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An Examination of the Nature of Sand Harvesting Conflicts and their Influence on Poverty Alleviation Initiatives in Makueni County, Kenya

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Abstract
Though natural resources play an important role in the economies of many countries, conflicts associated with their access continue to contribute to poverty in many African countries. While studies confirm conflict-poverty nexus for high value natural resources, scanty information is available on the low value resources. This study, therefore, examined one such low value resource – sand. The objective was to examine the nature of sand harvesting conflicts and their influence on poverty alleviation initiatives in Makueni County. The study employed descriptive and historical designs. The study was guided by the Resource Curse and Poverty Theories. The study sample comprised of 420 sand harvesters and several key informants. Data collection was done using questionnaires, interviews, focus group discussions and observation. Presentation of data was done using both quantitative and qualitative approaches. The study findings established that sand harvesting in Makueni County has been linked to violent conflicts which left many people either maimed, killed or without their property. These had increased poverty levels in the County. The study therefore recommends for establishment of appropriate institutions to mitigate on the conflicts in order to ensure that sand harvesting provides contributes to poverty alleviation in Makueni County.
Keywords: sand harvesting, resource use conflicts, nature of conflicts, poverty alleviation

INTRODUCTION

1.0 Background to the Study

Natural resources are very important to communities throughout the world. Half of the world's population is directly dependent on local natural resources with economies of some countries such as Malawi and Burkina Faso and Uganda depending on natural resources up to 89%, 99% and 82% of their GDP respectively (Reed, 2001:33; United State Institute of Peace, 2007:6). Paul Collier, an expert on the economics of civil war, estimates that close to fifty armed conflicts active in 2001 had a strong link to natural resource exploitation (United States Institute of Peace, 2007: 3). In the United Nations Secretary General's seminal report to the General Assembly and the Security Council in 1998 on the causes of conflict and the promotion of durable peace and sustainable development in Africa, among the key factors identified as fuelling conflict was the illegal exploitation of natural resources (The United Nations Office of the Special Adviser on Africa, 2006:7).

Kenya has not been prone to conflicts attributable to natural resource use. Some examples of resource related conflict include early 1950s Mau Mau movement (Wangari, 2008:68) and the 2007/2008 post-election violence (Human Right Watch, 2013:13). Though there are many studies on high value natural resources such as gold and diamond and how their exploitation can contribute either positively or negatively to conflict and poverty, very little in terms of studies has been done in relation to low value resources in order to understand how they can be exploited while avoiding conflicts and poverty. An example of such low value resource is sand.

Sand is a natural resource that is increasingly becoming important, not only in Kenya but the whole world. Some studies have argued that it is *the second most consumed natural resource after water* (Coastal Care, 2015). Kenya's National Environment Management Authority (NEMA) among other government institutions recognizes sand as 'an important natural resource whose demand has greatly risen' (National Environment Management Authority, n.d). This has been precipitated by several factors which include pressure to build infrastructure in order to support international competitiveness, rapidly developing economy, industrial development, population growth, and increasingly high standard of living (Crispin and Jegede, 2000:115; Kim, 2007:2).

In Kenya, sand is harvesting began in the 1950's with over 90% of annual sand coming from river source (Padmalal and Maya, 2014:60). Sand harvesting also occurs in different parts of the country for example: around Mai Mahiu in Nakuru County, Masinga in Machakos County, Mbeere, Isiolo County and Mombasa County. Makueni County, unlike many other counties in Kenya where sand is harvested, has uniquely witnessed an increase in cases of sand harvesting related conflicts. These cases have 'escalated to critical levels with very

heavy security implications' (Government of Kenya, Office of the Prime Minister, 2012:11).

For example: On 14th December, 2011 in Kitovo village in Makueni County, one person lost his life while another almost lost his both arms in sand related conflicts (You Tube, December 15th, 2011). Makueni County Early Warning Bulletin of January, 2012, reported that in Nzaui and Mukaa areas, conflicts had led to four deaths, burning of lorries and motor cycles, looting of property, rapes and displacement of some households who had to run away from their settlement areas to safety (Government of Kenya, Office of the Prime Minister, 2012:11). The impeachment of Makueni County Governor Prof. Kibutha Kibwana, in 2015 has partly been attributed to sand harvesting politics.

1.2 Statement of the Problem

Recent research on natural resources use conflicts suggests that prevalence of both violent and non-violent conflicts are increasing in Africa (Okoth and Ogot, 2008: 30). Mildner, *et al.,* (2011:156) have argued that natural resources are the second-most frequent conflict item in the 363 conflicts recorded in 2010.

Studies on natural resource use conflicts and poverty suggest that conflicts and poverty remain intrinsically intertwined (Draman, 2003:5). The poverty link to natural resource conflicts, however, can only be argued to apply mainly to high value natural resources such as oil, gold, silver, diamond, land and water, where researchers have concentrated much of their studies. The same cannot be argued for the low value resources such as sand in which there is apparent lack of national economic interest and therefore lack of information (Mbugua, 2012:10; Republic of Kenya, 2013:20).

In Kenya, conflicts associated with sand harvesting have mainly affected Makueni County where in the recent past there has been an increase in injuries, maiming, destruction of property and deaths; factors which call for urgent intervention. Despite this knowledge, there have been no efforts in terms of research to understand the types, the causes and the significance of these conflicts in influencing poverty alleviation initiatives.

2.0 LITERATURE REVIEW

The origins of conflicts related to resources are often complex and diverse. They are not only embedded in local cultural systems, but are also connected to wider social, economic and political processes. The intensity of conflict varies greatly, from confusion and frustration among members of a community to violent clashes among groups over resource ownership, rights and responsibilities (UNEP, 2004:21). Conflict related to resources can either be latent, meaning potential for conflict exists but is not yet developed or it could be open. When open or latent conflicts are not dealt with, they could escalate to structural conflicts which often lie dormant until awakened by other factors.

Sand harvesting, conflicts are often witnessed between the 'exploited' (sand harvesters) and the 'exploiters' (brokers, middlemen and transporters) an interaction which often leads to conflicts. The more the subordinate (sand harvesters) become aware of their true collective interests, the more likely they are to question the legitimacy of the unequal distribution of scarce resources, and the more likely they are to organize and initiate overt conflict against dominant segments of a system. As witnessed in Makueni County, the more violent and frequent the conflict, the greater the structural changes of the system and the redistribution of scarce resources. This is exemplified by the proposed Makueni County sand harvesting bill which allocates more income to sand harvesters.

Conflict over natural resources can be explained by Resource Curse Theory. Resource Curse is an economic theory which states that countries with abundant natural resources have relatively smaller economic growth than resource-poor countries (Van Gelder, 2012: 5). According to this theory, abundance of natural resources is seen as a 'curse' rather than a 'blessing'. The general thrust of the resource curse theory is the argument that natural resource abundance leads to poor economic performance, growth collapse, high levels of corruption, poor governance and greater violence (Liebenthal *et al*, 2003:1).

On their part, Dollard, *et al.,* (1939) saw conflicts related to resources as emanating from frustration from getting access to or proceeds from resources. According to Dollard and his team of researchers, the occurrence of aggressive behavior always presupposed the existence of frustration and the existence of frustration always leads to some form of aggression (Robarchek, 1977:763; Jody and Craig, 1995:360). Frustration in this context was defined as thwarting of a goal, the process of blocking a person's attainment of a goal or the reaction to such blocking. The amount of frustration and subsequent aggression depended on how near the individual is to the goal when blocked. Jeong (2000:7) has observed that if the aggression cannot be expressed against the real source of frustration, displaced hostilities can be targeted to substitutive objects. This could be the case with sand harvesters who, sometimes, attack sand transporters instead of other sand harvester who they are in conflict with.

The main criticism of their assumption is the thinking that aggression is always based on frustration and that frustration always leads to aggression. These claims make frustration both a necessary and sufficient condition for aggression. However, frustration is not a sufficient but a necessary condition for hostility and

aggression. This study, borrowing from this assumption argued that though the sand harvesters are the main players in sand business, they are 'shortchanged' by brokers, transporters and middlemen, a situation that leads to frustration, aggression and later conflicts. If these conflicts are not checked, they later can contribute to increase of poverty.

3.0 Research Methodology

This study used both descriptive and historical research designs. In advocating for descriptive research design, Mugenda and Mugenda (2003:160) and Kombo and Tromp, (2006:71) argue that descriptive research determines and reports the way things are. Historical research design is the study of a problem that requires collecting information from the past (Mugenda & Mugenda, 2003:166 and Okoth, 2012: 37-55) view. Given that historical design aims at arriving at conclusions concerning causes, effects or trends of past occurrences that may explain present events and anticipate future events, the design was chosen mainly because in Makueni County, sand harvesting remains illegal since 26th April, 2013.

The study population entailed all those people involved in sand harvesting in Makueni County. Kombo and Tromp (2006:77) define population as the entire group of persons or elements that have at least one thing in common. The population thus involved: key informants in the study namely sand brokers, sand transporters, private land owners bordering the rivers, Makueni County Commissioner, area chiefs, area OCPD, NEMA officer, community elders and Makueni minister for environment and natural resources.

To come up with the study sample, sand harvesters were grouped into eleven clusters based on the site they did their harvesting. Snow ball sampling was used to identify the harvesters based on the previous known sand harvesting site. The study also used purposive sampling to select key informants such as brokers, sand transporters, land owners bordering rivers where sand is harvested, county commissioner, NEMA officer, the area chiefs and Makueni County minister for environment and natural resources. The main strength of using purposive sampling lies in selecting information rich cases for depth analysis related to the central issues being studied. (Babbie, 2001:179; Kombo and Tromp, 2006:82).

A pilot study done on 8th of December, 2014 identified eleven sites where commercial sand harvesting was done in Makueni County. These areas were selected purposively as the study sites. These regions include Mangara, Kasikeu, Musaani, Yimba, Ndumbeni, Mbulutini, Kabuthu, Mwangine, Kiongwani, Kima and Kambi. From each region, snow ball sampling was used to select respondents (sand harvesters) to be interviewed.

As suggested by Kasomo, (2006:31), Kombo and Tromp, (2006:78) and Gay (1987:119) on standards rules of sampling in the descriptive design, the sample was picked from 10% of all people involved in sand harvesting. Using this formula, a sample of 420 respondents was arrived at.

A two days detailed reconnaissance of the study area was undertaken to facilitate familiarization of the study area, delineation and fine tuning of the study scope, to understand its challenges and opportunities.

The study collected two categories of data, primary and secondary. Primary data were collected through questionnaires, interviews, focused group discussions and observation. Sources of secondary data, which is data collected by someone else and which had already passed through the statistical process (Kothari, 2004:95), included desktop reviews, documentation, archival records, former interviews and previous direct observations.

This study employed both qualitative and quantitative approaches to data collection in order to confirm, refute, enrich, and explain the findings of one approach with those of the other (Carvalho and White, 1997:3). Davis and Baulch (2009:4) while supporting the use of mixed study methods argue that there is a need of integrating both qualitative and quantitative method especially in poverty studies because they offer 'an opportunity to learn more about the complex reality of poverty and can open up new avenues of learning about poverty, with implications for improved anti-poverty interventions.'

The questionnaire items were dichotomous, some requiring yes or no answers, multiple choices or having alternative answers listed or open ended questions. Out of the 420 questionnaires issued, 360 were fully filled. This showed a response rate of 85.71% which was considered sufficient for analysis. Mugenda and Mugenda (2003: 83) have argued that the response rate of 50% is adequate, 60% is good and 70% and over is very good.

In this study, the interviews were conducted with sand transporters, sand brokers, area chiefs, OCPD, County commissioner, NEMA officer, private land owners, community elders, and Makueni minister for environment with the aid of an interview schedule. This offered a possibility of modifying line of inquiry, follow up interesting response and investigating underlying motives. The focus group discussions were carefully planned using an unstructured guide. A group consisted of 6 people who shared common characteristics such as age, years of involvement in sand harvesting, and region harvesters come from. Two focus group discussions were conducted: one comprised of men sub-brokers and the second comprised of women involved in sand harvesting at Kasikeu and Mangara where majority of sand harvesters come from.

The primary goal of observation in this study was to describe behavior. Naturalistic observation

provided the first step in discovering why people behaved the way they did (Shaughnessy *et al*, 2003:88). The observation checklist had three observation items.

To ensure effectiveness of the data collection tools, a pre-test was carried out to test for their validity and reliability. To test for reliability of instruments, a test-retest method was used (Shaughnessy *et al,* 2003:151). This involved administering the same questionnaire twice within an interval of one week. Validity test checks whether or not the measurement tools collect the data required to answer the research question (Somekh and Lewin, 2005:216). A one day tools validation seminar was held on 19th October, 2014. Six people attended the seminar including one of the supervisors and the researchers' from different universities who were at various stages in their doctorate studies. After going through all the tools and making adjustments, comparative scoring was done. The results showed a reliability coefficient of 0.85, this implies that there was high a degree of reliability of the tools (Mugenda and Mugenda, 2003:96; Shaughnessy, *et al.,* 2003:151).

Selection of research assistants was based on their ability to communicate well and fluency in English, Kiswahili and Kikamba (the local language in Makueni. The research assistants were trained for one day before questionnaire pretesting was done.

To enable data analysis, field data were coded, classified and tabulated so that they were amenable to analysis (Kerlinger, 1973:34). Quantitative data was analysed using the Statistical Package of Social Science (SPSS) – version 17. Two types of analysis were made descriptive (by use of means, modes, percentages and frequencies) and inferential analysis. In qualitative data analysis, content analysis was used to identify emerging patterns using themes that emanated from the response. Integrating qualitative and quantitative methodologies was expected to result into better analysis, better policy recommendations and better action (Carvalho and White, 1997:18).

In this study, ethical consideration was informed by the American Psychological Association (APA) ethics code which provides 'a common set of values upon which researchers build their professional and scientific work' (Shaughnessy *et al*, 2003:45). The researcher was also informed by scholars such as Kombo and Tromp, and Mugenda and Mugenda (2010:12-15; 2006:106; 2003:190). They advise that participants are given full information about the research including the reasons they were chosen and the implications of their participation. In addition, the researcher ensured that the participants' privacy, confidentiality and anonymity were guaranteed by either concealing their identity or changing their names. Consent forms and a covering letter were provided to participants. As a condition for any research in Kenya, the researcher obtained a research permit from the National Commission for Science, Technology and Innovation.

4.0 FINDINGS AND DISCUSSION

The discussion of findings was divided into subsections which discuss: (i) the nature of conflicts, and (ii) the effects of the conflicts on poverty alleviation initiatives.

4.1 Nature of Sand Related Conflicts

The respondents were asked to indicate whether the sand harvesting related conflicts in Makueni County had been violent or non-violent. The study found out that 216 respondent (60%) of the respondents, indicated that the conflicts were violent while 144 or 40% indicated that the conflicts were non-violent (Figure 4.1).

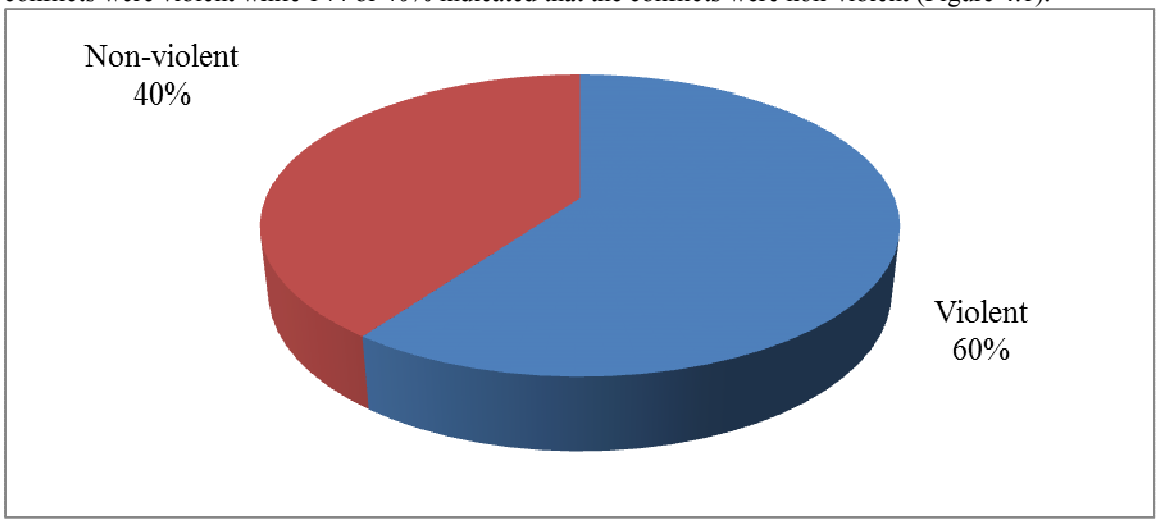

Figure 4.1 The Nature of Conflicts
Source: Field Data, 2015

Violent conflict in this study was considered as physical which means direct assault on an individual or

group. Non-violent conflict included psychological, verbal which involves use of words which invokes injury and non-verbal which involves use of gestures or signs. Asked to explain why many conflicts were violent, the local chief explained:

> *People here think the best way to achieve their goal is through violent conflict. There is a tendency to assume that non-violent methods of solving conflicts don't work. Besides, we don't have sufficient mechanism for stopping violent conflicts (Interview with the Chief at Kiongwani on 2nd February, 2015).*

Opongo (2009:77) is of the opinion that in conflict analysis, it is important to identify the conflict at its latent stage when condition likely to cause conflict begin to emerge such as marginalization of one group or party, economic, social, religious or political injustice. If nothing is done at this stage Opongo adds, then there could be full eruption of the conflict. Asked to comment on trends of the conflicts, majority of members of focus group discussion held at Mangara argued that trends are changing for worse. A lady argued that:

> *Initially, when sand harvesting began in the 1980, we used to have no conflict associated with it. Conflict related to sand harvesting is a recent phenomenon which began in the year 2000. Despite this challenge, we have not seen any serious effort towards conflict resolution from the central government or the county government. Corruption is also negating any effort toward successful management of our sand resources (Focus Group Discussion with Women at Mangara on 27th February, 2015).*

However, another lady sand harvester who argued that trends are changing for better had this to say:

> *Conflict on sand harvesting will reduce because there is increase in level of literacy especially among the youth in this area. NGOs and other actors are now coming out and are helping in resolving conflict. There is also a lot of awareness now on the need to manage our resources well. People are also being trained on the need to have alternative sources of income for example farming or starting small businesses (Focus Group Discussion with Women at Mangara on 27th February, 2015).*

4.2 Influence of the Conflicts on Poverty alleviation

To establish the influence of conflicts arising from sand harvesting, the respondents were asked to indicate the extent to which the conflicts led to different outcomes. The study found out that 252 out 360 respondents, representing 70% indicated that the conflicts led to physical injuries to a very large extent. The findings further revealed that 187 respondent or 51.9% of the respondents thought that the conflicts led to non-attendance to school by children to a very large extent 51.9% and that 139 sand harvesters which is equal to 38.6% agreed that conflict led to animosity to a very large extent. The less significant effects of conflicts which were likely to occur to 'no extent at all' included protracted court cases which accounted for 35.6% and displacement of persons at 27.2%. The findings are as presented in Table 4.1.

Table 4.1 Effects of Conflicts Arising from Sand Harvesting

Effects of Conflicts	**Very large extent**		**Large extent**		**Neutral**		**Small extent**		**No extent at all**		**Total**	
	f	%	F	%	F	%	F	%	F	%	F	**%**
Physical injuries	252	70	55	15.3	4	1.1	42	11.7	7	1.9	**360**	**100**
Deaths	26	7.2	37	10.3	46	12.8	160	44.4	91	25.3	**360**	**100**
Destruction of property	66	18.3	81	22.5	43	11.9	125	34.7	45	12.5	**360**	**100**
Destruction of buyers' Lorries	21	5.8	57	15.8	40	11.1	194	53.9	48	13.3	**360**	**100**
Displacement of persons	59	16.4	27	7.5	33	9.2	143	39.7	98	27.2	**360**	**100**
Protracted court cases	14	3.9	43	11.9	40	11.1	135	37.5	128	35.6	**360**	**100**
Animosity in families	139	38.6	115	31.9	35	9.7	55	15.3	16	4.4	**360**	**100**
Children not attending school	187	51.9	38	10.6	24	6.7	56	15.6	55	15.3	**360**	**100**
Closure of businesses	68	18.9	73	20.3	13.9	109	30.3	60	16.7		**360**	**100**

Source: Field Data, 2015

Other effects of the conflicts which were given included: conflicts between the chief and sand harvesters, tension, misunderstanding among harvesters, lack of job opportunities, insecurity, sand harvesting without license, destruction of farms, cheap sale of sand, failure to pay land owners, refusal by land owners to sell sand and disagreement between different youth groups.

These findings are supported by the World Bank studies on conflict and poverty which found out that people in fragile and resource use conflict-affected situations, are more than twice as likely to be under-nourished compared to those in other developing countries, more than three times as likely to be unable to send their children to school, twice as likely to see their children die before the age of five, and more than twice as likely to lack clean water. Half of all children deaths occur in conflict affected areas (World Bank. n.d Stop Conflict, Reduce Fragility and End Poverty).

It is not only businesses that are affected by conflicts; individuals too are affected by conflicts. From interview with sand harvesters it was established that the lives of many sand harvesters come to a standstill whenever there are conflicts. A sand harvester complained that:

> Whenever conflict happen here, many sand harvesters are affected. Many are injured and as such they cannot work. Apart from injuries many properties are destroyed and sand harvesting is banned. All these affect the income of the sand harvesters for they cannot continue doing harvesting until peace is restored. Sometimes restoration of peace takes a long time. All these affect harvesters' families for they cannot afford food, taking their children to hospitals and other basic needs (Focus Group Discussion with Sub-brokers at Kaskeu on 4th February, 2015).

Conflicts have also contributed to the increase in petty crime rate in Makueni County. As noted by county administrator, this is mainly because many youth now do not have jobs. Officials of the county are however making every effort to make sure that some of these youths have jobs. The county administrator, commenting on what work the youth who were involved in sand harvesting are currently engaged in said:

> Many youth have migrated to other areas to look for jobs. Some have gotten jobs at the Konza Oil Terminus (also known as Petrol City), others are working at the ongoing standard gauge railway, while others are doing casual jobs at the Konza City. Others have decided to remain around and are engage in small businesses. Our main challenge is with the youth, who do not want to work and are loitering around (Interview with County Administrator to Mukaa Sub-county Office on 8th April, 2015).

M^{c}kinlay (2004:220), commenting on the need for the youth to have jobs so that to avoid soaring of crime rate noted that:

> Unemployment brings a raft of negative features, with the potential to lead to criminal activities: loss of status, boredom, alienation from the community, and the erosion of social values, and, loss of income. These factors all contribute to erosion of the values and norms of a well-functioning community. Very often dysfunctional families lack support structures. It becomes attractive for people of all ages to be lured into criminal activities (Mckinlay, 2004:220)

When respondents were further asked to mention the people involved in conflicts, the following were mentioned: Sand harvesters and other groups of sand harvesters, sub-brokers and brokers, members of the same family, land owners and brokers, the County government (NEMA) and sand harvesters, community elders and sand harvesters. These findings show that conflict on sand harvesting mainly pitted different groups. This is a confirmation of Food and Agriculture organization's (2000:3) assertion that most conflicts are characterized by the presence of multiple stakeholders who themselves may have subgroups with varying interests.

On the duration of conflicts, the respondents mentioned that the duration taken by the conflicts vary with the nature of the conflicts. Most of the 'small' conflicts took a few days while 'major' conflicts spread into months.

The study established that people responded to conflict differently. There are those who decided to avoid conflict, others were passive, meaning they felt helpless, whereas others decided to use counter violence. Those who used counter violence explained that they resulted into violence because they were pushed to the wall, did it in self-defense, the aggressor didnot have respect for their right, or simply they thought other non-violent methods could not work.

From focus group discussion it was established that various actors contributed in various way to fueling sand related conflicts. Table 4.2 summarizes how various groups contributed to conflicts.

Table 4.2 Contribution of Various Actors to Conflicts

Group	*Role they played in Fueling Conflicts*
Sand Harvesters	*-Harvesting from private land* *-Harvesting from non designated areas*
Transporters	*-Stealing sand* *- Failure to pay various community levies,* *-Carrying excess load and destroying roads.* *-Passing through private farms*
Brokers	*-Failure to pay harvesters and land owners* *-Selling sand from non designated areas*
NEMA	*-Not clear on which sites harvesting can be done* *-Allowing sand harvesting without license*
Police	*-Taking bribe from transporters to allow sand harvesting in non-licensed areas*
County administration	*-Taking bribe to allow sand harvesting* *-Failure to enforce the law*
County government	*-Failure to come up with sand harvesting law*
Land owners	*Family dispute on ownership of sand*

Source: Field Data, 2015

Table 4.2 shows that various actors had made varied contributions to aggravate the sand harvesting conflicts in Makueni County. The greatest contributor to the conflicts is both the county and the National government who have not: come up with sand harvesting lows, fail to enforce good practices in sand harvesting as stipulated by law. NEMA for example did not license sand harvesters while the police took bribes to allow unlicensed people to continue harvesting.

5.0 Summary, Conclusions, Recommendations and Suggestions for Further Study

5.1 Summary

The study established that 216 respondents, which is equivalent to 60%, indicated that the conflicts were violent while 144 or 40% indicated that the conflicts were non-violent. Majority of the respondent that is 252 out 360, representing 70% indicated that the conflicts led to physical injuries to a very large extent whereas 187 respondents or 51.9% of the respondents said that the conflicts led to non-attendance to school by children to a very large extent 51.9% and that 139 sand harvesters which is equal to 38.6% agreed that conflict led to animosity to a very large extent. The less significant effects of conflicts were protracted court cases which accounted for 35.6% and displacement of persons at 27.2%..

5.2 Conclusions

The study concluded that violence characterized sand harvesting conflicts in Makueni County. Many people were maimed, killed or lost their property. Many of the sand harvesters had also participated in the conflicts. While sand harvesting was expected to be an income generating project that would offer any people in Makueni opportunities to earn a living, the conflicts linked to its harvesting had actually increased poverty levels in the County. The conflicts left many people powerless without the ability to effectively participate in society, factors which contributed to exacerbate poverty.

5.3 Recommendations

The study established that the main reason why the youth were not fully benefiting from sand resource is because of conflicts. There is therefore need to establish appropriate institutions to mitigate on the conflicts in order to ensure that natural resources serve the function that they should – of providing income for sand harvesters as well as revenue to the county government. Given that, it is the responsibility of the county government to hold the custodial rights of the sand resources on behalf of citizens who are collectively the owners, government must manage the natural assets in its custody in such a way as to maximize their value to citizens. This study proposes that a county government should form three committees which will manage sand: Conflict management committee, economic committee and environmental committee.

5.4 Suggestions for Further Research

This study established that sand in Makueni County is associated with conflict. There is a need to do a comparative study with other neighboring Kajiado County to establish whether both counties are faced with similar challenges. The findings from Kajiado and Makueni Counties can act as ‘good practice’ to inform appropriate management recommendations.

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