



# **BASELINE STUDY SURVEY OF COUNTY ENVIRONMENTAL COMMITTEES IN KENYA**

**BASELINE SURVEY REPORT**

*April 2018 - April 2019*

# Acronyms

**CJGEA** – Center for Justice Governance & Environmental Action.

**NEMA** – National Environmental Management Authority

**EHRD** - Environmental Human Rights Defenders

**CEC** - County Environmental Committees

**EMCA** – Environmental Management & Coordination Act

**CSO** – Civil Society Organization

**NLC** – National Lands Commission

**UN** – United Nations

# List of Figures

Figure 1: A section of the Community Based Organization, Centre for Justice Governance and Environmental action	14
Figure 3: Map of economic activities in Kenya	16
Figure 4 : Map of Kenya showing the location of Mombasa County and a map of Mombasa County	18
Figure 5: Map showing Kilifi County	26
Figure 6 : A map of Embu County showing the geographical locations of the sub-counties	32
Figure 7 : Map showing Kitui County	37
Figure 8: A map of Machakos County	42
Figure 9: Map of Makueni County	47
Figure 10: Map of Nyeri County	51
Figure 11: A map of Murang'a County	55
Figure 12: Map of Kiambu County	60
Figure 13 : Satellite Map of Kajiado County	64
Figure 14 : A map showing of Bomet County	68
Figure 15: A map showing location of Kakamega County	71
Figure 16: Map of Vihiga County	74
Figure 17: Map of Bungoma County	77
Figure 18: A map of Busia County	81
Figure 19: Map showing location of Kisumu County	85
Figure 20: map of Homabay County	89
Figure 21: Map showing location of Migori County	92
Figure 22: Map of Kisii County	96
Figure 23: Map of Nyamira County	100
Figure 24: Map of Kenya showing location of Tana River County and a map of Tana River County	103
Figure 25: Map of Marsabit County and inset Map of Kenya showing location of Marsabit County	107

# Table of Contents

<b>Acronyms</b>	<b>1</b>
<b>List of Figures</b>	<b>2</b>
<b>Table of Contents</b>	<b>3</b>
<b>1. Introduction</b>	<b>12</b>
1.1: Duration	14
1.2: Areas covered	14
1.3: Baseline Survey Personnel	14
1.4: Area of Study	14
1.5: Economic Activity	16
1.6: Aims and Objectives	16
<b>MOMBASA COUNTY</b>	<b>17</b>
2.1: Study Area Description	18
2.2: Environmental Issues in the area	18
2.3: Sampling	23
2.4: Research Instruments	23
2.5: Findings and Interpretation	23
2.5.1: Establishment of County Environmental Committee	23
2.5.2: Budget for the committee	23
2.5.3: Committee membership	23
2.5.4: Access to information	23
2.5.5: Challenges.	23
<b>KILIFI COUNTY</b>	<b>25</b>
3.1: Study Area Description	26
3.2: Environmental Issues in the area	26
3.3: Sampling	30
3.4: Research Instruments	30
<b>EMBU COUNTY</b>	<b>31</b>
4.1: Study Area Description	32



4.2: Environmental Issues in the area	32
4.3: Sampling	35
4.4: Research Instruments	35
4.5: Findings and Interpretation	35
4.5.1: Establishment of County Environmental Committee	35
4.5.2: Budgeting for the committee	35
4.5.3: Committee membership	35
4.5.4: Access to information	35
4.5.5: Milestones of the committee	35
4.5.6: Role of committee in capacity building, access to information and public participation	35
4.5.7: Challenges	35
4.5.8: Future success of committee mandate	35
<b>KITUI COUNTY</b>	<b>36</b>
5.1: Study Area Description	37
5.2: Environmental Issues in the area	37
5.3: Sampling	40
5.4: Research Instruments	40
5.5: Findings and Interpretation	40
5.5.1: Establishment of County Environmental Committee	40
5.5.2: Budgeting for the committee	40
5.5.3: Committee membership	40
5.5.4: Access to information	40
5.5.5: Milestones of the committee	40
5.5.6: Role of committee in capacity building, access to information and public participation	40
5.5.7: Challenges	40
5.5.8: Future success of committee mandate	40
<b>MACHAKOS COUNTY</b>	<b>41</b>
6.1: Study Area Description	42
6.2: Environmental Issues in the area	42

6.3: Sampling	44
6.4: Research Instruments	44
6.5: Findings and Interpretation	44
6.5.1: Establishment of County Environmental Committee	44
6.5.2: Budgeting for the committee	45
6.5.3: Committee membership	45
6.5.4: Access to information	45
6.5.5: Milestones of the committee	45
6.5.6: Role of committee in capacity building, access to information and public participation	45
6.5.7: Challenges	45
6.5.8: Future success of committee mandate	45
<b>MAKUENI COUNTY</b>	<b>46</b>
7.1: Study Area Description	47
7.2: Environmental Issues in the Area	47
7.3: Sampling	49
7.4: Research Instruments	49
7.5: Findings and Interpretation	49
7.5.1: Establishment of County Environmental Committee	49
7.5.2: Budgeting for the committee	49
7.5.3: Committee membership	49
7.5.4: Access to information	49
7.5.5: Role of committee in capacity building, access to information and public participation	49
7.5.6: Challenges	49
<b>NYERI COUNTY</b>	<b>50</b>
8.1: Study Area Description	51
8.2: Environmental Disputes in the area	51
8.3: Sampling	53
8.4: Research Instruments	53
8.5: Findings and Interpretation	53

8.5.1: Establishment of County Environmental Committee	53
<b>MURANG'A COUNTY</b>	<b>54</b>
9.1: Study Area Description	55
9.2: Environmental Issues in the area	55
9.3: Sampling	57
9.4: Research Instruments	57
9.5: Findings and Interpretation	57
9.5.1: Establishment of County Environmental Committee	57
9.5.2: Budgeting for the committee	57
9.5.3: Committee membership	58
9.5.4: Access to information	58
9.5.5: Role of committee in capacity building, access to information and public participation	58
9.5.6: Challenges	58
9.5.7: Future success of committee mandate	58
<b>KIAMBU COUNTY</b>	<b>59</b>
10.1: Study Area Description	60
10.2: Environmental Issues in the area	60
10.3: Sampling	62
10.4: Research Instruments	62
10.5: Findings and Interpretation	62
10.5.1: Establishment of County Environmental Committee	62
10.5.2: Committee membership	62
10.5.3: Challenges	62
<b>KAJIADO COUNTY</b>	<b>63</b>
11.1: Study Area Description	64
11.2: Environmental Issues in the area	64
11.3: Sampling	65
11.4: Research Instruments	66
11.5: Findings and Interpretation	66
11.5.1: Establishment of County Environmental Committee	66

11.5.2: Budgeting for the committee	66
11.5.3: Committee membership	66
11.5.4: Access to information	66
11.5.5: Challenges	66
<b>BOMET COUNTY</b>	<b>67</b>
12.1: Study Area Description	68
12.2: Environmental Issues in the Area	68
12.3: Sampling	69
12.4: Research Instruments	69
12.5: Findings and Interpretation	69
12.5.1: Establishment of County Environmental Committee	69
12.5.2: Budgeting for the committee	69
12.5.3: Committee membership	69
12.5.4: Access to information	69
12.5.5: Role of committee in capacity building, access to information and public participation	69
12.5.6: Challenges	69
<b>KAKAMEGA COUNTY</b>	<b>70</b>
13.1: Study Area Description	71
13.2: Environmental Issues in the area	71
13.3: Sampling	72
13.4: Research Instruments	72
13.5: Findings and Interpretation	72
13.5.1: Establishment of County Environmental Committee	72
13.5.2: Budgeting for the committee	72
13.5.3: Committee membership	72
13.5.4: Challenges	72
<b>VIHIGA COUNTY</b>	<b>73</b>
14.1: Study Area Description	74
14.2: Environmental Issues in the area	74
14.3: Sampling	75



14.4: Research Instruments	75
14.5: Findings and Interpretation	75
14.5.1: Establishment of County Environmental Committee	75
14.5.2: Budgeting for the committee	75
14.5.3: Committee membership	75
14.5.4: Challenges	75
<b>BUNGOMA COUNTY</b>	<b>76</b>
15.1: Study Area Description	77
15.2: Environmental Issues in the area	77
15.3: Sampling	78
15.4: Research Instruments	79
15.5: Findings and Interpretation	79
15.5.1: Establishment of County Environmental Committee	79
15.5.2: Budgeting for the committee	79
15.5.3: Access to information	79
15.5.4: Challenges	79
<b>BUSIA COUNTY</b>	<b>80</b>
16.1: Study Area Description	81
16.2: Environmental Issues in the area	81
16.3: Sampling	82
16.4: Research Instruments	82
16.5: Findings and Interpretation	82
16.5.1: Establishment of County Environmental Committee	82
16.5.2: Budgeting for the committee	82
16.5.3: Access to information	82
16.5.4: Challenges	83
<b>KISUMU COUNTY</b>	<b>84</b>
17.1: Study Area Description	85
17.2: Environmental Issues in the area	85
17.3: Sampling	86

17.4: Research Instruments	87
17.5: Findings and Interpretation	87
17.5.1: Establishment of County Environmental Committee	87
17.5.3: Access to information	87
17.5.5: Challenges	87
17.5.6: Future success of committee mandate	87
<b>HOMABAY COUNTY</b>	<b>88</b>
18.2: Environmental Issues in the area	89
18.3: Sampling	90
18.4: Research Instruments	90
18.5: Findings and Interpretation	90
18.5.1: Establishment of County Environmental Committee	90
18.5.2: Committee membership	90
18.5.3: Access to information	90
18.5.4: Milestones of the committee	90
18.5.5: Role of committee in capacity building, access to information and public participation	90
18.5.6: Future success of committee mandate	90
<b>MIGORI COUNTY</b>	<b>91</b>
19.1: Study Area Description	92
19.2: Environmental Issues in the area	92
19.3: Sampling	94
19.4: Research Instruments	94
19.5: Findings and Interpretation	94
19.5.1: Establishment of County Environmental Committee	94
19.5.2: Budgeting for the committee	94
19.5.3: Committee membership	94
19.5.4: Access to information	94
19.5.5: Challenges	94
19.5.6: Future success of committee mandate	94
<b>KISII COUNTY</b>	<b>95</b>

20.2: Environmental Disputes in the area	96
20.3: Sampling	98
20.4: Research Instruments	98
20.5: Findings and Interpretation	98
20.5.1: Establishment of County Environmental Committee	98
20.5.2: Budgeting for the committee	98
20.5.3: Committee membership	98
20.5.4: Access to information	98
<b>NYAMIRA COUNTY</b>	<b>99</b>
21.1: Study Area Description	100
21.2: Environmental Issues in the area	100
21.3: Sampling	101
21.4: Research Instruments	101
21.5: Findings and Interpretation	101
21.5.1: Establishment of County Environmental Committee	101
21.5.2: Budgeting for the committee	101
21.5.3: Committee membership	101
21.5.4: Access to information	101
21.5.5: Challenges	101
<b>TANA RIVER COUNTY</b>	<b>102</b>
22.1: Study Area Description	103
22.2: Environmental Issues in the Area	103
22.3: Sampling	105
22.4: Research Instruments	105
22.5: Findings and Interpretation	105
22.5.1: Establishment of County Environmental Committee	105
22.5.2: Budgeting for the committee	105
22.5.3: Committee membership	105
22.5.4: Access to information	105
22.5.5: Challenges	105

<b>MARSABIT COUNTY</b>	<b>106</b>
23.1 Study area description	107
23.2 Environmental Issues in the area	107
23.3 Sampling	109
23.4 Research Instruments	109
23.5 Findings and Interpretation	109
23.5.1 Establishment of County Environment Committee	109
23.5.2 Budgeting for the Committees	109
23.5.3 Committee membership	109
23.5.4 Access to information	109
23.5.5 Challenges	109
<b>Challenges Faced By Field Officers</b>	<b>109</b>
<b>Key Findings And Interpretation Of Results Across All Counties</b>	<b>110</b>
<b>Success Of The Study</b>	<b>121</b>



# 1. Introduction

Center for Justice Governance and Environmental Action (CJGEA) is a non-profit environmental / human rights, organization in Kilifi, Kenya. Our mandate is to work towards the realization of environmental rights of the economically marginalized and neglected communities residing around extractive industries, environmental conflicts and toxic sites in Kenya. CJGEA seeks to address the shrinking civil space for Environmental Rights Defenders and lack of capacity for leadership roles in the EHRD community so as to facilitate success in environmental protection and sustainable development. CJGEA intends to leverage on the new devolved system of Government and new legislation which includes the formation of County Environmental Committees consisting of civil society groups.

Recent attacks on Environmental Rights Defenders (ERDs) with a view to silence them globally and locally have increased posing a threat to the protection of nature and the environment. Grassroots environmental movements in Kenya face open hostility especially when they try to hold state and non-state actors accountable for the protection of their immediate environment. As the global scramble for depleted natural resources has increased, Kenya is not left behind and therefore is also rapidly moving towards mineral extraction to add on domestic income and foreign exchange.

Corporations seeking to maximize on profits are taking advantage of the weak implementation or lack of legislation to engage in wanton environmental impunity like pollution. This has led to corporate/Community conflicts especially in mineral rich counties of Kenya. Increasing resistance by Community environmental movements seeking to protect the Rivers, mangroves and forests and way of life from these corporation's emissions puts these EHRDS on the front-lines at great risk. Kenya is among the 14 countries that voted against United Nation General Assembly (UNGA) resolution 2015

on protection of human right defenders.

CJGEA in the past facilitated an entry baseline study of the 5 Coastal Counties and through it we were able to identify some of the participatory needs of Environmental Human Rights Defenders and we found that there was need to find ways to involve the EHRDs in environmental governance at the County level which would be necessary to create a link between the Communities and the Government agencies. This would ensure that affected Communities are consulted widely and informed of upcoming development projects before they would be initiated and in turn reduce environmental conflicts in the country. This would ensure proactive rather than reactive participation in environmental decision making. Some of the challenges the EHRDs were encountering in the course of their work would easily be solved by incorporating them into formalized platforms that recognized the legitimacy of their work and allowed them to take part in the decision making process. CJGEA has done extensive work in environmental rights mobilization and lobbying with the state actors to ensure environmental justice is served along the Coastal belt. Through its work with EHRDs, CJGEA identified County Environment Committees (CECs) as a platform to ensure citizen engagement, inclusiveness, participation and information access on matters Environment.

Following extensive research and consultations, CJGEA established ways through which EHRDs could be legally involved in environmental governance and this was by tapping into the current devolved system of Government in Kenya which takes into account the need for citizen engagement in sustainable environmental governance; policy and decision making process regarding matters environment and subsequently provides for the establishment of County Environmental Committees across all the 47 Counties as per the Environmental Management and Coordination Act (EMCA) Act. The

EMCA Act is an Act of Parliament to provide for the establishment of an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto. This Act establishes institutions such as National Environmental Management Authority, County Environmental Committees, National Environmental Tribunal, National Environmental Complaints Committee and the council of environmental health

As stipulated in the Environmental Management and Coordination Act (EMCA), the Governors are supposed to constitute CECs and appoint members from the Communities in their respective Counties. The Act was amended in 2015 to align to the 2010 Kenyan constitution. In the amended Act, the County Environmental Committees replaced the District and Provincial Environmental committees.

According to EMCA section 29 of No. 5, 2015:

1. The Governor shall, by notice in the Gazette, constitute a County Environment Committee of the County.
2. Every County Environment Committee shall consist of —
  - The member of the county executive committee in charge of environmental matters who shall be the chairperson;
  - An officer of the Authority whose area of jurisdiction falls wholly or partially within the county who shall be the Secretary to the County Environmental Committee;
  - One representative for each of the Ministries responsible for the matters specified in the First Schedule at the county level;
  - Two representatives of farmers or pastoralists within the county to be appointed by the Governor;
  - Two representatives of the business community operating within the concerned county appointed by the

Governor;

- Two representatives of the public benefit Organizations engaged in Environmental management programs within the County appointed by the Governor in consultation with the National federation of Public Benefit Organizations.
  - A representative of every regional development authority whose area of jurisdiction falls wholly or partially within the County.
3. Appointments in this section shall be made with the relevant County Organs that are representative of the nominees of the County.
  4. The Governor, in making the appointments under this section shall ensure –
    - Equal opportunities for persons with disabilities and other marginalized groups ; and
    - That more than two thirds of the members are of the same gender
  5. Members of the County Environment Committee appointed under paragraphs (c) to (g) of subsection (2) shall hold office for a period of three years and shall be eligible for reappointment for one further term.

The County Environmental Committee shall:

- (a) Be responsible for the proper management of the Environment within the County for which it is appointed;
- (b) Develop a County strategic environmental action every 5 years; and
- (c) Perform such additional functions as are prescribed by this act or as may, from time, be assigned by the Governor by notice in the Gazette.

This project is aimed at promoting an all-inclusive approach principle to protection and empowerment of grassroots Environmental Rights Movements.





**Figure 1: A section of the Community Based Organization, Centre for Justice Governance and Environmental action**

“Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided” (Principle 10 of the Rio Declaration on Environment and Development, 1992)

This report presents a part of the survey done in the various Counties on the CECs and includes challenges experienced during the study and data collected.

### 1.1: Duration

The survey is to be done in a period of four months. A follow up meeting will be conducted in each County to access progress

and the functioning of the environmental committees.

### 1.2: Areas covered

The Counties visited during the survey were a total of 30 by the end of April 2019 though this report only represents findings of 23 Counties which agreed to fill in and sign our questionnaires. Of the total 30 Counties visited, some were not willing to receive our field officers and divulge information despite attempts to secure appointments and write introduction letters prior to the visits. Of the 23 Counties represented in this report, there were those that were still reluctant to divulge information for fear of insurbodination. We plan to conclude the study in the counties not covered and revisit the counties where the study was not conclusive.

### 1.3: Baseline Survey Personnel

### 1.4: Area of Study

Kenya is an African Country, positioned specifically in Eastern Africa. Its total area, including 11,230 sq. km of water is 580,367



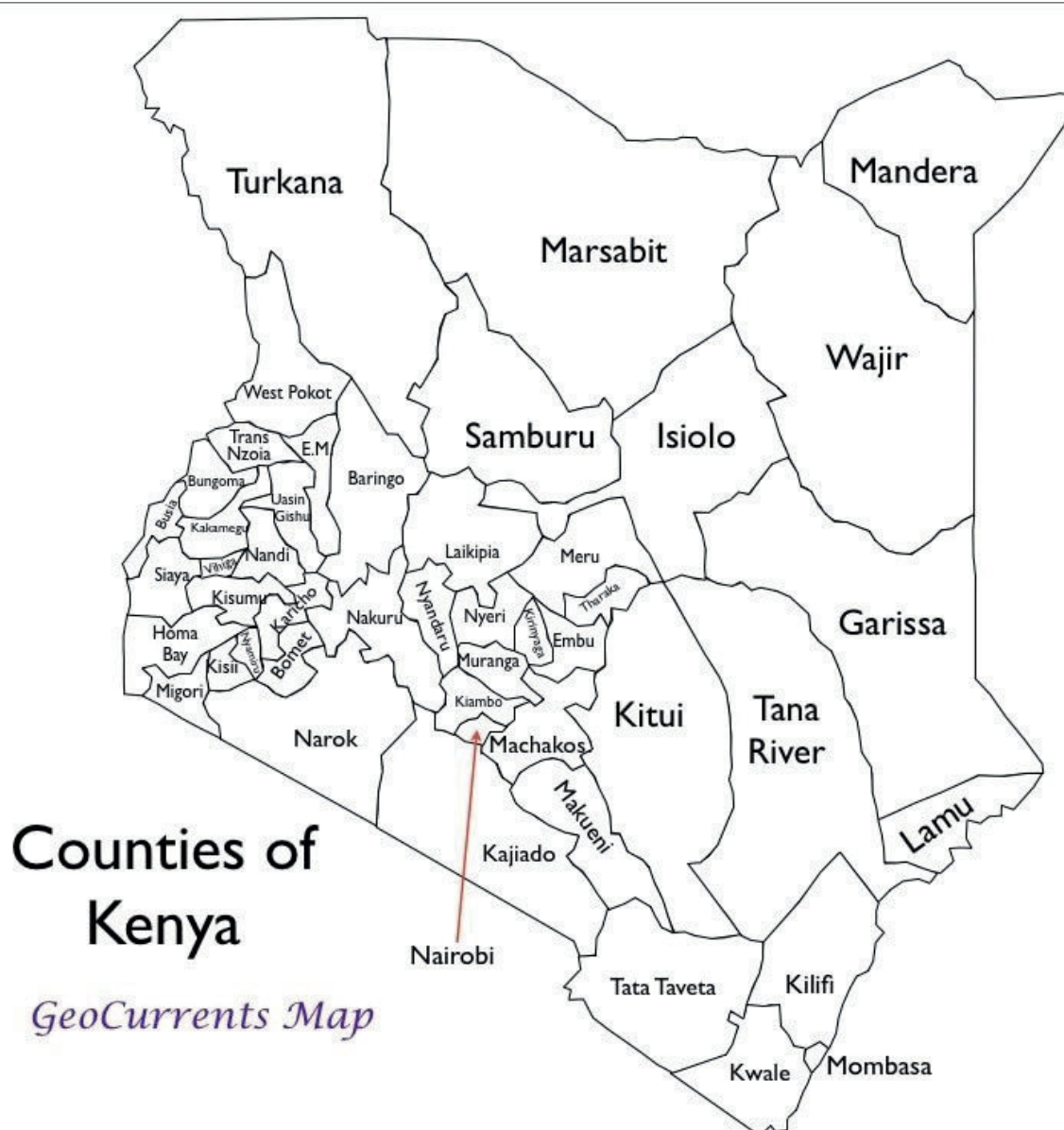


Figure 2: A map of Kenya showing the geographical distribution of the counties.

Name	Role	Organisation
Ms. Phyllis Omido	Executive Director	CJGEA
Ms. Michelle Mwanahamisi	Project Officer	CJGEA
Mrs. Tania Okumu	Accountant	CJGEA
Mr. Tom Bicko Ooko	Field Officer	CJGEA

#### Baseline Survey Personnel

square km. The Country is divided into 47 counties that initially fell under the 8 provinces until devolution was introduced.

It has a maximum length of 1,131 km SSE-

NNE and a maximum width of 1.025 km ENE-WSW. The population of Kenya according to a 2017 estimate is at 49,125,325. Kenya's capital and largest city is Nairobi while its oldest city and first capital is the coastal



city of Mombasa. Kisumu City is the third largest City and hosts a critical inland port at Lake Victoria. Other important urban centers include Nakuru and Eldoret.

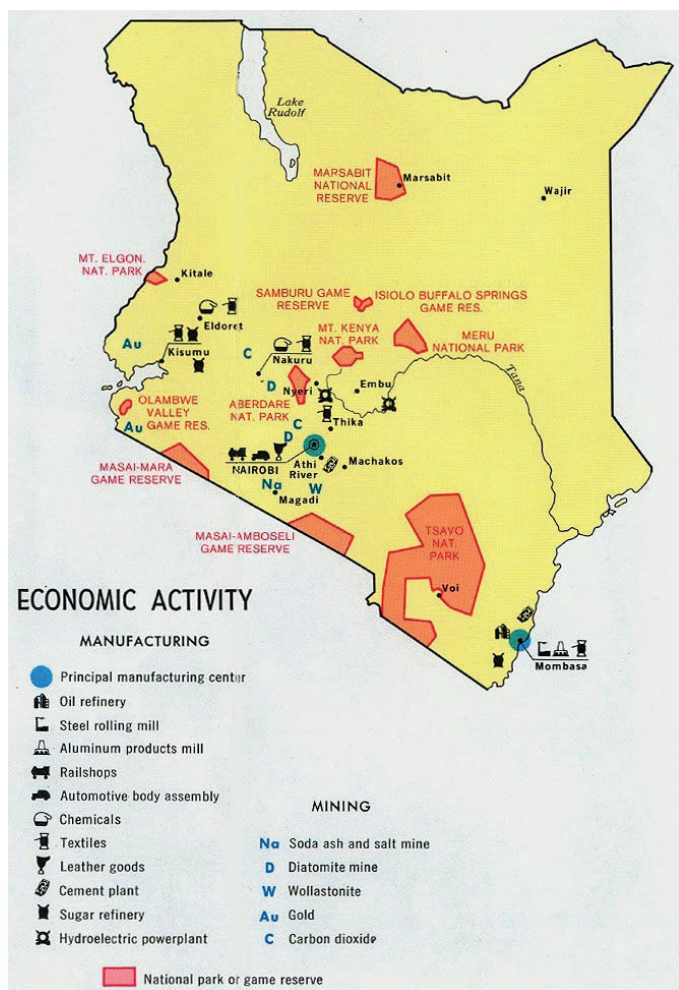


Figure 3: Map of economic activities in Kenya

## 1.5: Economic Activity

The main economic activities in Kenya are directly linked to the environment. They include, agriculture, forestry, fishing, mining, industrial manufacturing, energy, tourism and financial services. Each of the 47 counties has one of the activities as its main economic activity. The government is encouraging economic and infrastructural development in the various counties which will in turn boost the state's economy when accumulated together.

## 1.6: Aims and Objectives

### 1.6.1: Overall Objective

The aim of the survey is to form partnerships with the County Environmental Committees (CECs) and to understand the status of the Committees in each County.

### 1.6.2: Specific Objectives

- To support the geographical expansion of Center for Justice Governance and Environmental Action through the formation of a coalition amongst the partners in the 47 counties' EHRDs.
- To facilitate an entry baseline study to identify the progress of the County Environmental Committees.
- To train and facilitate one representative from each of the 47 Counties to participate in the County Environmental Committees' meetings.

# MOMBASA COUNTY

## 2.1: Study Area Description

Mombasa County is one of the 47 counties of Kenya. Its capital and the only city is Mombasa. It is located in the South Eastern part of the former Coast Province where it was one of the former districts in Kenya. The County lies between latitudes 3. It is the smallest county covering an area of 229.7 sq. km, excluding 65 sq. km of water mass. Mombasa County is divided into seven divisions, eighteen locations and thirty sub locations spread out amongst the four major

## 2.2: Environmental Issues in the area

### Heavy metal contamination

### Lead poisoning with a focus on Owino Uhuru settlement in Mombasa

Owino-Uhuru is an informal settlement covering 13.5 acres and located on plot No. 148/V/MN in Mikindani Location in Mombasa County, it has a population of approximately 3000 people. This settlement is one

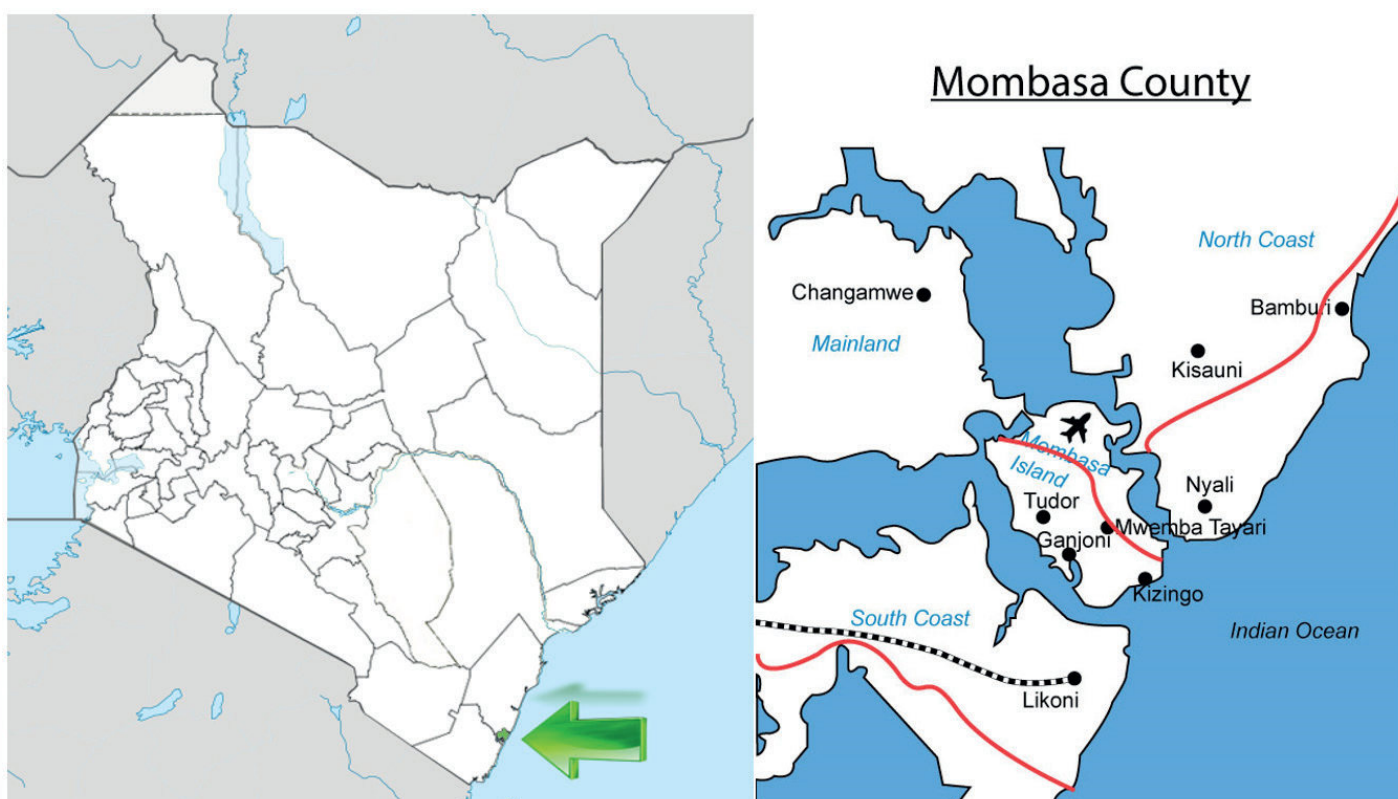


Figure 4 : Map of Kenya showing the location of Mombasa County and a map of Mombasa County

divisions; Mombasa Island, Changamwe, Likoni and Kisauni. The Governor of Mombasa County, whose code is 001, is Mr. Ali Hassan Joho.

The population of Mombasa County as per the 2009 census was 939,370. Mombasa County lies in the lowland of Coast region and rises gradually from the sea level in the east to slightly over 76 m above sea level in the mainland west. The highest point is at Nguu Tatu hills in the mainland north that rises up to 100m above sea level.

of the many in the country that have been exposed to extreme chemical poisoning by a state licensed lead smelter, located next to the community.

Owino Uhuru borders a (Non-Decommissioned) lead battery recycling plant that was closed down but the community members continue to suffer the toxic effects of Lead poisoning. Poor management of Lead wastes and smelting residue is a potent risk to the environment and to the surrounding populations. Left untreated, lead wastes in arid and semi-arid areas can be full of



lead bearing dusts for years, which is detrimental to humans, animals and the entire ecosystem.

In the year 2012, CJGEA commissioned a study that scrutinized the processes leading up to the setting up of the battery smelting refinery and the study revealed that the EIAs that had been conducted by NEMA lead experts in engaging public participation requirement did not involve any member of the Owino Uhuru community and therefore did not take into account their interests and that of the natural environment. The EIA document reveals a calculated conspiracy for the benefit of the board and management of the smelter company. The EIAs were characterized by lots of omissions and deception in order to arrive at an already predetermined decision and this gave room for the smelter to carry on with its operations for years despite the dangers it posed to the environment and the health of the people. Habo Agencies Limited and Penguin Paper and Book the Kenyan companies that housed the smelter (metal refinery EPZ Ltd) are owned by Hezron Awiti Bolo attached is the agreement

The community was threatened with eviction after seeking their right to a clean environment even though they could trace their presence on the land to the early 1900s. The residents, however, did not know that they were supposed to acquire land ownership documents. CJGEA mobilized the community to pay the land rates that had been accumulating in the Lands Department for many decades and defended the community's right to ownership, using Article 2 of the Law on Ownership and Other Real Rights, which states:

- “The right to ownership can be acquired by all domestic and foreign natural persons and legal entities, including the state and the units of the local self-government, under conditions and in a manner stipulated by this and other laws and adverse possession which is the occupation of the land of another person

against his wish and in opposition to his title.”

- “That, where possession continues without the interruption of an eviction for a period of over 12 years, the squatter becomes legally entitled to the land by the operation of the doctrine of adverse possession”. Owino Uhuru land case

CJGEA ran a project called ‘Tuna sauti’ meaning ‘we have a voice’ an advocacy program that amplifies the voices of the marginalized communities hosting extractive industries to advocate for access to clean environment and socio-economic justice. The project was implemented in Owino Uhuru community in Mombasa County and through it:

- CJGEA made Lead poisoning a national issue that triggered discussions nationwide.
- The Owino Uhuru community capacity was extensively built and a survey conducted showed that 66% of the study population understood their environmental rights, source and effect of lead poisoning including avenues that they can use to access effective remedy using the Kenyan constitution 2010.
- CJGEA received request for support from 3 communities; Naivasha, Juakali in Eldoret and Imara ,Daima in Nairobi who are experiencing pollution and negative impacts of extractive industries located around them. CJGEA has not been able to directly assist these other communities due to its current funding capacity. CJGEA work was recognized internationally when the Executive Director Phyllis Omidio was awarded The Goldman Foundation environmental prize 2015 for Africa, which has put CJGEA on the global map.
- A senate committee was convened to investigate and provide recommendations to the lead poisoning



problem in the community. The final report recommended the government to clean up the toxic site.

- Through the media there was a nationwide outcry of lead poisoning in Owino Uhuru. The standard Media who partnered with CJGEA to produce an expose' dubbed "Plague for profit" aired it for 3 days in English and 3 days in Swahili "Futari ya Sumu" which was repeated the following week due to public demand.
- CJGEA has successfully linked the community to the media to be able to directly highlight their issues. Recently after winning their land case in Mombasa high court the community approached media houses which saw the results featured in The Star Newspaper and Radio Kaya F.M
- CJGEA involved the legislative arms of the government through a petition to the senate. The petition was received by the senate and CJGEA was invited to address the senate on this issues. The Senate also visited the Owino Uhuru community and wrote a report

The alarming Blood Lead Levels (BLLs) of the children and community members of Owino Uhuru has necessitated an intervention of remediating the toxic environment but even with the rising cases in patients affected by lead poisoning, not much has been done by the government in terms of medical provision for the patients. The medication is expensive and even after a directive by the County Governor stating they should be issued for free, the affected members of the Community are yet to benefit from that.

CJGEA supported the Owino Uhuru community in filing a class action litigation suit in court challenging the responsibility of the state and non-state actors towards the achievement of the right to a clean and

healthy environment as assured in article 42 of the Kenyan Constitution. The respondents who are mainly state and non-state actors have been served. The suit will act as a precedent for so many other communities over the country. There have also been attacks and kidnappings on community members and activists involved in the case that has resulted in a section of the community members involved in the case being put under witness protection as the court case goes on. We seek remediation of the polluted environment and compensation of the victims who have faced unimaginable agony and distress.

The houses of the Owino Uhuru Environmental Defenders were surrounded by goons who broke in threatening to torch them. Luckily some fled prior to the attacks.. One member who was home was brutalized and rescued by his sons' narrowly escaping death. The Office of the High Commissioner for Human Rights through the UN special Rapporteur on the Environment and Human Rights John H. Knox released a Press Release requesting protection of CJGEA members under threat. Our Environmental Human Rights Defenders living under threat gave their testimony. CJGEA has taken a lead in advocacy for change of attitudes towards environmental activists and their legitimate work. There is urgent need to challenge systemic failure to protect environmental activists. Many have been killed yet non-action and silence from relevant state agencies signals silent consent for the vilifying of this group of individuals working to preserve nature and sustainability of their communities.

There have been numerous attacks and intimidation emanating from respondents of the class action suit and smelter proponents and whose ownership is from the political class The sudden influx in mining companies in the coastal belt of Kenya has seen the rise of many environmental rights defenders seeking to protect their immediate environment by protecting their human territories, their way of life and socio economic rights. The current Kenyan govern-

ment has been at the forefront of infringement of civil society space. Activists have come under threats, including loss of life. Sadly, many deaths still go undocumented and there is no justice for the victims or their loved ones.

Sudden attacks and threats against CJGEA members in 2017 brought the issue close to home. Four environmental activists and members of CJGEA were singled out for leading advocacy for the Owino Uhuru Class action litigation. The class action litigation (which is supported by the partnership of the Office of the High Commissioner for Human Rights (OHCHR) seeks to challenge the responsibility of the state and non-state actors towards the protection of the right to a clean and health environment as assured in Article 42, 69 and 70 of the Kenyan constitution 2010.) CJGEA litigation suit is a critical component of the environmental justice framework for Kenya as a country as it will create a unique and the first much needed precedent that other environmental movements can use to access redress and access to effective remedies for violations including restoration and remediation of vulnerable ecosystems.

Following the CJGEA media advocacy campaigns on lead poisoning in Owino Uhuru, NEMA shut down 17 smelters and we have seen improvement on the workings of the remaining smelters. Chloride Exide in Nairobi for example, are following the procedure laid out for the protection of their workers and the environment. They test their workers' blood lead levels after every three months and ensure that they wear protective gear while working. They have also purchased a large piece of land to keep their activities away from residential areas

This just comes to show why there is a need for active and well informed EHRDs and an active CEC that can push for the concerns of the community members in the future so they can stand their own ground.

## Municipal Solid Waste

### *Kibarani Dumpsite*

Kibarani area has for years groaned under mountains of garbage until recently when it was decommissioned after pressure was put on the County Governor who had initially declined to close it down. It has since been relocated to Mwakirunge which again has sparked controversy from the locals and the aviation stakeholders as the dumpsites act as a feeding ground for scavengers and these birds could easily interfere with planes attempting a landing approach to Moi international airport by getting into the engines and causing accidents. The dumpsite extends to the ocean causing marine pollution and oil spills and this clearly shows why it is an issue of Environmental concern save for the stench that comes from it.

The dumpsite has been characterized by sprawling municipal garbage tips, piles of new garbage and burnt out wastes accumulated over the years. The situation doesn't get any better as the old railway line that passes through the dumpsite has also been affected by the garbage spilling on the rails.

There is a whole community of people living on the dumpsite that don't understand the repercussions of living on a land fill. They have made make shift houses surrounded by piles of medical and electronic waste, used nappies and sanitary items, general household rubbish and broken glass, not to mention dead animals and human wastes. They survive on picking recyclable wastes from the landfill and can always be seen scrambling for incoming garbage trucks in order to get fresh waste. The Mombasa County also supports them with drinking water and occasionally food handouts.

Kibarani dumpsite has since been converted into an amusement park but the process involved in doing the remediation is not environmentally acceptable. The County government of Mombasa has planted artificial turf and converted Kibarani into an amusement park without putting into consideration that it was a landfill until



recently. Landfills carry toxic and hazardous wastes that have been accumulated over the years and the reclamation was supposed to involve a safe process including replacement of soil around the landfill after garbage removal.

The remediation has been done hastily and hasn't taken into account the issues of environmental concern that would arise from reclaiming dumpsite land without putting the correct measures into place. Remediation action is generally subject to an array of regulatory requirements and should be based on assessments of human health and ecological risks.

### **Reclamation of Ocean Land**

With the recent reclamation of acres of land from the Indian Ocean at Kibarani by private investors to pave way for development, Mombasa is at the risk of ceasing to be an island. The illegal encroachment into the sea is also a major concern to the international community especially UNESCO. The UN had warned of delisting Mombasa as an island as its existence has long been threatened by the ongoing reclamation of the Indian Ocean by private developers especially at the Makupa causeway which is along the Mombasa-Nairobi highway and serves as a link between the island and mainland.

The reclamation is the epicenter of corruption and impunity whereby powerful individuals have resorted to grabbing the sea. Investors who are believed to be politically connected are among players who have encroached into the sea and put up multibillion shillings properties including container freight stations and offices near the port of Mombasa. It is believed that they were given conditional approvals by NEMA and also received licenses from relevant government agencies to reclaim the sea before the Water Resources Management Authority stepped in. The Water Resources Management Authority (WARMA) had stopped the reclamation of two sites in Kibarani by Makupa Transit Shade Limited and Multiple

Hauliers but encroachment is still going on. A suggestion has been made to mark the riparian land and peg it and even put beacons where nobody should go beyond.

### **Sewerage problems**

Mombasa does not have a functional sewerage system yet residents pay for sewerage services. Emptying of effluent into the Indian Ocean is polluting the sea. Some restaurants and cafes pour waste water on the streets while waste water flows from some homes onto pavements and alleys. The sewerage problem if not addressed can lead to an outbreak of diseases. The situation needs to be addressed to avert degrading of beaches and destruction of marine life. Residents and visitors have been exposed to intolerable stench emanating from raw effluent emptied carelessly.

According to the Coast Water Services Board report of 2012, less than 300,000 people out of the possible 1 million have access to sewerage services. Mombasa has two sewerage plants at Kizingo and Kipevu. However, only the latter is functional. The only functional sewage treatment plant at Kipevu serves residents of Changamwe, Port Reitz, Magongo and Jomvu. The sewage menace has forced hotels around the County to invest in their own treatment plants as Mombasa remains the tourism hub of the region. A sanitation project to curb the situation is however underway.

### **Pollution**

**Air Pollution-** Mombasa County has an array of factories which release toxic substances in the form of waste products into the air thus degrading the atmosphere and ozone layer which in turn has led to climate change and has brought health hazards upon the residents. An example of such an industry is the Changamwe Oil Refinery.

**Water Pollution-** When waste from manufacturing industries, Chemicals and oil spills end up in the ocean they cause water pollution. This impedes the reproduction of

corals, disrupts aquatic ecosystems, changes dynamics and feeding behaviors of fish and shortens the mortality of other marine species. The use of on-site sanitation systems for human waste management has also had an impact on groundwater aquifers through microbial pollution, rendering otherwise chemically suitable water unsuitable on this account without treatment.

### ***Destruction of Mangrove vegetation***

The overharvesting of mangroves due to a high demand for Charcoal and firewood in Mombasa has put the mangrove vegetation along the coastal belt under threat as residents as well as investors have led to their destruction. This has also led to the dwindling of fish reserves affecting the vital fishing sector which acts as a lifeline to many residents. This unsustainable exploitation of the mangroves if not addressed urgently could lead to the total wipe out of the mangrove forests. A case in point is the Tudor Creek that is being exposed to over exploitation of mangrove forests and pollution from untreated raw sewerage released into the ocean from Mombasa County. Another case is Mshomoroni area where there are illicit breweries of local brews and they're cutting down the trees for the industry. Some of the residents are also constructing houses and other establishments using the mangroves.

The trees are also harvested for firewood purposes because they burn very quickly and are stronger compared to other woods. Mangrove forests capture carbon dioxide from the environment at a rate that's five times more efficient than other forests. Mombasa is thus becoming hotter due to the depletion of the forests as their presence regulates climate change. Mangroves also support the tourism and fishing sectors as they play host to a variety of fish and wild-life species. Fish catch levels at the coast have gone down tremendously and fishermen have also lamented on the decline of fish stocks due to ongoing works at Kibarani after wealthy private developers reclaimed acres of ocean land, affecting the source of livelihood for hundreds of locals. The area

is among the biggest fishing grounds for fishermen in terms of high level fish such as lobsters and prawns.

## **2.3: Sampling**

Sampling was purposive as we targeted the Chief Officer of the environment department of the County, Dr Nyongesa Godfrey, the director and County Executive Committee member within the county. Our respondent was Lucy Nyambura, the director of the Environment department, Mombasa County and she co-operated and gave us the required information for the study.

## **2.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of the MINITAB software. The data garnered was majorly descriptive.

## **2.5: Findings and Interpretation**

### **2.5.1: Establishment of County Environmental Committee**

The committee exists but is awaiting Government endorsement and Gazettement.

### **2.5.2: Budget for the committee**

The Government has not budgeted for the committee.

### **2.5.3: Committee membership**

The Committee has 1 member of each of the represented categories; farmer, businessman, man, woman, youth, CSO, faith based and people living with disability.

### **2.5.4: Access to information**

The community has not yet accessed information about the progress of the committee.

### **2.5.5: Challenges.**

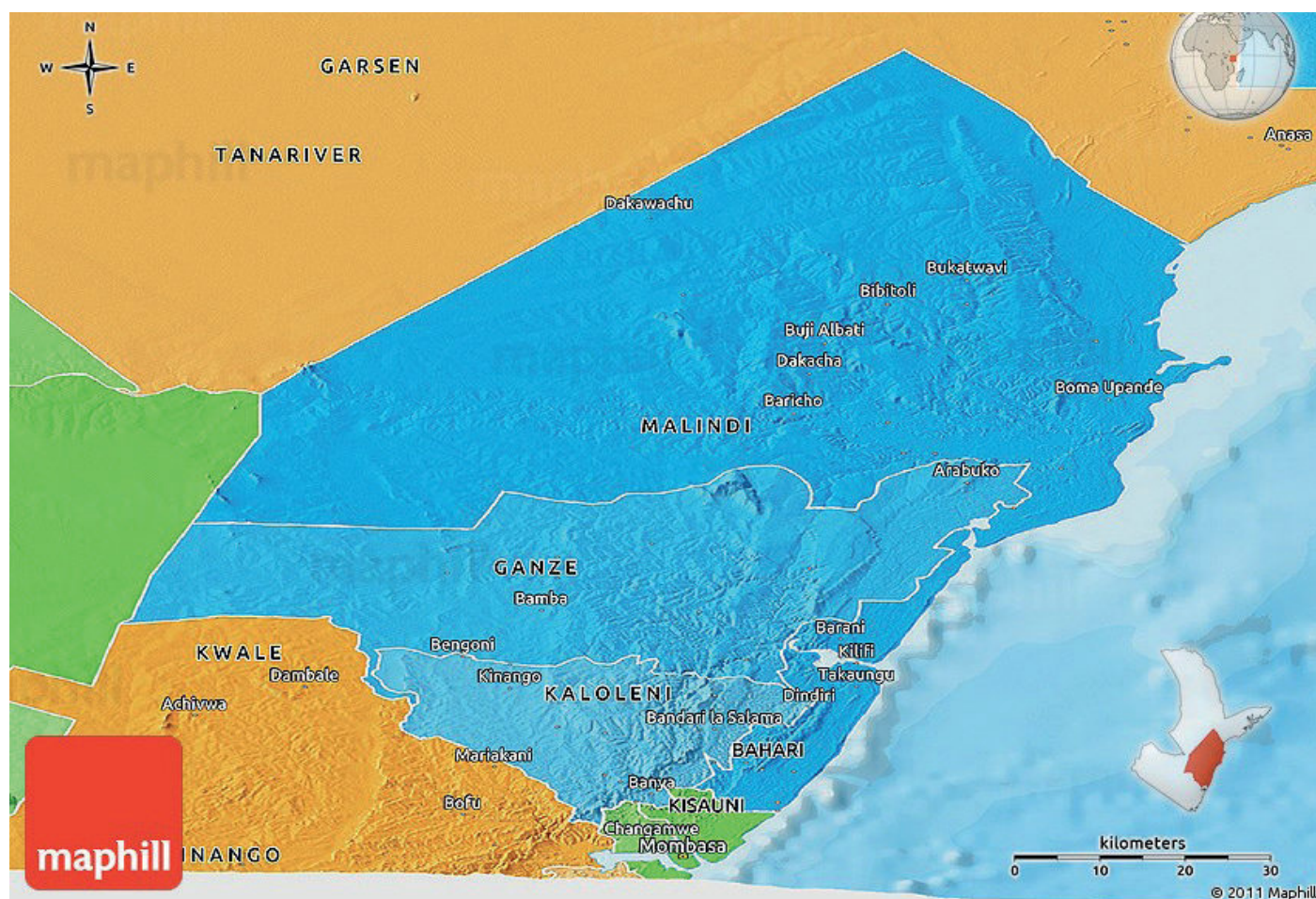
- Insufficient funds to aid in the smooth running of the County Environmental Committee.



- Issues of Environmental concern are not considered a priority in the County.
- Citizens are not willing to volunteer to be part of the committee, they instead demand for payment.
- Devolution is still a new concept. The change has lagged behind as the authorities clarify their respective mandate between the National and County Governments.

# **KILIFI COUNTY**

### 3.1: Study Area Description



**Figure 5: Map showing Kilifi County**

Kilifi County was formed in 2010 as a result of merging of the former Kilifi and Malindi districts. Its population is 1,109,735 and covers an area of 12,245.90 sq. km. The County is located northeast of Mombasa. Tourism and fishing are the major economic activities due to its proximity to the ocean. Kilifi has a strong industrial sector with the Mabati Rolling Mill and the Athi River Cement Factory contributing hugely to the region's economy. Salt mining and agricultural opportunities also form a part of the economic activities in the County. The Governor of Kilifi County is Mr Amason Jeffah Kingi.

### 3.2: Environmental Issues in the area

*Mining and quarrying with a focus on Magarini, Kilifi County*

Magarini in Kilifi County is home to several salt mining companies. Owing to the nature of the operations carried out by the mining companies, the environment is at a great risk of pollution. Despite the heavy presence of CSOs in Magarini, many Community members have been forcefully evicted from their ancestral land.

The Magarini Salt belt situation has continued to be a case of forced evictions, assaults and deaths inflicted upon Magarini Community members who have for long accused the salt mining companies of evicting them with utmost cruelty contrary to human rights laws to pave way for the expansion of the salt farms. Most Community members, who happen to be illiterate, have been tricked into signing documents indicating that they have been living as squatters on their ancestral lands. They were mostly compelled to do so to avoid being jailed.



CJGEA through its lawyers has in the past filed a constitutional petition against Kurawa salt company in Magarini in connection with a land dispute on behalf of Joel Ogada and his family members, claiming that the company violated their fundamental rights. CJGEA also filmed a documentary that highlighted the plight of the Community members and crimes against humanity brought about by the vicious deeds of the salt mining corporates and the authorities. The salt corporates have also come under scrutiny for flouting of labor laws and mistreatment of workers. The salt mining activities have also resulted in water contamination, the diversion of natural river courses, mangrove vegetation destruction and environmental degradation. The state has been biased in solving the land row by siding with the salt companies and ordering the Community members to leave the salt farms.

The major injustices in the area include:-historical land injustices, forceful displacement, water scarcity due to river diversion, deforestation of mangrove forests, livelihood deprivations and human rights violations including extrajudicial killings, harassments, threats and intimidations. Most of these violations are to the Community by hired goons, salt mining corporate security guards and the local police.

There have been numerous cases of complaints from the Magarini Community about the activities of the salt mining companies and their impact on the environment. Salt pans produce very bad odor and also contaminate water thus making it unsafe for consumption by humans. The Presence of salt pans has reduced the quantity of water available for use for both human and livestock. CJGEA has been actively involved in the advocacy campaigns against the salt mines and harassment of human rights defenders by the Companies by intervening with advocacy strategies to address the socio-economic impacts on the Community where rights were not being realized.

Information gathered from the Community

members showed that there was violation of their participatory rights from the planning, inception and operation of the projects. The human rights defenders. The Magarini Salt belt situation is a case of forced evictions whereby Magarini Community members have accused the salt firms along the salt mining belt of evicting them with utmost cruelty and without observing standards of human rights to pave way for the building of the salt firms.

Environmental Human rights defenders have been attacked and harassed for fighting for their rights to a clean environment and land ownership. The salt mining corporates have managed to penetrate the local authorities who they use to instigate harassment upon EHRDs and the local Community who do not comply with their terms to the extents of killings, arrests and violence in the form of physical injuries and beatings making it very difficult for the Community to access effective remedy through the judicial system in the area. CJGEA has helped in the release of some of the EHRDs one such case being that of Joel Ogada a Magarini resident who has experienced harassment in the past. Ogada was charged with a heap of criminal charges ranging from arson to threatening to kill. His wife, while seeking to stop the demolition of her homestead and a forceful eviction, was charged with arson. Such cases are rampant, with many defenders having to relocate or go into hiding for fear of their lives.

EHRDs from the area have been incorporated into the CJGEA security protocol that is inclusive of trainings on human rights work and avenues available for advocacy. CJGEA has also facilitated the HRDs to attend trainings under the Natalia project by Civil Rights Defenders on digital and physical security. Through CJGEA, the Magarini Community has been able to attend a public participation forum organized by the National Land commission to address the coastal historical land injustices. After the forum, CJGEA shared informative video and documentation on behalf of the Community.



CJGEA accompanied IPOA to the murder scene during an investigation of an extrajudicial killing of an environmental rights defender, the late Mr. Mangi Kenga who had been unlawfully shot by police. We furnished the authority with the incidences occurring in the Community and they as well had a one on one talk with the Community members CJGEA has helped the people of Magarini to file a petition to the National assembly concerning the salt mining corporates that have infringed on their rights and continue to do so even in the wake of resistance from the Community.

CJGEA initiated a project dubbed “Kurunzi la Matumaini” meaning “light of hope” which aims at empowering the Magarini Community to hold the local authorities and other service providers accountable to the injustices. This includes improving their participation in environmental decision making forums which will reduce the tensions and conflicts that exists between the Community, salt mining corporates and local authorities. The project aim was to mainstream a human rights based approach towards dealing with environmental issues in Magarini, Kilifi County and exploring social violations and environmental issues arising from the salt mining industry.

### ***Destruction of mangrove vegetation***

The area has eight species of mangrove vegetation which are constantly being cut down with no afforestation practices. Residents and environmental conservation groups in Kilifi County have been vocal on the destruction of Mangrove forest cover in the area. Loggers are targeting the mangroves for poles and rafters. The conservation groups have been trying to reclaim some of the areas which have been destroyed by the illegal loggers but their efforts have proved futile as the loggers are now targeting the reclaimed areas too.

The groups also claim that the government has failed to intensify forest surveillance to curb the destruction of mangroves, something that threatens the future of

mangroves in the area and endangers the aquatic life that thrives around the mangrove areas. The destruction of mangroves has led to the decline of fish stocks in the area as artisanal fishermen from the area lack modern fishing gear hence depend on near shore fishing. The area used to be a breeding ground for turtles and giant crab species which have medicinal values and also shield the residents from the adverse effects of the harsh ocean. The seahorse also used to be in plenty but that fish can no longer be found in the area as a result of the destruction of the mangrove forests.

### ***Pollution***

**Air Pollution-** There are factories that are being developed and those already in existence which pose a threat to the environment, the residents and the climate through emission of toxic gases during the manufacturing processes. Some of these factories include the Mabati rolling mills in Mariakani that manufactures iron sheets, Athi river mining company that manufactures cement and lime in Kaloleni, Mombasa cement factory which manufactures cement in Vipingo sisal farm and the salt firms in Magarini, Malindi.

**Water Pollution** – Residents have complained of water pollution from the salt pans at Magarini, slaughterhouses, Textile companies and processing plants in the area that release untreated waste into the rivers and water streams which contaminate the water they use for domestic and agricultural purposes. The Slaughter houses in Mariakani for example have been directing untreated animal waste into River Kombeni. The companies are posing a serious threat to the health of the residents who depend on the river for their water needs.

**Marine pollution-** The sandy beaches along the coast line of Kilifi are littered with plastics that have been washed up from the ocean. Pollution of the ocean by plastics and trash is a global issue of environmental concern and it destroys the natural aesthetics of the beaches and also poses a threat to

existence of marine life in the ocean.

### **Overfishing**

Overfishing and the use of illegal and destructive fishing gear as well as the destruction of the marine habitat are all detrimental to the artisanal fishing industry. The optimal fishing capacity at the coast is estimated at 4,625 boats but there are around 5,600 boats. This has not only burdened the artisanal fisheries industry, but also reduced the fishermen's earnings considerably. There have also been concerns raised by local fishermen about foreign fishermen, especially from Pemba and Zanzibar, who intrude the Kenyan ocean waters to fish thus adding to the reduced populations of fish and water conflicts.

A case in point is the declining lobster populations over the years. This is blamed on fishermen overharvesting the lobsters before they mature. The underweight lobsters should be released back into the waters since they are caught alive but the fishermen sell them instead.

### **Improper Land use leading to land degradation**

Mining is one of the economic activities in Kilifi County. The minerals excavated include manganese in Ganze constituency, salt in Magarini constituency, coral rocks in Kilifi North and South constituencies, limestone in Kilifi South constituency, Silica in Malindi constituency and sand harvesting done in the entire County. The mining is done through excavation of open pits and by use of heavy machinery which results to deep open pits and consequent land degradation and the loss of the natural scenic beauty of the land. An article on the Nation Newspaper on March 31st 2018 highlights a case of land leased for mining iron ores to a private company by one Mr Edward Kenga, a resident of Jaribuni village, which was then left with large open pits filled with water.

### **Desertification and drought as a result**

### **of deforestation**

Forests are being cut down by residents for charcoal burning and timber unsustainably as afforestation is not practiced. This could lead to desertification and drought if not dealt with in time. A case in point is the Arabuko Sokoke forest which is the largest forest in Kilifi County. The forest covers 420 square kilometres and has over 600 tree species which are now endangered because of deforestation. The forest is facing destruction by the residents living around it due to charcoal burning, logging and famine. Most of the destruction is spear-headed by cartels that are well-connected and do not fear the authorities. Trees are being cut down and very little land is still covered by trees and other vegetation.

### **Poaching and Destruction of Wildlife Habitat**

Poachers, illegal loggers and wood carvers have intruded deep into the Arabuko Sokoke forest where rangers don't access regularly thus endangering wildlife and causing destruction of forest cover. Snares and traps are being used by poachers to kill elephants and other wild animals within the forest. The poachers are colluding with locals to trap elephants using the dangerous traps and this poses a danger to the animals and people who walk in the forest unknowingly. The Snares are not only harmful to elephants but to other animals as well as human beings. Some people have lost their lives after getting sharp cuts from poisoned traps that are hidden in the forest. What used to be water drinking points for elephants; about five marshes, all together with grass have dried up. This interference with the wildlife habitats causes the wild animals to flee to other areas which might not be suitable for their survival as their natural habitat is.

### **Biodiversity loss with a focus on Indigenous Species**

Arabuko Sokoke is classified as one of the largest remaining Coastal forests in East



Africa .The forest is 420 km long and located along the Kenyan coast 110 kilometers north of Mombasa and borders the Mida Creek, a Mangrove forest. The locals have expressed their concerns that the forest is now on the verge of extinction following continuous degradation and destruction of old indigenous trees. Arabuko Sokoke may soon face complete depletion of forest cover if action is not taken to protect it due to massive logging, charcoal burning, and wood carving which are a threat to the biodiversity of the forest. There are native medicinal plants growing in the wild in Arabuko Sokoke forest and if people keep on cutting the trees, they will also disappear. This comes to show the need for EHRDs in the area to actively engage in protecting wildlife and the forest, as well as ensuring poachers and loggers are apprehended by working closely with the authorities through a CEC.

### **Municipal solid waste**

Residents have raised concerns over the inefficient garbage collection systems around Kilifi County. Some of the affected areas include Mtwapa, Mtomondoni, Nyambura and the Kilifi bus park on the Mombasa-Malindi highway. According to an overview by the Department of Water, Environment and Natural resources Kilifi County, less than 10% of the households dispose their garbage or solid waste through an organized system. The county administration has been blamed for laxity in the collection of garbage. Residents fear for disease outbreaks posed by the hazardous conditions from the contamination of water by the wastes. The residents live in fear of cholera outbreaks as there have been cases of severe diarrhoea in the past arising from poor solid waste management.

The county bought land in some parts to be used as garbage sites but up to now nothing has been done in most of these areas and instead garbage is carelessly disposed in heaps around the residential areas. Some roads have been inaccessible due to heaps of trash and some residents complained of the garbage being swept by flood waters

into their houses when it rains. The heaps of garbage have also blocked water drainage systems.

### **Water Scarcity**

The water shortage crisis has been affecting the residents, even making it to the news headlines on several occasions as it has been occurring very often and the County government is not doing much to combat the problem. Provision of clean water is limited and locals are forced to use salty water for their daily uses which is unsafe for human health consumption. The locals have expressed their fear of contracting diseases as a result of consuming the salty water.

Residents in the remote areas of Kilifi County are forced to travel long distances to fetch water from boreholes and water pans which is usually untreated water and puts them at risk of waterborne diseases.

The presence of an active CEC is thus needed to push for all this issues as the County Government has failed to deliver and thus the need for a CEC to engage them and put pressure on them to ensure that all this issues of environmental concern are accounted for and sorted out.

### **3.3: Sampling**

Sampling was purposive as we targeted the director, County executive Chair Mwachitu Karisa Kiringi and The Chief Officer of the environment department of the County Mr. Andrew Makoti. Our respondent in Kilifi was Samwel Lopokoityit, County Director of Environment, NEMA Kilifi branch.

### **3.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of the MINITAB software. The data garnered was majorly descriptive.



# EMBU COUNTY

## 4.1: Study Area Description



**Figure 6 : A map of Embu County showing the geographical locations of the sub-counties**

Embu is a county in the former Eastern Province where its largest town was the headquarters of the province. The county has a population of approximately 543,221 people; 267,609 male and 275,612 female and it occupies an area of 2,818sq. Km. Embu is divided into five sub counties; Embu North, East and West, and Mbeere North and South. The governor is Mr. Martin Nyaga Wambora.

The backbone of the economy in Embu County is agriculture. Livestock farming is also gaining popularity with revival of milk cooperatives. Tourism is also a source of economy.

## 4.2: Environmental Issues in the area

### *Proposed Seven forks solar plant in Embu*

Kenya Electricity and Power Generation Company (KenGen) is planning a solar power project to expand its power generation portfolio. The solar plant is to be located near the Seven Forks Hydroelectric Power Complex in Machanga, Mbeere South, and Embu County. The project's infrastructure will extend over an area approximately 100 hectares on land that is owned by KenGen in the county.

KenGen currently manages all public power generation facilities in Kenya and is the largest power producer in Kenya and East Africa. It owns 26 generation plants throughout Kenya, including 14 hydroelectric plants, six geothermal plants, 3 thermal plants, and 3 wind plants. The proposed Seven Forks Solar Project will see KenGen install solar photovol-

taic cells over the area, with capacity to generate about 45 Megawatts of power. It is intended that the electricity generated by the Project will be fed into the national grid through the Kenya National Transmission System with a grid connection directly to the existing 132 kilovolt Kamburu- Masinga overhead transmission line. KenGen will be responsible for developing the project with the support of private investors. The project is part of the company's strategic plan to meet Kenya's ambitious national target to increase the country's electricity generation from renewable sources to 85%. On location, the project will include on-site buildings, an operational control centre, office, welfare

facilities, security and storage facilities, and stores.

The residents however oppose the project and even threatened to block construction of the mega solar power producing plant in Embu if they are not provided with piped water. The solar plant will completely block about 50,000 residents from accessing Kamburu Dam and the Tana River, which they rely on for water. The Mbeere South Member of Parliament, Geoffrey Kingangi has in the past joined in to express his concerns over the project and even involved lawyers to write to KenGen to provide alternate sources of water but his requests have not been addressed. He went on to state that the residents understand the importance of the project, but they have to benefit directly from it and thus the company should ensure residents are provided with piped water as the project goes on.

In the preliminary environmental and social impact assessment report, the company did not indicate how it will curb the water shortage problem and also did not involve the community in the project plan. The whole of Mavuria ward and the whole of Kiambere ward will be affected, because those are the only areas through which residents can access water from Kamburu Dam and Tana River. The Seven Forks hydropower dams in the constituency have blocked all the traditional watering points, and only Machanga is left. Read article

### **Water Scarcity**

Embu County is home to the Seven Forks hydro-power producing dams situated in the Mbeere region of Embu and partly in Machakos County, which supply most of Kenya's electricity. They are Masinga, Kaburu, Gitaru, Kindaruma and Kiambere dams - tens of kilometres from one to the next and filled through a cascading waterway. Ironically, the presence of the dams has not improved lives of locals whose desire to be connected to the national grid remains a pipe dream. The residents despite being close to reservoirs with millions of

litres of water still go without water for the better part of the year. Their persistent aggrievances to have access to water to previous governments have not been honored, with some now in their advanced years thinking about the promises made by politicians and government officials that they would be supplied with water.

Mavuria and Kiambere ward residents have held a demonstration in the recent past. The locals left their businesses and laid siege at Gitaru Power Station, demanding KenGen start water projects that would cater for their water needs.

### **Municipal Solid Waste**

Embu town is yet to develop rigid policies to deal with solid waste management. The disposal methods used in Embu Town include waste collection and dumping of waste in open dumpsites. Embu Town faces many challenges in regard to solid waste management. Embu town residents have in the past raised the red flag over the possibility of Cholera and Typhoid outbreaks due to the large chunks of garbage left uncollected in various estates. This has also led to an outcry from the business community.

The garbage situation was so bad to an extent that it had encroached airstrip land. NEMA ordered the Embu town dumpsite be relocated 13 kilometres away from the airstrip. The dumpsite will pose a danger to planes when the airstrip becomes operational.

### **Mining of stones along riverbanks**

This is happening through mining of stones along the riverbanks. Mining activities are rampant mostly around the Kavingachi and Ena rivers found in Embu County.

The Water Resources Management Authority has had to place a ban on mining of stones from rivers in Embu citing environmental damage. The riparian area of the rivers is constantly under threat from miners, who do not understand the implications River destruction. The riparian area



plays the role of filtering soils not to get to the river and hence the need to protect it at all costs.

Some unemployed youth have been mining stones, which they then crash and then sell to builders oblivious of the consequences. The miners have on several occasions been warned to vacate the riverbanks by the authorities. Some unscrupulous civic leaders have also allocated riverbank land to residents without due regard to the environment.

### ***Sewerage problems***

The current onsite treatment methods need to be assessed for safety and capacity to handle the current and future wastewater flows. An assessment shows that pit latrines, pour flush toilets, septic tanks, cesspits and disposal into rivers and streams are not adequate in catering for the current and future wastewater flows, of more than 7000 m<sup>3</sup>/day. The future wastewater flows will demand better disposal methods in addition to the ones in existence. High levels of organic matter and total coliforms of the effluent disposed into Kigaritho stream and downstream of the stream show that EMCA's effluent standards, WHO drinking water standards are being violated on site by the residents using dilution as a method of wastewater disposal. These forms of violation in addition to the reported cases of amoebic dysentery prove that the streams and river water in the area is unsafe for drinking. The wastewater requires some level of pre-treatment before disposal into rivers or streams.

Landlords and residents have been using septic tanks to dispose sewage and this incurs expenses as they then have to pay for the waste to be removed by exhausters. Sewage disposal has been a nightmare to landlords at Blue Valley, Dallas and Majimbo estates in Embu County for many years. Landlords direct the effluent into septic tanks and hire exhausters to empty them at a cost in every three months. In some cases, some landlords hire youths to

scoop out the waste using buckets then bury it. This means waste disposal is cumbersome and risky to the health of residents.

### ***Destruction of Rivers***

This has been as a result of deforestation which has led to drying up of rivers and human activities which disrupt the natural flow of rivers through construction of dams in Embu County and an example is the seven forks hydropower producing dam.

In a memorandum presented by residents to KenGen, they claimed the national power generator had blocked the common community water points during construction of the five dams by diverting the water from the rivers to underground tunnels. River Thiba in Machang'a area of Embu County has dried up downstream, affecting thousands of residents of the semi-arid in Mbeere region.

### ***Discovery of Copper in Embu County***

With the recent discovery of Copper in two sites in Embu County, investors have expressed interests in the County with plans of setting up copper mining and refining industries in the County. Chinese investors have expressed their interests in creating partnerships in Mining and agriculture with Embu County as the county is endowed in those areas. A delegation of Chinese investors toured the Mbeere region in 2018 in readiness for a partnership with the Embu County Government in commercial mining of the minerals. The delegation was led by the Economic and Commercial Counselor in the Kenyan Chinese Embassy Dr. Guo Ce, who said mining of the copper and other minerals in the region may start next year if they establish that the deposits are large enough to support large scale mining. Mining has negative impacts on the Environment more so the land where the activities are undertaken. There will be land degradation and the natural environment will lose its aesthetic value. The copper smelting and refining industries that will be established will lead to air pollution and

water pollution if the toxic gases and wastes are not treated before being released into the environment. Most of the residents are not yet aware of the negative impacts of the project and seem to have welcomed the idea communicated to them during a rally by the Embu County Governor, Mr Martin Wambora. There has to be a way to create awareness amongst the Community members on the impacts of mining and how they stand to benefit and thus the need for the establishment of a CEC and presence of EHRDs in the area.

### 4.3: Sampling

Sampling was purposive as we targeted the director, County executive chair and Chief Officer of the Environment Department of the County. Our respondent in Embu County was the County Environmental Officer Elizabeth N Ngotho from NEMA, Embu County offices, Department of Compliance and Enforcement.

### 4.4: Research Instruments

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## 4.5: Findings and Interpretation

### 4.5.1: Establishment of County Environmental Committee

The committee was established in 2016 and has been active ever since.

### 4.5.2: Budgeting for the committee

There has been no budgeting which has caused constraints in the committee's activities such as training.

### 4.5.3: Committee membership

Youth are not represented in the committee as they do not have the necessary qualifications, women and men are represented but there are no representatives from CSOs and

People living with disability.

### 4.5.4: Access to information

Community has been able to access information through sensitization and focus groups.

### 4.5.5: Milestones of the committee

The committee has been able to formulate county development plans; unfortunately, they are not budgeted for.

### 4.5.6: Role of committee in capacity building, access to information and public participation

The committee is of great help as it has government representatives to whom the public can effectively raise their issues.

### 4.5.7: Challenges

There were no challenges experienced.

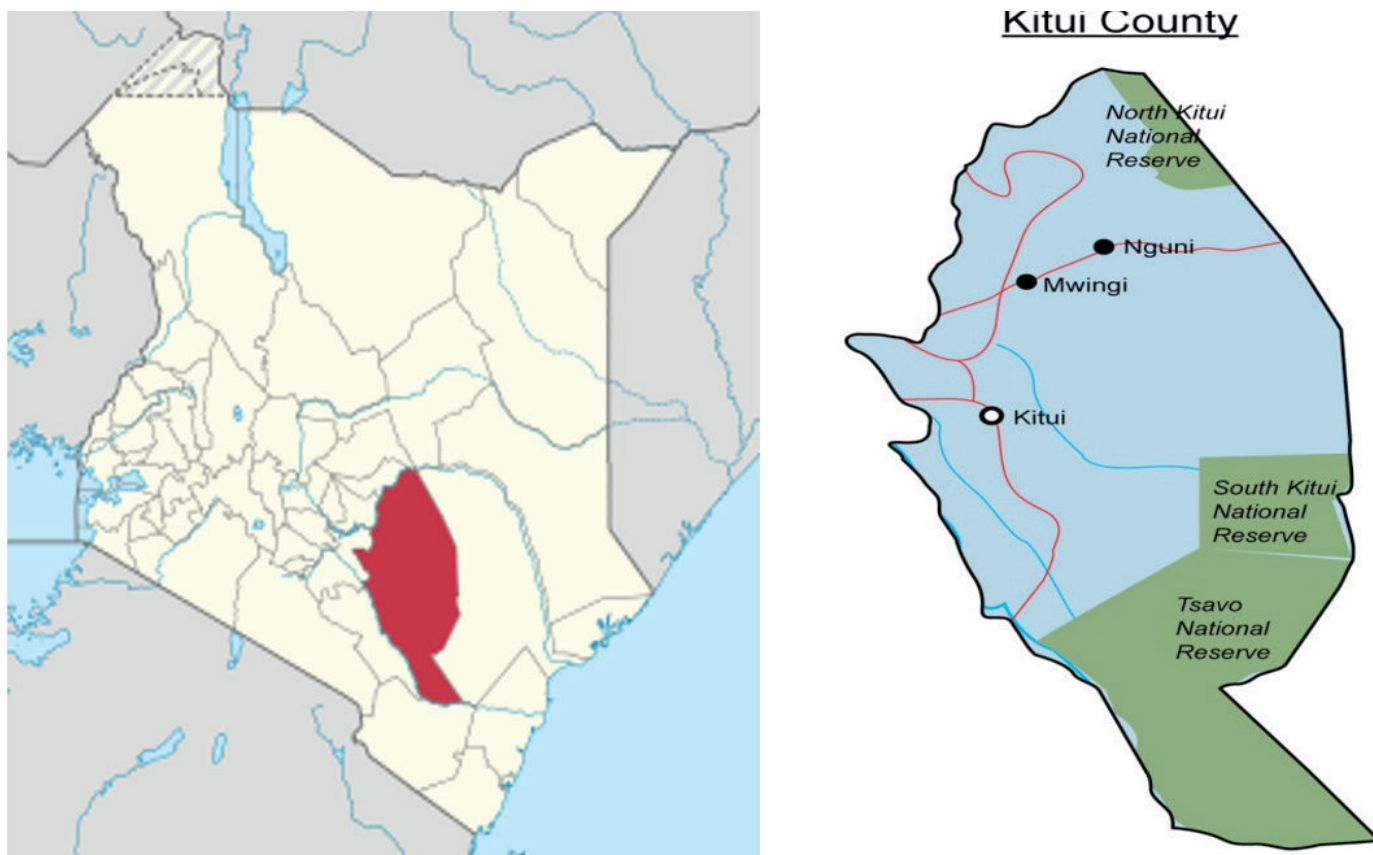
### 4.5.8: Future success of committee mandate

No input was given.

# **KITUI COUNTY**



## 5.1: Study Area Description



**Figure 7 : Map showing Kitui County**

Kitui County is found in the eastern province of the former geographical divisions of Kenya. The County has a population of 1, 012, 709, and an area of 24,385.1 sq. km. Kitui County has 8 sub-counties. The economy is dependent on agriculture despite the sporadic rainfall, industries; cotton, and mining; coal and limestone. Ms Charity Ngilu Is the Governor of Kitui County.

## 5.2: Environmental Issues in the area

### *Proposed Kitui Coal Plant*

Kitui County harbors rich valuable mineral deposits. The county boasts of coal, discovered at the Mui coal basin several decades ago. According to expert reports, there are also significant amounts of iron ore as well as traces of copper and these are expected to benefit the County economically. However, since the signing of the benefit sharing

agreement between Kitui leaders and the Chinese firm, Fenxi Industry Mining Company, which was contracted to mine coal way back in 2014, very little has happened in Mui basin five years down the line.

There have been setbacks barring the start of the coal mining project. One major setback is the move by global stakeholders to restrict the use of coal as a form of energy and instead advocate for the use of green energy. This has made coal less useful as a form of energy. Political intrigues have also stood on the way for the mining of coal in Kitui. There seemed to be a conflict between the national and county governments over the sharing of wealth from the coal mines.

Another issue which has continued to frustrate the mining is the signing of the addendum; a document which was drafted after the signing of the Benefit Sharing Agreement to cater for interests of the local community who were thought to have been

left out in the agreement. The document is yet to be signed. At the same time, the local community has opposed the project due to uncertainty on where they would be relocated to once the project starts. Compensation has also been a thorny issue that has delayed the start of the project. The residents feel that the project will totally interfere with farming which is the main source of income for them.

### **Charcoal production activities**

The indiscriminate cutting down of trees for firewood and charcoal production ranks top on the causes of deforestation in Kitui County as forest cover continues to face depletion. The trees have been cut down without applying afforestation practices. An example of a forest threatened by deforestation is the Nuu forest where charcoal barons cut down trees indiscriminately. Nuu forest risks transformation into a desert in the next few years going by the current rate of deforestation, the last hope of a forest cover in Kitui County is under alarming attack by charcoal barons. Even after a law was passed that bans charcoal business in the county, the charcoal barons are still going on with the logging activities by bribing authorities. The logs are then covered with an earth mound and this restricts the supply of air during carbonization process.

There have been cases where Lorries transporting charcoal have been attacked by the residents and had their Lorries burnt. The residents were apparently angered by the charcoal burning activities and were also affecting a ban on charcoal production and logging activities. The arson of the lorry ferrying charcoal even led to the arrest of the Kitui County Executive Chair for the environment John Makau and the Governors advisor, David Mbisi. If an amicable solution is not found there will be more cases of burning of Lorries and loss of lives. This area therefore needs EHRDs that can advise the locals on amicable ways of effecting the charcoal ban and an active CEC to handle and follow up on such conflicts as

most of this lorry drivers are just hired to ferry the charcoal and it would be unfair to torch their lorries and even kill them as the main perpetrators are the ones that burn the charcoal and those in charge of the businesses.

### **Sand Harvesting**

Sand harvesting practices have been banned in Kitui County after an outcry from the residents who had resorted to taking matters into their own hands by blocking lorries ferrying sand citing that the rivers were drying up as a result of the practices. In most sub-counties, extraction of valuable stones has been rampant and the open pits left after mining have exposed the land to degradation. The use of heavy machinery in the area especially the river banks has resulted in land degradation. Kitui has geological deposits among which are industrial rocks and mineral deposits. The minerals include limestone, iron ore, manganese, magnetite, graphite, coal, gypsum, vermiculite and gemstones. Rocks with economic value are granite, trachyte, phonolites, marble and quartzite.

Uncontrolled sand harvesting has led to the collapse of several rivers in Kitui County, posing a major threat to the natural ecosystem in the area. Despite the county government having imposed a ban on sand harvesting, the illegal sand harvesting is still ongoing. River Kivou in Kitui County which was once a thriving horticultural zone is now a shadow of its glorious past due to unrestrained and illegal sand harvesting that has destroyed its river bed, collapsed its banks and dried its water points. The illegal sand harvesting is now adversely affecting the environment in Kitui County. Seasonal Rivers like Nguutani in Mwingi West constituency and River Kivou in Mwingi Central Sub-County are now on the verge of drying up, due to unrestrained sand harvesting which has destroyed river beds, collapsed river banks and drained water points. The two rivers are just a representation of what is happening in several parts of Kitui and residents are now calling upon the County



government to move with speed and curb the vice, with a view to sustaining the eco-system.

### **Water scarcity**

The water shortage in Kitui County is a looming humanitarian crisis. The county government boreholes have broken down and have excess salinity levels and fluorides making them unfit for human consumption. Locals have to traverse a distance of close to 20km in search of water and it takes them a whole day at the water sources because of the long queues encountered. Thousands of residents in Kitui County especially in Malalani and Endau risk death by starvation as water sources are disturbingly drying up. The residents who only rely on three wells in the area have called on the county government to intervene as these water sources are not only too few but also filled with fluoride.

### **Drought**

A larger section of the population is in dire need of relief food to save them from starvation as the drought bites hard. Livestock farming in the County is also at risk as most of the animals are dying as a result of drought. The region receives inadequate rains and a dry spell is resultant. There has been a great decline in food and livestock production as well as water supply in Kitui. Most crops have dried up prematurely while most seasonal water sources have dried up. The situation has seen limited water points across the county strained as humans and livestock compete for water.

### **Desertification as a result of Climate Change**

The County is currently facing adverse weather change patterns. Uncontrolled cutting down of trees for charcoal burning and logging in the remote parts of Kitui County especially in Kitui South, has led to adverse climate change as the region now receives inadequate and erratic rainfall. Water sources have dried up as a result and

crop yields have deteriorated drastically.

In the past harvest from maize, sorghum and millet was in plenty. After it rained, the soil would retain moisture and support the plants until the harvesting period but currently the crops can't flourish with the kind of weather changes being experienced. A combination of long drought and flash floods caused by climate change has led to poor successive maize harvests, leaving communities in areas like Mtalani, Vote-Ndatani and Kongo desperate for food. The recent changes in weather patterns is an indication that there is need to empower the residents on climate resilience. Climate variability and change is affecting weather patterns and seasonal shifts with serious repercussions on rural households. Semi-arid environments such as Kitui County are extremely vulnerable to climate change because their production systems are climate sensitive.

### **Destruction of Wildlife habitat**

Despite wildlife and conservation laws prohibiting trespassing in national parks and game reserves, South Kitui Game Reserve is home to more than 5,000 people surviving on poaching and illegal charcoal burning. Illegal herders, squatters, poachers and charcoal burners are destroying the eco-system as they have encroached into wildlife habitat forcing the animals to flee elsewhere. Power saws are being used to cut mature acacia trees which interrupt with the natural ecosystem and leading to destruction of the wildlife habitats. This could lead to extinction and affect the flora-fauna relationship as some species can't thrive in altered environments.

### **Biodiversity Loss with a focus on Indigenous Species**

#### **Acacia tortilis**

High value indigenous tree species which are preferred by loggers for production of quality charcoal are also at risk of becoming extinct. More than 85 per cent of the



charcoal produced in the County comes from *Acacia tortilis (umbrella thorn)* and *Tamarindus indica (tamarind)* which are indigenous tree species.

Cutting down trees for charcoal production in Kitui County is done indiscriminately and the danger is that loggers prefer trees that take decades to mature yet there are no efforts to replenish the environment through afforestation. These trees grow naturally in forests and farmlands and unlike other fast growing species, they take a minimum of 30 years to mature and unless decisive measures are urgently taken to stop charcoal burning, the arid region will deteriorate into a barren land unable to support any meaningful economic venture.

### **Pollution**

This is mainly caused by gases emitted from the manufacturing industries in the area. An example is Kitui Industries Limited, a cotton gin plant. During the sand harvesting process, the scooping of sand with the use of machinery from the rivers results in oil and grease leakages. The blasting of rocks and transportation of the materials results in weakening of the bridges leading to Tiva River where illegal sand harvesting has been taking place.

## **5.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. Our respondent in Kitui County was Mr. Benjamin Mukulo from the Department of Environment and Natural Resources at the NEMA Kitui County Office.

## **5.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data that was garnered was majorly descriptive.

## **5.5: Findings and Interpretation**

### **5.5.1: Establishment of County Environmental Committee**

The environmental committee was established in November 16th 2017.

### **5.5.2: Budgeting for the committee**

Budgeting is not done directly as the committee draws its funds from the budget for environmental protection and management.

### **5.5.3: Committee membership**

All groups are represented just as stipulated in the EMCA Act 2015.

### **5.5.4: Access to information**

Not quite as it is still in its initial stages prior to a sensitization exercise to the wider community.

### **5.5.5: Milestones of the committee**

The committee has been able to participate in the screening of all projects for environmental and social safeguards.

### **5.5.6: Role of committee in capacity building, access to information and public participation**

The committee plays a vital role in overseeing environmental and social obligations for all county undertakings.

### **5.5.7: Challenges**

No challenges encountered.

### **5.5.8: Future success of committee mandate**

Committee should be given space to coordinate/ oversee environmental issues in the community so that they can implement their mandate.

# **MACHAKOS COUNTY**





## 6.2: Environmental Issues in the area

Power producer KenGen is planning to raise the Masinga hydroelectric dam's wall and install equipment that will pump downstream water back to the dam to ensure a steady supply of the cheap power it produces throughout the year. Previous failed attempts to raise the Masinga wall were sus-

KenGen is moving forward with its efforts to raise the dam wall despite the low rainfall and drought being experienced in the County. The increase in the height of the Masinga 200-ft-high by 7,200-ft-long embankment dam wall is expected to increase the total storage capacity of the Tana River impoundment, which is currently at 1,260,000-acre feet. The Masinga project was commissioned in 1981 on the country's longest river and original plans for the facility include an upper reservoir.



that would hold water pumped from downstream Tana River flow. The upper reservoir capacity would also provide for flood water protection for the lower course of the Tana River.

The project also entails installing pumping equipment at the scheme. Under the plan, the stored water is pumped in a cycle between the cascading seven forks dams with Masinga being at the top as it sits on a higher ground. The water is pumped during night time and weekends when electricity demand is not high and stored then released when demand is at peak through turbines, flowing downhill from the upper reservoir into the lower one generating electricity. Power sector Experts however argue that the dam should be de-silted and not raised. The process of silt removal involves dredging out of layers of sand and soil deposits from the dam floor and some investors had even offered to de-silt Masinga dam for free on behalf of KenGen. In exchange, the company had hoped to find gold dusts and particles swept downstream and deposited at the bottom of the dam. Unfortunately the deal was shelved by the Government and it never saw the light of day. Heavy rains occasionally cause the dam, standing at a height of 60 metres, to overflow when the water hits the maximum level, leading to loss of over 100 million litres and spilling which results in flooding downstream and thus it would be more logical to build canals and extra dams to control the water during heavy rain season instead of the raised wall.

### **Sand harvesting**

Sand harvesting and mining along river banks in Machakos County may have provided a lifeline to hundreds of people for years, but it has also brought about environmental degradation in the form of Land degradation and riverbank erosion. Riverbed mining causes erosion and often leaves the river -plains much more vulnerable to flash floods because it allows loose landmass to be washed downstream. Areas mostly affected by illegal sand harvesting in

the county include Masinga, Yatta, Mwala, Kathiani and Kangundo districts. Sand related conflicts and incidents of harvesters buried alive in the sand are also common. The activity has brought forth destruction of the natural aesthetics of the environment, drying of riverbeds and destruction of roads used to transport the sand by heavy vehicles.

### **Destruction of rivers**

Riverbed mining causes erosion and often leaves the river-plains much more vulnerable to flooding because it allows loose landmass to be washed downstream. Water levels in the rivers are dropping down at an alarming rate due to sand harvesting along the river banks. Areas mostly affected by illegal sand harvesting in the county include Masinga, Yatta, Mwala, Kathiani and Kangundo districts.

### **Drought**

This is directly linked to low annual rainfall and deforestation practices. This has led to drying up of rivers and water scarcity. It has also affected food production as farming relies greatly on rainfall and Irrigation from rivers. The drought patterns in this County were studied and it was concluded that it is a dry place and it experiences moderate to extreme drought resulting to food insecurity.

### **Sewerage problems**

Machakos County government has in the recent past been warned by NEMA against unlawful discharge of raw sewage in Athi River town, Mavoko sub-county. NEMA had asked the county to stop further environmental pollution at the county's slaughterhouse in Slaughter Slum, Athi River town which pose a great health risk to residents. In Mavoko municipality the sewer network is dysfunctional with a deficit of 86% sewage treatment capacity.

### **Water Scarcity**

The County has generally been facing water

shortages for decades now. Residents have been forced to walk long distances in search of water. Those living in towns are the hardest hit with a 20-litre container retailing at up to Sh30. The most affected areas are Mavoko, Machakos Town, Tala, Matuu and Masinga.

In Machakos town's Katoloni suburb, residents are forced to wake up early and queue for many hours to buy water. In Matungulu sub-county, residents of Kyaume have to camp at a water point by the roadside.

The County Government is however taking measures to improve water supply by drilling more boreholes and building dams that will be used in harvesting water. This will ensure as many people as possible are connected to water supply.

### **Desertification as a result of Climate Change**

Desertification in Machakos County is becoming widespread as trees are being cut at a faster rate than they are being replaced. This has led to the removal of forest cover and drying up of rivers and water catchment areas has resulted to water scarcity and alarming desertification rates. Over-exploitation of forests, overgrazing and improper land use practices have caused many areas to become unproductive for farming and this has also resulted in desertification. The role of forests in the reduction of global greenhouse gas emissions plays a key role in mitigating climate change. Deforestation and forest dilapidation in the County is mostly being determined by exterior forces and has affected agricultural development. The major problem posed by climate variation in Machakos County is water scarcity.

The county is yet to benefit from redress of the salient policy gaps for climate change. Like most of the counties in Kenya, Machakos County lacks a climate change policy and still relies on some national policies. The enforcement and link in the already

existing policies and legislations is also weak and an environment for undertaking climate related interventions is yet to be created.

### **Municipal Solid waste**

The County has no elaborate waste disposal procedures and systems. The residents have been constantly raising complaints concerning the garbage dumping issue with the Governor at some point getting irked and firing officials in charge of the Solid waste management department in the County.

### **Deforestation**

Trees and forest cover in Machakos County are under the threat of depletion as they are being cut down indiscriminately to provide charcoal and for logging purposes. A case in point is the Iveti forest whereby saw millers with the permission of the County government had been allowed to clear trees on 22 acres of forest land. This was done without the consent of the communities around that have been making an effort to restore the forest cover within the County.

## **6.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the County environment department. Our main respondent in Machakos was the Director of Climate Change, Jackline Mumo from the Department of Environment, NEMA Machakos County offices.

## **6.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **6.5: Findings and Interpretation**

### **6.5.1: Establishment of County Environmental Committee**

The committee has not been established yet but the process of appointing members has already started.

### **6.5.2: Budgeting for the committee**

The government has budgeted for the committee and it is inclusive of policy formulation.

### **6.5.3: Committee membership**

The constitution of the committee is guided by the requirements provided in EMCA 2015.

### **6.5.4: Access to information**

The community does have access to necessary information about the committee.

### **6.5.5: Milestones of the committee**

No milestones achieved as the committee is yet to be established.

### **6.5.6: Role of committee in capacity building, access to information and public participation**

The committee does have a big role in promoting capacity building, access to information and public participation.

### **6.5.7: Challenges**

No challenges encountered.

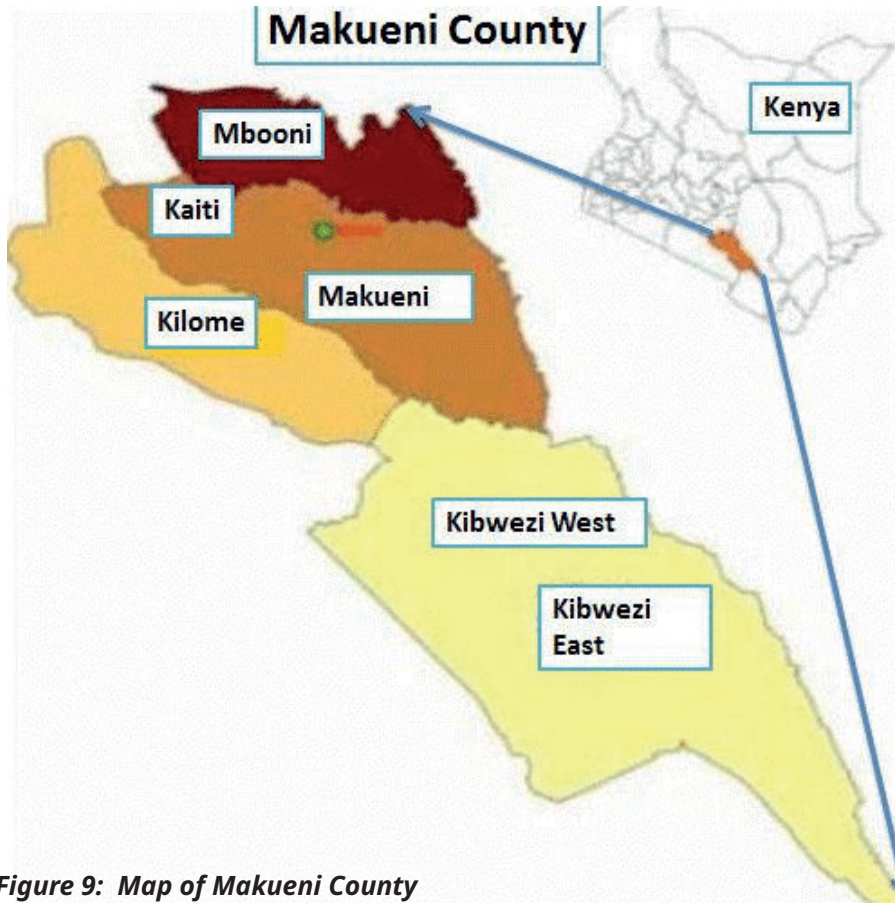
### **6.5.8: Future success of committee mandate**

Enough budgeting should be provided to fund the committee's activities.



# MAKUENI COUNTY

## 7.1: Study Area Description



**Figure 9: Map of Makueni County**

Makueni County was formerly known as Makueni District, found in the former Eastern Province. The capital of this county is a town known as Wote. The county has a total population of 884,527 people (2009 census) and an area of 8,008.9 sq. km. Its capital and largest town is Wote. Mr Kivutha Kibwana is the County's Governor. The County has six sub-counties namely: Makueni, Kaiti, Kilome, Kibwezi East, Kibwezi West, and Mbooni.

## 7.2: Environmental Issues in the Area

### *Proposed Thwake Mega dam project*

Thwake dam which will be constructed at the confluence of River Thwake and River Athi will be ten times larger than Ndakaini dam and also the largest in East Africa. Concerns have been raised over excessive pollution of River Athi, which is expected to pour the bulk of water in the proposed Sh62 billion Thwake Dam. Stakeholders from

Machakos, Makueni and Kitui Counties, which the mega facility is expected to serve, have urged the Government to address environmental concerns arising from pollution of the river. In 2016, the Parliamentary Committee on Environment and natural resources toured sections of Athi River and made findings that its waters were badly contaminated and therefore recommended a clean-up plan. However no efforts have been done to date and the levels of pollution have increased.

The objective of the project is to provide drinking water, irrigation and hydroelectric energy for the larger semi-arid area of Makueni County and surrounding regions,

including the technology city of Konza that is under construction. Upon completion the Thwake dam, which is being constructed by the China Gezhouba Group Company (CGGC), is estimated to be 80.5m high and have the ability to store up to 681 million cubic metres of water. Out of this, a majority, 625 million cubic metres of water will be for purpose of producing electricity and the downstream irrigation of agricultural land. The rest will be divided as follows; 34 million cubic metres will be for human use while 22 million cubic metres will be for upstream irrigation. The construction of this phase is expected to be completed by the end of 2022. An additional three phases are expected to follow after the initial phase is complete. After the initial phase, there will be construction of hydraulic plants, which will be used to treat up to 117,200 cubic metres of water for the 640,000 residents that will be occupying the tech city of Konza as well as 34,600 cubic metres for household use for the 674,700 inhabitants in the region. The next phase will include

production of hydroelectric energy followed by another stage that will focus on 40,000 hectares of irrigation.

The Governors of Makueni and Machakos have raised concerns over the division of jobs and contracts in the project which only gives the locals a very small entitlement. There have also been complaints of compensation of residents that were displaced in order to pave way for the construction. [Read article here](#)

### ***Sand harvesting***

The lucrative sand harvesting has resulted in Land degradation as sand is scooped and dug out exposing the land to erosion and caving in of the land. The sector depleting most of the sand within the County is the construction industry. Makueni has in the recent past been in the limelight for sparked bloody conflicts between cartels and locals where people have been killed and Lorries transporting sand torched [see article]. There have also been cases of deaths in collapsed mines an example being Kwa Muvai River, Makueni County.

### ***Destruction of Rivers***

Sand harvesting destroys riparian vegetation, affects the flow of water along the rivers, erodes the water holding capacity of the riverbed and damages ecosystems. Scooping from riverbanks is prohibited to avoid widening rivers and decrease in water levels that has led to drying up of rivers. The harvested heaps interrupt the natural flow of the rivers. An example is Isuuni River in Makueni County

### ***Deforestation***

The unsustainable cutting of trees and harvesting of wood has led to degradation of forests in the County causing the escalation of deforestation. Logging activities are happening inside forests like Kivale in Mbooni, Makueni County Water catchment areas are also drying up and timber and charcoal are becoming very expensive. Residents

cut down trees for charcoal burning, settlement, agriculture and timber. Deforestation has made the county water scarce with only a very small population having access to improved sources of water. The average distance to the nearest water point is estimated at 8 kilometres. This is attributed to the cyclical droughts and shrinking water sources caused by cutting down of trees and encroachment on watersheds.

### ***Drought***

Makueni County is characterized by perennial droughts and famines. The sight of Livestock near dry water pans, failed crops and women walking for long distances with their donkeys in search of water is what you see in areas like Mtito in Makueni County. In most areas residents depend on relief food aid and in some parts they have adapted to growing drought resilient crops to sustain them. The decline of water sources due to low annual rains and deforestation practices has resulted to water scarcity in the County. The drought has led to reduced food production and affected agricultural development this in turn has made food prices to shoot up.

### ***Desertification as a result of Climate change***

Desertification has come about as a result of clearance of natural vegetation for charcoal production, logging activities, timber production and also to allow room for settlement as population rapidly increases. As a result, large tracts of land, which were under natural vegetation cover, have now been interfered with resulting in little or no vegetation cover at all. Most rivers and springs have also dried up.

When trees are cleared, overexploited or degraded, they react with sensitivity to a changing climate and this largely affects the weather patterns. Food insecurity and acute water shortages are permanent features in Makueni and the current climate change has had adverse effects on the residents. Rivers are also drying up due to uncon-



trolled deforestation an example being River Kaiti.

Climate change is killing Makueni's water resources. A case in point is in Kilungu, where rivers and water towers have dried up due to climate change. Most farmers have opted to construct greenhouses and grow drought resilient crops as a way of adaptability to the climate change. The County has also drafted strategies to deal with this challenge.

### 7.3: Sampling

Sampling was purposive as we targeted the director, County Executive Chair Bob Kisyula and Chief Officer of the Environment department of the County, Mary Mbenge.

### 7.4: Research Instruments

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## 7.5: Findings and Interpretation

### 7.5.1: Establishment of County Environmental Committee

The committee was established in 2017 and has been functional since.

### 7.5.2: Budgeting for the committee

The County government has been involved in financing of the meetings already held, and is aware that they should set aside funds for the committee in their budget.

### 7.5.3: Committee membership

Representation in the committee membership structure is in accordance to the EMCA 2015 guidelines.

### 7.5.4: Access to information

The community has been able to access information concerning the committee

through their representatives who are members of the committee.

### 7.5.5: Role of committee in capacity building, access to information and public participation

The community interacts with the government officials which makes it easy for them to gain access to information and to participate in the decision making processes about issues concerning them

### 7.5.6: Challenges

No challenges were encountered as they used guidelines from EMCA Act.

# **NYERI COUNTY**



## 8.1: Study Area Description



Figure 10: Map of Nyeri County

Nyeri County has a total area of 3,356 sq. km. and a population of 693,558 as of 2009 census. It is located on the southwest flank of Mount Kenya. Its capital is Nyeri town and is geographically found in the Central region of Kenya. The Governor of Nyeri is Mr Mutahi Kahiga.

## 8.2: Environmental Disputes in the area

### Municipal Solid Waste

Solid waste management has been a challenge in Nyeri County over a long time with garbage disposal being done on illegal dumpsites. This menace has posed health dangers as dumpsites are hazardous and the stench from them is unpleasant. Some of these wastes find their way into water courses such as rivers and causes contamination of the water.

A case in point is an illegal dumpsite that has been sitting on the Asian Quarters grounds in Nyeri town for more than 20 years. Recent efforts by the County to reclaim the Asian Quarters grounds, that are choking in waste and filthy smell, by moving tonnes of garbage to the lower side of the field barely 100m from River Githwariga have sparked protests. A section of residents and NEMA officials have opposed the move, warning of the effects the waste will have on the river and the environment.

### Pollution

#### Air Pollution

There are several industries in Nyeri that manufacture tea, coffee and dairy products. The factories release untreated toxic gases and smoke into the air causing air pollution. Another source of air pollution is the stone crushing plants set up within



different areas in the County. On a typical day, clouds of dust rise as the stone crushing machines reduce huge boulders to chips. Residents have complained of dust and air pollution. Some of the stone crushing plants were found to have been using explosives to break down the rocks without permits from the Geology Department or installing the requisite safety apparatus.

**Water pollution** – Toxic wastes released from the factories and landfills eventually find their way into the water courses and this results in contamination of the water sources. Residents have over the past been dumping garbage into River Chania. Water pollution poses risky health hazards as the contaminated water is not safe for human and livestock consumption and this also affects crop yield as the plants could wilt and die as a result of toxic chemicals in the water.

### ***Improper land use leading to Land degradation***

Land degradation is happening through over-cultivation of land and cutting down of forest cover that protects land from soil erosion. Use of excessive fertilizers and pesticides has also resulted in soil degradation. In areas where stone crushing plants have been set up the natural aesthetics of the land have been interfered with and loose rocks in large open pits are a clear evidence of this.

Chinga Dam, a comparatively small man-made dam constructed located in Othaya, Nyeri County has been discovered to be facing drastic changes in its size of since the time it was constructed as a result of increased sedimentation in the dam. The sediments come from erosion and upstream where trees have been removed and thus the soil is carried downstream by River water. There has been a clear shift from cultivation of food crops to production of tea and much land unsuitable for cultivation and that previously had not been utilized has been used to produce tea thus making the land vulnerable to degradation.

### ***Deforestation***

Forested areas have been cleared successively and replaced with tea. These changes are all consequences of the rapidly increasing population. The wetland upstream and water catchment areas are constantly being drained by farmers to facilitate more cultivation. Trees are being cut for logging purposes and also to provide fuel in form of firewood to the coffee factories around Nyeri County. A case in point is the Arberd-ares forest whereby over the recent times, logging and deforestation has been taking place at a very alarming rate and this has caused the vital water catchment area and several river sources to be depleted. The rivers are now drying up and the local residents are experiencing dry taps.

### ***Climate Change***

Climate change has led to unpredictable harsh weather conditions since the usual rainy seasons are scarce and the annual rains have drastically dropped. The current climate on Mount Kenya is wet, but drier than it has been in the past. The ice is melting away. The rivers flowing from the glaciers are not as full as they used to be and some have dried up. When the melting starts, rivers first experience high flows because of the melting ice but this subsequently reduces because the glaciers never really recover like they did before climate change became a reality. Because of this, the water levels in the rivers drop drastically in the years that follow.

The area is highly vulnerable to climate change because of its exposure to increasing temperatures and rainfall variability and its dependence on agriculture means any change in the climate affects the subsistence farming. River Gura's water volumes have gone low and the Tetu residents no longer have consistent water in their taps. More than a decade ago, River Kagumo used to break banks but now it's been reduced to a stream. River Muringato, whose water is piped to thousands of residents in Kieni West Division has almost dried up as well.

The wildlife in the range is also being affected adversely by change in weather patterns brought about by climate change.

### **Landslides**

Landslides are common in Nyeri County. Most landslides take place during the long rains which confirms the connection between precipitation and landslides. Most landslides occur in the upper part of the catchment areas, tea fields and forest areas where deforestation is rampant and most of them on North-facing slopes. All inventoried. Annual rainfall in the area is high and this is an influencing factor for the occurrence of the landslides. The risk of landslides is augmented by cutting down of trees on steep slopes.

## **8.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. Our respondents in Nyeri County were the Chief Officer, Department Water, Environment Resources and Sanitation, Stanley Maina Mutuota and the Director, Department of Water, Environment and Natural Resources, Esther Mbugua.

## **8.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **8.5: Findings and Interpretation**

### **8.5.1: Establishment of County Environmental Committee**

The committee has not yet been established.

# **MURANG'A COUNTY**





## 9.2: Environmental Issues in the area

## Controversial North Collector water tunnel project

fully lined 11.8km, 3.2m diameter tunnel that will gather water at the source in the Arberdares forest then have the water diverted to Ndakaini dam. The Rivers targeted are River Maragua, River Gikige & River Irati. The project will then extend to tap water from River South Mathioya, River Hembe, River Githugi and River North Mathioya. All these rivers feed into Tana River. The project also entails building a channel to move water by gravity to a treatment plant 6km downstream of Ndakaini. The project is being funded by the European Union and falls under the Water Towers Protection and Climate Change Mitigation and Adaptation Program. The program seeks to protect and conserve water towers and ground water supplies in Kenya to curb Climate change and drought.

However, leaders and activists from Murang'a County have demanded the construction of the Northern Collector Tunnel halted over concerns that the project is not being implemented as designed. The controversial tunnel is supposed to collect flood water from the targeted Rivers but the ongoing works are set to completely divert the entire water flowing from the Rivers as opposed to tapping flood water as designed. The residents had planned to hold demonstrations to oppose the project but it never materialized as locals feared the repercussions and kept off after some of the area leaders convinced them not to participate.

The tunnel project has been classified as a category "A" project by the World Bank which means the water towers and aquifers in the Arberdares will face permanent, irreversible destruction as a result of the tunneling action. Desertification will also be resultant in the Counties downstream of the project as the streams and rivers would dry up. The Government had also promised to initiate parallel water projects that would relieve Murang'a residents of water shortage once the project begins but nothing has been done yet.

The National Government has not yet given out crucial information concerning the project and this has led to speculation and uninformed debates among the affected communities. The project will lead to desertification of different counties downstream as the river waters are diverted. The project did not involve public participation and thus the people downstream were not consulted and are not aware of the consequences.

The tunnel has also created a wave of forceful and violent evictions which have been carried out by the Kenya Forest Service, a partner in the Water Towers Protection programme. The EU has however distanced itself from the violence and even suspended its funding after a member of the indigenous communities was shot during the evictions. Complaints have been forwarded by human rights Organizations and UN

rapporteurs which prove that the tunnel project is encouraging the abuse of indigenous people's rights. It is for these reasons that EHRDs should come in and an active CEC be formed in the County to address the ongoing controversies surrounding the project and see to it that evictions follow the laws and don't go against human rights. The defenders would also push for public participation in the project and divulge information to the public concerning the project and the adverse effects it would bring.

### **Municipal solid waste**

#### **A focus on the proposed Land fill project in Mitumbiri, Maragua**

The garbage disposal system in Murang'a County is not efficient and a landfill project is underway to deal with the menace. The landfill is meant to recycle waste and bury biodegradable matter collected from Nairobi, Kiambu, Kajiado, Murang'a and Machakos counties. The project, which is under the Ministry of Infrastructure, Department of Urban Housing, is being spearheaded by Nairobi Metropolitan Service. The project is owned by the Government and is funded by World Bank and the Government of Kenya to provide alternative means of waste management disposal.

However, the residents have opposed the move stating that they were not consulted and it would be unfair for them to provide water to the other Counties while getting sewerage in return. They were concerned that the buried matter and waste water would get into boreholes and underground water sources contaminating them thus making the water unfit for consumption. In defense of the Project, the officer in charge, Mr. Bundi stated that the landfill will have the capacity to take in 500 tonnes of solid waste a day and after three years the buried organic waste will produce methane gas that will be used for power generation.

In an advert placed in the dailies, the Transport and Infrastructure Cabinet Secretary said the proposed Sh2 billion sanitary



landfill project in Mitumbiri, Maragua Constituency, was going to be put on hold until proper public participation is done. The project has been opposed in four other counties and it's hard for the residents to understand why Murang'a gave it a clean bill of health.

### **Landslides**

Due to the steep physiography and high sedimentation rates within Murang'a county, slumps, debris flows and turbidity currents are common. The county is the most prone part in Kenya, with the most number of recorded events.

Landslides are common in highly mountainous landscapes with rugged terrain. Sediment supplies from storm floods, over steepening of dispositional slopes and water movement triggers the slides.

The Landslides have led to deaths, displacement of people and destroyed infrastructure. On April 28, 2017, four people died following a mudslide in Murarandia village in Kiharu Constituency while 10 others were injured after a landslide swept their homes and left 300 families homeless.

Some roads have also been rendered impassable in the recent past and the tea farms have been cut off due to the landslides. [\[View article here\]](#)

There is thus a need for EHRDs and an active CEC in the County to ensure people affected by landslides are compensated fairly by the Government and measures are taken to curb the calamities in case of a repeat of the same.

### **Pollution**

Residents who use water from river Tana in Murang'a for domestic and irrigation purposes have expressed fear over water pollution accusing a local tannery of emptying effluents into the river. As a result, they said the water has changed color to green and the river has been producing a foul smell forcing the residents to seek water

elsewhere.

The residents are accusing the tannery plant located in Sagana town of draining its chemical refuse into the river putting lives of people living downstream at risk of contracting diseases. Emptying the toxic wastes and chemicals into the river not only poses a threat to the humans and livestock that consume the water but also the fish that exist in the river. Some hotels which conduct canoeing and rafting sports along the river have halted the activity following the deteriorating water standards.

The Thathawa Irrigation water project has also been affected by the water pollution in the recent past as the farmers were temporarily forced to halt growing of horticulture and rice. The farmers expressed fears over using the water which had been producing a bad smell to irrigate their crops. The factory has been polluting the river for years yet no action has been taken against its management.

## **9.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County.

## **9.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **9.5: Findings and Interpretation**

### **9.5.1: Establishment of County Environmental Committee**

The committee members have already been appointed and all that is pending is Gazettement.

### **9.5.2: Budgeting for the committee**

The government has budgeted for the committee which includes capacity building the



community members.

### **9.5.3: Committee membership**

18% makes up the youth, 3% the women, 6% men and people living with disability and CSOs have a percentage of 1.8%. This is the constitution of the committee's membership.

### **9.5.4: Access to information**

The community is aware of the committee's progress as there was a public participation session conducted to nominate the committee members.

### **9.5.5: Role of committee in capacity building, access to information and public participation**

The committee is important as it helps in all the above mentioned.

### **9.5.6: Challenges**

The selection of nominees had political inclination.

### **9.5.7: Future success of committee mandate**

For the committee to be successful, it needs to go for benchmarking to areas with best practices.

# KIAMBU COUNTY

## 10.1: Study Area Description



Figure 12: Map of Kiambu County

Kiambu's capital is Kiambu town and its largest town is Thika. The total population of Kiambu County is 1,623,282. The County is 40% rural and 60% urban owing to the city conurbation of Nairobi city. Kiambu County is part of the Nairobi metro together with 3 other counties. Mr Ferdinand Waititu is the Current Governor.

## 10.2: Environmental Issues in the area

### *Proposed Kariminu dam project*

Construction of the Sh24 billion Kariminu dam in Gatundu North, Kiambu County had been halted for 12 years following a land compensation stand-off between the affected residents and the government. The residents had moved to court to oppose the project as they were going to be displaced without substantial compensation. The Residents have in the past held a series of meetings with government representatives

to push for a review of the land valuation terms as they felt shortchanged by the initial compensation amounts they had been offered. See article

Such issues show the need for EHRDs in the area and an active CEC that can act as an intermediary channel through which the residents can get the County government involve them in the decision making process and also hear out their aggrievances and issues of concern pertaining to development projects, land grabbing and environmental problems they are facing.

### *Built environment issues revolving around Land ownership battles*

The rise in the number of gated communities in Kiambu County has been surrounded by controversy in some cases where the developers are accused of land grabbing. An example of such a battle is Runda Paradise, a Sh1.7 billion gated community project at Paradise Lost, off Kiambu Road,



in Kiambu County .The land ownership battle is between some rich families and peasants who claim ownership of the 900 acre piece of estate land, and with the latter insisting they inherited the land from their forefathers. The complainants have been forcefully evicted from their ancestral land which has been coupled with violence and killings of some of their kin and neighbors during the forceful evictions [ view article ]

### ***Destruction of wetlands***

Over the years, the wetlands in Kiambu have undergone serious destruction an example being the Ondiri wetland. Some of the activities which have led to the destruction of the Ondiri wetland include overharvesting of water using water pumps, encroachment of the banks for agricultural purposes, conflicting policies on wetland natural resources which are regarded as counter-productive and selfish interests by stakeholders. The residents have expressed concerns that if measures are not put in place to save the wetlands, it may soon dry up. The residents also support the need for harmonized strategies for sustainable wetland use and conservation and are willing to support such initiatives.

### ***Improper land use resulting in Land degradation***

Land degradation is mostly in the form of quarrying and mining. The main mining activities include natural gas exploration in Lari constituency, extraction of ballast, hardcore, gravel, murram, sand and building stones in Juja, Gatundu South and Gatundu North constituencies. During mining, huge chunks of land are excavated and the grounds are left bare and exposed to caving in due to instability. Large open pits are filled with water creating unnecessary ponds that provide breeding ground for mosquitoes and also pose a danger to animal and human life through site accidents. The grounds that have been excavated cannot support agriculture and the lands are left to lie fallow.

### ***Deforestation***

There is massive destruction of forests in the county. Forests like Kinale, Kereita and Kieni all which are in Lari Sub-County have been indiscriminately cleared to pave way for the establishment of human settlements and give land to practice agriculture. Illegal Logging in the same forests has also led to cutting down of trees without afforestation which has resulted into a reduction in the number of trees. As a result of all these activities, Kiambu County has experienced climate change which is evident through the declining of water levels in the rivers and the reduced rainfall amounts being received in the area as opposed to a decade ago. If this continues, desertification will also be resultant.

### ***Pollution***

Kiambu County hosts several factories especially in the industrial areas of the urban centers in the County which coffee, tea and fish processing as examples .These factories cause pollution to the environment as their method of disposing wastes into the environment does not follow the required regulatory standards. The factories release their wastes into the water sources and air resulting in the contamination of the Environment. An example is the tar-processing plant in Gatuanyaga ward, Thika East district, Kiambu County which was recently closed after 200 residents complained that it was causing air pollution. The residents said it had been emitting heavy smoke in the air for the two months it had been in operation. The issue forced the intervention of area MP Alice Nganga and the Deputy County Commissioner Solomon Komen who ordered the plant owners to close down.

### ***Municipal Solid Waste***

Kiambu County grapples with poor waste management ranging from solid wastes to liquid wastes. In a study that was conducted about waste disposal and management in Kiambu County with Gitambaya in Ruiru Sub County as the case study, it was con-

cluded that the government had failed to effectively discharge its duty and execute all the major processes within solid waste management cycle. In another case, residents of Ngoliba, Ndura, Magogoni and Gatwanyaga areas in Thika East expressed their fear of contracting water borne disease in case of an outbreak following the release of raw sewage waste into River Chania. This was because they claimed sewage was flowing from an old sewerage plant in Pilot Estate in Thika town into river Chania and that it had been happening for a while now. The residents expressed their desperation in sourcing for clean and safe water for drinking and other domestic uses as they used the same water for all their household chores and farming. Tina Mbithe, who lives in Ngoliba, said they have reported the matter to the relevant department but the issue has not been addressed yet.

### 10.3: Sampling

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. The Chief Officer Department of Water, Environment, Energy and Natural Resources Mr. John Muhia was our respondent in this case.

### 10.4: Research Instruments

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## 10.5: Findings and Interpretation

### 10.5.1: Establishment of County Environmental Committee

In the process of establishment; names have already been suggested.

### 10.5.2: Committee membership

The names of the members suggested are of environmental background so that they are relevant to the committee and the percent-

age of membership is guided by EMCA.

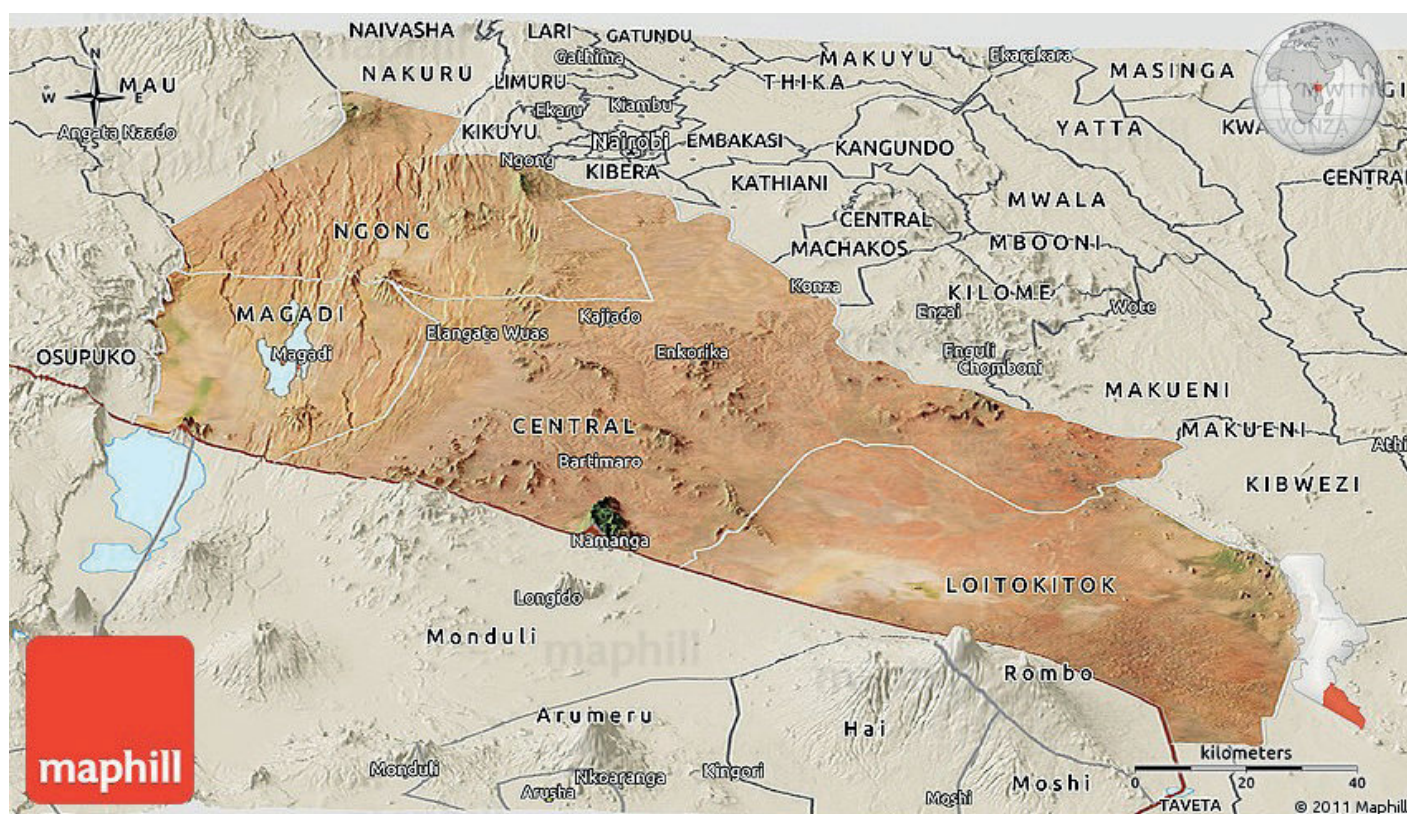
### 10.5.3: Challenges

A committee had been established in the previous regime but was not established as the members were selected from a political inclination rather than environmental background. Due to this incompetence, the committee was not gazetted.

# **KAJIADO COUNTY**



## 11.1: Study Area Description



**Figure 13 : Satellite Map of Kajiado County**

This county is one of four others that make up the Nairobi Metro. It has a population of 687,312 and an area of 21, 292.7 sq. km. Kajiado's capital is Kajiado town, although Ngong is its largest town. The governor of Kajiado County is Mr Joseph Ole Lenku.

## 11.2: Environmental Issues in the area

### *Proposed Cement Clinker in Kajiado*

The Cement clinker project in Kajiado has already started and was even inaugurated by President Uhuru Kenyatta. The coal fired power plant is National cement's strategy to deal with delays in connecting to the power grid as well as evading the need to pay high costs of electricity. The cost of procuring electricity from Kenya Power is relatively expensive compared to that of using coal generated power. National cement describes Kenya power services as unreliable, with intermittent interruptions which will be detrimental to the Company's clinker

production. To power its plant, National cement will need an estimated 63,360 tonnes of coal which it plans to import from South Africa and other coal rich countries until local mining kicks off. Clinker from the coal fired power plant will be transported to the manufacturing unit in Lukenya for further processing into Cement.

The Cement Clinker will have adverse effects on the Environment and the communities living around it. It would result in air pollution, dust pollution and health hazards as coal is the main source of energy in this project and its use is associated with the release of greenhouse gases, global warming, coal fires, thermal pollution coal combustion wastes, heavy metals, acid rain and toxins into the environment. The health hazards include respiratory, cardiovascular, and cerebrovascular effects.

There is thus a need for EHRDs to mobilize the local community and create awareness on the effects of coal as an energy source for the clinker. The presence of an active CEC is



also critical so as to liaise directly with the County government to ensure the project is taking into account environmentally safe processes and no locals are compromised as a result of the project.

### **Water Scarcity**

Kajiado County is classified as a semi-arid area; it lacks adequate water supply systems. The town had a projected population of 16,003 in 2013 (KNBS, 2010) but no functional municipal water supply system. There is no permanent river near Kajiado town and several other parts of the county at large. The county has a formation with poor aquifers such that even bore holes have low water yields. Water is sold at an exorbitant price given that a twenty liter jerican can cost an average of 10 shillings which translates to around 500 shillings per m3 compared to The Water Services Regulatory Board's tariff of 35 shillings per m3. Other main reasons for this challenge include insufficient rates of capital investment, difficulties in appropriately developing local water resources, and the ineffectiveness of institutions mandated to manage water supplies in the region. It is important to acknowledge the milestone in handling this issue where the county government together with the World Bank and the Belgian government have drilled 50 boreholes to supply water in schools around Kajiado.

### **Drought**

Kajiado County experiences very harsh climatic conditions coupled with long dry seasons without any rain. Thousands of cattle have died over the past years due to lack of pasture and water. More cattle are always at risk of starvation and death whenever dry seasons strike and the residents normally require urgent support in terms of food and water to feed their animals. The children in certain parts of this county always suffer from malnutrition and even face death due to lack of food as is the case with the adults especially the aged in the society.

### **Municipal Solid Waste**

Poor solid waste disposal is among the main problems that contribute to poor solid waste management in Kajiado County. The residents of Kajiado County especially the ones who reside in the urban areas dispose their wastes carelessly without giving due consideration to the environment this in turn results into serious impacts on the entire surrounding thereby causing air and water pollution. It also poses serious health risks to individuals around these areas. Ngong', a town in Kajiado is among the places in Kajiado County being affected by poor solid waste management. Though the county government has tried its best to handle the issue through waste management projects like the Ngong waste management project, waste disposal has still proven to be a huge environmental problem for the county authorities and it therefore requires further intervention.

### **Improper land use resulting in Land degradation**

Kajiado county practices large scale sand harvesting and it earns the county revenue returns of millions of shillings annually collected through taxation. It is estimated that sand transporters export 300 trucks each day from Kajiado to Nairobi and other counties. This large revenue earned from the sand harvesting business has led to the overexploitation of the resource and it has left the ground in a very bad state. The lands in these areas have been excavated to harvest sand and large openings have been left on the surface thereby posing danger to the animals and residents of these areas. Early last year the governor H.E. Joseph Ole Lenku banned sand harvesting in Kajiado county as he wanted proper regulations to be laid down to guide the operations of the multi-million business that generate large revenue to the county.

## **11.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the

environment department of the County. Mr. John W. Kanini the Director department of Environment and Natural Resources was our respondent in this case study.

## **11.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **11.5: Findings and Interpretation**

### **11.5.1: Establishment of County Environmental Committee**

The committee has already been established and gazetted.

### **11.5.2: Budgeting for the committee**

The government has not yet budgeted for the committee.

### **11.5.3: Committee membership**

The membership of the committee is in line with the EMCA 2015 Act.

### **11.5.4: Access to information**

The community has not been able to access information about the committee yet.

### **11.5.5: Challenges**

No challenges encountered.



# **BOMET COUNTY**

## 12.1: Study Area Description

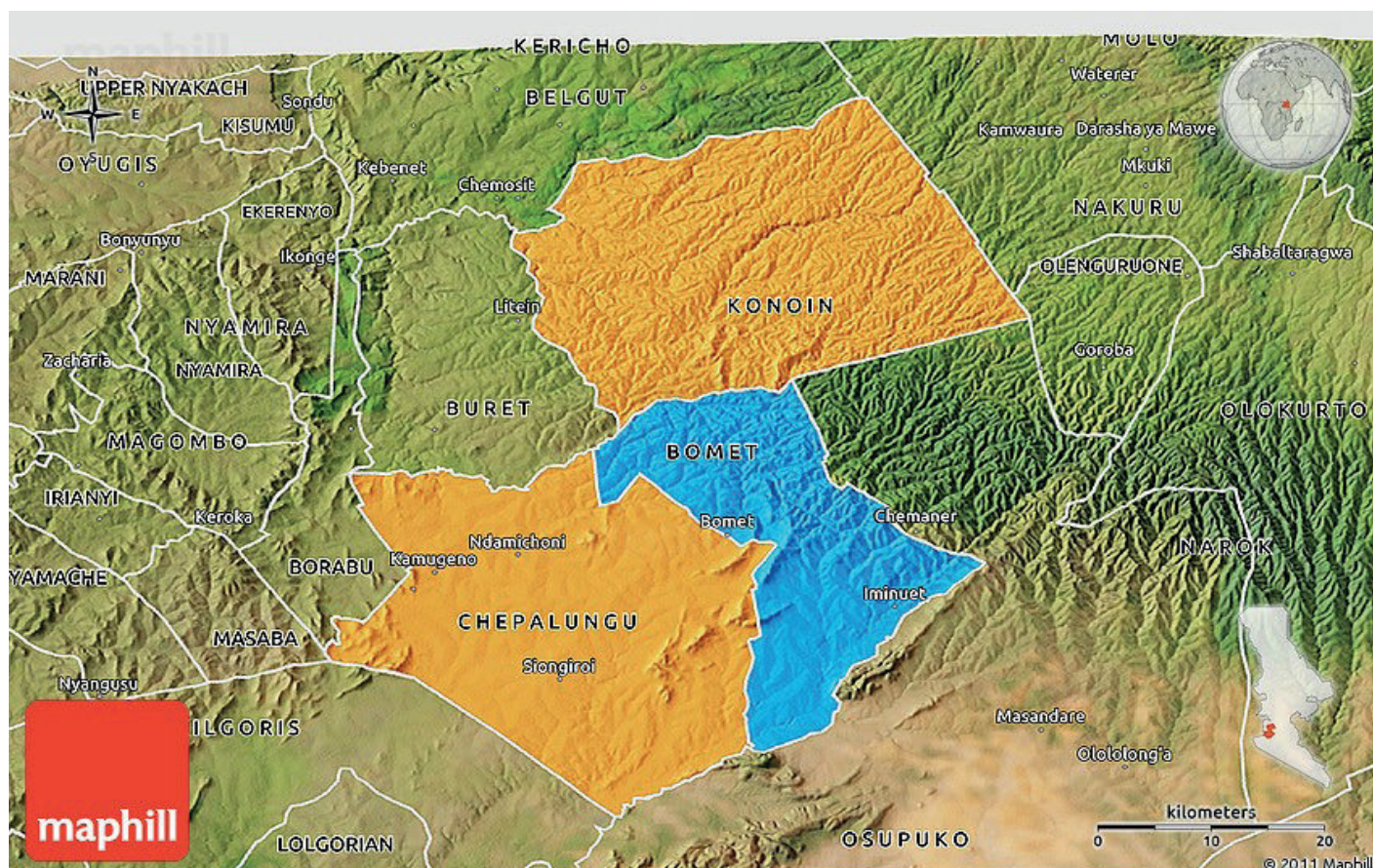


Figure 14 : A map showing of Bomet County

Bomet County was created from former Kericho District and former Rift Valley Province. It has a population of 724,186 and an area of 1630 sq. km. Ms Joyce Laboso is the Governor of this County.

## 12.2: Environmental Issues in the Area

### Deforestation

Mau forest has a rich bio-diversity and is home to many rare and indigenous trees and animals. South west Mau forest is found in Bomet County and is one of the forests that make up the Mau forest. It is the largest of the 22 blocks of the Mau Forest Complex, and is of critical importance. Unfortunately, human encroachment has led to the destruction of 25 per cent of the forest. Key threats to the forest have been illegal extraction of resources for commercial purposes, especially timber, wood fuel and charcoal. This has posed serious danger to

the country's largest water tower.

### Municipal Solid Waste

Solid Waste Management is one of the most neglected areas of development in most developing and transition economies of the world. With rapid growth of Bomet County, the issue of solid waste management continues to pose great threats to sustainable development. The county has had a poor management system of solid waste management which resulted into the residents carelessly disposing their waste anyhow in their surroundings. It is only till recently that the Governor Ms. Joyce Laboso said that she will give a 10 acre piece of land to be used for solid waste management.

### Water pollution

This is rampant in River Nyongores in Bomet town. Due to the lack of functional sewerage treatment plants in Bomet County for a long period, residents and factories



in the town have been disposing their raw untreated wastes into the river thus polluting it and exposing those depending on its waters for domestic use to threats like water borne diseases.

### ***Improper land use leading to Land degradation***

The heavy deforestation that has been experienced in Bomet county especially in the south west Mau forest has left the ground completely bare and vulnerable exposing it to water and wind erosion. This has in turn resulted into soil degradation with the rich fertile top soil being swept away leaving a completely unproductive junk of land that cannot support plants' growth.

## **12.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. Mr. Joseph Kebeney, the Chief Officer for Water, Sanitation and Environment welcomed us into his office and shared with us all the information we needed to know on the CEC in Bomet County.

## **12.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **12.5: Findings and Interpretation**

### **12.5.1: Establishment of County Environmental Committee**

The committee has already been established and was gazetted in 23rd March 2018.

### **12.5.2: Budgeting for the committee**

Budgeting for the committee was done and included provision of funds for sensitization and meetings.

### **12.5.3: Committee membership**

The youth and people living with disability are not represented, have 3 CSO representatives, 7 women and 17 men.

### **12.5.4: Access to information**

The community has not been able to access information about the committee since it is still new but they are planning to go around the county with the committee so that they can introduce themselves to the community.

### **12.5.5: Role of committee in capacity building, access to information and public participation**

The community is able to work with government officials which make communication of necessary information easier.

### **12.5.6: Challenges**

- Complex and long procedures that drag the establishment of the committee have delayed the implementation of the Act.
- Some names proposed were of people whose contracts expired before the Gazettement of the committee.



# **KAKAMEGA COUNTY**

## 13.1: Study Area Description

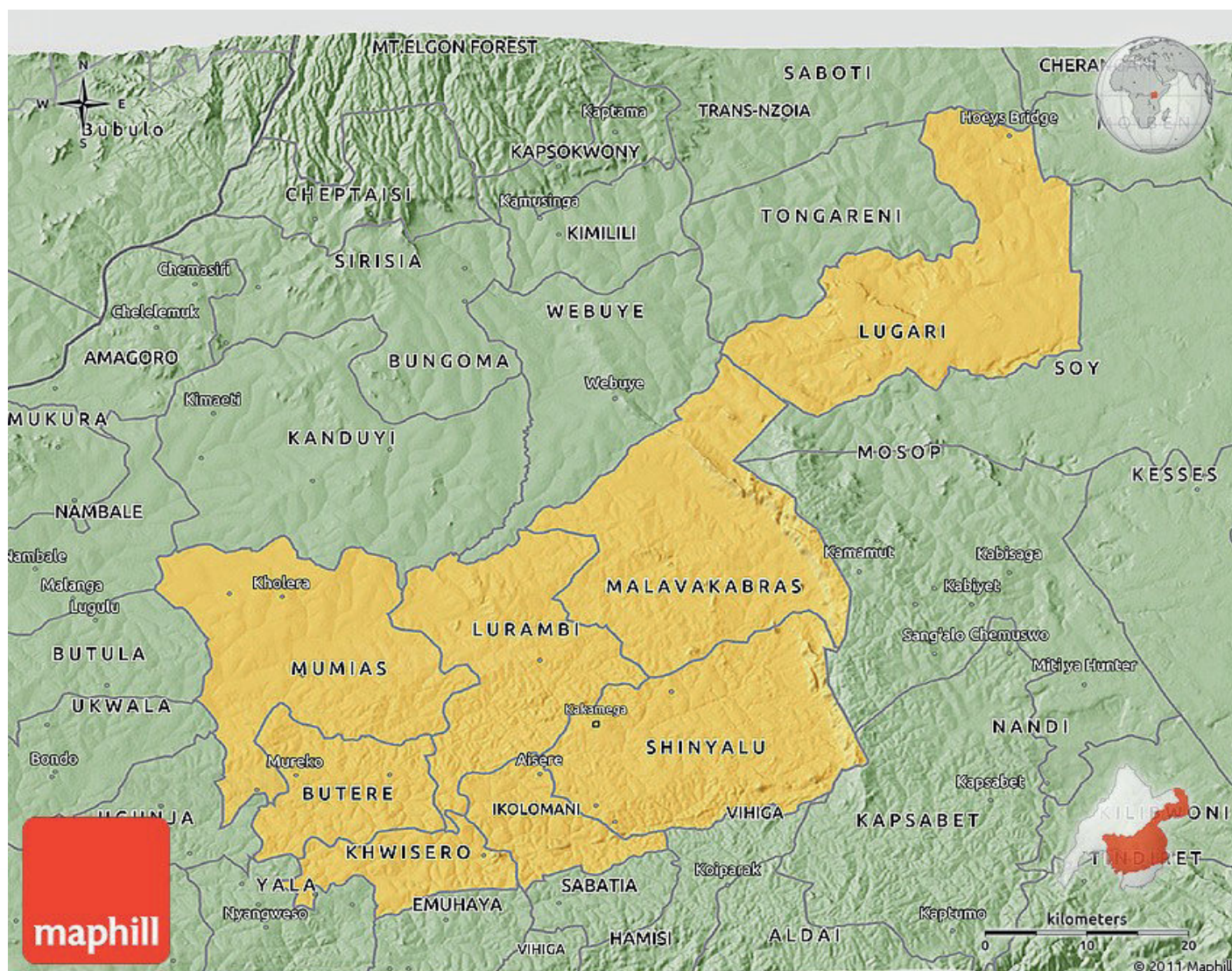


Figure 15: A map showing location of Kakamega County

Kakamega County is located in western Kenya in what was formerly Western Province. The capital and largest town is Kakamega. It has a population of 1,660,651 and an area of 3,033.8 km<sup>2</sup>. The main economic activities in the region are crop farming, livestock keeping and fish production. The main crops grown in Kakamega County are sugarcane, maize, beans, cassava, finger millet, sweet potatoes, bananas, tomatoes, tea and sorghum. Maize meal forms the staple food for the county. The governor of the county is Mr. Wycliffe Ambetsa Oparanya.

## 13.2: Environmental Issues in the area

### Deforestation

This has been evident as witnessed in Kakamega forest where there has been massive degradation of the forest through cutting down of the trees without caution to pave way for agricultural land and settlement expansion and also practice logging. This has been the main reason to the decline of the forest cover. In response to Kakamega's forest decline, several groups have formed to increase awareness of the forest and address the high poverty rate that is fueling its decline. One of these groups is the Kakamega Forest Integrated Conservation Project which aims to address problems through initiatives such as community-based income generation, provision



of alternative cooking fuels, and capacity building for local residents to help them better protect the forest.

### **Municipal Solid Waste**

Waste management has proven a hard nut to crack in Kakamega County, putting to question the devolved units' abilities to manage the environment. This has led to increased pollution and frequent water-borne diseases like cholera to the residents. There is need for proper solid waste management system as this has denied the residents the right to a clean and healthy environment as enshrined in article 42 of the 2010 constitution.

### **Pollution**

Kakamega County grapples with pollution which is in form of air, water and land pollution. Water pollution is from the fact that litter is dumped into the streams and other water sources as for land pollution there is uncontrolled dumping system of wastes. This results into serious pollution of the environment. For air pollution, Mumias sugar factory releases toxic fumes into the air making the environment's air unsafe for breathing and hence endangering the health of residents around the sugar factory.

## **13.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. The director Department of Environment, Energy, Water and Natural Resources Mr. Zablon was our respondent in this case study.

## **13.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **13.5: Findings and Interpretation**

### **13.5.1: Establishment of County Environmental Committee**

The committee was established in November 2016

### **13.5.2: Budgeting for the committee**

Waiting for the next financial year as the present one was drawing to a close.

### **13.5.3: Committee membership**

Every requirement followed as per the EMCA Act 2015.

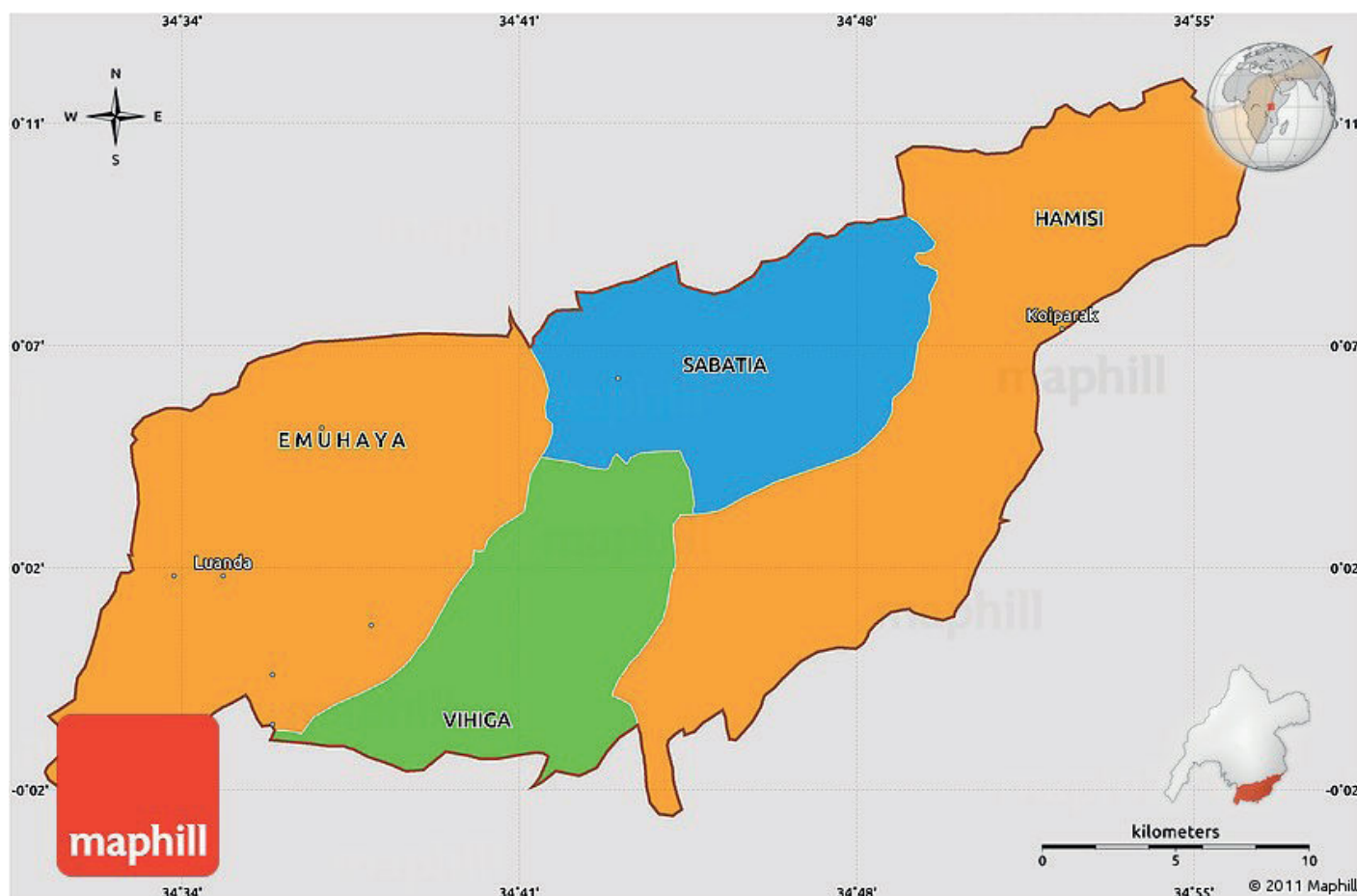
### **13.5.4: Challenges**

- Inadequate financial resources.
- Clarity on duty bearer- It is not clear whether it is the County or National Government.
- Interpretation of the law which is to guide the establishment of the committee.



# **VIHIGA COUNTY**

## 14.1: Study Area Description



**Figure 16: Map of Vihiga County**

This is a County in the former Western Province of Kenya. It has five constituencies, Emuhaya, Vihiga, Sabatia, Luanda and Hamisi, and a population of 612,000 people with an annual population growth rate of 2.51%. The County covers a total area of 531 square kilometers. It has undulating hills and valley with rivers flowing from North-East to South-West and draining into Lake Victoria. HE Dr Wilber Ottichilo is the Governor of Vihiga County.

## 14.2: Environmental Issues in the area

### *Destruction of Rivers*

Due to encroachment of the banks of river Yala for agricultural activities, the banks have become vulnerable to soil erosion. The sand on the river bank is carried away by water into Kisumu County and eventually deposited into Lake Victoria hence causing

silting of the river and lake itself.

This has also led to frequent floods being experienced in the areas next to river Yala as the river usually bursts its banks during heavy rains and affects the people who mainly live downstream in parts of Vihiga county, Kisumu county Kano plains.

### *Deforestation*

Maragoli forest, although a gazetted forest, has very few trees on ground to justify the assertion that it was once a dense forest. This is as a result of human activities such as logging and charcoal burning which have led to the cutting down of trees relentlessly without practicing afforestation and re-afforestation practices despite the government's ban on logging and charcoal burning.

### *Land degradation*

There is massive Land degradation resulting mainly from Quarrying. Depleted murram sites are easily noticeable in Vigetse village in Maragoli forest. Ballast extraction is also considered a source of livelihood in the County. Farming practices such as over cultivation and excessive use of pesticides and fertilizers have led to reduced soil fertility and a drastic drop in agricultural yields. Human encroachment into riparian areas such as river banks has also led to the destruction of the riverbanks.

### 14.3: Sampling

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. Our respondent in Kajiado County was the Director, Environment and Natural Resources Department, Mr. John W. Kanini.

### 14.4: Research Instruments

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

### 14.5: Findings and Interpretation

#### 14.5.1: Establishment of County Environmental Committee

The committee has been established but is yet to be gazetted.

#### 14.5.2: Budgeting for the committee

No budgeting has been done for the committee.

#### 14.5.3: Committee membership

EMCA regulations were the guidelines when it came to nominating the committee members.

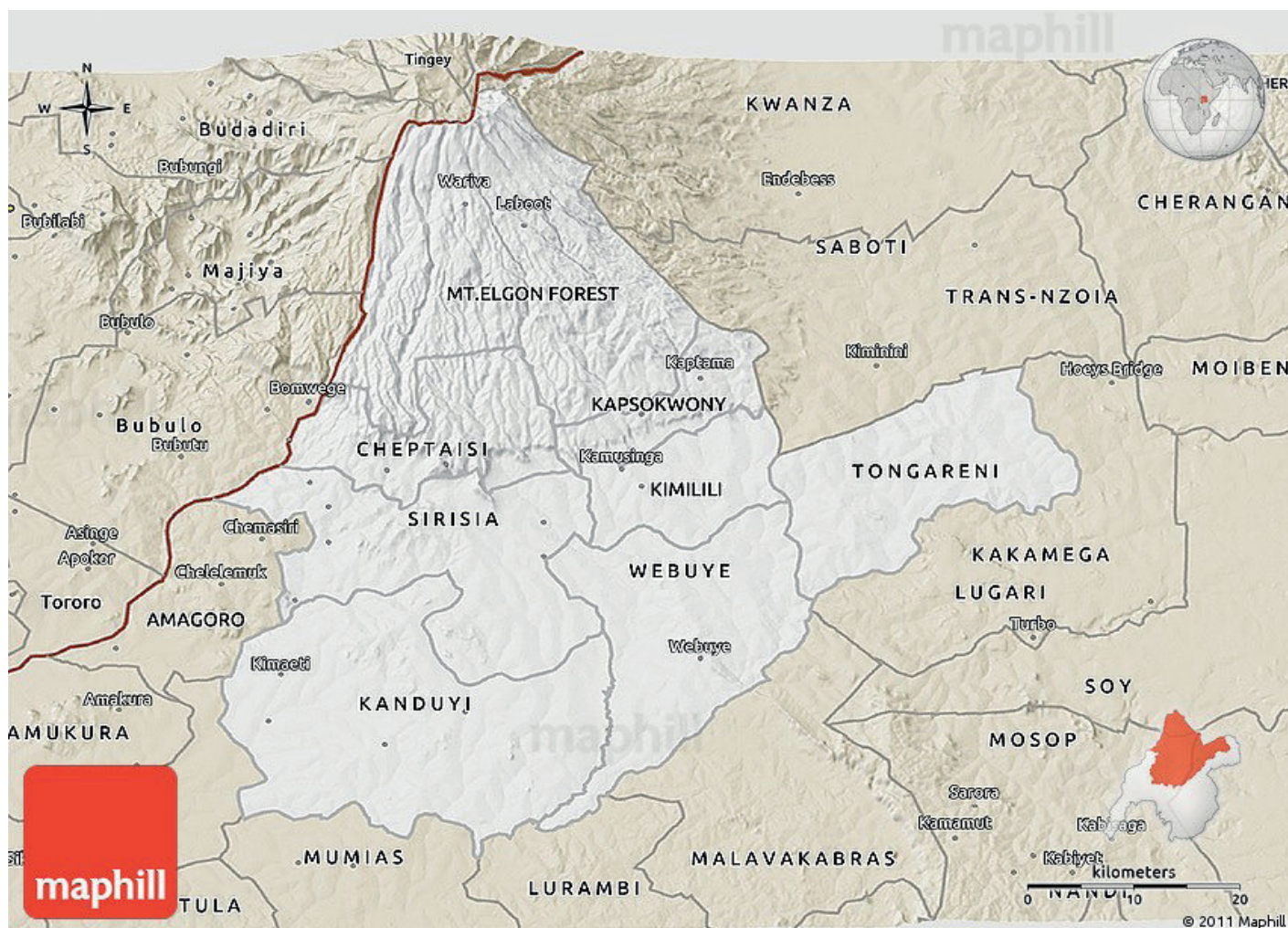
#### 14.5.4: Challenges

Change of governance- this has resulted to the drag in the Gazettement process.



# **BUNGOMA COUNTY**

## 15.1: Study Area Description



**Figure 17: Map of Bungoma County**

This is a County in the former Western Province and runs along the Kenya Uganda border. it has a total population of 1,035,063 and an area of 2,069 square kilometers. Bungoma's economy is centered on agriculture, mainly maize and sugarcane. This is encouraged as the County receives rainfall throughout the year and has several rivers which are used for small scale irrigation. The Governor of Bungoma is H.E. Wycliffe Wangamati.

## 15.2: Environmental Issues in the area

### *Proposed 10 billion Angololo dam project*

The dam is to be built in Bumula Constituency, Bungoma County and is expected to serve Bungoma, Kakamega and Busia.

The project is part of the vision 2030 program and is expected to benefit more than 2,000,000 people by 2032. The dam estimated to be 24 metres high, with a storage capacity of 3.92 million cubic metres, will support irrigated agriculture for 1,700 hectares and a small 260KW hydropower station.

The aim of constructing the dam is to control floods that happen regularly in River Nzoia particularly on the lower sides, increase food production through irrigation schemes and generate power down-stream where possible. The dam is estimated to cover over 40 square kilometres and is to affect six locations in Bungoma North Sub-County namely Kabuyefwe, Naitiri, Kimilili, Tongaren, Khakamwe and Soi Sambu, leading to displacement of between 30,000 to



40,000 people.

However, due to protests the Government had shelved the project and opted to create smaller dams around the County which delayed the project but recently the deal was signed and the project was flagged off in Bumala as the project would have displaced more than 60000 people. The national water and pipeline co-operation had been given the task and had planned to have a major dam at Tongaren but there was a lot of resistance from the locals claiming that it was going to take over their fertile agricultural land and the compensation rates were not substantial enough to sustain the residents who were being forced to relocate.

A new plan was later proposed which was to see the dams put up in Webuye, Siaya and Mumias after residents of Bungoma County rejected the initial plan Article

### Deforestation

Mt Elgon forest has undergone drastic changes over the years due to encroachment by human activities. The forest has been degraded through the haphazard cutting down of trees without replacing them by planting new ones. This has led to the reduction of the forest cover in the mountain by a huge percentage. People mainly clear the forest to establish settlements and practice agriculture. Others cut down the trees to burn charcoal and practice logging. As a result of all these activities, there have been experiences with climate change from time to time which has in turn changed the lifestyles of the people in the area as they no longer get the same yields from agriculture as they used to get previously.

### Water pollution

Bungoma County has experienced problems of water pollution which results from open dumping of wastes which are later swept into the streams by water during rains. Also the haphazard disposal of solid wastes such as plastic bags has led to the pollution of the

environment in the county thereby making the environment to lose its natural aesthetic value.

### Destruction of Wetlands

Wetlands in Bungoma County are facing degradation. This is due to eucalyptus plantations, sugar cane farming, unregulated grazing and poor farming methods. River Sio measures 1,448 kilometer square and stretches from Bungoma, Walatsi, Sio to Lake Victoria. River Musokoto, Walatsi and Kakolait are some of the tributaries of River Sio. One reason River Musokoto is drying up is sugar cane farming. Sugar cane is one of the few cash crops in western Kenya. The riverine wetlands make it attractive to land-owners to cultivate the crop. This is because the land is fertile compared to the uplands. This crop is being cultivated along the river's watershed. This reduces the quantity of water seeping into River Musokoto.

Another factor is eucalyptus plantations as close to eleven eucalyptus plantations are found along the entire 25km of the river. The plantations affect the level of both ground and surface water storage. In the long run, the amount of water reaching the river during the dry season is reduced. The poor farming practices along the river, such as cultivating along the watershed are also a contributing factor in the drying of the river. This has increased rates of soil erosion resulting in the river getting silted. The river has reduced in depth and size to become a mere stream. The natural vegetation that once grew along the river has faced extreme clearing activities through cutting and burning for agriculture or construction. This has reduced the capacity of the soils to retain water during the rainy season and their filtration capabilities have drastically dropped.

### 15.3: Sampling

Sampling was purposive as we targeted the CEC and Chief Officer and director of the environment department of the County. The CEC Renson Makheti Wanyonyi was our



target respondent.

## **15.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **15.5: Findings and Interpretation**

### **15.5.1: Establishment of County Environmental Committee**

The committee exists but is not functioning and is yet to be gazetted.

### **15.5.2: Budgeting for the committee**

The committee has been budgeted for by the government.

### **15.5.3: Access to information**

No information has been disseminated yet as the committee is yet to be gazetted.

### **15.5.4: Challenges**

No challenges encountered as there was direction from EMCA Act.

# **BUSIA COUNTY**

## 16.1: Study Area Description

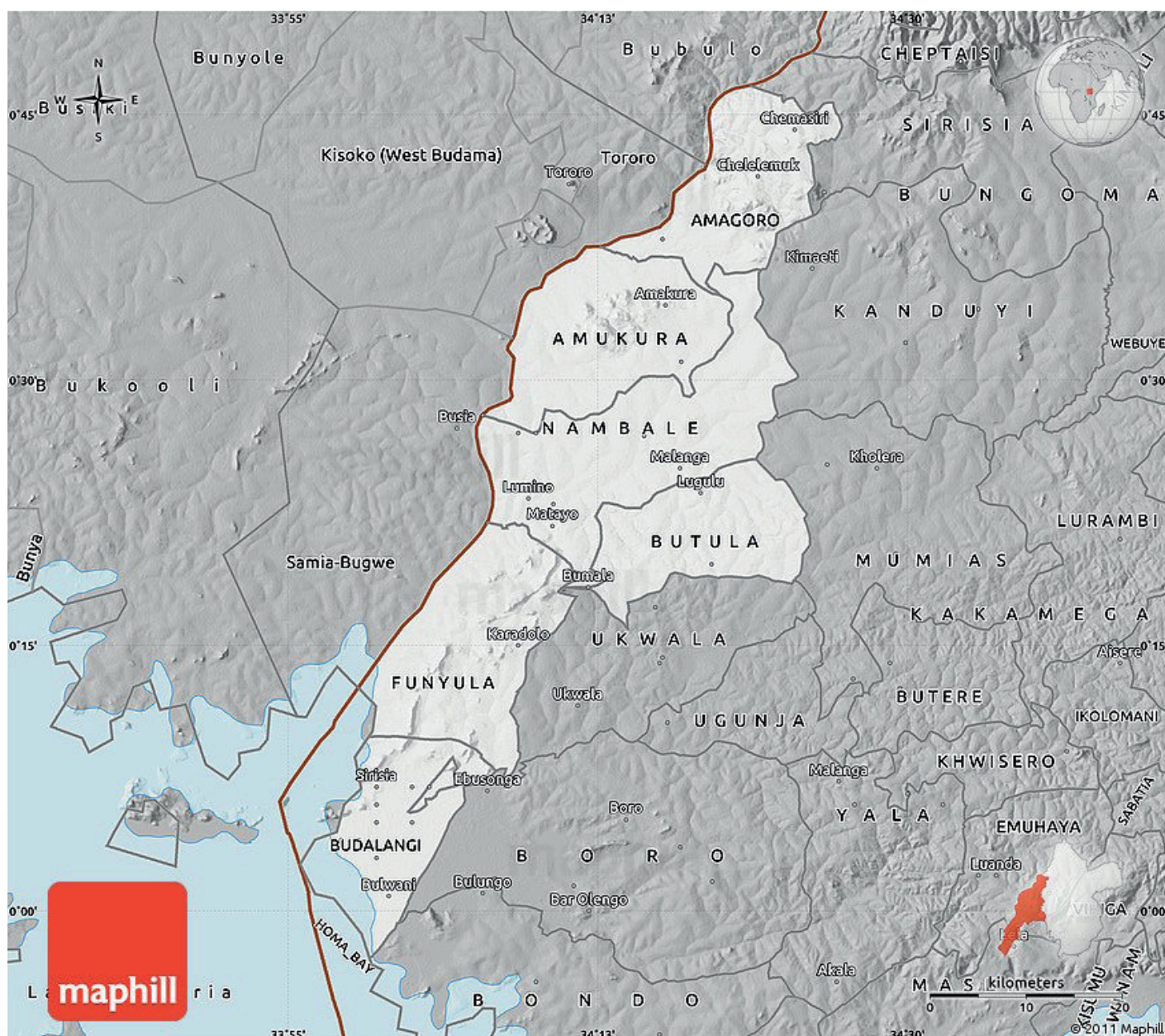


Figure 18: A map of Busia County

Busia County is one of the Counties that made up the former Western Province of Kenya. Its main economic activity in its urban centre is trade with Uganda. Away from town, the economic activities are fishing and agriculture with millet, maize, sweet potatoes, beans and cassava as the principal cash crops. The County has a population of 743,946 people according to the 2009 census. HE Sospeter Ojaamong is Busia's Governor.

## 16.2: Environmental Issues in the area

### *Improper land use leading to Land degradation*

The persistent practice of large scale sand harvesting along River Nzoia has weakened the dykes that had been constructed to control floods hence exposing Budalangi to perennial to floods. This has greatly affected the livelihoods of people and it has in several occasions resulted into loss of life and property. It has also led to massive



soil erosion and destruction of farm lands during heavy rains as the floods sweep away the rich fertile top soil and any form of vegetation. This has caused great losses to the farmers and has resulted into famine as crops cannot do well in such conditions hence creating food shortage.

### ***Destruction of rivers***

The residents of Busia County have encroached into the riparian land along river Nzoia. People have grabbed land along the river banks and have cleared the vegetation to either practice agriculture or establish settlements. This has increased the vulnerability of the river to massive soil erosion and heavy flooding of the adjacent environs when it rains as there is no vegetation to channel the river in its right course.

It has also resulted into pollution of the water source due to the excess use of fertilizer during planting of crops. Silting of the river has also been a major problem as too large deposits of silts are deposited downstream due to heavy erosion of the river banks.

### ***Cuscuta glomerata weed***

This is a parasitic weed from the genus *Cuscuta* and family *Convolvulaceae*. It destroys the vegetation in the area by growing around it as a climber and ends up killing the plants. The weed can also be found even in homesteads.

### ***Deforestation***

The forest cover of Busia County currently stands at 1.7% which can be attributed to cutting of trees for logging and charcoal burning business. This has been suspected to be the major cause of the drought experienced in the County over the past recent years. The residents have continued cutting down trees despite government's ban on logging and charcoal trade early last year. This scenario has caused huge losses as the county's crop production has reduced and the climatic conditions have also deteriorated greatly.

rated greatly.

### ***Water pollution***

This is an emerging issue that has been recently identified. The residents are washing their automobiles in the rivers and lake thus disposing chemicals and dirt into them. This endangers the aquatic life as their ecosystem is interfered with by this disposal of chemicals into the lake and rivers thereby reducing the number of fish with a huge percentage. The water from these sources are also not fit for domestic use as the chemical composition has been interfered with and hence can be very harmful to both animal and human consumption.

## **16.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. The county executive committee member Dr. Isaak Alukwe and the chief officer for environment Mr. Moses Weunda were our respondents in this case study.

## **16.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **16.5: Findings and Interpretation**

### **16.5.1: Establishment of County Environmental Committee**

No Gazettement yet but the process of appointing committee members has started.

### **16.5.2: Budgeting for the committee**

The government has not budgeted for the committee.

### **16.5.3: Access to information**

The community has been able to access information about the committee.

### 16.5.4: Challenges

During the first term of devolution, the environment department had not been devolved.

# KISUMU COUNTY



## 17.1: Study Area Description

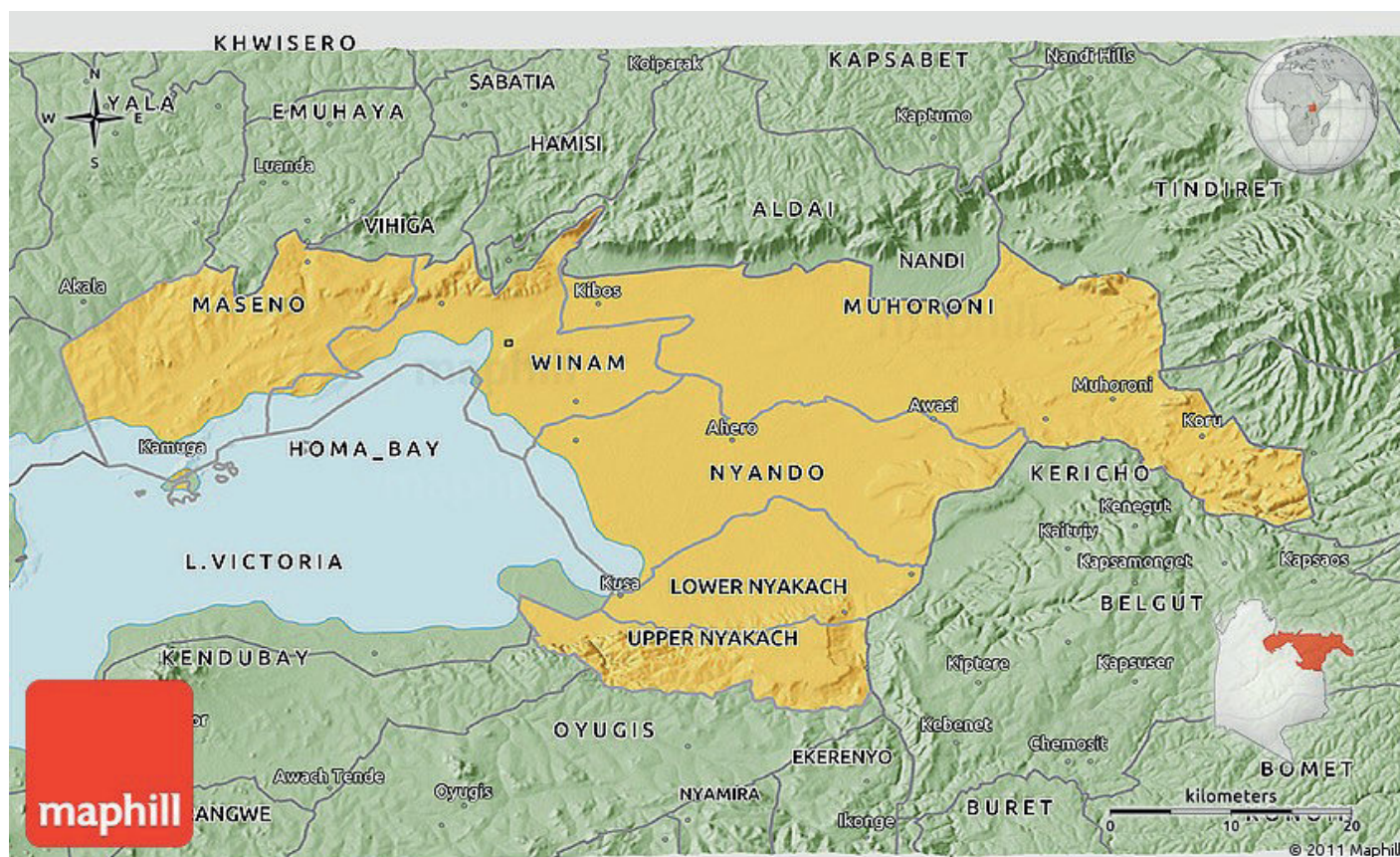


Figure 19: Map showing location of Kisumu County

Kisumu County is headed by the Governor Mr Anyang' Nyong'o and his deputy Mr Matthew Owili. It is one of the three city-Counties in Kenya. Kisumu County follows the borders of the former Kisumu District, covering an area of 2085.9 square kilometres. According to the 2009 census, it has a population of 968,909.

## 17.2: Environmental Issues in the area

### Kure- Soin dam Project

The project stationed at the border of Kisumu and Kericho counties was mooted by the national government in 1992 but has delayed to commence following what Orimba termed as misunderstanding between implementers and would-be beneficiaries. Compensation for villagers to be displaced by the dam will cost the Government Sh2 billion. Residents of both Kisumu and Kericho were to be affected by the pro-

ject. The project was aimed at controlling floods in the lower parts of Nyando, as well as providing water for domestic purposes and irrigation for the two counties.

### Invasive species with a focus on Water hyacinth

The stubborn invasive weed is a menace and it is choking the lake making fishing virtually impossible. The weed is so thick that boats can't cross the lake as the beguiling carpet of the invasive hyacinth makes fishing tedious. Fishermen at Karachuonyo and Kochia have felt the pinch of the weed's effects. The green plants with lavender flowers don't look threatening at all and sometimes fishermen go out to fish only to be stuck in water for hours. Usually, the shores of Lake Victoria are a hive of activity but fishermen are now staying away owing to the noxious water hyacinth.

The water hyacinth has increased its coverage, carpeting many areas where boat



operators ferry tourists for sightseeing and this has affected the tourism sector in Kisumu County. The weed prevents sunlight from reaching other aquatic species and creates thickets too dense for fishing boats to travel through. The plant also decreases water flow, creating regions of still water ripe for mosquito reproduction. Tourism players are decrying the new infestation, saying it is adversely affecting navigation on the lake. Some fishermen were admitted to Homa Bay County Referral Hospital after spending three days trapped in the weed near Achich Beach. An unknown number of fishermen have reportedly been stuck in Lake Victoria, Homa Bay County, after their boats were entangled by the weed.

In Kisumu, for example, popular sites such as Dunga Hill Camp and Hippo Point are no longer navigable. Tourists seeking a panoramic view of the lake and town are missing out. Usually, a ride on a motor boat costs about Sh300 per person, for a brief tour of the water and nearby areas. Most boats would carry up to a dozen people, normally on weekends but not anymore. The lake is the main source of attraction, particularly for nearby hotels. This weed is an impediment to business. Tourist cannot get a view of the lake, let alone take boat rides. Hotels and restaurants along the lake that are adversely affected are Kiboko Bay, Eco Lodge, Dunga Hill Camp, Tilapia Resort and Sunset Hotel. According to Kenya Marine and Fisheries Research Institute Kisumu (KMFRI), periodic changes in wind patterns and human activities have encouraged the re-germination of the weed. In January 2018, about 10,360 hectares of the lake were covered by the weed, whose coverage has now increased from 14,000 ha to 17,000 ha. The increased water temperature of about 28 degrees Celsius has favored growth of the weed.

Human activity introduced this weed to Lake Victoria and it has resulted into negative effects on the natural ecosystems. This weed has formed an impassible canopy, providing a breed ground for snakes and mosquitoes while making the lake waters

dirty and dangerous for domestic use. It has also denied aquatic animals, including fish sufficient oxygen as it competes for the available air with the fish. Kisumu County has experienced a backdrop in economic growth as one of the major trading goods i.e. fish has greatly reduced in number. This has forced some fishermen in Kisumu to abandon the trade altogether, opting to grow maize and sugarcane instead.

### **Sand harvesting**

Sand mining can lead to considerable environmental damage as witnessed along Nyamasaria River in Kisumu. The sand harvested creates depression on the ground which lies on the riparian zone making it prone to soil erosion hence resulting into soil infertility. It also causes the destruction of aquatic and riparian habitat through large changes in channel morphology. This leaves the river banks bare without any vegetation as the soil around these places cannot support any kind of vegetation.

### **Water pollution**

The water sources especially the rivers and lakes are contaminated from untreated residential and industrial wastes deposited into them. This has resulted in contamination of water making it unfit for domestic consumption. Water pollution has also posed a threat to existence of aquatic life.

### **Floods**

The county experiences floods from time to time during the heavy rains seasons. This happens when River Nyando bursts its banks and causes floods in the areas downstream, especially Kano plains and often ends up in loss of lives, displacement and the catastrophic destruction of vegetation and property.

## **17.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. The county environment officer Mrs. Cindy

Shiaoni responded to the questionnaire in this case.

## **17.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **17.5: Findings and Interpretation**

### **17.5.1: Establishment of County Environmental Committee**

The committee has been established but not gazetted.

### **17.5.2: Budgeting for the committee**

The government has not yet budgeted for the committee.

### **17.5.3: Access to information**

The community has access to information about the committee and its progress though not in the best way.

### **17.5.4: Milestones of the committee**

The committee has helped in the monitoring of the environment.

Planning for awareness programs and national environmental events has been made easier.

### **17.5.5: Challenges**

Gazettement process took long.

### **17.5.6: Future success of committee mandate**

The success of the committee is linked to the government including the committee in its budget.



# **HOMABAY COUNTY**

## 18.1: Study Area Description

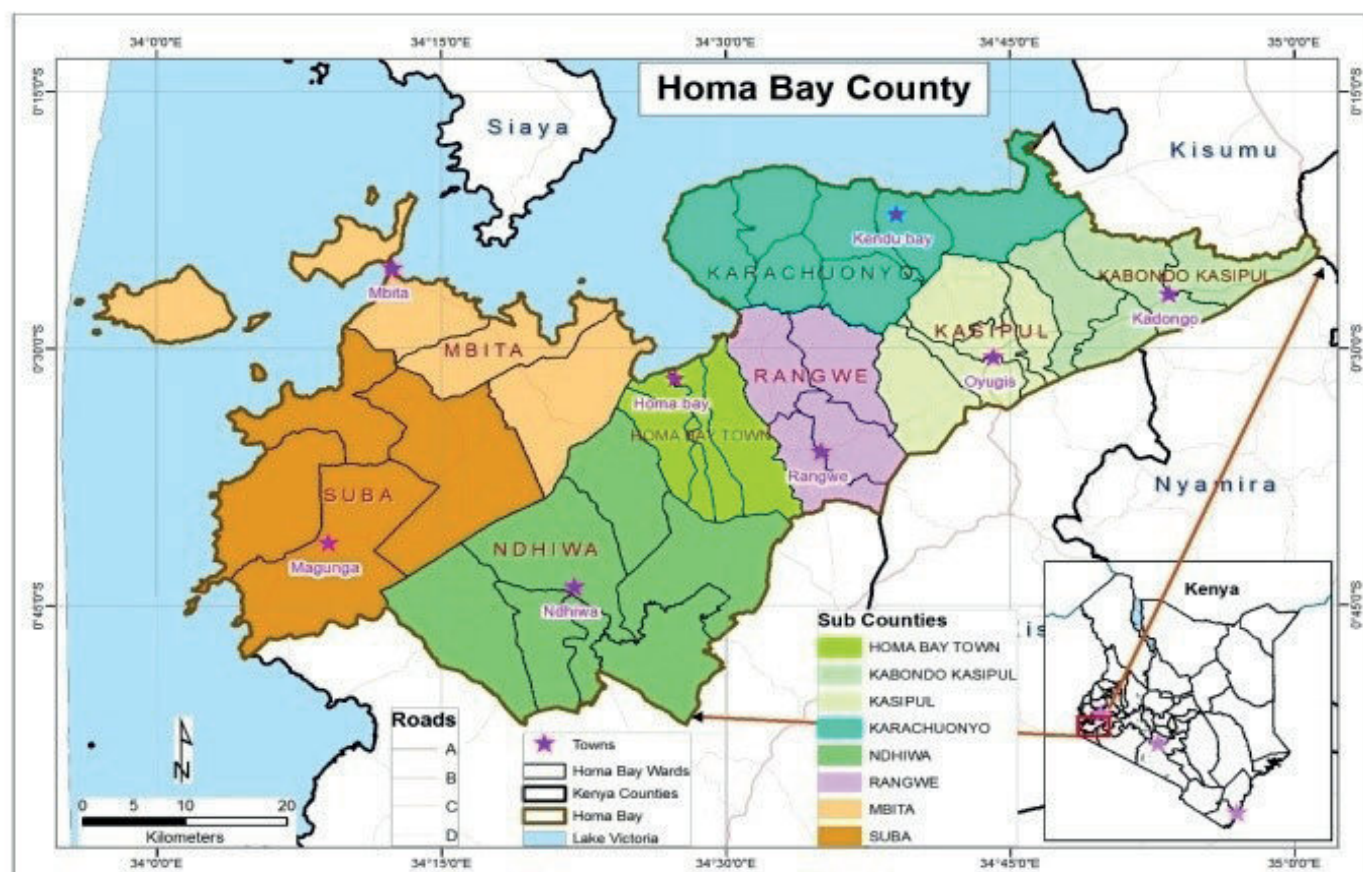


Figure 20: map of Homabay County

Homa Bay County is a county in the former Nyanza province of Kenya. Its capital and largest town is Homa Bay. The county has a population of 963,794 (2009 census) and an area of 3,154.7 km<sup>2</sup>. It boasts of Lake Victoria as a major source of livelihood. The County is divided into two main relief regions namely the lakeshore lowlands and the upland plateau with a number of rivers namely Awach Kibuon, Awach Tende, Maugo, Kuja, Rangwe and Riana rivers, most of which originate from Kisii and Nyamira counties. Climate is inland equatorial, with temperatures ranging from a mean annual minimum of 17.1°C to a mean maximum of 34.8°C, with rainfall amounts of between 250mm and 700mm per annum. Fishing and agriculture are the main economic activities in Homa Bay County. They produce some of the best fish in the world. The Governor, HE Cyprian Awiti, heads Homabay County.

## 18.2: Environmental Issues in the area

### *Sand harvesting*

Sand harvesting activities are a night mare in Homa Bay. Despite the obvious degradation to the environment, the villagers don't see anything wrong with what they are doing. The activity poses adverse threats to people's health and the environment. They vary from cosmetic to catastrophic depending on the scale of mining. The environmentalist says there are no enforceable laws that government agencies such as the National Environment Management Authority can use towards enforcing sustainable sand harvesting in areas like Kobala in Homa Bay County. In the harvesting, nothing has been spared. Sand harvesters dig deep into the earth leaving behind series of gaping holes and destabilizing infrastructure like roads and housing.

## **Pollution**

Intensified agricultural activities in Kenya over the past few years has led to increased use of fertilizers, pesticides and heavy machinery in order to increase yields for economic development, food security and achieve the goals of vision 2030. Homa Bay in particular has been a victim of the same. This has led to heavy metal contamination which has affected the soils thereby rendering the earth unproductive and unable to support any kind of agriculture. It has become a major concern, and authorities have warned that continued use of excessive fertilizer and other chemicals in the soil may prove detrimental to both the health of humans as well as the aquatic life resulting from the presence of Lake Victoria in the county.

## **Intensive agricultural practices**

Intensified agricultural activities in Kenya over the past few years has led to an increased and persistent use of fertilizers, pesticides, manure, use of machinery in order to increase yield for economic development and achieve the goals of vision 2030. Homa Bay in particular has been a victim of the same which this has led to heavy metal contamination which is a major concern for ecosystem in general.

## **18.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. For Homa Bay County, we were served by Mr. Johanna Reuben Ouma who is the county officer in charge of environment.

## **18.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **18.5: Findings and Interpretation**

### **18.5.1: Establishment of County Environmental Committee**

The committee was gazetted in November 2017.

### **18.5.2: Committee membership**

The membership of the committee does not include departmental representation. The gazetted members of the committee are categorized as; 1 youth, 1 woman, 5 men, 1 person living with disability and 2 representatives from CSOs.

### **18.5.3: Access to information**

The community has no access to information concerning the committee and its progress.

### **18.5.4: Milestones of the committee**

The committee has been able to develop a County Environmental Action plan.

A work plan for development of policies on the environment, forests and sand harvesting has been created

### **18.5.5: Role of committee in capacity building, access to information and public participation**

The committee is important as it representation from all categories of people within the County.

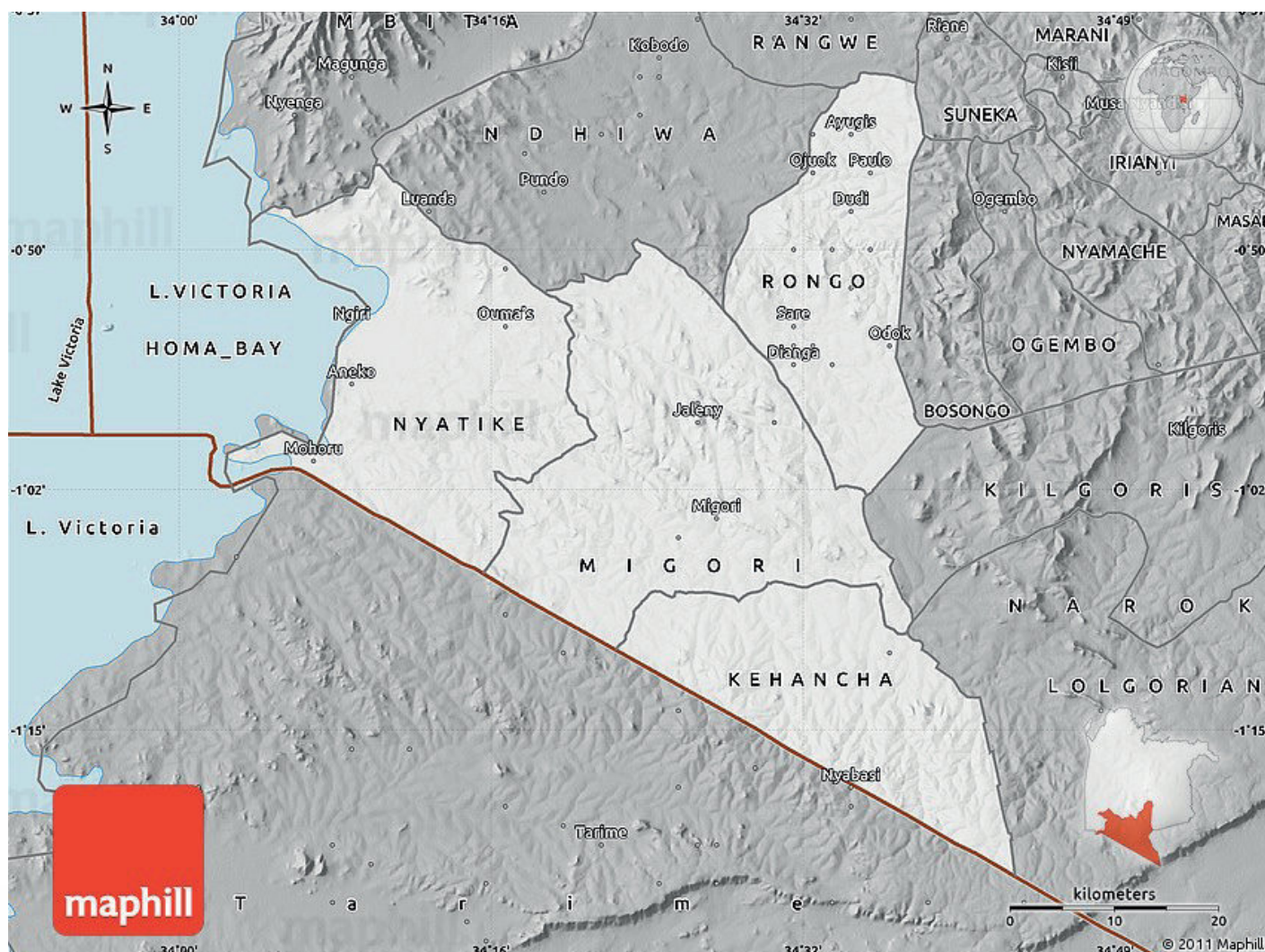
### **18.5.6: Future success of committee mandate**

Capacity building will empower the committee to achieve its mandate effectively.



# **MIGORI COUNTY**

## 19.1: Study Area Description



**Figure 21: Map showing location of Migori County**

Migori County is located in the southwestern part of Kenya with its headquarters, Migori town being 368 km from Nairobi. It is perhaps the most diverse and most viable commercial center after Kisumu in Luo-Nyanza. The County has a population of 917,170. The main economic activities for Migori County are agriculture, farming, manufacturing and mining. The County also sees some limited commercial activities. Mr Okoth Obado is the Migori County Governor.

## 19.2: Environmental Issues in the area

### Migori Gold Mines

Migori County has proven deposits of tita-

nium, gold and coal and holds significant copper, niobium and manganese deposits. There have been cases of environmental concern like pollution, land degradation and heavy metal contamination as a result of the mining. There have also been cases of displacement of people, unsafe working conditions in the mines and sexual harassment thus the need for EHRDs to stand up for the rights of the people and put an end to the unfair treatment of the community.

The area has been known for producing gold for many years yet majority of those who work at the mines especially women have nothing to show for the “golden” opportunity their ancestral lands have to offer. The residents still face poverty and very few have reaped the rewards of mining. The Government has entrusted



resource extraction, ownership of the mines, wealth and power in the hands of a selected few, aggregating corruption and adverse inequalities in the running of the mines. There have been cases of Sexual and Gender Based Violence in the mines whereby women are forced into sexual activity in exchange for money. Mining is physically straining and hazardous and is one of those male dominated jobs and thus most women are left with tasks like grinding of precious stones which doesn't earn them much. The women are sexually exploited by the men who dig for the stones as they are not allowed into the holes and sometimes lack the money to buy the stones and in some cases they are just denied the chance to buy and forced to pay in form of sexual favors. This puts them at risk of contracting HIV and other sexually transmitted diseases contributing largely to the widespread AIDS scourge.

### ***Natural Resource Depletion***

Gold is not a renewable source of energy and as overexploitation goes on the reserves will be diminished and there won't be any gold left at all. The scramble for gold in Migori County could result in the depletion of the resource in the coming years as the mining approach applied is not sustainable. Once excavation has been done land is left bare and not rehabilitated and if this goes on the mineral quantities will drastically reduce and in the end the County may not produce significant amounts of gold to boost the economy.

### ***Mining Related Environmental accidents***

Collapsing mines are a common disaster in Migori County where artisanal gold mining methods are widely applied. The gold mines cave in and collapse resulting in death and people getting stuck in the mines. The safety of the miners is not guaranteed and most of them just take up the risks to dig into the tunnels in search of the gold. There have been cases of collapsed mines with the most recent one happening in January 2019, whereby a Kanga gold miner was buried

alive. Prior to that there was another accident in the Macalder goldmines in Nyatike whereby 4 miners lost their lives in December, 2018

In May 2018, 6 gold miners lost their lives in Copper Hill mines, Nyatike as they were trying to make their way out of the mines. The heavy rocks in the mines usually hamper the rescue efforts and the use of an excavator is needed to get the trapped workers out. Heavy rainfall is also a contributing factor to the crumbling and caving in of the mines.

### ***Mercury Contamination***

The mining of gold requires mercury which is used in the separation of pure gold from its raw ore this is because it is inexpensive and simple often allowing miners to produce gold in a single day. The mercury, which is a metal and not eco-friendly, pollutes and harms the local ecosystem habitat. Mercury also poses health risk to the miners who are exposed to it directly.

### ***Hydrological Issues with a focus on Collapsed Kebarisia dam in Migori***

A faulty dam built by the Migori County government collapsed early in 2018, leaving an estimated 100 families homeless. The dam in Kebarisia village overflowed from about 4 am after heavy rains. People who woke up early to farm alerted their neighbors so they could move. Homes were completely destroyed, families were displaced and farms destroyed. The dams are poorly inspected and no proper audits are carried out on them hence the disasters. The villagers end up accommodated at mission shelters for a while but no compensation is accorded to them by the County governments.

### ***Improper Land Use leading to Land degradation***

Hundreds of unemployed people in parts of Migori have taken up illegal gold panning in a bid to survive harsh economic



times, leaving a trail of destruction that has alarmed land and property owners as well as environmental authorities. The small-scale miners have set up makeshift mines on farmland as well as sites adjacent to homesteads and schools. Deep tunnels have been dug beneath buildings, farms and roads in parts of Kuria and Kehancha resulting in cracked walls, destroyed roads and sinkholes. This situation has alarmed property owners as the lands can no longer sustain the buildings. Also the lands have been left bare and unproductive as the rich fertile top soil no longer exists.

### 19.3: Sampling

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County. Mr. Tom Agumba Misenya the county director of environment was our respondent in this case study.

### 19.4: Research Instruments

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## 19.5: Findings and Interpretation

### 19.5.1: Establishment of County Environmental Committee

The committee members have been appointed and are awaiting Gazettement.

### 19.5.2: Budgeting for the committee

The government has not budgeted for the committee.

### 19.5.3: Committee membership

People living with disability are not represented but the other categories mentioned in the EMCA Act 2015 are represented in the following percentages; 8% are youth, 25% women, about 65% are men and CSOs are 7%.

### 19.5.4: Access to information

Since it is still pending Gazettement, there has been no communication about the committee and its progress.

### 19.5.5: Challenges

The logistics of supporting the sustainability of the committee members

### 19.5.6: Future success of committee mandate

To achieve its mandate, the committee should be fully recognized by the County Government and resources allocated to it to perform effectively and efficiently.

# **KISII COUNTY**

## 20.1: Study Area Description

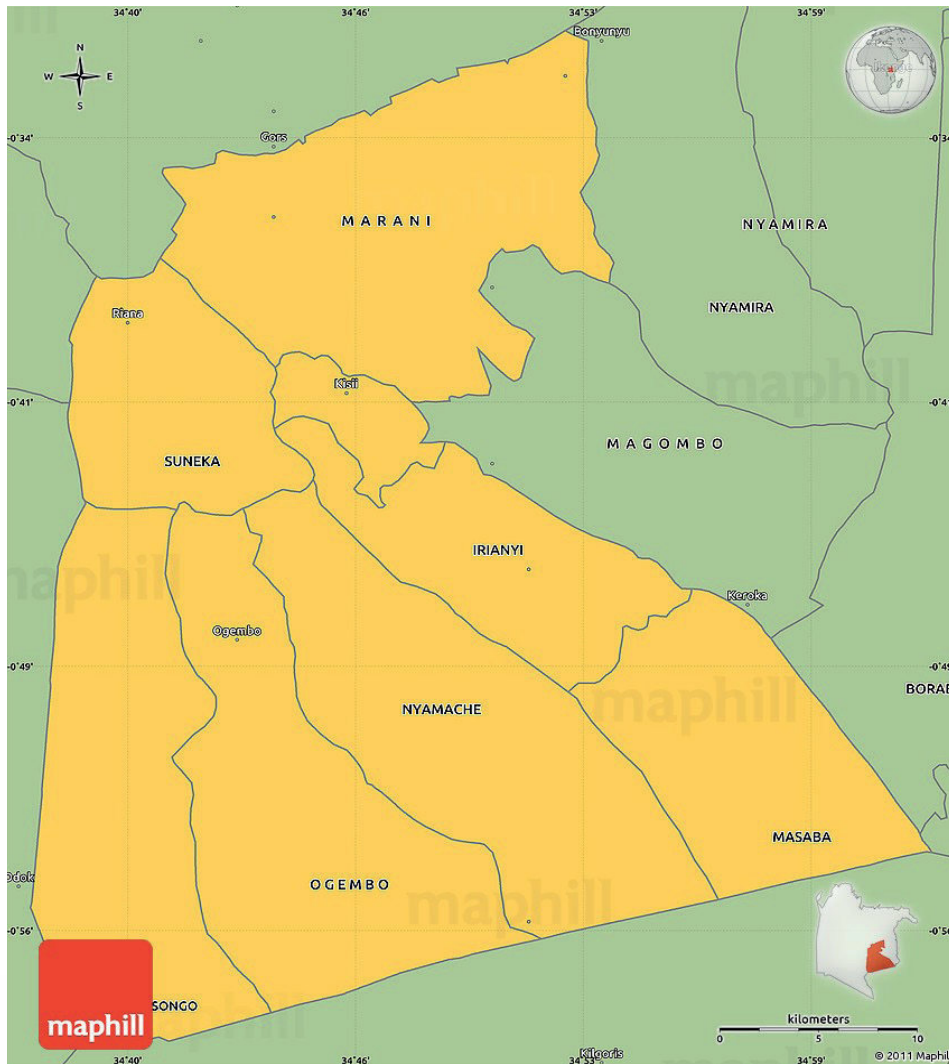


Figure 22: Map of Kisii County

Kisii is a County found in south western Kenya. its largest town is Kisii. The County has nine Constituencies and six administrative divisions. Kisii County has a total area of 1317.9 square kilometres and a population of 1,152,282 (2009 census). Mr James Ongwae is the Governor for Kisii County.

## 20.2: Environmental Disputes in the area

### *Destruction of water catchment areas*

Unplanned planting of the eucalyptus tree in the Kisii highlands threatens livelihoods of millions of water users in Nyanza Province. The Ministry of Environment says the region, which is endowed with important rivers and catchment areas risks drying

up due to the effects of planting the eucalyptus in riparian areas.

The authorities have advised residents against planting the trees near water sources to safeguard against water loss. They have noted that many permanent rivers had reduced water volumes while others had become seasonal over time.

### *Proposed Sugar mill in Nyangweta Forest*

Nyangweta forest, a gazetted water tower, is under threat due to proposed construction of a sugar factory by the Kanoria Group. As the country takes initiatives to carry out tree planting campaigns and maintaining the country green, the county government wants to destroy the only forest in Kisii County to build a factory. When

the forest was first gazetted in 1965, it was approximately 258 acres. Over time, its acreage has reduced as some of the land was hived off for the construction of Kisii University.

Although the Kisii County governor James Ongwae, Senator Sam Ongeru and South Mogirango MP Silvanus Osoro are pushing for the construction of the sugar factory at Nyangweta Forest, it is the last thing the residents need. The leaders even went as far as tabling their case to the senate requesting to be allowed to take off 120 acres of land from the Nyangweta forest to pave way for construction of the sugar mill.

The plan has sparked mixed reactions among residents and leaders alike. Propo-



nents of the project led by Governor James Ongwae, Senator Sam Ongeru and South Mugirango MP Sylvanus Osoro tabled their case before the Senate Committee on Lands whereby they wanted 120 acres taken off the forest for the construction of the Sh5 billion sugar mills to be set up by Kanoria Group. They dismissed opponents of the project as being out of touch with needs of the residents. However, they have not addressed the salient issues on the project's environmental impact and viability. The National Assembly Committee on Environment opposed a bid by the Kisii County government to hive-off a forest and put up a multi-billion sugar plant. The ruling by the committee came days after the county leadership and the national minister for environment presented its case to the committee. The residents continue to oppose the move.

### ***Population pressure resulting in Environmental Degradation***

The major contributor to environmental degradation in the county is Population pressure which has resulted in destruction of water catchment areas like Nyansembe forest in Gucha South district for farming purposes. The depletion of vegetation, together with the hilly terrain also contributes to soil erosion in the county. The application of farm chemicals has caused pollution on both surface and undersurface water sources. The coffee and tea processing factories contribute to water pollution through discharging the effluent into the rivers. Mining of soapstone has also led to land degradation.

### ***Destruction of water catchment areas***

The Nyangweta forest, a gazetted water tower, is under threat by a proposed construction of a sugar factory by the Kanoria Group. When the forest was first gazetted in 1965, it was approximately 258 acres. Over time, its acreage has reduced as some of the land was hived off for the construction of Kisii University..

### ***Deforestation***

Destruction of forests in Kisii County continues even after a ban on logging by the government. In the last five years alone, at least one forest has been decimated by the county government to give way for creation of a bus park cum market at Keumbu, Nyaribari Chache Sub-county. The danger facing the forests in the county is further heightened by lack of forest guards to deter destructive human activities. At Nyangweta, the largest of the eight designated government forests, the effect is apparent as human activities take toll. What was a thick, dense forest with gigantic and massive pine and eucalyptus trees a decade ago is now a pale shadow of what it means to be a forest.

### ***Loss of indigenous species***

Mature trees have long been depleted and what is remaining is slender immature trees which are yet to stimulate the appetite of loggers. He added that land in much of the expansive forest is rocky, sandy and trees planted there take decades to mature. At Emborogo Forest in Masaba South Sub-county, the entire hilly forest is under threat of extinction. Planting of Blue gum trees near watch catchment areas is one of the main reasons the County has been experiencing water shortages. Residents who have planted blue gum trees have been urged to remove them from water catchment areas and replace them with environmental-friendly trees so as not to experience acute water shortages in the future. Thousands of eucalyptus trees planted by the government in the mid-70s have already been cut to pave the way for a primary school and a church.

### ***Climate change***

Due to deforestation, rainfall patterns are gradually changing and this has made it difficult for farmers to predict the weather patterns. The weather pattern has significantly changed resulting in unpredictable planting seasons in the county. This has led to poor agricultural yields resulting to high

levels of food insecurity.

### **Municipal Solid Waste**

Raw sewage flowing through the streets of Kisii town has become a common sight. Dumping of solid waste into major rivers and in Kisii town has also been a problem for some time now, but there seems to be no solution in sight. County officials have failed to keep their promises to fix broken and blocked pipes. The effluent has polluted Nyakomisaro River, a tributary of Riana River, a major source of water for residents of Kisii and Migori. County officials have been accused of taking bribes to approve illegal constructions. Broken and blocked pipes are also an issue of concern as they have been left unfixed for a long time thus escalating the sewer problems.

### **Pollution**

The coffee factories in the County have been blamed for polluting rivers by releasing effluents directly into them. Other than contaminating water, illegal constructions have also diverted rivers. In the recent past, the Health Chief Officer Melitus Kabari, announced that all springs in Kisii town had faecal contamination and advised residents to boil or treat drinking water. Laboratory analysis had shown that all springs had particles from toilets. Streams are fully subjected to pollution and they carry lots of plastic bags and also flows next to a sewer system which at times overflows. This is both hazardous to the environment and the health of the people residing in the area.

### **Destruction of Rivers**

Construction is being carried out along river banks in Kisii County. These constructions have caused interruption in the regular flow of the rivers by diverting them. They have also resulted in the contamination of the river water sources.

## **20.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the

environment department of the County. Mr. Obwocha Alexander the director department of energy, environment, water and natural resources divulged the necessary information we required and even went ahead to show us the documents they had filed on the CECs

## **20.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **20.5: Findings and Interpretation**

### **20.5.1: Establishment of County Environmental Committee**

The committee was gazetted on 30th January 2018.

### **20.5.2: Budgeting for the committee**

No budgeting, in relation to the committee, has been done.

### **20.5.3: Committee membership**

Membership was guided by the 2015 EMCA Act.

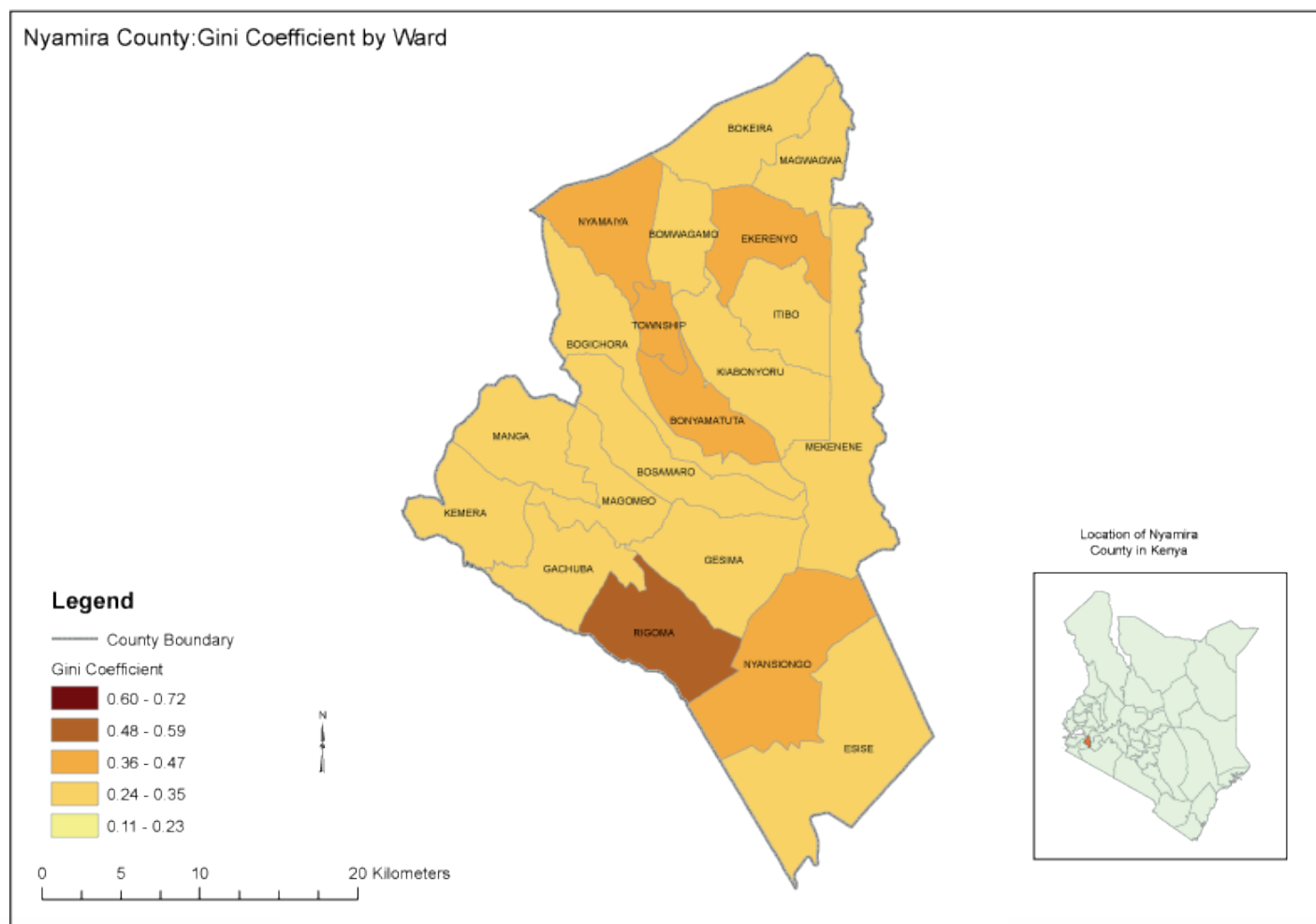
### **20.5.4: Access to information**

The community has no access to information concerning the committee.

# **NYAMIRA COUNTY**



## 21.1: Study Area Description



**Figure 23: Map of Nyamira County**

Nyamira County was formerly part of Kisii district. The County has a population of, according to the 2009 census, 598,252. Its largest town and capital is Nyamira with an urban population of around 41668 (2009 census). It is sometimes referred to as North Kisii County. The Governor of Nyamira County is HE John Nyagarama Obiero.

## 21.2: Environmental Issues in the area

### *Proposed Bonyunyu dam Project*

The construction of the Sh5 billion Bonyunyu Dam in Nyamira County has sparked controversy. The project is funded by the Dutch government. The dam is projected to end the water shortage crisis in Kisii town and its environs. Residents say about 2,000 people will be displaced, but officials say only three families will be affected.

The project faced opposition as residents claimed they had been kept in the dark over compensation plans. There were fears that more than 2,000 people would be displaced to pave way for the dam project estimated to generate 1.2MW of electricity. The residents have blocked the construction of the dam citing that the government is planning to evict them without compensation yet they legally own the lands in question. They urged the government to relocate the dam to a different area. Surveyors who have visited the project site were violently rejected by residents. A resident has in the recent past been shot dead by police after he allegedly confronted surveyors with a machete in the wake of demonstrations against the project where scores of protesters were injured. The project has fueled conflicts whereby two houses said to belong to area residents who support the construction of the dam have in the recent past been

torched in Masaba North.

According to the residents, the project did not involve public participation and the residents have had to retaliate as they felt they were being unjustly exploited by the Government. The Lake Victoria Water Services Board however refuted the allegations that the communities were not involved and said the project will go ahead, despite resistance by residents. The locals had been barricading roads and violently turning away workers at the site, prompting increased security. The area needs an active presence of EHRDs and a working CEC as the issues raised by the residents require specialized attention. The dam may be useful in the long run but the views of the residents are very crucial and a way for the residents to create a rapport with the Government must be put in place thus the need for EHRDS.

### **Environmental pollution**

The coffee factories in the County have been blamed for polluting rivers by releasing effluents directly into them. Recently the coffee factories have been given notice of closure or being slapped with heavy lawsuits for causing massive environmental pollution if they don't take the necessary measures to improve on the environmental issues raised and adhere strictly to the laid down environmental laws and regulations that guide operations of industries. The National Environment Management Authority (NEMA) in Kenya has on several occasions claimed coffee millers in Nyamira County have for years been responsible for water pollution and have given several warnings to them.

### **Deforestation**

Deforestation in Nyamira County is happening at an alarming rate as trees are cut down for logging purposes and for providing fuel for the tea factories in the County. This has resulted in depletion of forest cover. Trees are also cut down to pave way for tea farms expansion and this has led to

loss of forest cover.

## **21.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County.

## **21.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **21.5: Findings and Interpretation**

### **21.5.1: Establishment of County Environmental Committee**

Committee established and was gazetted in 2016.

### **21.5.2: Budgeting for the committee**

The County Government has not budgeted for the committee.

### **21.5.3: Committee membership**

People living with disabilities and CSOs are represented. 10% makes up the youth, 20% women and 70% men.

### **21.5.4: Access to information**

The community has been given access to information about the committee and its progress.

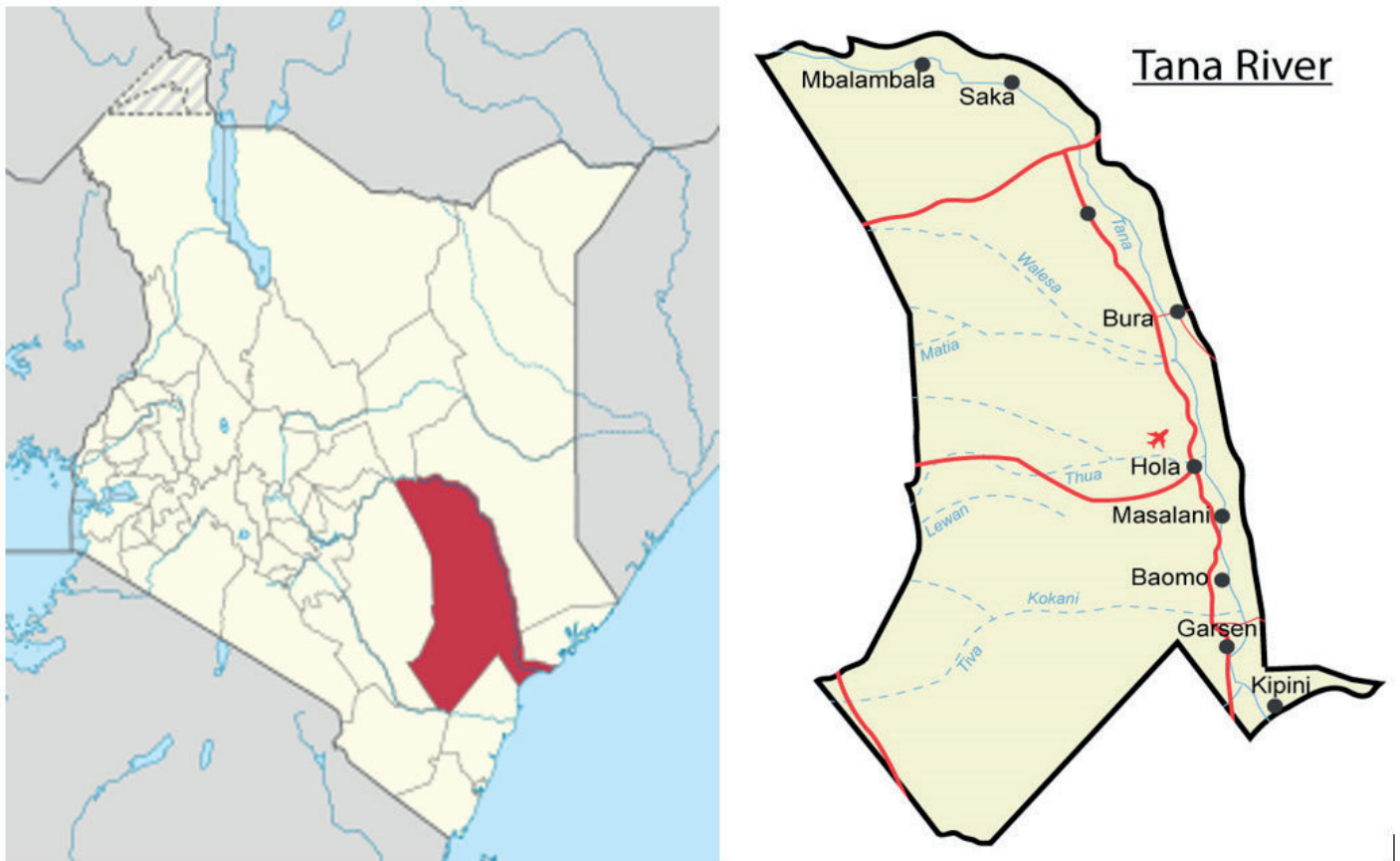
### **21.5.5: Challenges**

Inadequate financial resources

# **TANA RIVER COUNTY**



## 22.1: Study Area Description



**Figure 24: Map of Kenya showing location of Tana River County and a map of Tana River County**

Tana River County is a county in the former Coast Province, Kenya. It is named after River Tana. It borders Kitui County to the West, Garissa County to the North East, Isiolo County to the North, Lamu County to the South East and Kilifi County to the South. The county lies between latitudes 0°00'53" and 2°00'41" South and longitudes 38°02'54" and 40°01'51" East. The county has a total area of 38,862.2 Km<sup>2</sup> and covers about 35km of the coastal strip. The county's administrative headquarter which is also the largest town is Hola. The governor of Tana River County is H.E Major (Rtd) Dhadho Gaddae Godhana who was elected on August 8th on Orange Democratic Movement (ODM) Party ticket and took over from Hussein Dado of wiper party who was the former governor.

The major physical feature in Tana River County is an undulating plain that is interrupted in a few places by low hills at Bilbil

around Madogo and Bura divisions. The land in Tana river generally slopes south eastwards with an altitude that ranges between 20m to 200m above sea level at the top of the Bilbil hills. The River Tana traverses the county from Tharaka County in the North to the Indian Ocean in the South passing through Tana Delta and covering a stretch of approximately 500km. The most striking topographical feature is the River Tana that traverses the county from the Aberdares in the North to the Indian Ocean in the South covering a stretch of approximately 500 kilometers.

## 22.2: Environmental Issues in the Area

### *Land use change*

The Galana-Kulalu irrigation project and food security scheme was unveiled in 2014 as a one-million-acre model farm. This project was to cover both Tana River and Kilifi

counties possessing large tracks of land of over one million acres in size. This space was very huge and it meant people had to be evicted in some areas to create space for the project to initiate. The massive 14.5 billion shilling model project was come up with to enhance food security in the country as it was anticipated the project would produce 40 million bags of maize annually which would greatly boost food in the country. According to the records at the land offices of both the two counties, land ownership remains a big problem in the project area. The Model Farm was to be located within Galana-Kulalu Ranches which are on Government land which had been leased by NIB from ADC.

As per the records, 60 per cent of the residents in the project area owned some acreage of land. Only 14 per cent of the residents in the area owned allotment letters and none of the residents possessed a title deed. The area was sparsely populated with few inhabitants who settled in a nucleated manner. The Giriama and Watha communities in Kilifi and Tana River Counties respectively were scattered in small groups as per their family relations and settled along the river. The Orma were also in small groupings though off the riverine. Majority of the households within these areas have lived in their farms for over 12 years with average land holding capacity per household within the area ranges between one and three acres. Since most of the locals lacked ownership documents for their lands, they were forced to leave their lands without compensation which led to injustice as they had known Galana-Kulalu as their home for a very long time. The residents were displaced and it caused a series of back and push between the proponents of the project and the residents of the area. Up to date the residents who lived as squatters due to the land ownership problems witnessed everywhere within coastal region have never been compensated while the project which made them to be evicted has since stalled raising eyebrows on whether it was even viable in the first.

### **Water scarcity**

According to government officials, water scarcity has always fuelled deadly inter-ethnic wars that have continued to claim lives in Kenya. This is because the valuable resource is always scarce in certain parts of Kenya being mostly in the arid and semi-arid areas and often the demand supersedes its availability thus resulting into a deficit. In the recent past, Tana River County witnessed some of the deadliest environmental conflicts ever as a result of resource use struggles among the communities living within the lower Tana River Delta. According to witness account, On Sunday, September 9, of 2012, 38 people were killed in revenge attacks in the Tana River Delta district of Kenya's Coast province. The deceased included eight children, five women, 16 men, and nine police officers. The incident occurred as the government announced it would conduct a disarmament exercise in the Tana River Delta following clashes over water and pasture that had led to massive loss of life and property with more than 80 people dead.

The Pokomo and the Orma communities who both inhabit the lower Tana Delta and who both mainly depend on pastoralism as the leading economic activity have constantly brushed shoulders over the control of the plenty waters and rich pasture lands of the lower Tana River Delta. Each side claims ownership of the water resource and the grazing fields with the main intention being to feed their animals. On this note conflicts always arise and it is perennial especially during the dry seasons. Both communities viciously attack each other, steal each other's animals and at worst kill one another and destroy property in continued series of retaliation attacks. The conflict over the water resource and grazing land in the lower Tana Delta has continued to be a perennial problem and it has continued to claim lives, animals and property. It has led to people being left homeless in the past with many becoming internally displaced persons in their own country. According to some of the locals, they have expressed



that the environmental resources in the area such as river have become blessings in disguise as the people thought the river supports them, it also brings untold suffering on the people due to the on and off ethnic wars.

## **Floods**

Tana River County experiences serious flooding especially in the lower Tana River Delta during rainy seasons upstream. When it rains upstream, the storm water is carried in form of flash floods by the flow of the river downstream. Residents of Tana River County normally find it extremely difficult to access services as the floods completely the area. The floods often lead to massive loss of life and property. Recently more than 40 families in Garsen, Tana River County were displaced by floods. These people were forced to move to higher grounds to evade the raging floods which had already claimed the lives of a few people and swept away all their livestock. The government advised them to move to safer grounds where they could be accessed in order to provide aid as the floods had completely locked them from being reached. They were left homeless and since then they have never been able to get back their normal lives. They raised concerns that they have been forgotten in efforts to help rebuild their homes in Walkone in Galile as promised by both the county and national governments.

On 23 Oct, 2018 a flooding warning issued by the Meteorological Department saw families flee their homes in Tana River County. Residents of Kone village and other parts of Galole and Tana Delta pitched camp on higher ground as the rains started. The residents told media outlets that they had decided to move early to minimize the damage experienced last season, when tens of thousands were displaced. They said that they had left their property behind so they would still incur losses yet they had just started recovering. They also complained about pests being carried along by floods which end up completely destroying their

crops during planting. Earlier in May In May that year, more than 1,000 people were displaced after dams in Tana River were submerged by floods, spilling water into the villages.

## **22.3: Sampling**

Sampling was purposive as we targeted the director, CEC and Chief Officer of the environment department of the County.

## **22.4: Research Instruments**

The primary tool used was questionnaires and photography. The data generated was entered and analyzed by use of MINITAB software. The data was garnered was majorly descriptive.

## **22.5: Findings and Interpretation**

### **22.5.1: Establishment of County Environmental Committee**

Committee established and was gazetted in 2017.

### **22.5.2: Budgeting for the committee**

The County Government has not budgeted for the committee.

### **22.5.3: Committee membership**

CSOs are represented making up 33%, 16% women and 84% men.

### **22.5.4: Access to information**

The community has limited access to information about the committee and its progress.

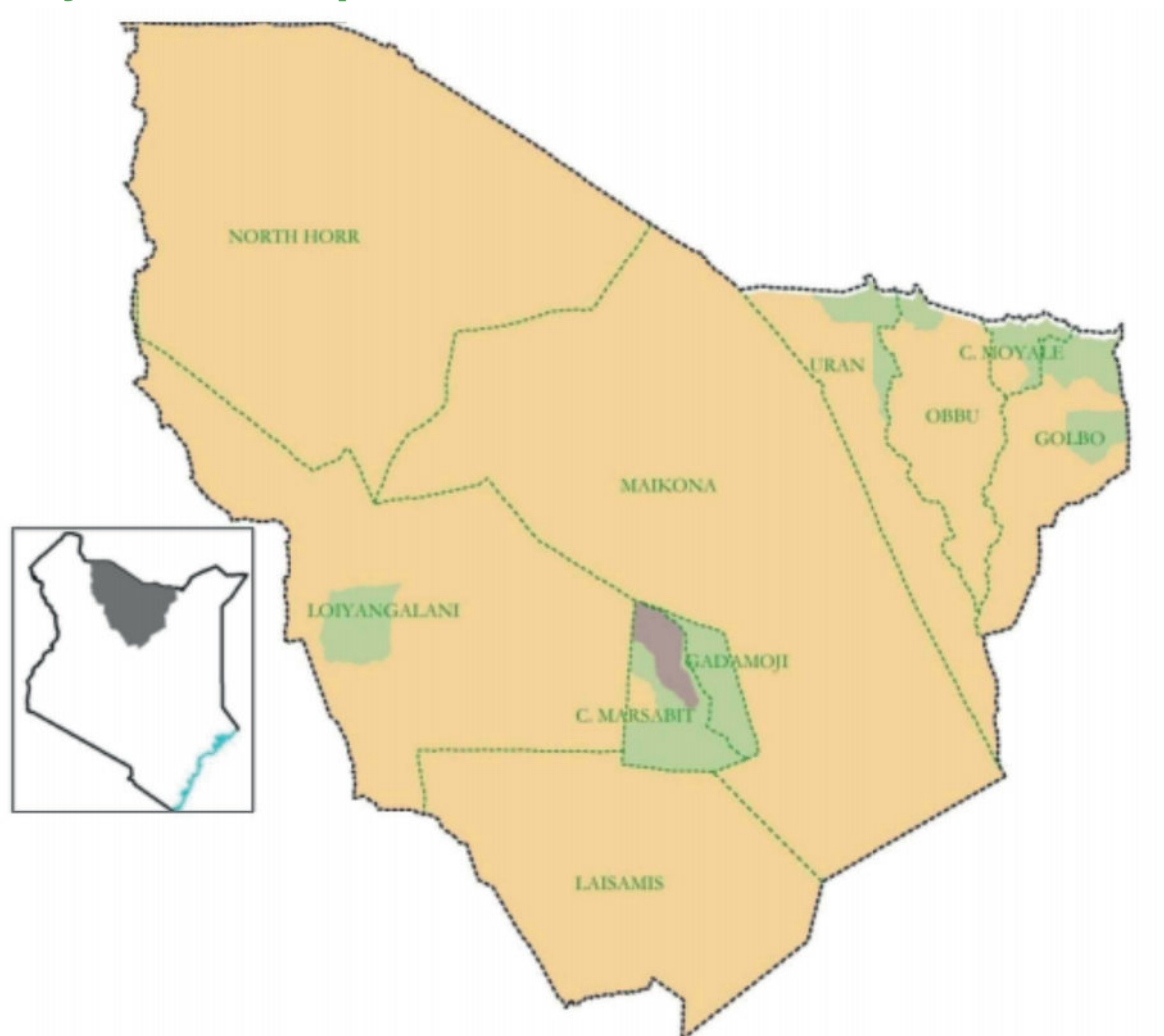
### **22.5.5: Challenges**

Inadequate financial resources



# MARSABIT COUNTY

## 23.1 Study area description



**Figure 25: Map of Marsabit County and inset Map of Kenya showing location of Marsabit County**

Marsabit County is a county of Kenya. Covering a surface area of 66,923.1 square kilometres Marsabit is the largest county in Kenya. Its capital is Marsabit and its largest town Moyale. The County has a population of 291,166.

## 23.2 Environmental Issues in the area

### *Contaminated water sources*

Marsabit County for a very long time now has been faced by serious water contamination which resulted from mining activities in the late 1980s. Recently the government and other organizations working in this arid region were baffled more so following the unexplained deaths of more than 115 camels. The animals died after drinking

water from an abandoned well in El-Hadi village on the Kenya-Ethiopia border. And a few days after the incident, another herd of 56 sheep and goats perished in similar circumstances, according to the Chief Officer in charge of livestock in Marsabit County, Wario Sori. This surprisingly, according to the residents of Marsabit, deaths of both people and livestock in Chalbi are not a new phenomenon. In October 2009, the government through the Ministry of Environment was forced to constitute an inter-ministerial team to investigate cause of massive deaths of livestock in the desert. But what prompted the investigations are media reports of people dying from different cancers believed to be caused by the contaminated waters.

It started in the year 2000 when a herd of

7,000 sheep and goats died after taking water from a borehole in Kargi, southern Chalbi. Numerous other incidents of similar nature followed spreading to other parts of Maikona, Kalacha, Dukana and North Horr, which are in the northern and western parts of the Chalbi desert. Locals attribute the deaths to toxic substances they say were buried in oil wells by an oil exploration company in the 1980s and the area is yet to be remediated.

According to experts, Most of the waters from boreholes and shallow wells, do not meet safety standards with respect to salinity, sulphates, nitrites and arsenic they contain. The waters have high levels of nitrates that government officials have attributed to animal waste that finds its way into water sources when it rains.

This continued ignorance on the part of the government has resulted into serious environmental and health impacts as witnessed above. People and livestock have continued to lose their lives haphazardly when in real sense a lasting solution to this menace can be found. It is therefore a high time that the government moves swiftly to correct on this. This problem through the CEC can be addressed properly and extensively to a lasting solution.

### **Water scarcity**

Marsabit County is one of the counties that lie within the larger arid lands of Kenya. This county experiences an acute shortage of water annually due to the dry conditions experienced in this part of the country. For the past one year, Marsabit county residents have not received any amount of rainfall. This has created an environment that is unbearable for both human and animal survival. People and livestock have continued to perish from lack of food and water which has resulted from the prolonged droughts. The county residents cried foul that it was extremely expensive to survive in such conditions as a 20 liter jerican of water retailed at up to 100 shillings and that meant certain families had to spend more than 500 shil-

lings a day to keep them going. As at the time of this study, most water points had dried up and the ones that still had water had long queues of more than 500meters.

Notably, the meteorological department noted that Marsabit County would not receive rainfall any soon as the dry conditions would prolong for some time. The county government had raised a red alarm that they were facing hunger as a county due to drought and were requesting for relief food and water from the national government and other international relief organizations. The county of Marsabit receive less than 300mm of rainfall per annum and this cannot serve the whole community together with their livestock as they are mainly pastoralists. The county government together with the national government and other relevant authorities need to come together and come up with a long lasting solution to this perennial issue. Marsabit County can participate in decision making concerning this matter and they could also give their views on some of the solutions that could be applied to remedy the situation.

### **Natural Resource Conflicts**

The people of Marsabit County are majorly pastoralists and they mainly depend on pasture and water for their livestock survival. Since the area experiences acute water scarcity a serious problem always arises in the usage and sharing of these limited resources that range from water and pasture. This has in turn resulted in community conflicts among the members of the county where people kill each other for these resources and they steal each other's livestock. Several people have died from such attacks especially the women and children.

The local politicians normally play a major role in the fuelling of these conflicts as they always claim the environmental resources belong to either side of the warring communities. The issue of the natural resource conflict sharing has become so emotive that at times it has forced the national govern-



ment to deploy its security agencies in these areas to help with peace restoration and circulation of relief food.

The aftermath of such struggles for environmental resources has been evident as families have been separated in this area, people's homes have been burnt and they have either been left displaced or homeless. Other evident challenges arising include families being left poor as a result of cattle rustling, and more deaths being recorded as a result of people killing each other. All these issues have left the county residents distraught and less vibrant and an urgent solution is required.

Through the CEC and its establishment in Marsabit County, there will be a platform where people can come up with solutions towards resolving the environmental conflicts among the communities in an amicable manner.

## 23.3 Sampling

Sampling was purposive as we targeted the Sub-County Environment Officer, Mr Orbora Fereiti Thomas who was our respondent during the survey.

## 23.4 Research Instruments

Questionnaires were used in data collection. The data generated was entered and analyzed by use of MINITAB software. The data

was garnered was majorly descriptive.

## 23.5 Findings and Interpretation

### 23.5.1 Establishment of County Environment Committee

Committee established and gazetted in 2016.

### 23.5.2 Budgeting for the Committees

The Committee has not been budgeted for.

### 23.5.3 Committee membership

Women, men and Civil Society Organizations represented in the Committee. No representation for youth and people with disabilities.

### 23.5.4 Access to information

The Community members have no access to information.

### 23.5.5 Challenges

- No funding for the CEC.
- No trainings for the committee members.
- Community unawareness on the existence of the CEC.
- Lack of coordination between NEMA and county departments of Environment etc.

## Challenges Faced By Field Officers

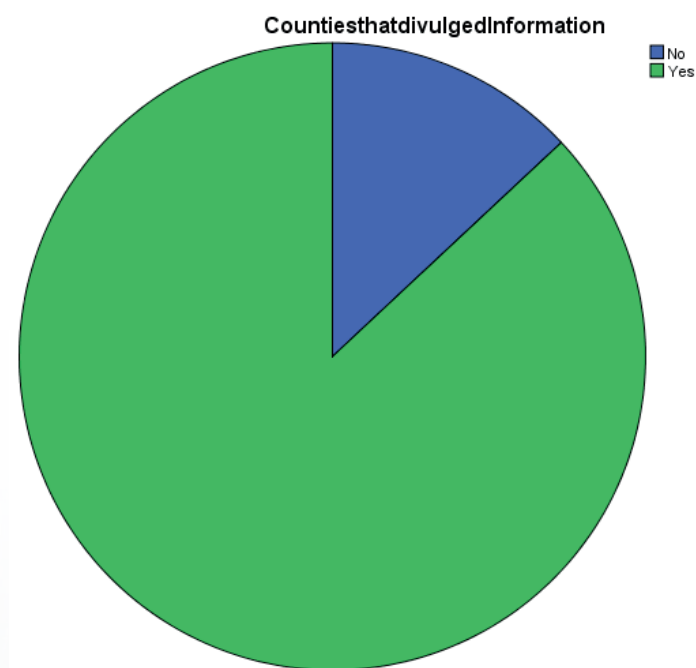
- Complex procedural flow of authority-in some of the Counties visited, the authorities were not cooperative saying that they would only cooperate when instructed to do so by their bosses even when they had the information needed and the capacity to attend to us.
- Denial of access to information-information about the County Environmental Committees is expected to be accessible to anyone as they are to be gazetted, but that was not the case. Some of the Counties were reluctant to give us information on the committees saying that they either had no permission to do so or it was sensitive Government information.
- Delay of implementation-in most of the Counties, the committees have either been gazetted or are in the process of Gazettement. In just a few is where no implementation has been done so they had no information to share.

## Key Findings And Interpretation Of Results Across All Counties

### Counties that divulged information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	3	13.0	13.0	13.0
	Yes	20	87.0	87.0	100.0
	Total	23	100.0	100.0	

The pie chart below illustrates the percentage of counties that divulged information and those that were not willing to divulge information in the 24 Counties covered by the study.

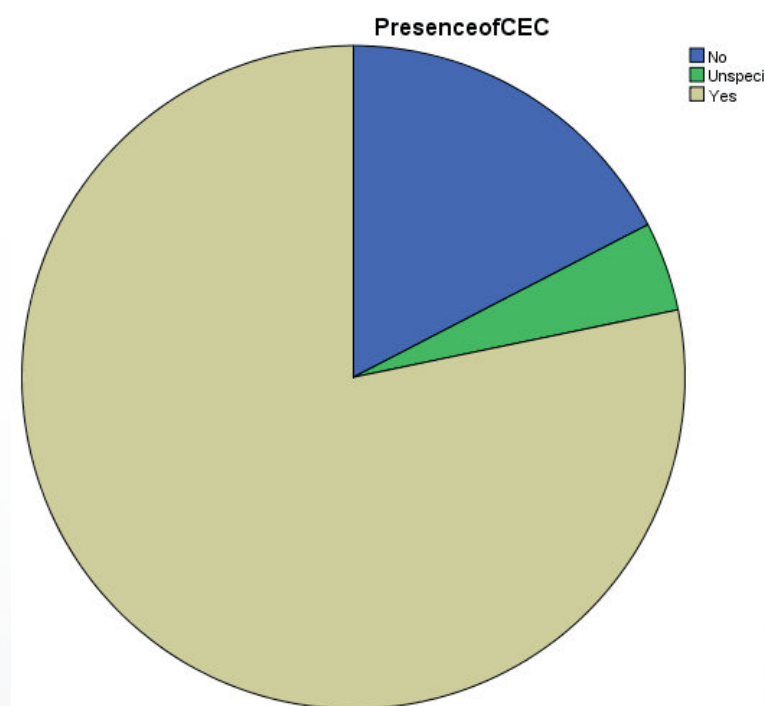


*“One of the objects of the right to information contained in article 35 is to promote open and transparent Government. It is a specific right that underpins the values of transparency, accountability, good governance and public participation. It is a right that implicitly recognizes that the citizen has a role to play and indeed a responsibility in prying open the affairs of state in order to achieve the values of the Constitution” – Justice Majanja.*

## Presence of CEC's

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	17.4	17.4	17.4
	Unspecified	1	4.3	4.3	21.7
	Yes	18	78.3	78.3	100.0
	Total	23	100.0	100.0	

The following pie chart illustrates the presence of CECs across the counties covered by the study:



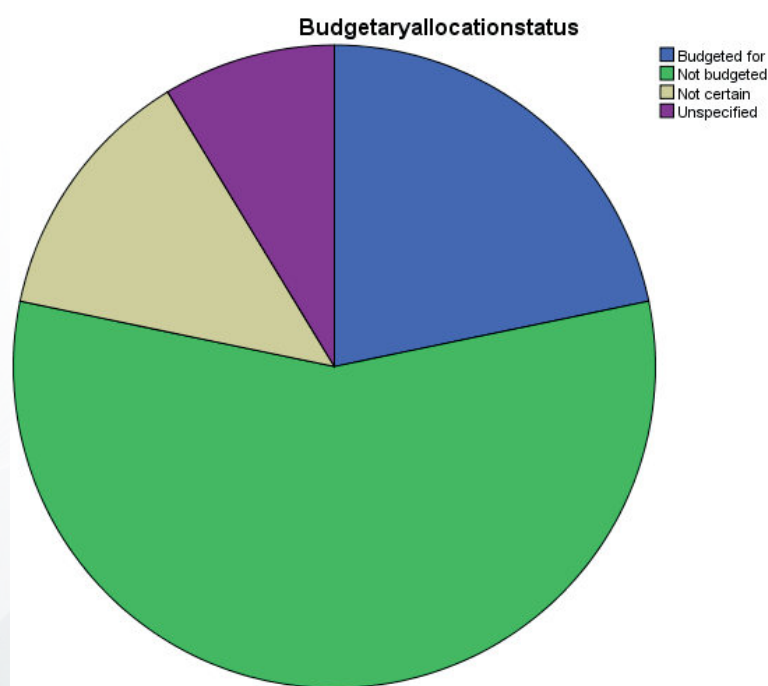
*Kenyans are now experiencing the consequences of climate change. CECs are one avenue that would ensure environmental protection and climate change mitigation through participation in environmental governance. It is therefore paramount now more than ever that all counties across the country comply with the law in implementing the County Environment Committees.*



## Budgetary Allocation Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Budgeted for	4	21.7	21.7	21.7
	Not budgeted	13	56.5	56.5	78.3
	Not certain	3	13.0	13.0	91.3
	Unspecified	2	8.7	8.7	100.0
	Total	23	100.0	100.0	

The study revealed that some counties had budgeted for the CECs while others had not budgeted for them while others were only funding selective activities for the CECs. The following pie chart shows the budgetary allocation status for the CECs activities across the counties covered during the study:

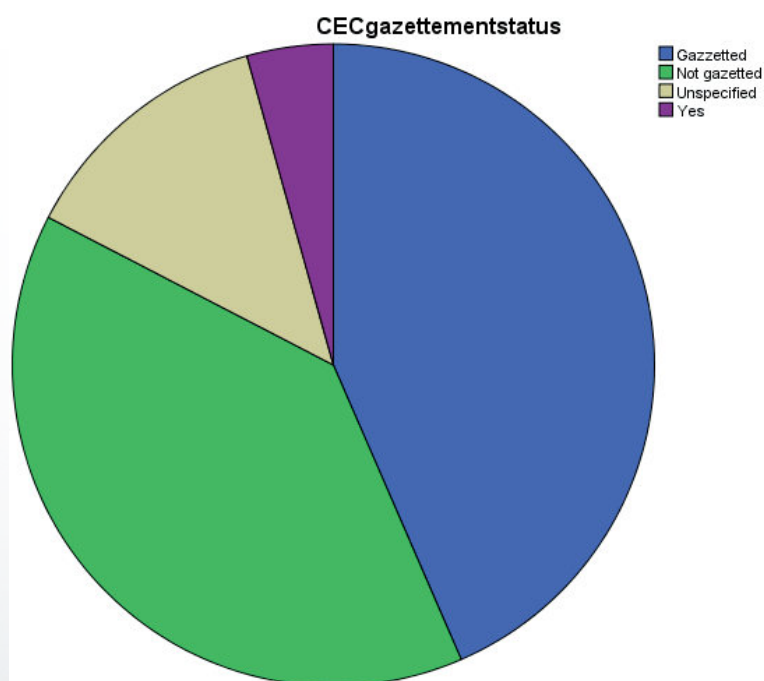


*CECs depend on funding for them to function effectively and carry out their mandate. The study established that the fraction of the CECs not budgeted for exceeds those that have been budgeted for. Funding constraints hamper the normal functioning and planning of the Committees.*

## CEC Gazettement Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Gazetted	10	43.5	43.5	43.5
	Not gazetted	9	39.1	39.1	82.6
	Unspecified	3	13.0	13.0	95.7
	Yes	1	4.3	4.3	100.0
	Total	23	100.0	100.0	

The study revealed that the CECs had been gazetted in some of the Counties while in others they are yet to be gazetted. This is illustrated in the pie chart below:



*The Kenya Gazette is an official publication of the Government of Kenya that publishes notices of new legislation, notices required to be published by law or policy and announcements for general public information. Most CECs are yet to be gazetted and this makes it hard to budget for them as they are not included in the annual budget of the County Governments.*

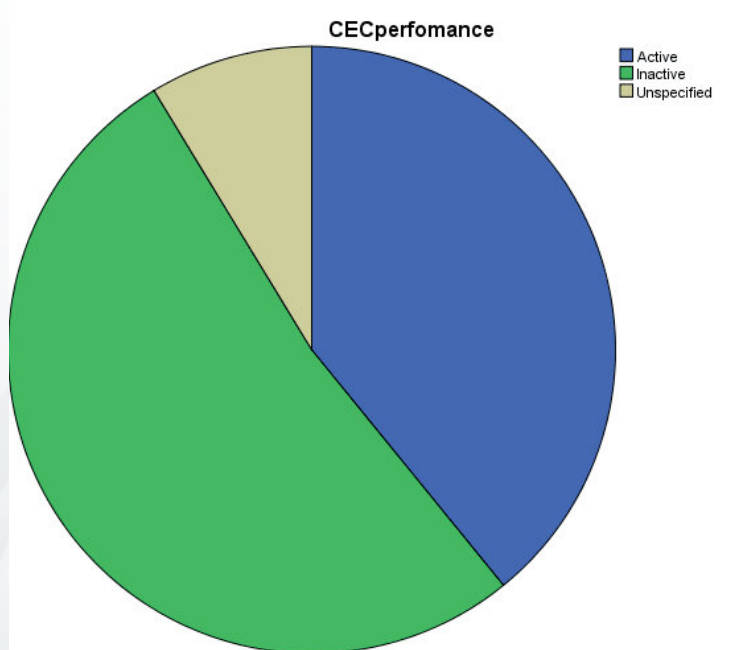
## CEC Appointment Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unspecified	37	30.4	30.4	30.4
	Yes	16	69.6	69.6	100.0
	Total	23	100.0	100.0	

## CEC Performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Active	9	39.1	39.1	39.1
	Unspecified	12	52.2	52.2	91.3
	Yes	2	8.7	8.7	100.0
	Total	23	100.0	100.0	

The chart below shows the performance of CECs across the counties in Kenya. Most of the counties in the country have their CECs inactive giving a clear indication that most counties have not taken seriously the implementation of the CECs as required by the law.



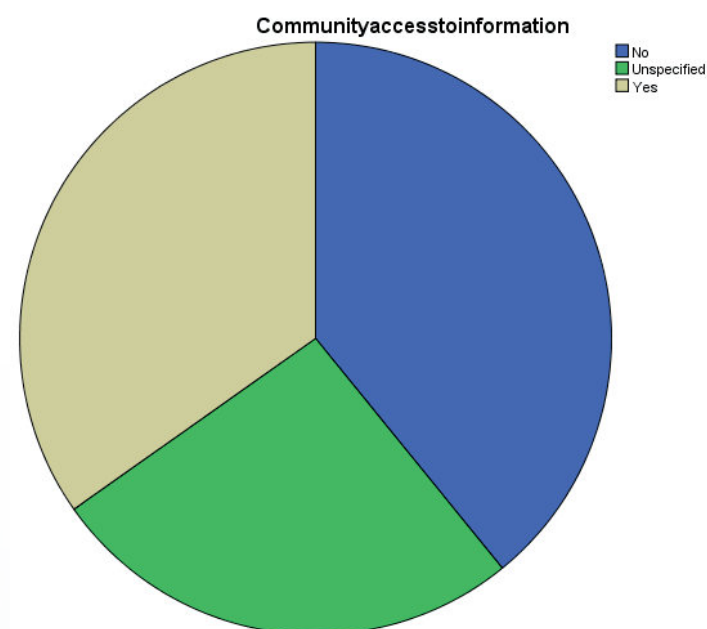
*“All sovereign power belongs to the people...” (Article 1 of the Kenyan Constitution 2010) and active public participation is one way of making this (and the national value of democracy) a reality. But surveys often show that rather few Kenyans are actually involved in government decision-making that affects them, though more would wish to be involved.*



## Community Access To Information

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	39.1	39.1	39.1
	Unspecified	6	26.1	26.1	65.2
	Yes	8	34.8	34.8	100.0
	Total	23	100.0	100.0	

The pie chart below shows the rate of access to information for the Communities in the Counties covered by the study.



*Access to information is critical for enabling citizens to exercise their voice, to effectively monitor and hold government to account, and to enter into informed dialogue about decisions which affect their lives*

## Membership across the counties

### Committee Membership (Youth)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not represented	6	26.1	26.1	26.1
	Represented	12	52.2	52.2	78.3
	Unspecified	5	21.7	21.7	100.0
	Total	23	100.0	100.0	

### Women

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not represented	1	4.3	4.3	4.3
	Represented	17	73.9	73.9	78.3
	Unspecified	5	21.7	21.7	100.0
	Total	23	100.0	100.0	

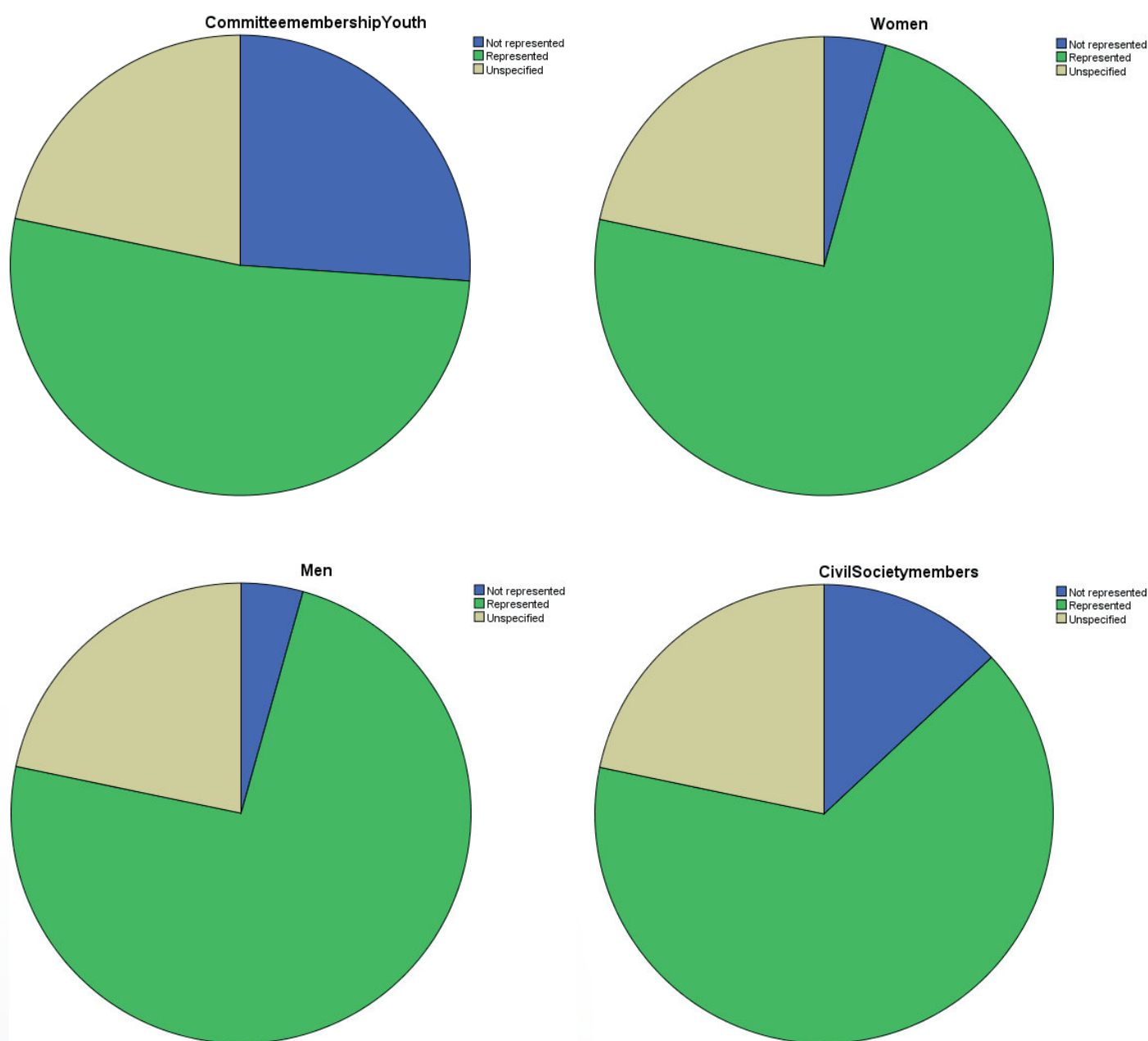
### Men

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not represented	1	4.3	4.3	4.3
	Represented	17	73.9	73.9	78.3
	Unspecified	5	21.7	21.7	100.0
	Total	23	100.0	100.0	

### Civil Society Members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not represented	3	13.0	13.0	13.0
	Represented	15	65.2	65.2	78.3
	Unspecified	5	21.7	21.7	100.0
	Total	23	100.0	100.0	

The following pie charts illustrate the composition of membership across the counties as stipulated in the EMCA Act amended 2015 on the membership of the County Environment Committees:



***Understanding the links between gender inequality and environmental degradation, and taking responsive actions, can accelerate positive dynamics and promote sustainable development.***



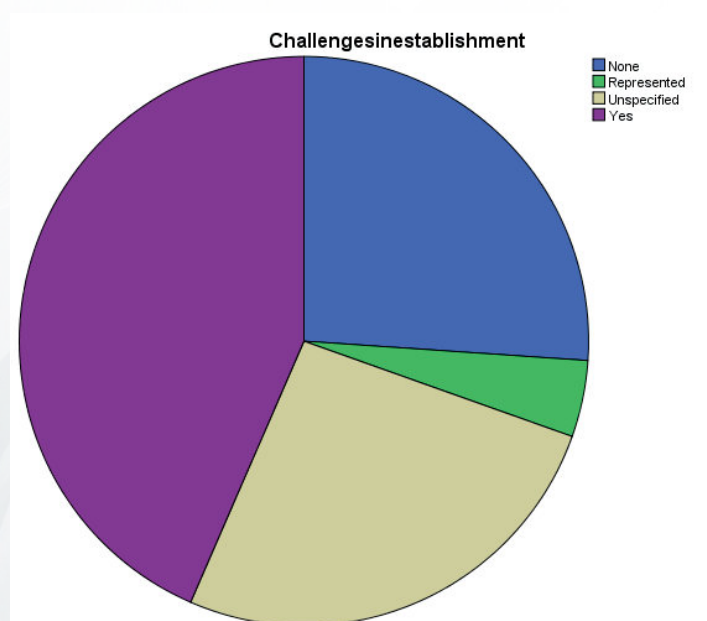
## People Living With Disability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not represented	8	34.8	34.8	34.8
	Represented	9	39.1	39.1	73.9
	Unspecified	6	26.1	26.1	100.0
	Total	23	100.0	100.0	

## Challenges In Establishment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	6	26.1	26.1	26.1
	Represented	1	4.3	4.3	30.4
	Unspecified	6	26.1	26.1	56.5
	Yes	10	43.5	43.5	100.0
	Total	23	100.0	100.0	

The following pie chart shows challenges in the establishment of the CECs across the Counties covered during the survey:

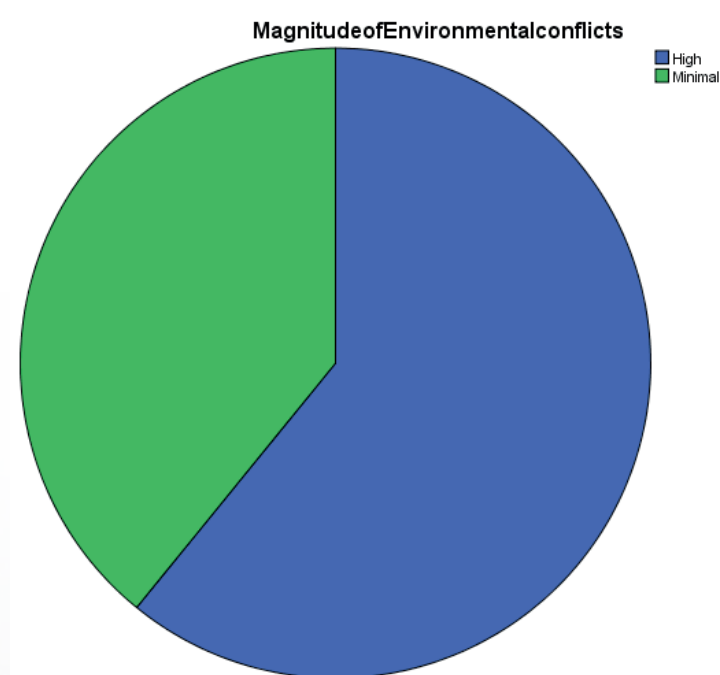


*The study identified that in some counties there were challenges and constraints encountered in the establishment of the Committees while in others there were no challenges at all as the Counties supported the CEC establishment and even included them in the budget*

## Magnitude Of Environmental Conflict

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High	14	60.9	60.9	60.9
	Minimal	9	39.1	39.1	100.0
	Total	23	100.0	100.0	

During the survey CJGEA discovered that in some counties there was a high rate of environmental conflicts while in others the conflicts were existent but were not so pronounced and this is illustrated in the pie chart below:

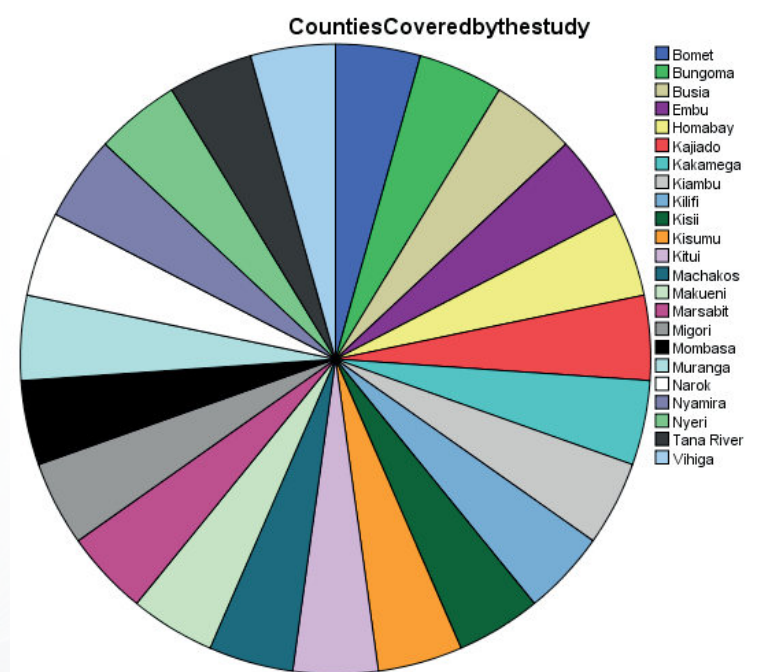


*According to Zurich (1992), environmental conflicts manifest themselves as political, Socio-Economic, ethnic or territorial or conflicts over resources or national interests*

## Counties covered by the study

The Study has so far positively covered 23 out of the possible 47 Counties and this is excluding Counties that refused to divulge information or fill in and sign our questionnaires at all.

	Counties			
Valid	Bomet	Kakamega	Machakos	Narok
	Bungoma	Kiambu	Makueni	Nyamira
	Busia	Kilifi	Marsabit	Nyeri
	Embu	Kisii	Migori	Tana River
	Homabay	Kisumu	Mombasa	Vihiga
	Kajiado	Kitui	Muranga	



*The counties of Kenya are geographical units envisioned by the 2010 Constitution of Kenya as the units of devolved government. The powers are provided in Articles 191 and 192, and in the fourth schedule of the Constitution of Kenya and the County Governments Act of 2012*



## Success Of The Study

- This baseline survey study allowed for the expansion of CJGEA work among the Counties and fostered relationships between CJGEA and the Counties.
- The study allowed us to identify those Counties that need our help in the formation of the committees and which committees are willing to involve our EHRDs in their meetings and activities.
- Through the study we are able to know the Counties we are going to push for the implementation of establishment of the committees.
- Environmental challenges were discussed during this study. This will make it easier for consultation and finding solutions to the challenges by the committees of the different Counties.

# Notes

[illegible]

[illegible]



# Notes

[illegible]



## CONTACT US

Land line: +254 772 807384

Cell: +254 772 967888

Skype ID: centerforjgeakenya

Email: [info@centerforjgea.com](mailto:info@centerforjgea.com)

Web: [www.centerforjgea.com](http://www.centerforjgea.com)