adaptation, NGOs have all their structures being supportive of adaptation action and scored fifty eight percent and more in all the structural elements under assessment. NGOs will need to work more on their perceived legitimacy as their stakeholders' confidence is at a low of fifty eight percent only comparable to that of the private sector that stands at fifty percent. NGOs show dynamism in exchange of ideas with its external environment and this openness has led to them accessing increasing financial and material support. Community based organizations with an overall score of seventy percent are a close second, this can be attribute to their high enabling score of ninety percent in positive interpersonal relations and effective communication. Community based organizations are based within the community and have direct day to day links with the community, they are able to interact, observe and note the challenges right at the grassroots and address emerging climate change concerns on time. Government agencies and private sector institutions had final overall scores of sixty eight percent, in both these categories of institutions, coordination and stability in addition to procedures ranked very high at ninety percent and above. Both categories of institutions are thus considered to have structures that would enable address climate change adaptation.

Generally, private sector institutions, community based organizations and faith based organizations in the Basin have the most enabling structures with respect to productive processes which focus on delivery of climate change adaptation practices. These categories of institutions are more flexible, less bureaucratic, small in size and maintain close links with their stakeholders thus internally they are able to make faster decisions pertaining to climate change adaptation action.

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