

Mechanisms of Conflict Management over Common Pool Resources among the Residents of Lower River Nyando Floodplains, Kisumu County, Kenya

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Abstract

Conflict management is the process of reducing the negative and destructive capacity of conflict through a number of measures and by working with and through the parties involved in that conflict. However, scholars have not addressed how latent conflicts can be managed by the parties involved without any feeling of grievance or betrayal among the conflicting groups. This study was set to examine mechanisms of conflict management over common pool resources among residents of lower river Nyando floodplains and to explore the appropriate means of managing conflicts. The recurrence of conflicts in the lower River Nyando floodplains despite the interventions by different actors called to attention the need to address these conflicts. It was therefore necessary to undertake a study highlighting conflicts over common pool resources among the residents of lower River Nyando floodplains with a view to finding solutions to the continuous loss of human lives, environmental degradation, and displacement of persons among other issues. Descriptive research design was adopted for the study, and purposive and stratified sampling techniques were used to select 138 respondents who were interviewed using interview schedules. Cronbach's Alpha was used to test instrument's reliability and a coefficient of 0.76 was obtained. Key actors in conflict management were found to be the government, nongovernmental organizations, elders, community based organizations and religious leaders while conflicts that were common in the area arose from the use of land, water, fishing, and exploitation of papyrus. Litigation, negotiation, and coercion were the main mechanisms of managing conflicts. It was concluded that negotiation was the most appropriate mechanism in resolving conflicts over common pool resources. This study is beneficial to the government in that it identifies key actors in conflict management hence appropriate mitigating mechanisms can be implemented to enhance gainful management of conflicts in common pool resource areas.

Keywords: Conflict; Mechanism; Conflict Management; Common Pool Resource; Flood plains.

1. Introduction

A large proportion of the poorest rural households in the developing world depend critically on common-pool resources like forests, fisheries, and wetlands for their food and livelihood (DFID, 2007). Access to these resources means the difference between an adequate diet and malnutrition and the chance for a growing income and a means to invest in children's education besides being a route out of poverty (Sunderlin *et al.* 2005; WRI 2005). In developing countries where access to and use of renewable common-pool resources essential to rural livelihoods are highly contested, improving cooperation in their management is increasingly seen as an important element in strategies for peace building, conflict prevention, and longer-term social-ecological resilience (DFID, 2007; Feil *et al.* 2009; UNEP 2009). The recent surge in international outcry over land grabbing as countries and corporations aim to secure ownership or long-term use rights for agricultural land and primary resource extraction has increased attention to poor people's resource rights and livelihoods in policy debates over food security and poverty reduction (Anseeuw, *et al.* 2012). Le Meur, Hochet, Shem, and Touré (2006) averred that access to resources is made of competing claims, rights and duties, strategies and actors' logics. It is also controlled and regulated by various institutions, "traditional" (earth priest, chief, religious cults, age-groups organisations, etc.) and "modern" (elected bodies, or community). Allison *et al.* (2011); Mwangi, (2009); and Tole, (2010) observe that there has been a rise in the movement to protect and extend the rights of local communities to access and exploit forests, fisheries, and rangelands through community-based management.

When existing resource management institutions are unable to address resource competition, typically one or more factors are at play that reduce or negate their credibility and legitimacy in the eyes of key stakeholders, according to Ratner, Meinzen-Dick, May, and Hagland, (2013). Conflict management is seen by Miller (2003:8) as "a variety of approaches aimed at controlling or terminating feudal contestation of a common resource through constructive problem solving process. Tanner (2000), on the other hand, states that conflict management is the limitation, mitigation and/or containment of a conflict without necessarily solving it, while Wallensteen and Swanström (2002) argued that conflict management should imply a change from destructive to constructive, in the mode of interaction. Few studies, however, have sought to establish common processes

through which conflict resolution mechanisms are made accessible to various Common Pool Resource (CPR) user groups. According to Sanginga *et al.* (2007) there are three broad categories of conflict management mechanisms. These are customary approaches, legal or litigation process, administrative mechanisms, negotiation, and alternative conflict management systems.

Although conflicts over common pool resources had been recurring in the study area, no study had been conducted in the lower River Nyando floodplains to determine the connections between common pool resource exploitation and conflict management mechanisms. Institutions such as Lake Victoria Research Institute (VicRes), Lake Basin Development Authority (LBDA), Lake Victoria Environmental Management Programme (LVEMP), and Friends of Lake Victoria (OSIENALA) among others had concentrated on the development potential, opportunities and challenges of the floodplains with little focus on conflicts. Therefore this study sought to assess the mechanisms used for conflict management over common pool resources among the residents of lower River Nyando floodplains in Kisumu County, Kenya.

2. Literature Review

Conflict management is about bringing parties face-to-face to discuss and negotiate acceptable solutions, according to Beierle and Konisky (2001). It is the foundation for more effective conflict resolution between different actors Wallenstein (2002). It is important to identify types of resources over which conflicts may arise before resolution mechanisms are adopted (Meur *et al.* 2006). Many researchers have argued that types of conflicts that underpin rural livelihoods in agricultural landscapes like the subsistence use of land, water, fisheries, and forests have received far less attention from the environmental security community, (UNEP 2009; UNDP 2010; Kapur *et al.*, 2012; Young and Goldman 2013). Various mechanisms exist for conflict management all over the World. Sanginga, *et al.* (2007) suggested that a mechanism of moving beyond the ad hoc interventions (by the state) that typically characterize alternative dispute resolution with external facilitation or mediation, to the framework with features of the prevailing governance and involving the feuding communities is desired. The credibility of any conflict resolution mechanism as regards landed resources issues rests upon its capacity to produce or control rules, and arbitrate and solve land conflicts along a dialectic according to which the process of recognition of property rights by a politico-legal institution simultaneously constitutes a process of recognition of the legitimacy of this institution (Lund, 2002). A politico-legal institution constitutes an authority in land affairs only as long as individuals resort to it in case of disputes (Le Meur *et al.*, 2006).

Customary mechanisms (or communal mechanisms), legal and administrative mechanisms, and alternative approaches to conflict management were suggested as appropriate management approaches to conflicts. Customary mechanisms are desired for encouraging participation by community members and respect of local values and customs, provides familiarity of past experience, can be more accessible because of low cost, use of local language, flexibility in scheduling, decision-making is often based on collaboration, with consensus emerging from wide-ranging discussions and often fostering local reconciliation (Ratner, Meinzen-Dick, May, and Hagland, (2013). Collaborative management that engage stakeholders involved in the conflict can serve not only to promote positive social and ecological outcomes in the near future but can also improve the relationships among stakeholder groups and the capacity for learning and adaptation necessary in addressing future conflicts (Daniels and Walker 2001).

Customary or communal mechanisms, however, have shortcomings (Ratner, *et al* 2013). Not all people have equal access to customary conflict management practices owing to gender, class, caste, ethnic or other discriminations embodied in cultural differences. On one hand, communities are becoming more mixed, resulting in weakened authority and social relationships, while on the other hand, customary or communal mechanisms cannot accommodate conflicts among different communities, or between communities and government structures, or external organizations and thus legal or authoritative mechanism becomes handy (Adhikari and Adhikari, 2010). Group values is only important if power relationship among different conflicting players is considered (Edmunds and Wollenberg 2001; Jentoft, 2007).

The other mechanism is employment of legal and administrative mechanisms in managing conflict over CPR. This mechanism of conflict management is desired because it is officially established with supposedly well-defined procedures, and takes national interests, concerns, and issues into consideration, while decisions are legally binding (Ratner, *et al* 2013). But critics view this mechanism as inaccessible to the poor, women, marginalized groups and remote communities because of the cost, distance, language barriers, illiteracy and political discrimination. Judicial and technical specialists also often lack expertise, skills or interest in participatory natural resource management, and therefore can offer very little in terms of CPR conflict management (*Ibid*, 2013).

Finally, Sanginga, *et al.* (2007) suggested an alternative conflict management process from customary/communal and legal/administrative one. This conflict management mechanism is desired because it promotes conflict management and resolution by building on shared interests and finding points of agreement; the processes also resemble those already existing in many conflict management systems all over the World so

that success stories can be shared for the benefit of conflicting communities. It has low costs and is flexible to the prevailing situations and it also fosters a sense of ownership in the solution and its process of implementation. Advocates of this approach also argue that it (the approach) emphasizes building capacity within communities so that local people can become more effective facilitators and handlers of conflict (Olson, 2006). However, pundits have poured cold water on this mechanism, by arguing that it is prone to encounter difficulties in getting all stakeholders to the bargaining table, and may be difficult to overcome power differences among stakeholders because some groups may remain marginalized. At the same time, decisions arrived at may not always be binding, while some practitioners may try to use methods developed in other countries without adapting them to the local contexts.

3. Methodology

3.1 Study Area

This study was done in lower River Nyando floodplains of Nyando District, Kisumu County, Kenya. Administratively, Lower River Nyando Flood Plains is found in Lower Nyakach and Nyando divisions (GoK, 2002). The area is served by two rivers; Nyando and Awach which during rainy seasons cause floods in Lower Nyando Flood Plains. Under normal circumstances, however, the two rivers provide water for rice growing by irrigation. Sondu River also provides water for running Sondu-Miri Hydro Power Station in Nyakach. This power station generates 60 megawatts of electricity.

Soils and climatic conditions of the district are suitable for sugarcane growing in Muhoroni, Miwani and parts of Nyando Division. Sugarcane therefore forms the main cash crop in the district. The swamps along rivers Nyando and Awach in Nyando and Lower Nyakach are best suited for rice growing under irrigation. The rest of the Kano Plain with its black cotton soil is most suited for cotton production. The level of access to safe drinking water is another issue of great concern. The area is prone to flooding during the wet season thus resulting in contamination of water sources. Industrial discharges into the lake and vehicle washing along the shores have contaminated water for the residents. This study was conducted in two locations namely: Wawidhi and North Nyakach. In North Nyakach location, the study was conducted in Gem Nam and Gem Rae sub-locations; while within Wawidhi location, the study was conducted in Magina, Kakola and Kochogo sub-locations. Figure 1 shows the map where the study was conducted.

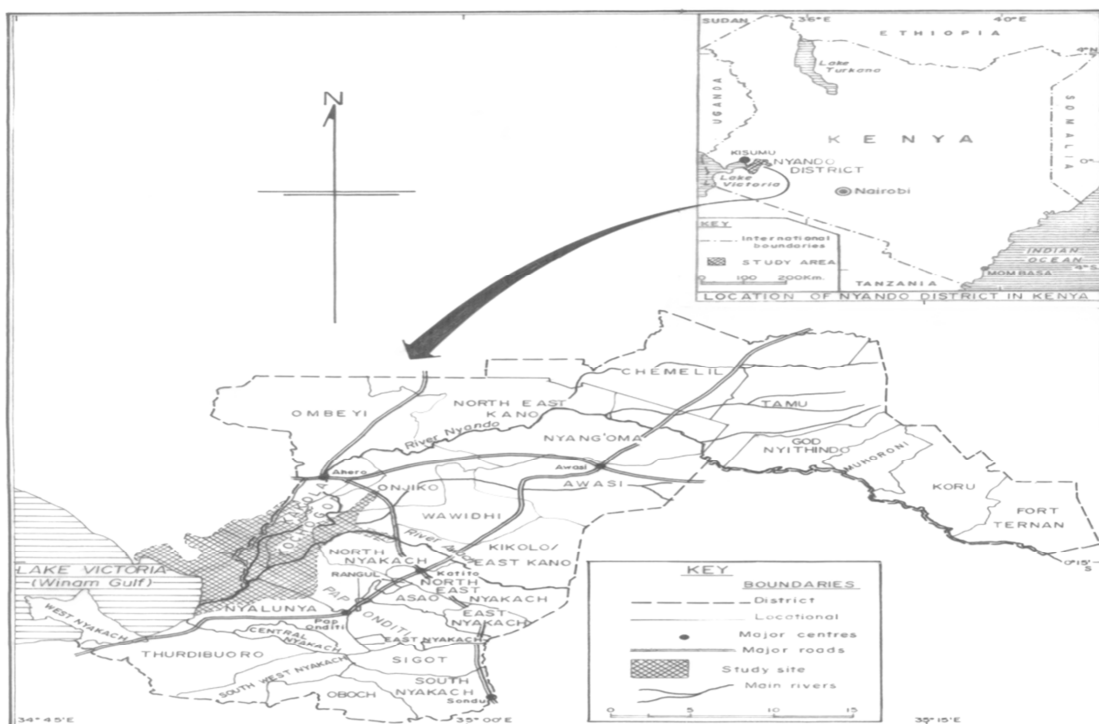


Figure 1: Map of the Study Area

3.2 Study Population and Sampling Procedure

Stratified and purposive random sampling techniques were used to select 138 respondents from the 6370 households in the area. In purposive sampling espoused by Mugenda and Mugenda (2003), the researcher's judgment in selecting the respondents from whom data is to be collected is acceptable.

3.3 Data Collection Instruments and procedure

This study used interview schedules to gather the necessary data from the heads of households sampled from the families living within the study area. Administration of interview schedules allowed the researcher to make clarifications on questions not clearly understood by the respondents.

Instruments used to collect the required data were pilot tested in Ombeyi sub-location far away from the area under study since it had similar characteristics. The instruments yielded Cronbach's reliability coefficient alpha value of 0.76, which was acceptable. From the attached map, Ombeyi sub-location is far from the areas under study and this reduced the effect of contamination. The reliability and validity of the instruments were obtained through checking for representativeness of data, checking for bias due to observer bias or the influence of the researcher on the research situation, cross-check data with evidence from other independent sources and comparing and contrasting the data during the stage of qualitative investigation on the conflicts. Through pilot testing, the instruments were reorganized and some parts deleted so as to get a working instrument. The final instrument obtained was the one used to collect the required data.

3.4. Data Analysis and Results Presentation

Based on the research instruments and data collected, data was organized, processed and analysed using descriptive statistics. In the field, the researcher ensured that questions were answered correctly to give accurate information. The researcher was therefore keen to find out how the people of lower River Nyando floodplains were responding to the questions asked according to the study objectives. Data was coded by assigning numerical values to the qualitative data for analysis. According to Charmaz (1983), the disassembling and reassembling of data occurs through the coding process. Researchers therefore use codes to pull together and categorise a series of otherwise discrete events, statements and observations which they identify in the data. This study used descriptive statistics (tables, frequencies and graphs) to organize and describe the sampled population. Data was processed on computer using Statistical Package for Social Sciences (SPSS).

4. Results and Discussions

4.1 Results

4.1.1 Conflicts over Water

It was imperative to assess the frequency of conflicts over water as one of the resources in the flood plain. Water is an essential resource since its use affected various activities on a daily basis in the flood plain. For the purpose of this study, conflicts over water resources were categorized on a weekly, monthly and quarterly basis as shown in table 1.

Table 1: Conflicts over Water

Frequency of Conflict	Frequency	Percent
Weekly	22	16
Quarterly	47	34
Monthly	69	50
Total	138	100

Table 1 illustrates that 50% of the respondents indicated that conflicts over water occurred on a monthly basis while 34% reported a quarterly basis and finally 16% weekly. There were different user groups of water resources and this sometimes led to conflicts between and among different users such as farmers, fishermen, livestock keepers and general users.

4.1.2 Conflicts over Papyrus and Related Resources

Papyrus was one of the key resources exploited by the residents of the flood plain. Other reeds and grasses including the water hyacinth were also exploited. Knowledge of the frequency of conflicts over these resources would help in proposing interventions in a timely manner. Table 2 illustrates the responses regarding the frequencies of conflicts over papyrus and related resources.

Table 2: Frequency of Conflicts over Papyrus and Related Resources

Frequency of Conflict	Frequency	Percent
Weekly	67	49
Monthly	71	51
Total	138	100

From table 2 above, 51% of the respondents felt that conflicts over papyrus and related resources occurred on a monthly basis whereas 49% of the respondents indicated that conflicts occurred weekly over these resources.

4.1.3 Conflicts over Fish Resources

Fishing was one of the major economic activities among the residents of lower River Nyando floodplain. The infestation of the lake by the water hyacinth, the recession of the lake water which reduced fishing grounds, the diminishing fish stocks and the government regulation especially fishing ban in certain periods made fishing a difficult economic undertaking. Table 3 shows the frequency of conflicts over fish resources.

Table 3: Frequency of Conflicts over Fish Resources

Duration	Frequency	Percent
Weekly	14	10
Monthly	25	18
Quarterly	59	43
Semi-Annually	26	19
Annually	14	10
Total	138	100

As shown in table 3 above, 59 respondents (43%) reported quarterly frequency of conflicts followed by 26 respondents (19%) indicating semi-annually frequency, 25 respondents (18%) monthly frequency, and 14 respondents (10%) indicating weekly and annually frequency respectively.

4.1.4 Conflicts over Land Resources

It was important to note that farmers, livestock keepers and even papyrus and reeds harvesters depended on land for their livelihood. The importance and centrality of land among the residents of the flood plain could not be overemphasized. Figure 2 shows the frequency of conflicts over land.

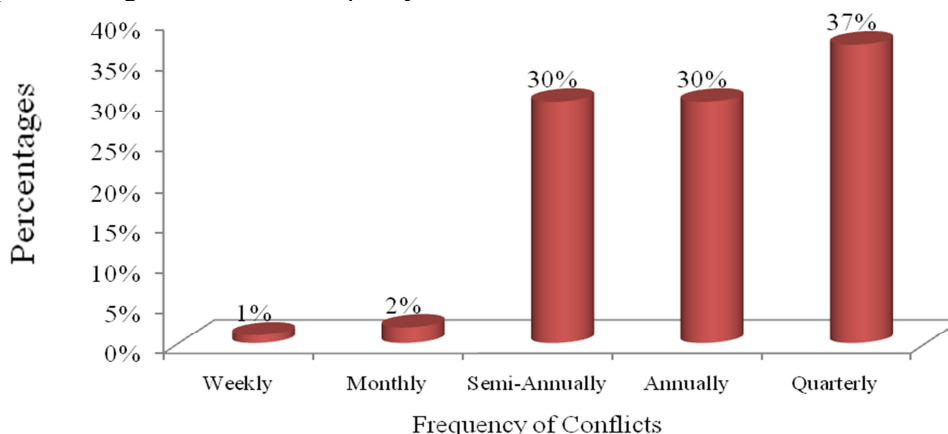


Figure 2: Frequency of Conflicts over Land Resources

From figure 2 above, it was evident that 37% of the respondents indicated quarterly frequency of conflicts over land resources, 30 respondents annually and semi-annually respectively, 2% monthly whereas 1% weekly.

4.2 Management of Conflicts

4.2.1 Management of Conflicts over Water

This study also established that the residents of lower River Nyando floodplains employed different conflict management mechanisms in addressing conflicts over water. The respondents employed various conflict management mechanisms such as litigation, negotiation, compromise and coercion to resolve conflicts over water. The frequencies in which various conflict management mechanisms are employed by the residents are illustrated by Table 4.

Table 4: Conflict Management and Conflict over Water.

Mechanism of Managing Conflicts	Occurrence of Conflict over Water					
	Yes		No		Total	
	F	%	F	%	F	%
Litigation	26	19	03	02	29	21
Negotiation	52	38	05	04	57	42
Compromise	28	20	07	05	35	25
Coercion	16	12	01	00	17	12
Total	122	89	16	11	138	100

According to table 4 above, negotiations were the most (42%) common method of solving water-based conflicts. Compromise (25%) followed after negotiations, thereafter litigation (21%) and lastly, least (12%) employed management method for conflict over water was found to be coercion.

4.2.3 Management of Conflicts over Fishing Resources

The study also sought to establish different conflict management mechanisms to address conflicts over fishing resources, as shown in Table 5.

Table 5: Conflict Management and Conflict over Fish

Mechanism of Managing Conflicts	Occurrence of Conflict over Fishing					
	Yes			No		
	F	%	F	%	Total F	Total %
Litigation	12	09	01	01	13	10
Negotiation	86	62	06	04	92	66
Compromise	26	19	04	03	30	22
Coercion	02	01	01	01	03	02
Total	126	91	12	09	138	100

According to table 5 above, negotiation is the most (66%) common methods of managing conflicts over fishing resources. Other methods of managing conflicts over fishing resources were compromise (22%), litigation (10%), and coercion (02%). Coercion was the least preferred method of managing conflicts over fishing resources as a common pool resource.

4.2.4 Management of Conflicts over Papyrus and Related Resources

Although conflicts over common pool resources were prevalent in the area, communities appeared not to prefer antagonistic mechanisms of managing conflict, as is illustrated by Table 6.

Table 6: Conflict Management and Conflict over Papyrus

Mechanism of Managing Conflicts	Occurrence of Conflict over Papyrus					
	Yes			No		
	F	%	F	%	Total F	Total %
Litigation	16	12	04	03	20	15
Negotiation	50	36	05	03	55	39
Compromise	41	30	07	05	48	35
Coercion	07	05	08	06	15	11
Total	114	83	24	17	138	100

Negotiations (39%) and compromise (35%) still remained the leading mechanisms of managing conflicts over papyrus and related resources as is illustrated by Table 6. There were cases (15%) of conflicts presented to court for judicial determination (litigation), and coercion (11%) was the least employed mechanisms of managing conflict over papyrus and related resources.

4.2.5 Management of Conflicts over Land

Table 7 shows that litigation, negotiation, compromise and coercion as conflict management mechanisms were used by majority of the residents in resolving conflicts over land. Most of conflicts over land were managed through coercion. The implication of this was that people remained hostile to each other since coercion in many times led to fatal injuries, death and destruction of people's livelihoods. As demonstrated in table 7, the use of coercion left relations strained but also people remained waiting for opportunities to revenge. Coercion was followed by compromise, litigation and negotiation respectively.

Table 7: Conflict Management and Conflict over Land

Mechanism of Managing Conflicts	Occurrence of Conflict over Land					
	Yes			No		
	F	%	F	%	Total F	Total %
Litigation	12	09	01	0	13	09
Negotiation	02	01	06	06	08	07
Compromise	26	19	04	03	30	22
Coercion	86	62	01	0	63	62
Total	126	91	12	09	138	100

4.3 Actors in Conflict Management

The respondents suggested the government, NGOs, CBOs, Elders and Religious leaders as actors in conflict management as indicated in table 8. Table 8 indicated that 60 respondents of 44% preferred the government to

manage the conflicts, 36 respondents of 26% suggested elders, 24 respondents of 17% NGOs, 12 respondents of 9% religious leaders and finally 6 respondents of 4% indicated CBOs. Majority of the respondents felt that the government is best suited to manage conflicts.

Table 8: Actors in Conflict Management

Actors	Frequency	Percent
Government	60	44
NGOs	24	17
CBOs	06	04
Elders	36	26
Religious Leaders	12	09
Total	138	100

4.3.1 Government in Conflict Management

The government plays a pivotal role in conflict management because it is mandated by the constitution to provide security and maintain law and order. It was instructive to note that even the other actors in conflict management appealed to the government to provide security and ensure residents live in peace and harmony. The role of the government in conflict management involved peace building, policy development, prosecution and provision of security as illustrated in figure 3. Figure 3 shows that majority of the respondents indicated provision of security as the role of the government in conflict management by 61%. This was followed by prosecution with 20% response, peace building 13% and lastly policy development 7%.

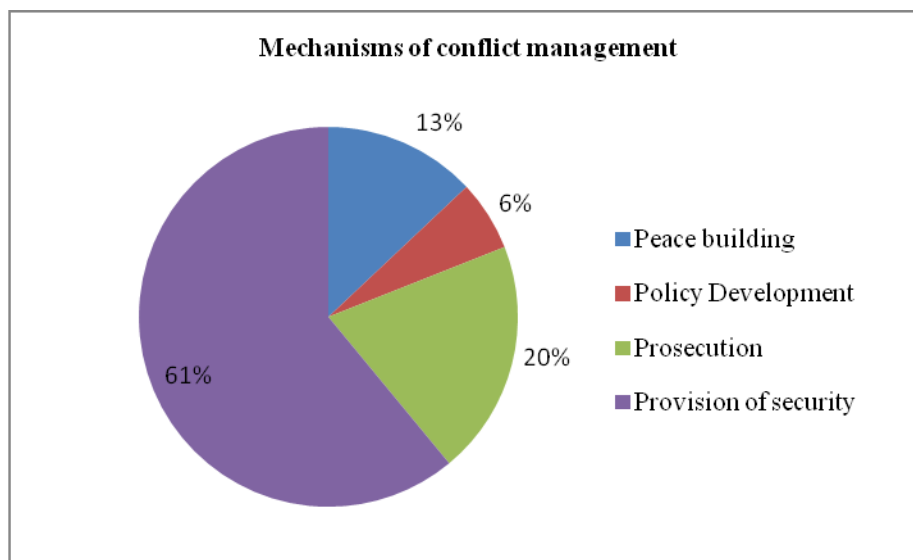


Figure 3: The Role of the Government in Conflict Management

4.3.2 CBOs and NGOs in Conflict Management

CBOs and NGOs were active actors in conflict management in the floodplain. They helped the residents raise their standards of life with finances to start small and medium scale enterprises, advice and training. This endeared them to the residents who saw them as friendly partners who shared experiences and sought solutions together. As opposed to CBOs, NGOs were outsider impartial and not influenced by the local circumstances. The role of CBOs and NGOs in conflict management is illustrated in table 9. Table 9 indicates that majority of the respondents who accounted for 76% preferred policy advocacy whereas 24% of the respondents reported peace building as the role of the CBOs and NGOs in conflict management.

Table 9: The role of CBOs and NGOs in Conflict Management

Role	Frequency	Percent
Peace building	33	24
Policy advocacy	105	76
Total	138	100

4.3.3 Elders and Religious Leaders in Conflict Management

Elders are considered custodians of wisdom, customs, tradition and history of the community. This is because conflict management requires knowledge of the problem, the history and tradition of the community and the relevant skills. Religious leaders on the other hand provide spiritual leadership and guidance and are therefore considered neutral. The role of elders and religious leaders included policy advocacy and peace building as illustrated in table 10. From table 10, it was evident that majority of the respondents preferred peace building (78%) while 22% respondents suggested policy advocacy. Given the status, respect and responsibilities given to elders and religious leaders by members of the society, it was expected that majority of the respondents would prefer their peace building role to other roles.

Table 10: Role of Elders and Religious Leaders in Conflict Management

Conflict Management	Frequency	Percent
Policy Advocacy	30	22
Peace Building	108	78
Total	138	100

5 Discussions and Conclusions

5.1 Discussions

The study determined that theft of papyrus and related resources frequently turned into fully blown fights between the communities since the public more often than not resorted to lynching the suspected thief. This has failed to foster good relations among rival clans, hence a recipe for future hostilities. It has been established by this study that the government achieved greatest success rate in its resolution of conflicts caused by exploitation and use of papyrus and related resources. This confirmed that the government and community elders are always critical players in prevention and resolution of conflicts relating to exploitation and use of common pool resources within the African societies. This corresponds with Le Muer *et al.*'s (2006) statement that the government has a politico-legal institution constitutes an authority in land affairs only as long as individuals resort to it in case of disputes (Lund, 2002). The government has a unique role to play in management of conflicts over common pool resources. These include peace building, development of policy to regulate exploitation and use of the resources, prosecution of persons going against regulations, and criminals who employ unorthodox means to access the resources and provision of general security to property and users of common pool resources.

The findings of this study therefore concur with a growing number of scholars and practitioners who recognize the crucial role played by governments in natural resource management. For instance, Ostrom (1990) argued that policies emanating from central governments should generally give local communities rights over the natural resources where they live. Without appropriate and adequate policy on resource ownership and exploitation as the case currently is at Lower River Nyando floodplain, conflicts over these resources become inevitable. However, the role of the elders on the management of conflicts over common pool resources differs with that of Bernstein (1992). In an examination of extralegal mechanisms of managing conflicts over common pool resources, Bernstein (1992) highlights how long-standing norms within the community of diamond traders govern dispute resolution using commonly accepted rules and practices and private arbitration.

The study also established that the success of elders in conflict management depends largely on social homogeneity to the operation of norms within ethnically homogeneous user groups. Inhabitants from Lower River Nyando floodplain are immigrants from other parts of Luo Nyanza. Elders congregate along clans, some of which have long standing hostilities against each other. It is such lack of homogeneity and long standing mistrusts and stereotypes among clans that complicate the role of community elders in managing conflicts over common-pool resources in the area leading to their failure in achieving sustainable peaceful exploitation of the area's resources. This resonates with Kuba & Lentz's (2006) observation that the history of mobility and settlement of the different interacting groups continually reshapes the politics of belonging amongst such groups.

5.2 Conclusions

With regard to conflict management, a number of mechanisms have been put in place over the years to try and resolve conflicts among the residents of lower River Nyando floodplains. Actors in conflict management over common pool resources included the government, non-governmental organizations, community based organizations, community elders and religious leaders and to a lesser extent, household heads. The role of the government in management of conflicts over common pool resources included peace building, development of policy to regulate exploitation of the resources, prosecution of persons going against regulations and criminals who employ unorthodox means to access the resources and provisions of general security.

This study established that community elders contributed to management of conflict over common pool resources through advocating for policy development on resource exploitation and peace building. Elders of

the various groups come together and set up a special council with membership drawn from both sides of the divide. The group then leads reconciliation efforts based on circumstantial evidence, seeking views and opinions of neighbors, holding private consultations, visiting dispute scenes, cross-examining witnesses and considering solutions. This has borne fruit but has lacked sustainability due to the deep suspicions among members of the groups involved. Conflict management by elders lack structures such as office space, recognizable hierarchical leaderships and records of past peace building activities.

The provincial administration through the Assistant Chiefs, Chiefs, District Officers, District Commissioners and Provincial Commissioners have also been heavily involved especially in bringing order when there was a conflict and then assembling the elders for peace making meetings. This served a good purpose but had been viewed by residents as being more of reactionary endeavour.

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