



MACHAKOS COUNTY PARTICIPATORY CLIMATE RISK ASSESSMENT REPORT

26 | 05 | 2023



Ministry of Planning and Economic Development
DANIDA



TABLE OF CONTENTS

EXECUTIVE SUMMARY	xi
CHAPTER ONE	1
CONTEXT OF THE PARTICIPATORY CLIMATE RISK ASSESSMENT	1
1.1.1 Background	1
1.1.2 Geography.....	1
1.1.3 Administration, Urbanization and Demography.....	2
1.1.4 Social Impacts.....	2
1.1.5 Economic impacts.....	3
1.1.6 Environmental Impacts	4
1.1.7 Water Resources	5
1.1.8 Agro-Ecological zones.....	5
1.1.9 Climatic Zones.....	6
1.1.10 County Climate Interventions.....	7
3.1 1.2 Policy Context	8
1.2.1 Global Context.....	8
1.2.2 Regional Legal and Policy Framework.....	8
1.2.3 National Policy and Legal Context	9
1.2.4 County Legal and Regulatory Frameworks	10
3.2 1.3 Purpose of the PCRA Report.....	11
3.3 1.4 Key Steps in the County's PCRA Process.....	12
CHAPTER TWO	17
MACHAKOS COUNTY CLIMATE HAZARD PROFILE.....	17
3.4 2.1 Current and Historical Climate Hazards Profile and Trends	17
2.1.2 Hazard Ranking.....	18
2.1.3 Hazard Historical Profile	20
3.6 2.2 Climate Exposure and Vulnerability Profiles	22
2.2.1 Drought.....	22
2.2.2 Environmental Degradation	24
2.2.3 Pests and Diseases.....	26
3.7 2.3 Hazard characterization.....	27
2.3.1. Drought.....	27
2.3.2 Environmental Degradation.....	29
2.3.3. Pests and Diseases.....	30
3.8 2.4: Differentiated Impacts of Climate Risks	31
2.4.1 Women.....	31
2.4.2 Children Under 5 Years	31
2.4.3 Youth.....	31

2.4.4	The Elderly.....	31
2.4.5	Persons Living with Disability.....	32
2.4.6	Productive Assets.....	32
2.4.7	Critical facilities.....	32
3.9	2.5 Spatial Distribution of Risks	34
CHAPTER THREE.....		37
FUTURE CLIMATE SCENARIOS FOR MACHAKOS COUNTY.....		37
3.10	National and Downscaled Climate Change Projections	37
3.1.1	Temperature	37
3.2	Machakos Climate Scenarios	38
3.3	County Future Climate Scenarios	40
	Average Temperature in Machakos	41
CHAPTER FOUR.....		44
ANALYSIS OF EXISTING RESILIENCE/ADAPTATION STRATEGIES TO CURRENT AND FUTURE CLIMATE RISKS.....		44
4.1	Overview of Existing Adaption/Resilience Strategies.....	44
4.1.1	Drought.....	44
4.1.2	Environmental Degradation:	44
4.2	County Progress in Supporting the NCCAP.....	45
CHAPTER FIVE		55
5.1	MACHAKOS COUNTY CLIMATE STRATEGIC ADAPTATION INVESTMENT /ACTION PLAN.....	55
CHAPTER SIX		65
6.1	Emerging Issues	65
6.2	Conclusion	65
Annex 1		67
WARD BASED CLIMATE CHANGE ACTION PLAN		67
MASII-VYULYA WARD		67
MUA WARD.....		76
MUTITUNI-NGELANI WARD		80
ATHI-RIVER WARD.....		84
MULOLONGO- SYOKIMAU WARD		87
UPPER KAEWA WARD		91
IKOMBE WARD.....		95
LOWER KAEWA WARD		101
MUTHESYA WARD.....		104
KINANIE WARD		109
KIIMA KIMWE WARD		121
KITHIMANI WARD		126
KYELENI WARD.....		132

MUTHWANI WARD	136
KATANGI WARD.....	140
MACHAKOS CENTRAL WARD	143
MUTHETHENI WARD.....	146
MWALA WARD.....	153
KIVAA WARD	160
EKALAKALA WARD	167
KALAMA WARD.....	172
KIBAUNI WARD	175
KATHIANI CENTRAL WARD.....	181
KANGUNDO WEST	184
KANGUNDO NORTH.....	188
KANGUNDO EAST	193
KANGUNDO CENTRAL.....	198
MATUNGULU EAST	200
MATUU WARD	210
MBIUNI WARD	213
MUMBUNI NORTH WARD	217
WAMUNYU WARD	224
MASINGA CENTRAL	230
MITABONI WARD.....	234
TALA WARD.....	242
NDITHINI WARD.....	247
MATUNGULU WEST	251
MATUNGULU NORTH WARD	259
NDALANI	264
KOLA	272

List of Tables

Table 1 Agro-ecological Zones in Machakos County	6
Table 2: Stakeholder Mapping	13
Table 3 : Vulnerable Groups' Participation in PCRA process.....	15
Table 4: Hazard Ranking in Machakos County.....	19
Table 5 Historical Profile	20
Table 6: 6: Climate Exposure and Vulnerability – Drought.....	23
Table 7: Climate Exposure and Vulnerability -Environmental Degradation	24
Table 8 Climate Exposure and Vulnerability –Pests and Diseases	26
Table 9 Hazard Characterization – Drought.....	27
Table 10 Table10: Hazard Characterization – Environmental Degradation.....	29
Table 11 Hazard Characterization – Pests and Diseases.....	30
Table 12 : Differentiated Impacts of Climate Risks.....	32
Table 13: Spatial Distribution of Risks	35
Table 14 Likely climate Change Impacts by Sector.....	41
Table 15 : Key Programmes Prioritized in the CIDP	45
Table 16: Adaptation/Resilience strategies to Future Climate Risks	49
Table 17: Climate Change Actions Identified during PCRA Process.....	56

List of Figures

Figure 1: Location of Machakos County)	1
Figure 2 : Climatic Zones (Machakos, 2023)	7
Figure 3 Capacity Building of the TWG (Source Machakos County , 2023).....	13
Figure 4: Hazard /Resource map – Kithimani Ward.....	16
Figure 5: PCRA Engagement Muvuti/Kiima Kimwe Machakos County.....	17
Figure 6 County Hazard Map.....	18
Figure 7: Historical Annual Mean precipitation of Machakos County	39
Figure 8 : Historical Annual Mean Temperatures of Machakos County	39
Figure 9 Historical and expected heat stress and drought events in Machakos County (Source: MoALF, 2017)	40
Figure 10Average Temperature in Machakos	40
Figure 11 Average Temperature	41

ACRONYMS

CECM	County Executive Committee Member
CIS	Climate Information Services
CGM	County Government of Machakos
CHVs	Community Health Volunteers
CHW	Community Health Workers
CIDC	County Information and Documentation Centre
CCCF	County Climate Change Fund
DRM	Disaster Risk Management
FLLoCA	Financially Locally Led Climate Action
GIS	Geographical Information System
GRM	Grievance Redress Mechanisms
ITK	Indigenous Traditional Knowledge
KARLO	Kenya Agricultural and Livestock Research
KDSP	Kenya Devolution Support Programme
KFS	Kenya Forest Services
KMS	Kenya Meteorological Services
KNBS	Kenya National Bureau of Standards
NCCA	National Climate Change Act
NEMA	National Environment Management Authority
NGO'S	Non-Governmental Organizations
PCRA	Participatory Climate Risk Assessment
PWD	People With Disability
SDGs	Sustainable Development Goals
SEKEB	South Eastern Kenya Economic Block
TWG	Technical Working Group
U.H.C	Universal Health Care
USAID	United States Agency for International Development
WCCPC	Ward Climate Change Planning Committee
WRA	Water Resource Authority
WRUA	Water Resource User Associations

GLOSSARY OF KEY WORDS

Adaptation: Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Adaptive Capacity: The ability or potential of a system to respond successfully to climate variability and change, and includes adjustments in both behaviour and in resources and technologies.

Capacity Building: The process of developing the technical skills and institutional capability to effectively address climate finance within mandates and responsibilities.

Carbon Credits: A financial unit of measurement that represents the removal of one tonne of carbon dioxide equivalent from the atmosphere. Carbon credits are generated by projects that deliver measurable reductions in greenhouse gas emissions, and can be sold or traded through carbon markets.

Carbon Sequestration: The process of removing carbon from the atmosphere and depositing it in a reservoir or "sink", such as soil or trees.

Clean Development Mechanism (CDM): A Kyoto Protocol initiative under which greenhouse gas emission reduction projects in developing countries generate tradable carbon credits called Certified Emission Reduction. These credits can be used by developed nations to offset their carbon emissions and meet their Kyoto reduction targets.

Climate Change: referred to as global warming, describes the long-term trend of a rising average global temperature or changes in global or regional climate patterns, including changes in temperature, wind patterns and rainfall

Climate Finance: the flow of funds (both domestic and foreign sources) toward activities that reduce greenhouse gas emissions or build climate resilience.

County Climate Change Fund: All monies appropriated by county assembly, donations and grants from national or international designated authorities or agencies, charged as fees or levies whose purpose is to fund climate change actions and interventions identified by communities and other stakeholders within the county.

County Determined Contributions: The CDCs includes a GHG emission reduction target and adaptation goals and is consistent with Vision 2030 and Machakos CIDP.

Climate Proofing: Assessing current and future climate risks and impacts, and adjusting investment and business decisions to account for anticipated harm and losses as well as opportunities.

Climate Resilience: Closely linked to adaptation, building climate resilience includes reducing vulnerability to climate change, making sure that the impacts of climate change are avoided or cushioned, and enabling people to respond to climate risks.

Enabling Environment: Robust national and county policy and institutional frameworks to effectively plan, access, disburse, absorb and manage climate funds in a transparent and accountable manner.

Fund Administrator: The administrator of the County Climate Change Fund established under section 45 of the Machakos County Climate Change Act, 2021.

Green Climate Fund (GCF): A fund within the framework of the UNFCCC that aims to assist developing countries address climate change that forms the main multilateral financing mechanism to support mitigation and adaptation action in developing countries.

Greenhouse Gas (GHG): Any gas that absorbs infrared radiation in the atmosphere. Greenhouse gases include, but are not limited to, water vapour, carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, hydro fluorocarbons, hydro chlorofluorocarbons, ozone, per fluorocarbons and sulphur hexafluoride.

Low Carbon Development: A national development plan or strategy that encompasses low-emission economic growth that moves towards a resource efficient economy that is as low-carbon as possible and enhancing carbon sinks.

Measurement, Reporting and Verification (MRV): A term used to describe all measures which countries take to collect data on greenhouse gas emissions, mitigation actions and support, to compile this information in reports and inventories, report on and verify the results and impacts of mitigation, adaptation and climate finance actions, and the synergies between them.

Mitigation: human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power and expanding forests and other "sinks".

Nationally Determined Contribution (NDC): countries national contribution to achieve the global goal of the Paris Agreement.

Natural Resources: Endowments that accrue without the input of mankind.

Public Finance Mechanism: Financial commitments made by the public sector that alter the risk-reward balance of private sector investments, with the aim of mobilising investment in climate change activities.

Results-based Financing: A modality of disbursing finance for payments for projects or interventions conditional to the achievement of previously agreed results.

Sector: a composition of departments, agencies and organizations that are grouped together according to services and products they provide. They produce or offer similar or related products and services, and share common operating characteristics.

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their needs.

Tech Transfer: A set of processes covering the flows of know-how, experiences and equipment, mitigating and adapting to climate change among different stakeholders.

Vulnerability: The degree to which a person, community or system is susceptible to, or unable to cope with adverse effects of climate change among these climate variability and extremes.

FOREWORD

Translating the ambition of the Paris Agreement into action on the ground is the aim of Machakos County Climate Change Action Plan 2023-2027. The county is faced with an accelerating climate crisis ranging from soil degradation, diminishing water resources, increased temperatures leading to water scarcity among others. It is a major challenge of our time and threatens to undermine the gains that have been made over the years. Climate change has put our survival at risk and therefore it is no longer a debatable issue: the time to act is now.

Responding to the global call to action, this plan maps out the key priority areas and enabling actions that the County government, citizens and other stakeholders must take to achieve transformational action to further the achievement of Kenya's development goals of realizing low carbon climate resilient development. The action plan aligns climate change actions with the County Government development agenda; provides a framework for mainstreaming climate change into sector functions at the County level and lastly encourages participation of the private sector, civil society, youth and marginalized communities.

My focus is on high impact, feasible actions that prioritize adaptation and enhance climate resilience of the citizens of Machakos County. The Plan comes to action when the world is still recovering from the Covid-19 pandemic which has affected all the facets of life. Climate change has given us ample warnings and signs, and this Action Plan is a statement that Machakos County is determined to act as a responsible stakeholder in the global village.

My government is committed to lead in this quest to take action to combat climate change.

H. E HON. WAVINYA NDETI
GOVERNOR – MACHAKOS COUNTY

PREFACE

Climate change is a key development challenge that has significant effects on sustainable development in Machakos County and the country at large. Machakos County is faced with an accelerating climate crisis (Machakos County, 2023). Drought, heat stress, diminishing water resources and increased temperatures leading to water scarcity are the most problematic climatic hazards in the County. Citizens of Machakos County are often directly dependent on natural resources to sustain their livelihood with agricultural farming as the principal livelihood employing 73% of the population and contributing 70% of household incomes (Machakos County, 2023). The impact of climate change is already putting stress on these resources. Food shortage, increased food prices and lack of water are just some of the consequences of extreme weather events such as drought and flooding.

Climate change has affected all sectors and all people men and women, youth, persons with disabilities and children though its impacts are distributed differently among the genders. As such it presents enormous challenges and opportunities for development making it essential for climate change to be tackled in an integrated manner. This County Climate Change Action Plan (the Action Plan) demonstrates how Machakos County intends to address the existing challenges and opportunities and integrating climate change across seven priority actions; working closely with other stakeholders particularly the national government, private sector, academia, civil society among others.

This Plan shall hereby serve as a significant tool for documenting timely, accurate and relevant information on various facets of the Machakos County in order to ensure its sustainable use.

HON. CATHERINE MUTANU
COUNTY EXECUTIVE COMMITTEE MEMBER WATER, IRRIGATION, ENVIRONMENT AND CLIMATE
CHANGE

EXECUTIVE SUMMARY

This County Government of Machakos Participatory Climate Risk Assessment report is organized into six chapters, with the first chapter presenting the background, policy context, purpose/objectives of the Participatory Climate Risk Assessment report and the key steps the department of Climate Change followed in the PCRA process. Chapter two provides a comprehensive county hazard profile, exposure and vulnerability profiles, the differentiated impacts of climate trends differentiated by interest groups with a particular focus on women, youth, persons' with disabilities, the marginalized and vulnerable groups. It also captures a clear picture of the spatial distribution of climate risk projections broken down into the ecological zones within the county/ward level that links to the main livelihoods and economic sectors in each ward.

Chapter three identifies the future county climate scenarios developed from the climate risk assessment process at the ward level. The exposure and vulnerability of key interest groups is depicted in this section. Chapter four provides an analysis of existing resilience/adaptation strategies to current and future climate risks while chapter five has the county climate strategic adaptation investment/action priorities in a cross-sectoral perspective that aligns the action priorities with the county integrated development plan. It is hoped that the strategic adaptation action shall encourage the mobilization of climate investment.

The priority actions identified through the PCRA process for Machakos County include the rehabilitation of Water Catchments, eco-system rehabilitation including the construction of 174 new earth dams, rehabilitation of 407 earth dams and water pans and construction of 548 weirs/sand dams and support towards the enhancement of micro-irrigation. Household water harvesting, as well as completion/repair and maintenance of abandoned solar powered boreholes, promotion of community irrigation schemes for enhanced diet diversification. The special interest groups will be empowered for better livelihoods through deliberate inclusion of youth, women, persons with disabilities and the marginalized communities in decision making and development actions tailored to address their climate induced hazards. Other adaptation strategies for include improved water management, recycling and reuse of water, water conservation awareness campaigns, technology for water conservation in water services and supply, and improved watershed management.

The County Government Department of Climate Change will lead and facilitate the implementation of priority actions identified through the PCRA process working with partners to mobilize adequate resources and develop required laws and regulations. The strategic interventions will be operationalized by both the National and the County Government and its partners through the incorporation of specific actions in their strategic and operational plans. Capacity development for relevant stakeholders and officers in the relevant national and county departments will be a critical element of implementation. A continuous programme for monitoring and evaluation will be developed to ensure the attendant County Action Plan is reviewed within three years to assess its effectiveness and relevance in dealing with the climate hazards identified in this county PCRA report.

STEPHEN MULEI
CHIEF OFFICER- CLIMATE CHANGE

ACKNOWLEDGMENTS

Development of Machakos County Climate Change Action Plan 2023 -2027 has been a collaborative undertaking. The plan would not have been possible without the support of the Office of the Governor – Machakos.

For their contribution, we thank MI Links Limited who undertook the initial county-level review of climate change situation in the county, the County Department of Water, Irrigation, Environment and Climate Change for facilitating leadership in this process.

Special thanks go to the County Executive Committee Members and Chief Officers for Finance; Water; County Administration; Health; Education; Social Welfare and Infrastructure for allowing their valuable staff to team up with the Climate Change Unit for the PCRA process.

The CECM for Water, Irrigation, Environment and Climate Change together with the Chief Officer for Climate Change for their valuable leadership without which this work would not have been possible. All member of the Technical Working Group, all directors and teams from the department of Water; Citizen Engagement and all departments for the relentless efforts in mobilization of stakeholders and the all sub county and ward coordinators and Administrators for the zeal to see this project's success.

ENG. DANIEL KYALO
DIRECTOR -CLIMATE CHANGE

CHAPTER ONE

CONTEXT OF THE PARTICIPATORY CLIMATE RISK ASSESSMENT

1.1.1 Background

Climate change is a key development challenge that has significant effects on sustainable development in Machakos County and the country at large. The County is faced with an accelerating climate crisis (Machakos County, 2015) where drought, increasing temperatures (heat stress) and diminishing water resources leading to water scarcity are the most problematic climatic hazards in the County. Participatory Climate Risk Assessment (PCRA) is an approach that targets vulnerable categories –men, women, youth, persons with disability (PWDs) and the elderly and is used to identify local hazards, vulnerable groups and local capabilities in relation to local risks as well as develop workable action plans for reduction of these vulnerabilities.

1.1.2 Geography

Machakos County is located in the southeast part of Kenya. The County covers an area of 6,208.2 km² and lies between latitudes 0°45' South and 1°31' South and longitudes 36°45' East and 37°45' East. The prevailing local climate is semi-arid, and the landscape is hilly, rising from an altitude of 1,000 to 1,600 meters above sea level. The County borders eight counties: Nairobi and Kiambu counties to the West; Embu to the North; Kitui to the East; Makueni to the South; Kajiado to the South West and Murang'a and Kirinyaga to the North West as shown in Figure 1 below. The County is largely arid and semi-arid (ASAL), receiving a mean annual rainfall of about 500 mm with variations depending on the altitude.

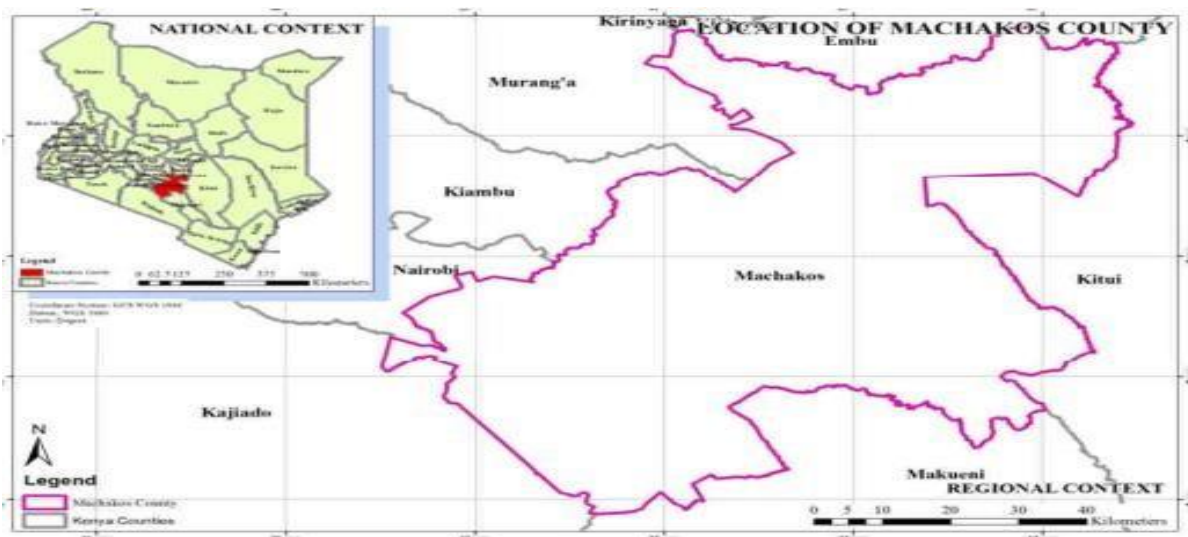


Figure 1: **Location of Machakos County** (Source: CIDP, 2023)

The County receives bimodal rainfall patterns with short rains in October and December while the long rains from March to May. Temperatures range from 18 to 29 °C (Machakos County, 2023). The long rains are normally received between March to May whereas the short rains are received from October to December. Due to the high temperatures and scarce rainfall, crops and pastures are normally affected by moisture stress, though areas along the Athi River occasionally experience floods.

1.1.3 Administration, Urbanization and Demography

Administratively Machakos County is divided into eight sub-counties namely Masinga, Yatta, Mwala, Kangundo, Matungulu, Kathiani, Mavoko and Machakos Town. Politically these subcounties represent 8 constituencies, 40 county assembly wards and 218 village units. Major towns in the county include the county's industrial capital Athi River, Tala, Kangundo, Matuu, Masii and Machakos. Due to its proximity to the capital city of Kenya, Machakos is referred to as the bedroom for Nairobi for it hosts residential areas in Kinanie, Mlolongo/Syokimau, Muthwani and Athi River wards where people working in Nairobi reside and commute to the capital.

The County had a population of 1,421,932 persons during the the 2019 Kenya Population and Housing Census, (KNBS, 2020) constituting of 710,707 (49.98 percent) and 711,191 (50.02 percent) males and females respectively, and 34 (0.002 percent) intersex. Out of these, the rural population was 504,247 (35.46 percent) males and 503,582 (35.42 percent) females, 25 (0.002%) intersex whereas the urban population was 206,460 (14.52 percent) males and 207,609 (14.6 percent) females and 9 (0.001 percent) intersex Compared to the national population, the county constitutes 3% of the total population. The county has a population growth rate of 3.4%, while nationally the growth rate is at 2.2%. The population of persons with disability as per the 2019 census report was 33,000 persons accounting for 2.32% of the total population of the county. The majority of the population in the county is between 0-24 years. This is an indicator of a young and growing population, which will potentially exert pressure on the county's resources in the future if the trend continues.

1.1.4 Social Impacts

Machakos County is vulnerable to the impacts of climate change with highest incidence of poverty is found among female headed households as women and men experience greater competition over resources, and lower access to basic infrastructure such as potable water, electricity, and clean cooking facilities. The County economy is highly dependent on climate-sensitive activities. Emerging cross- county conflicts on water and grazing land with Kitui and Kajiado counties may be exacerbated by climate change due to competition for the already scarce resources.

Drought spells have become more prolonged in the recent past. This has resulted in frequent crop failures over the years, aggravating the already dire need for food aid. In 2011, 1,876 families received relief food in Yatta Sub County due to drought whereas, in 2015, more than 50,000 people faced hunger also due to drought (Machakos, 2016). Due to the adverse effects on the agriculture sector, people have opted for some deleterious coping strategies such as sand harvesting, which lessen their resilience capacity. The frequency and magnitude of these extreme weather events are likely to increase, necessitating measures that can sustainably cushion the farmers and pastoralists from the climate disasters.

Flash flood events in Machakos County have led to the loss of human lives. These are very common in Tala, Matungulu West, and Athi-river wards. The devastating floods in early 2018 claimed over 183 lives and displaced more than 225,000 people in the country and Machakos County was adversely affected (MoALF, 2017). The incidences of floods lead to disease outbreaks in Machakos with cholera and other water-borne diseases affecting the population in Mwala, Mavoko and Machakos sub counties. These also lead to an upsurge of mosquito-borne diseases such as malaria.

Overall, in Machakos, at least 840,000 residents are food insecure while an estimated 500,000 people do not have access to water. Hundreds of children in the county suffer from malnutrition, and school performance has dropped significantly.

1.1.5 Economic impacts

Climate is a major driver of socio-economic activities in Machakos County. The sectors which depend on weather and climate information include; agriculture, water, construction, energy, trade and manufacturing, energy, health, and forestry. Citizens of Machakos County are often directly dependent on natural resources to sustain their livelihood with mixed farming as the principal livelihood employing 73% of the population and contributing 70% of household incomes (Machakos County, 2015).

The county's key economic activities include: subsistence agriculture, livestock keeping, trade and industrialization, mining/quarrying, housing, and urban development. According to the CIDP 2018-2022, the absence of a county spatial planning framework has led to the proliferation of informal settlements, congestion, environmental degradation, unplanned urban centres, pressure on agricultural land, and land-use conflicts. These challenges coupled with extreme weather events due to climate change such as floods and droughts have caused a negative impact on the economic performance of the County.

The costs that are incurred to respond to the climate change effects are high. The four wards of Athi River, Muthwani, Tala and Mlolongo/Syokimau that are prone to flooding, the economic impacts of floods are moderately severe as they wipe out resources worth millions of shillings as witnessed in 2018/2019. Roads and infrastructure were damaged, seasonal crops destroyed and livestock drowned.

In Machakos County, droughts have had the greatest economic impact due to the suppressed production of crops and adverse effects on livestock production. Drought also leads to depressed hydroelectricity generation, which consequently increases demand for electricity generation from thermal sources that are more costly and produce GHG emissions. The impacts of drought are felt at the household level and are particularly devastating for smallscale farmers and women who depend on rainfall for livelihoods.

Water: The quantity, quality and accessibility of water are strongly influenced by weather and climate. Drought was the most rampant hazard identified by the PCRA in Machakos County. This implies that the county is more at risk from water scarcity rather than an excess of water.

Agriculture: Subsistence agriculture is the backbone for the county accounting for about 70% of income for households (Machakos County, 2015). This is despite the environmental and climatic challenges facing the county especially due to extreme weather events such as floods and drought. Approximately 60% of total land area in Machakos is arable. The main cash crops are coffee, mangoes, citrus, French beans, pineapples, flowers, sorghum and vegetables. The food crops grown include maize, beans, pigeon peas, green grams, cowpeas and cassava which are cultivated in small scale. Women were identified as the most involved in subsistence agricultural farming and providing water for domestic use.

Fruit farming is a key source of livelihood for the county with 5593 Ha under Mango with a production of 67,320 metric tonnes per year. This sector suffers challenges of post-harvest losses and price depreciation. The PCRA proposed value addition and produce aggregation centres.

When agriculture is affected by climate change, it is therefore women, children and PWD who suffer the most.

Livestock farming: The County has 13 Ranches 3 of these are located in Machakos Sub-County while ten (10) are in Mavoko Sub- County. The livestock in these ranches include cattle, sheep and goats. The PCRA process identified that access and control of livestock rests entirely with the men while women provide the labour for livestock keeping. The vulnerable groups (Women, children and PLWDs) are not able to access livestock resources as an adaptation tool for addressing their climate vulnerability.

Trade: The County plays host to the open-air market concept with major market days where farm produce is traded. Commodities sold in these markets include fruits, vegetables, maize and beans. Women form the majority of those involved in small service industry with such ventures as salons, hotels and road side kiosks. Vulnerable groups within the county also derive their livelihoods from unskilled employment.

Mining and Industry: The PCRA identified major natural resources/mineral deposits within the County as limestone, granite and sand. The county hosts major cement and steel factories within Mavoko Sub- County. Sand harvesting was identified as a major source of livelihood in the five wards of Masinga and Ndalani ward in Yatta Sub County and Kalama Ssub County. The activity is rampant along the river beds and is undertaken by the youth including male children (14 – 35 years of age). In addition, there are stone mining quarries mainly within Mavoko, Matungulu, and Yatta sub counties.

Energy: Energy systems drive economic and social development. Firewood and charcoal are the most common sources of energy accounting for 81% of total energy used in Kalama sub county; 82.4% in Kangundo; 83% in Kathiani; 83.2% in masinga;73.1% in Yatta at 83.3% in Mwala and in Matungulu 62%. The county average use of wood fuel sources of energy reached 53.4% with Machakos Town at 42% and Athi River at a low of 6.7% (KNBS, 2019). Approximately 27% of households use paraffin lanterns for lighting despite the high cost of kerosene (CIDP 2023-2028). The choice of energy sources affects the rate of green transition for Machakos County where women and children provide labour for looking for firewood and cooking which is hindrance to efforts to increase vegetation cover and other tree growing initiatives.

Health: Temperature and rainfall conditions influence the spread of communicable diseases. This PCRA report illustrates that pollution of the Athi River was a key risk for all the wards along the length of the river and that stakeholders identified the health risks associated with use of the water from the Athi river on their health, that of their livestock and crops.

Other livelihood activities within the county include minimal apiculture and tourism.

1.1.6 Environmental Impacts

The PCRA process identified drought is the most predominant disaster affecting the county. The second was described as environmental degradation and challenges which comprise of inadequate solid waste management systems, insufficient sewerage networks, raw waste water discharge to rivers, air pollution, underground water sources contamination, unregulated sand harvesting, ecosystem degradation, flooding, and deforestation. These challenges arise due to conflicting demands for resources; increasing population, change in

land-use patterns and climatic conditions, high industrialization and urbanization and emissions of greenhouse gases.

Deforestation leads to desertification and this is one of the major threats facing Machakos County. Machakos County is the largest exporter of sand to the other counties. Rampant sand harvesting in the county has resulted in drying up of some of the rivers, leading to a reduction in a substantial amount of water in the County. The majority of the population relies on firewood and charcoal as the main source of fuel which is a major cause of desertification. Additionally, farming on slopes has resulted in the destruction of forests and water catchment areas, leading to desertification (Boitt, M.K and Odima, P.A, 2017).

1.1.7 Water Resources

The county has two permanent rivers –Tana and Athi traversing through that provide water for hydroelectric, industrial, domestic and irrigation. Other sources of water include streams, shallow wells, boreholes, small earth dams, springs and domestic water harvesting interventions such as tanks and farm ponds. According to the Machakos County Integrated Development Plan (CIDP) 2023 -2027 the percentage of households with access to clean safe water reached 45%. To increase this ration to 60% within the life span of the current planning cycle the county government plans to construct weirs so as to leverage the available sources of water including 453 seasonal rivers and streams.

Athi River is a main water source that would aid the county residents in coping with climate induced water scarcity, however among the stakeholders from Athi River, Kyeleni, Kithimani, Mbiuni, Wamunyu, Katangi and Kibauni wards pollution of the Athi river was identified as their main climate induced risk.

Drought induced water scarcity in Machakos can be classified into three: scarcity of water for domestic use, livestock and for agricultural use. During the PCRA stakeholders in Yatta, Masinga, parts of Mwala and Kalama sub counties identified the drought induced risks of crop failure and lack of water for domestic and livestock use. In Kangundo and Matungulu Sub Counties crop failure was the main drought induced risk.

1.1.8 Agro-Ecological zones

The County has seven identified Agro-Ecological Zones (AEZs) which are based on the potential for crop production.

Zone UM II-III (Lower Highland -Upper Midland) are forest zones and sub humid characterized by medium to low evaporation, are highly suitable for agricultural activities due to soil suitability.

Zone UM IV - V (Semi Arid) has medium potential for agricultural activities and production

Zone LM III-V (Arid) characterized by shallow and stony clay loamy soils with rock outcrops and plains covered by grass. These zones have little potential for farming but may be adaptable for livestock farming.

The agro-ecological zones in Machakos County are summarized in Table 1.

:

Table 1 Agro-ecological Zones in Machakos County

Major agro-ecological zone	Wards	Rainfall
Lower Highlands (LH) II	Upper Kaewa, Kathiani Central, Mua	Moderate (1000 - 1250mm)
Upper midland (UM) II-III	Machakos Central, Upper Kaewa, Kathiani Central, Kangundo Central, Kangundo East, Kangundo West, Kangundo North, Tala, Matungulu East, Mutituni, Mumbuni North	Moderate (1000 - 1250mm)
Upper midland (UM) IV4	Kalama, Kola, Muvuti/Kiima kimwe, Lower Kaewa, Mitaboni, Kangundo East, Matungulu West, Matungulu East, Matungulu North, Kyeleni,	Low (500-750mm)
Upper midland (UM) V	Athi River, Kinanie, Muthwani, Syokimau/Mlolongo	Low (500-750mm)
Lower Midland (LM) III	Kangundo East, Masii (Parts)	Very low (<500mm)
Lower Midland (LM) IV	Kangundo East, Masii, Mbiuni, Muthetheni, Mwala/ Makutano	Very low (<500mm)
Lower Midland (LM) V	Wamunyu, Kibauni, Ikombe, Katangi, Matuu, Ndalani, Kithimani, Kivaa, Ekalakala, Masinga central, Muthesya, Ndithini	Very low (<500mm)

(Source: CIDP, 2018)

Citizens of Machakos County are often directly dependent on natural resources to sustain their livelihood with mixed farming as the principal livelihood employing 73% of the population and contributing 70% of household incomes (Machakos County, 2015). The impact of climate change is already putting stress on these resources. Food shortage, increased food prices, and lack of water are just some of the consequences of extreme weather events such as drought and flooding.

1.1.9 Climatic Zones

Climate change is a key development challenge that has significant effects on sustainable development in Machakos County and the country at large. Machakos County is faced with an accelerating climate crisis (Machakos County, 2015). Drought, heat stress, diminishing water resources, and increased temperatures leading to water scarcity are the most problematic climatic hazards in the County

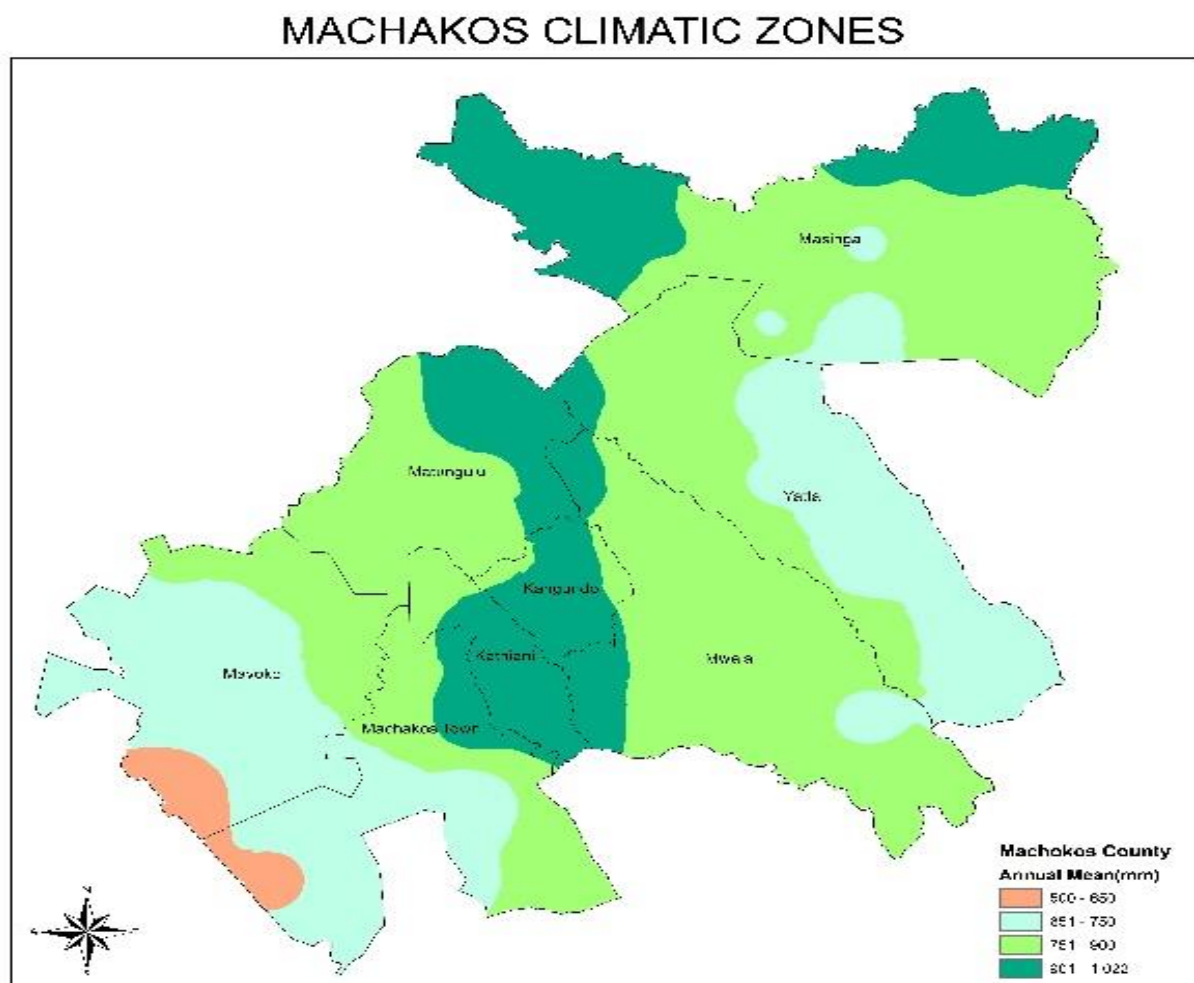


Figure 2 : Climatic Zones (Machakos, 2023)

The county's high dependence on climate-sensitive natural resources for livelihoods among these rain fed agriculture increases its vulnerability to climate change. The County Government of Machakos identified climate response mechanisms emanating from cascaded National Government strategies as well as local initiatives for climate adaptation/ resilience.

1.1.10 County Climate Interventions

Machakos County has made significant progress in addressing the threats posed by climate change. Key among these milestones is the development of the Machakos County Climate Change Bill (2020) and the Machakos County Climate Change Finance Draft Regulations (2019). The regulations obligate the setting aside of at least 5% of the annual development budget of the county to climate change action which is meant to;

- (a) give effect to priorities set by communities following a community-driven participatory planning process;
- (b) strengthen the role of communities, community structures, and indigenous knowledge systems in the planning of climate change response interventions; and
- (c) invest in public goods and structures to strengthen adaptation to climate change.

1.2 Policy Context

This report is informed by among other policies and legislation; international, national and Machakos county policies and legal frameworks supporting Climate Change assessment as follows:

1.2.1 Global Context

Climate change is a global problem, and a global solution is required to successfully address the impacts imposed on nations and communities across the globe.

United Nations Framework Convention on Climate Change (UNFCCC): The international response to climate change is founded on the United Nations Framework Convention on Climate Change (UNFCCC) that entered into force in 1994. The Paris Agreement geared towards strengthening the global response to the threat of climate change, by keeping the rise in global temperature below 2 °C above preindustrial levels.

Kenya's submitted its first NDC update to the UNFCCC on 24 July 2015 and currently is in the process of updating its NDC which will revise sectoral elements of the NDC implementation roadmap; and update the sectoral component of the National Climate Change Action Plans (NCCAP) to guide the Long-Term Strategy (LTS).

The Stockholm Convention: Aims at eliminating or restricting the production and use of persistent organic pollutants was ratified on 24th September 2004. Kenya is further committed to the 2030 Agenda for Sustainable Development that was adopted in September 2015.

The UN sustainable goals: include dedicated goals for climate change (SDG 13), protecting, restoring, and promoting sustainable use of terrestrial ecosystems (SDG 15), and mainstreaming climate change impacts and climate actions across all the SDGs. The overarching objective "leaving no one behind" is meant to ensure the most vulnerable members of the community progress faster than their better to do peers thereby reducing inequalities.

While the 17 Sustainable Development Goals (SDGs) are not legally binding, governments are expected to take ownership and establish national frameworks for their achievement.

1.2.2 Regional Legal and Policy Framework

Key regional policy frameworks that inform this PCRA report include:

The Africa's union Agenda 2063: Africa's blueprint and master plan for transforming Africa that into the global commits to building climate-resilient economies and communities and notes that participation in global efforts for climate change mitigation will support and broaden the policy space for sustainable development.

East Africa Community Climate Change Policy Framework (2010): whose overall is to guide Partner's countries and other stakeholders on the preparation and implementation of the collective measures to address Climate Change in the region while contributing to sustainability and economic development.

The East Africa Climate Change Master Plan (2011) provides a long-term vision for adapting to and mitigating climate change in line with the EAC Protocol on Environment and Natural Resources Management and with international climate change agreements. Its geared to ensure that partner states are climate-resilient and adapt accordingly to Climate Change.

The African Climate Change Strategy (2015): whose vision is to provide the African Union as a whole, the Member States, and other stakeholders with a reliable source of strategic guidance to enable them to effectively address climate change challenges. The strategy also proposes to carry out other interventions to address some specific priority areas including adaptation and risk management, Nationally Appropriate Mitigation Actions (NAMAs), and some specific cross-cutting issues.

The African Forest Landscape Restoration Initiative (AFR100) that seeks to bring 100 million hectares of land in Africa into restoration by 2030. This initiative promotes integrated landscape management to promote adaptation to, and mitigation of climate change. As at November 2020, African countries including Kenya had committed to the initiative.

1.2.3 National Policy and Legal Context

Constitution of Kenya (2010):- The institutional and legal framework for climate change action is anchored in the Constitution of Kenya (2010). Article 10 sets out national values and principles of governance, such as sustainable development, devolution of government, and public participation, Article 42 provides for the right to a clean and healthy environment including the right to have the environment protected for the benefit of present and future generations.

Kenyas Vision 2030 and its Medium Term Plans:- is the country's development blue print that recognizes climate change as a risk that could slow down the country's development . Climate change actions are identified in the 2nd Medium Term plan (MTP) 2013-2017. MTP III (2018 -2022) recognized climate change as a cross cutting thematic area and mainstreamed climate change actions in sector plans.

The Climate Change Act (2016):- is the national legislation that provides for an enhanced response to climate change and provides mechanisms and measures to achieve low carbon climate-resilient development. The Act establishes the National Climate Change Council and Climate Change and forms the legal basis for mainstreaming climate change considerations and actions into county sector development. The legislation also requires County Governments to integrate and mainstream climate change actions into their various sectors.

The National Climate Change Action Plan (NCCAP) 2018-2022:- aims to further Kenya's development goals by providing mechanisms and measures to achieve low carbon climate resilient development in a manner that prioritizes adaptation.

Climate Smart Agriculture Strategy 2017-2026:- aims to address the effects of climate change on the agricultural sector while taking cognizance of the importance of the sector to the country's economy. Considering agriculture is devolved function, the strategy requires of each county to develop county specific strategies towards implementation of climate smart agriculture policies, strategies and plans to guide and integrate County identified strategies into the County Integrated Development Plans (CIDPs) and other plans.

Other policies, plans, and frameworks that shall influence and guide climate change actions in Machakos County include the National Climate Change Response Strategy (2010); National Adaptation Plan (2015-2030); Kenya's Nationally Determined Contribution (NDC) (2016); Climate Risk Management Framework (2017); The Environment Management and Coordination Act 1999 (Amendment - 2015) ; National Climate Change Action Plan (NCCAP) 2018-2022 and the National Climate Finance Policy (2018), The Climate Change Amendment Act, 2023, the BETA framework among others.

1.2.4 County Legal and Regulatory Frameworks

Relevant County legal and regulatory frameworks include:

Machakos County Integrated Development Plan 2023- 2027; The Machakos County Integrated Development Plan 2023- 2027 has been developed taking into account the provisions and aspirations of other national and international development plans. The CIDP 2023-2027 has mainstreamed climate change in their CIDPs across all sectors. Climate change was recognized as one of the challenges limiting the achievement of the 2018 - 2022 CIDP targets, and adaptation actions are recognized as a priority to address climate change impacts in the current CIDP.

The Machakos County Climate Change Act of 2021; This is an ACT of the County Assembly of Machakos to put in place the framework and mechanisms for mobilization and facilitation of the County government, communities, and other stakeholders to respond effectively to climate change through appropriate adaptation and mitigation measures and actions and for connected purposes.

The Act put in place mechanisms for the enhancement of climate resilience through development, management implementation regulation and monitoring of adaptation and mitigation measures and actions. The Act establishes the County Climate Change Steering Committee responsible for the co-ordination and oversight of climate change response the County.

The Machakos County Climate Change Fund Administration Act of 2021; The draft regulations establish the Machakos County Climate Change Fund. The regulations obligate the setting aside of at least 5% of the annual development budget of the county for climate change action.

Machakos County Climate Change Finance Regulations (2019); The Act seeks to ensure sustainable exploitation and equitable sharing of the accruing benefits from sand harvesting.

The Machakos County Sand Harvesting Act of 2014; Administration and enforcement of the Act is by the Machakos County Sand Harvesting and Management Committee, which comprises the Chief Officers for finance and Natural Resources and representatives from special interest groups, among others.

The Machakos Agricultural Development Fund Act of 2014; This Act mainstreams climate change actions in agricultural development. The Act seeks to increase agricultural productivity through the provision of credits to undertake value addition, water harvesting, provision of farm inputs, facilitation of market research, and dissemination of market information.

Machakos County Management of Quarrying Act of 2016; The Act provides a legislative framework for the regulation of quarrying activities in the County. Key among the provisions of the Act is the designation of quarrying exploitation areas, protection of the environment from harmful effects of quarrying activities and rehabilitation of quarrying sites. This is critical in preventing environmental degradation and escalation of climate change effects.

Machakos County Public Participation Act of 2014; The Act establishes the modalities and platform for public participation in the governance of the County. It provides that County Executive Committees shall ensure that there are measures in place to ensure that minorities and marginalized groups participate decision making in all matters that affect them.

Machakos County Climate Change Amendment Act, 2022; Creates the County Climate Change organs and bridges the gap in the county government and national government climate change policy (management of the climate change function) by the county government

Machakos County Climate Change (Fund Administration) Regulations 2021; Operationalize the Climate Change Act, 2016 and the County Climate Change Act, 2021 through prioritized climate actions as per the MCCCAP 2023 -2027 and in consultation with the WCCCPC.

Other county legislation considered for this report include: Machakos County E-Waste Management Act of 2015; Machakos County Water Policy of 2018; Machakos County Annual Development Plan 2022-2023; Machakos County Ward Development Act, 2014 and Machakos County Ward Development Fund Amendment Act, 2015.

3.1 1.3 Purpose of the PCRA Report

The County Participatory Climate Risk Assessment Report seeks to align the Machakos County Government development goals with the National Climate Change Action Plan (NCCAP) 2018-2022 by providing mechanisms and measures to achieve low carbon climate resilient development, in a manner that prioritizes adaptation and recognizes the essence of enhancing the climate resilience of vulnerable groups, including children, women, youth, persons with disabilities, the elderly, and marginalized and minority communities.

The objectives of PCRA Process

- Align county climate change actions with the National and County Governments Climate Change Policies and legislation
- Enhance the capacity of the county to mobilise climate change finance to support sustainable development;
- Encourage participation of the private sector, civil society, and vulnerable groups within society, including women, older members of society, and persons with disabilities, children, youth, and members of minority or marginalized communities.
- Provide an inclusive model that is responsive, consultative and offers equity and social inclusion for climate risk assessment at the local level in line with the FLoCA guidelines for different sector interventions at the county level.

3.21.4 Key Steps in the County's PCRA Process

The development of the PCRA report has been a collaborative undertaking coordinated by the CECM Water, Irrigation, Environment and Climate Change, Machakos County Government. The process though led by the Department of Climate Change had the clear support of the Governor, the County Secretary, CECM Finance and the County Assembly of Machakos. The following eight steps were taken towards preparation of this PCRA report and the Machakos County Climate Change Action Plan 2023- 2027 and as guided by FLoCA project implementation unit.

Step 1: Formation of Technical working Group

The first step in the process was forming the Multi-Sectoral Technical Working Group (TWG). The team - led and trained by the National Drought management authority- became key Trainer of Trainees who spear-headed the Participatory Climate Risk Assessment at ward level. The composition of the multi-sectoral technical working group has representation from the following key stakeholder areas:

- i. County Department of Climate Change
- ii. County Department of Water
- iii. County Department of Gender and Social Welfare
- iv. County Department of Health
- v. County Department of Environment
- vi. County Department of Agriculture
- vii. County Department of Transport and infrastructure
- viii. County Department of Devolution
- ix. Water Resources Authority (WRA)
- x. National Drought Management Authority (NDMA)
- xi. Kenya Forest Service (KFS)
- xii. Kenya Meteorological Department (KMD)
- xiii. Civil Society Representative – Machakos County

Step 2 Training of the TWG:

Training of the TWG:- The National Drought Management Authority offered technical support in the training of TOTs for the Participatory Climate Risk Assessment (PCRA) process. This

training was conducted in Mombasa between 16th and 22nd April, 2023. The trained ToTs graduated into County PCRA facilitators and were commissioned to conduct ward level PCRA process and stakeholder engagements in all forty wards by H.E Hon. Francis Mwangangi – Machakos County Deputy Governor and the Chairperson of the County Climate Change Steering Committee.



Figure 3 Capacity Building of the TWG (Source Machakos County , 2023)

Step 3: Stakeholder Mapping:

The Participatory Climate Risk Assessment targeted 30 stakeholders per ward who had been identified through a consultative stakeholder identification and mapping forum conducted by the Technical Working Group in line with FLLoCA guidelines. The target groups mapped for stakeholder engagement at all levels were as presented in the table below:

Table 2: Stakeholder Mapping

S/No	Department/ Agency	Category of stakeholder	Comments
1.	Department of Education	Education sponsors/religious groups	
2.		Representative from Kenya Private School Association	Nominated by umbrella organization
3.		Ward Education Coordinators	Government official from education
4.	Department of Gender and Social Welfare	DEK (Deaf Empowerment Community); GEM (Africa Media Initiative)	Nominated through Red Cross Society of Kenya
5.		Social Welfare Officer	Nominated by the department of gender and social welfare

6.	Department of Environment	A representative from either Kenya Association of Manufacturers (KAM), Sand Harvesting Association or Kenya Forestry Services (KFS)	Environment to rationalize (NEMA to be co-opted in the technical working group)
7.	Department of Devolution	Ward Coordinators	County opinion leaders
8.		Sub-County Coordinators	County opinion leaders
9.		Ward Administrator	Secretary to the ward planning committee
10.	Department of Water	A representative from Water Resource Users Associations	Nominated by WRA
11.		Either one of Ward Water Officer, Sub – County Water Officer/Engineer or representative of the nearest WSP	Nominated by the Department of Water
12.	Stakeholders from Transport and Infrastructure	A representative from MAMAO (Machakos Matatu Owners Association)	
13.		A representative from Boda Boda Riders Association	Nominated by the umbrella body
14.		Representation from sub-county engineer's office	
15.	Stakeholders from Department of Agriculture	Either of Ward Agricultural officer or Sub-County Agricultural officer	Nominated by the Department of Agriculture
16.	A representative from Public Health	Community Health Volunteer (CHV)	Identified through the Department of Public Health
17.	Civil Society	A male nominee from Civil Society	Nominated by the umbrella body
18.		A female nominee from Civil Society	
19.	Kenya Meteorology Department	Rain gauge readers and those trained in reading	Identified through KMD
20.	The other 11 stakeholders come from the ward climate change planning committee (8 members and Department)		

Annex 2 presents a list all stakeholders engaged in the PCRA process in the county.

Step 4: Preparation of Ward level Engagements

Mobilization of the ward PCRA stakeholders was done through the department of devolution and in consultation with area leaders and the county coordinators. They ensured that the trainees met the minimum requirement of at least 50% representation for women and marginalized groups in line with FLLoCA guidelines and the Machakos County Public Participation Act, 2014.

All training materials, venues and other facilitation required for the PCRA process were procured in accordance with the Public Procurement and Asset disposal Act 2016 and as per approved budget. Community procurement was adopted for hire of training venues and supply of refreshments for the participants.

Step 5: PCRA Engagements

The county adopted an approach where the PCRA process took four (4) days per ward with 10 teams training in 10 wards every week. The PCRA process begun on 2nd May, 2023 in Yatta and Masinga Sub-Counties and continued through the county until the 20th May, 2023 when all forty wards had been covered. The PCRA process had the active participation of the vulnerable groups as tabulated in the following table 2:

Table 3 : Vulnerable Groups' Participation in PCRA process

Women		Men	
Youth	97	Youth	130
PLWD	29	PWD	43
Others	435	Others	517
Total	561		690
Percentage of Participants drawn from vulnerable groups			58.2%

For all forty wards the following topical areas of the PCRA process were deliberated;

Hazard Assessment:- The process was used to identify the most likely natural or human-made hazard or threat to the community, and seeks to understand its nature and behavior;

Vulnerability Assessment:- Involved identification of elements that are at risk because of the exposure of their location to the hazards;

Capacity Assessment:- Identifying status of people's coping strategies/resources available for preparedness, mitigation and emergency response, as well as to who has access and control over these resources;

Disaster Risk Analysis:- The process consolidated the findings of hazards, vulnerability and capacity assessments and drew conclusions and recommendations for disaster risk reduction;

Action plan:- Each ward came up with an action plan with both preparedness and contingency plans that were consolidated to produce this PCRA report and County Climate Change Action Plan (2023-2027).



Figure 4: Hazard /Resource map – Kithimani Ward

The PCRA process culminated in the development of PCRA reports in every ward which have proposed climate change interventions/actions per ward. Annex 2 presents the schedule of ward stakeholder engagement forum for all 40 wards in Machakos County.

Step 6: Data Analysis and Report Writing

The department appointed a small technical committee to carry out data analysis and compile the Machakos County PCRA report and Action Plan 2023 – 2027. This technical committee walked alongside the PCRA trainers, receiving the ward PCRA reports to develop the County PCRA report and draft Climate Change Action Plan 2023 – 2027. The County PCRA report was compiled by the TWG between 22nd and 24th May, 2023 at the Green Hub Resort in Mwala Sub County

Step7: Multi-Stakeholder Validation Workshop

The County PCRA report and Climate Change Action Plan 2023 – 2027 were validated in a multi stakeholder forum held between 25th May – 26th May 2023 in Nairobi, that incorporated members of the county assembly committee on environment, experts from different government and non-state organizations, representatives of the community and the NDMA. The documents were also put up for public scrutiny before adoption by the County Assembly.

Step 8:PCRA Report

This PCRA report is organized into six chapters with the first background information, contextualizes the PCRA process, policy and regulatory framework and key steps in the PCRA process. Chapter two and three reviews the county climate hazards, historical and current hazard trends and climate scenarios while chapter four presents an analysis of existing adaptation strategies and their effectiveness to future climate risks. Chapter five provides the county adaptation actions, investments and priorities in identified sectors of county development with chapter six presenting the conclusion. This report has lists of participants who contributed to the report and the county priorities as adopted at the ward level and county validation workshop.



Figure 5: PCRA Engagement Muvuti/Kiima Kimwe Machakos County

CHAPTER TWO

MACHAKOS COUNTY CLIMATE HAZARD PROFILE

2.1 Current and Historical Climate Hazards Profile and Trends

Machakos county is characterized by two distinct rainy seasons, long rains which falls between March April May (MAM) averaging to 350 mm per annum, and short rains falling between October, November December (OND), averaging to 300mm per annum.

The main climatic phenomena in the county are:

- Erratic rainfall patterns
- Prolonged dry spells resulting to drought in areas of Masinga, Yatta, Mwala, Kalama sub counties among other areas.
- Heavy rainfall within a short period resulting to flash floods especially areas of Mlongo, Athiriver, Kinanie, Muthwani wards among other areas.

Machakos County Hazard Map

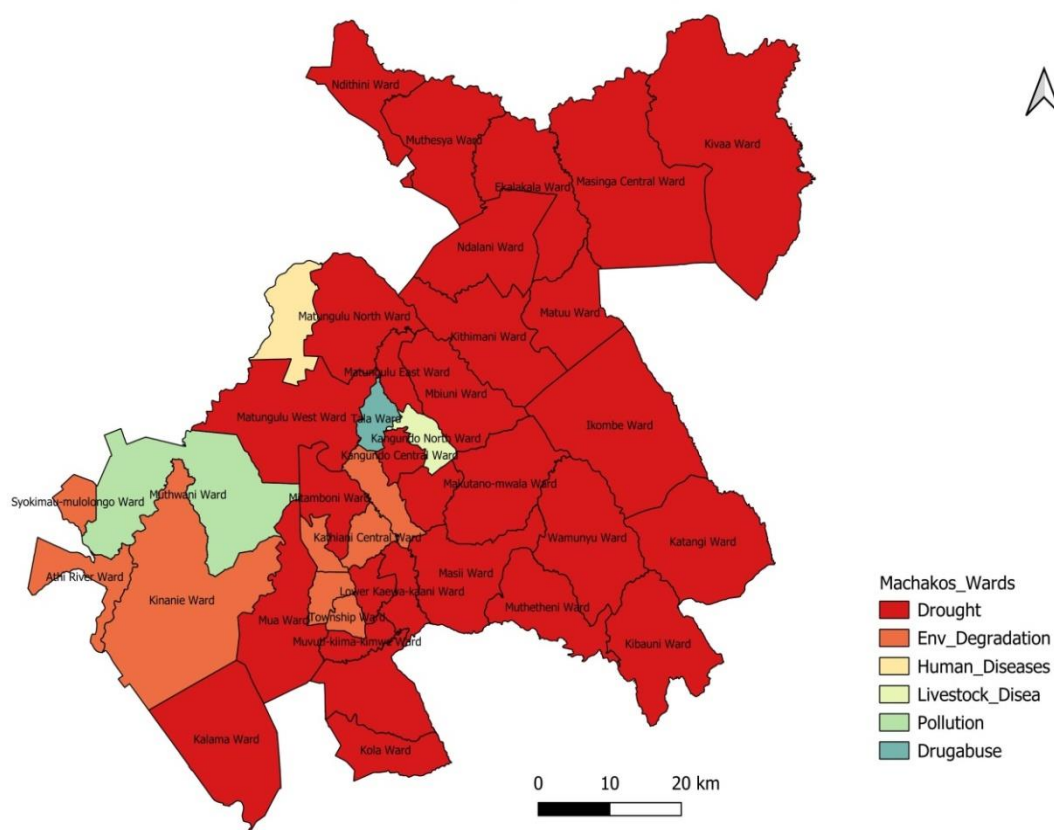


Figure 6 County Hazard Map

The County has been experiencing various climate induced hazards and risks such as: drought, environmental degradation, crop pests and diseases, pollution (air, land and water), livestock diseases, drug and substance abuse, human diseases and floods. The most frequent hazard within the county was identified as drought, the earliest having been reported in 1927. This phenomenon has been triggered by both natural and human factors and has had negative impacts on lives and livelihoods within the county.

2.1.2 Hazard Ranking

Drought is prolonged dry period caused by low rainfall, deforestation and total lack of rainfall that results into hunger, thirst, high temperature, body weakness, animal emaciation and low milk production in livestock. The warning signs of drought include: immigration of birds, shedding of leaves, non-flowering and stunted growth vegetation and trees.

The forewarning period is normally 3 months and the speed of onset is usually slow ranging between 4-5 months.

Table 4: Hazard Ranking in Machakos County

Hazard	Caused by	How Do We Know	No. of Wards	Rank
Drought	<ul style="list-style-type: none"> -Inadequate water sources Low and erratic rainfall -poor agricultural practices -Increased temperature - Human-wildlife Conflict -overgrazing -sand harvesting 	<ul style="list-style-type: none"> -Rise in temperature -Heat stress -Delayed onset of rains -Shedding of leaves 	31	1.
Environmental Degradation	<ul style="list-style-type: none"> -Pollution -Soil erosion -Deforestation -Desertification -Over grazing -Sand harvesting -Charcoal burning 	<ul style="list-style-type: none"> -Change of the color of water from clear to green -Bare river beds -Lack of tree and soil cover Formation of gullies -poor soils 	24	2.
Crop Pests and Diseases	<ul style="list-style-type: none"> -Poor farming practices -Climatic changes 	<ul style="list-style-type: none"> -invasion by new pests and diseases -resistance to existing pesticides 	22	3.
Livestock Diseases	<ul style="list-style-type: none"> -Poor farming practices -Resistance to pesticides -over stocking 	<ul style="list-style-type: none"> -emaciation of livestock -death of livestock 	18	4.
Human Diseases/ Outbreaks/Diseases Burden	<ul style="list-style-type: none"> - Inadequate nutrition/diet - Loss of livelihood - Climatic conditions – eg Malaria - Lifestyle habits 	<ul style="list-style-type: none"> - Poor health 	15	5.
Floods	<ul style="list-style-type: none"> -Higher than normal amounts of rainfall -Poor infrastructure -Disregard to land use plans/guidelines 	<ul style="list-style-type: none"> -Damaged infrastructure -Disease outbreaks eg chorela 	7	6.
Drug and Substance abuse	<ul style="list-style-type: none"> -Moral decay 	<ul style="list-style-type: none"> deteriorating standards of education -increase in incidences of petty crime 	3	7.

Drought being the main hazard has increased vulnerability of both human, non-human elements and critical facilities within the communities and some of the effects include;

degraded ecosystems, water scarcity and degradation of the already fragile ecosystem thus becoming unable to support the local communities.

Water pollution in all wards along the Athi River, over-exploitation of natural resources and environmental degradation was opined to lead to severe, pervasive and possibly irreversible changes for people, assets, livelihoods and ecosystems in the county. For this reason Machakos County requires urgent environmental action to reduce climate induced harm and to avoid effects of environmental degradation.

Air pollution especially in the urban areas has been a major cause of human and livestock diseases among the communities in Mavoko, Matungulu, Yatta and Mwala Sub Counties. The effects of drought have increased vulnerability among communities resulting to looking for coping mechanisms such as drug use and Substance abuse in Tala, Kalama and Machakos Central wards.

Increased temperatures have also caused mutation of disease-causing organisms hence increased crop pests and livestock diseases which further escalated vulnerabilities among communities.

Environmental degradation continues unabated. Environmental degradation is caused by anthropogenic, it manifests in different ways such as deforestation, soil erosion, water pollution, burning of fossil fuels and increased Agricultural activities.

Anthropogenic pollution and greenhouse gas emissions in Kinanie/Mathatani, Muthwani, Masii and Matuu wards have further increased hence the changing climate patterns witnessed in the county. However, without a much stronger abatement, anthropogenic greenhouse gas emissions will markedly further increase global warming and changing climate patterns.

Climate change adaptation is therefore necessary to reduce vulnerability towards the negative impacts that we cannot prevent.

2.1.3 Hazard Historical Profile

The chronological climate events for the county are tabulated in the table 5 as follows:

Table 5 Historical Profile

Year/ Trend	Hazard	Effects	Coping Mechanisms	Adaptation/ Resilience Measures
1927	Floods	Human and livestock disease Deaths	Temporary relocation	-Roof catchment (Water harvesting) -Soil conservation -Promote sewer system
1960	Drought (Yua ya ndeke)	Deaths Death of livestock	Consumption of wild fruits, roots and barks Rural urban migration Barter trade	-Conservation Agriculture -Water harvesting
1964	Drought (Yua-Longosa)	Deaths of livestock Deaths of human beings migration	Consumption of wild fruits, roots and barks Rural urban migration	Conservation Agriculture Water harvesting

			Barter trade	
1974-75	Drought livestock disease outbreak (Kithana)	Migration mass deaths of both people and livestock	Consumption of wild fruits, roots and barks Rural urban migration & Barter trade	Conservation Agriculture Water harvesting
1980	Drought (Katokelele Kathika)	Deaths of animals Deaths of human beings	Consumption of wild fruits, roots and barks Rural urban migration Barter trade	Conservation Agriculture Water harvesting
1984	Drought (Ngwa Ngwete) Outbreak of skin disease	Food shortage School drop out Deaths of human and livestock	Consumption of wild fruits, roots and barks Rural urban migration Barter trade	Conservation Agriculture Water harvesting
1986	Drought	Food shortage Starvation Deaths of livestock	Consumption of wild fruits, roots and barks Rural urban migration Barter trade	Conservation Agriculture Water harvesting
1997	Cholera outbreak/out reak of livestock diseases	Deaths of people and livestock	Use of herbs	Sensitization forums Availability of drugs
1997- 1998	Elnino	Destruction of crops	Temporary relocation Evacuations	Roof catchment (Water harvesting) Soil conservation Promote sewer system
2007- 2008	Drought	Deaths	Consumption of wild fruits, roots and barks Rural urban migration Barter trade	Conservation Agriculture Water harvesting
2019 - 2021	Locust invasion Quelea birds Outbreak of livestock diseases	Destruction of crops Death of livestock	Use of helicopters to spray the locusts Chasing the locusts by use of drums	Spraying of the locusts Routine monitoring Training on future management

2019-2020	Covid-19	Loss of lives Closure of learning institutions Loss of employment Inflation Quarantine	Social distance Masks & hand-washing Banning of social gatherings Lockdown and curfews	Vaccination Sensitization of the public wearing masks
2022	Drought	Lack of job opportunities Death of livestock Scholl drop outs	Consumption of wild fruits, roots and barks Rural urban migration Barter trade	Conservation Agriculture Water harvesting

3.32.2 Climate Exposure and Vulnerability Profiles

Low rainfall and high temperature form the highest sources of vulnerability leading to major climate risks for Machakos County. The PCRA process found drought, environmental degradation and pests and diseases to be the most prevalent hazards for Machakos County. The effect of these hazards include: water scarcity and poor water quality, food insecurity, flash floods, soil erosion, reduced soil fertility, increased incidences of pests and diseases and environmental degradation and loss of biodiversity.

2.2.1 Drought

Drought is the prolonged dry spell/ period caused by delayed onset of rainfall, low unreliable rainfall and deforestation. Lack of rainfall results into hunger (food insecurity), thirst, high temperature, body weakness, animal emaciation and low milk production in livestock. The warning signs of drought in the county include: immigration of birds, shedding of leaves in some trees or failure to grow /stunted growth of some plants and non-flowering of others.

The forewarning period is normally 3 months and the speed of onset is usually slow ranging between 4-5months. The frequency of drought in Machakos is annually in the months of January-February and June-September.

Among elements at risk of drought hazard are human elements among these women, children under five years of age, the youth, the aged and persons with disability. Other elements are productive assets of livestock and farms/farmlands as well as critical infrastructure in such facilities schools, health centres, roads, market centres, water and sewer infrastructure etc

The key climate change impacts have further been differentiated by climate exposure and vulnerability of key groups and summarized as depicted in table 6.

Table 6: 6: Climate Exposure and Vulnerability – Drought

Hazard	Drought			
Sector	Climate Risk	Vulnerable Group(s)	Causes of Vulnerability/Shock	Adaptation Strategies
Water	Lack of water for domestic use	Women, Children under 5, PWD, the Youth and the elderly	-Delayed onset of rainfall -Failed rains -Uncertain changes in rainfall patterns -Water pollution - Damage to water infrastructure eg breaching of earth dams -damage to pipelines due to long periods of disuse and exposure to extreme heat	Policies, Early Warning systems Public awareness Water harvesting Capacity building employees and communities
Environment and Natural Resources	Loss of biodiversity	Women, Children PWD, the Youth and the elderly	Decline in forest productivity due to low rainfall and high	Policies and legislation Capacity building of communities for green energy transition
Agriculture	-Crop Pests and Diseases - Livestock diseases -Poor farming practices - Inadequate access to nutritious food	Women, PWD, children and the elderly	-Rising temperatures -Uncertain changes in rainfall patterns -Water scarcity -Poor land-use planning -Loss of soil fertility -low soil moisture - High reliance on rain-fed agriculture -Insecure land tenure and land fragmentation -Abandonment of traditional foods	Policies and legislation Capacity building of farmers groups, stakeholders and county staff
Health	-Heavy disease burden, and limited access to quality health care, particularly in rural climate vulnerable communities	Men, Women, PWD, children under 5 and the elderly	-Rising temperatures -Increased pests and diseases -Flooding - pollution	Policies Community sensitization Capacity building of county employees and communities
Livelihoods	- Loss of livelihoods (MSMEs are unable to break even or stay afloat) -Low soil moisture -Settlements with poor living	Women, Children, PWDs and the elderly	-Inadequate resources -Interruptions to the road, networks, because of flooding and heavy rainfall events -Disruption of access to work, markets, education, and healthcare facilities,	Policies Capacity building Public sensitization

	conditions -Damage to infrastructure, including roads and bridges due to floods. - Increased incidence of water borne diseases		- damaged infrastructure and transport services -Increase in risks from the collapse of buildings, declining health of buildings, and loss of value, due to more frequent and heavier rain events, and encroachment of water catchment areas	
Energy	Deforestation (damage to tree cover and loss of biodiversity)	Women, Children, PWDs and the elderly	- Use of (fossil fuel)firewood/ charcoal for cooking & Lighting	-Policy development / Regulatory framework - Sensitization and capacity building towards green energy transition

2.2.2 Environmental Degradation

Environmental degradation is the destruction of the surrounding due to either natural or human related causes which include overgrazing, overstocking, deforestation, poor farming methods, bricks making, rainfall failure, murram extraction and poor soil conservation measures. The forces associated with environmental degradation include hunger, death of livestock, desertification, and poor infrastructure. The warning signs are gully formation, decreased vegetation cover, high temperatures, livestock diseases and increased wind storms. The forewarning for environmental degradation hazard is two months and the speed of onset is medium speed and occurrence is continuous.

The causes of this hazard include over grazing, overstocking, poor farming practices, bricks making rainfall failure, murram extraction, poor soil conservation measures.

Table 7: Climate Exposure and Vulnerability -Environmental Degradation

Hazard	Environmental Degradation			
Sector	Climate Risk	Vulnerable Group(s)	Causes of Vulnerability/Shock	Adaptation Strategies
Environment/ Natural Resources / Ecosystems	Environmental degradation/ Loss of biodiversity cover/ Fossil cooking and lighting energy	Women, Children, PWD, the Youth and the elderly	-Rising temperatures -quarrying and sand harvesting - temperatures -Increases in invasive species, and a resurgence of new pests and diseases - Increase in air pollution -Increased exposure to forest fire, pathogens, and invasive species -Reduced environmental resources and benefits -reduced forestry associated economic activities eg bee keeping	Policies and legislation Capacity building of communities for green energy transition

Energy	<ul style="list-style-type: none"> -Increased demand for energy, -Reduction in the capacity for hydroelectric generation - energy fluctuations or blackouts because of -Increased demand for biomass fuels and solar energy 	Women, Children, PWD , the Youth and the elderly	<ul style="list-style-type: none"> -high temperatures encourage the use of air conditioners and refrigeration. - decline in water flows in rivers, particularly during dry seasons - increased reservoir siltation - Reductions in hydroelectric generation - leading to energy supply interruptions 	<ul style="list-style-type: none"> Policy development Capacity building of employees and community Demand for solar energy is an opportunity that may be harnessed to build the adaptation/ resilience of the community to climate change shocks
Water	Decreasing water sources	Women, Children, PWD , the Youth and the elderly	<ul style="list-style-type: none"> -Rising temperatures -quarrying and sand harvesting -Depleted ground water resources -Siltation of surface water sources (dams/ water pans) 	<ul style="list-style-type: none"> Policies and legislation Capacity building of county employees and of communities for household water harvesting and conservation
Agriculture	<ul style="list-style-type: none"> Reduced yields -soil erosion -loss of livelihoods 	Men, Women, Children, PWD , the Youth and the elderly	<ul style="list-style-type: none"> Low soil moisture Delayed onset of rains/rainfall failure Reduced economic returns from farming activities 	<ul style="list-style-type: none"> Policies and legislation Capacity building of county employees and communities for and farm level water harvesting and conservation including micro irrigation/drip irrigation strategies
Education, Youth and Social Welfare	<ul style="list-style-type: none"> -Decline in school attendance/rising dropout rates. -Increased levels of unemployment among youths -Increased cases of insecurity - Reducing investments. 	Women, Children, PWD , Youth and the elderly	<ul style="list-style-type: none"> -Delayed onset of rains -Disruption of access to work to education centers due to gulley formation -Youths adopt disruptive livelihoods such as sand harvesting and quarrying 	<ul style="list-style-type: none"> -Policies and legislation -Capacity building

Manufacturing	Pollution -supply chain disruptions due to extreme climate events -Higher operation costs for companies	Men, Women, Youth, PWD, Children and the elderly	- Greater resource scarcity, such as water and raw materials. -Greater risk of plant, product, and infrastructure damage - Adoption of non-renewable energy - Unresponsive policies and legislation	Policies and legislation enforcement Through creation of multi-agency teams Community sensitization Capacity building of county employees, manufacturers
Settlements	Increased incidence of flooding	Women, Children, PWD, the Youth and the elderly	Rapid urbanization Lack of storm drain systems Encroachment of riparian areas along river Athi Unresponsive policies	Policies and regulations/Spacial planning Sensitization of communities and county employees Moving to higher ground

2.2.3 Pests and Diseases

During the PCRA process 55% of wards reported pests and diseases as climate hazards and the same were presented as crop pests and diseases (22 wards), livestock diseases (18 wards) and human diseases (15 wards) respectively.

Table 8 Climate Exposure and Vulnerability –Pests and Diseases

Hazard	Pests and Diseases			
Sector	Climate Risk	Vulnerable Group(s)	Causes of Vulnerability/Shock	Adaptation Strategies
Agriculture	Reduced yields -food insecurity -crop failure -- Increased prevalence of crop pests and diseases -Increased incidences of livestock diseases	Men, Women, Children, PWD, the Youth and the elderly	Delayed onset of rainfall Increased temperature Low soil moisture High cost of farm inputs Encroachment into wildlife corridors	Capacity building of employees, farmer groups, value chain actors Policy development
Water	- Poor Hygiene conditions -Water Pollution	Women, Children, PWD, the Youth and the elderly	-Reduced water sources Delayed onset of rainfall -inability to create coping strategies such as waste water management	Policy development Capacity building of employees Multi-stake holder engagements
Health	-Increase in incidences of malaria, -Increase in water-borne diseases, such	Men, Women, Children, PWD, the Youth and the elderly	-Heat stress, -Lack of safe water -Water creates breeding grounds for mosquitoes -Lack of safe water lead to disease out breaks	Policy development Capacity building of employees and sensitization of communities

	as cholera, and typhoid. -Increased number of people affected by food insecurity and malnourishment -Increase in lifestyle and respiratory diseases		-Drought - Challenges of resources for livelihood results into food scarcity -adoption of unhealthy lifestyles and poor eating habits	
Settlements	Growth of slums/ informal settlements -Poor sanitation conditions (Lack of sewer lines and waste management systems)	Men, Women, Children, PWD , the Youth and the elderly	-Topographical causes -urbanization -Unplanned settlements	Policies community sensitization Capacity building of technical teams of the county government
Education, Youth and Social Welfare	-Increased teenage pregnancies and early marriages -Drug and substance abuse and GBV as well disintegration of family breakages	Women, Children, PWD , the Youth and the elderly	Adoption of disruptive livelihoods eg sand harvesting, mining and child labour.	Policy development, Multi stakeholder engagements towards improvement of school retention rates and performance

3.42.3 Hazard characterization

For the three major hazards, the PCRA process identified the most vulnerable groups as follows:

2.3.1. Drought

Drought was characterized as summarized in table 9

Table 9 Hazard Characterization – Drought

Hazard Profile	Elements at Risk	Level of Vulnerability			Location of Element at Risk	Reason for Vulnerability
		H	M	L		
Drought is characterized by prolonged dry period caused by	Human elements					Children are prone to low immunity They are totally dependent on care

<p>low unreliable rainfall, deforestation and lack of rainfall resulting to hunger, thirst, high temperature, body weakness, animal emaciation and low milk production in livestock. The warning signs of drought include: immigration of birds, shedding of leaves failure to grow and non-flowering of plants and trees. The forewarning period is normally 3-4 months and the speed of onset is usually slow ranging between 4-5 months. Recently, the frequency of drought is experienced on annual basis in the months of Jan-Feb and June-Sept.</p>	0-5 years		x		At home	givers exposing them to high risk Under care of parents
	5-18 years		x		At school	School going age
	18-35 years	x			At home/School	Students /Working on farms
	35-60 years	x			At home	They are providers for all age groups They own the assets and when lost they are directly affected
	60 and above	x			At home	Suffer due to low immunity -Exposed to old age/degenerative diseases
	PLWD	x			Home /work	Low immunity Stigma . They lack balanced diet Tend to have limited access to health care Low income
	Productive Assets Livestock	x			Home	Lack of proper animal husbandry
	Farms	x			Home	Farms are invaded by livestock for pasture hence erosion
	Critical Facilities Schools	x			Community	Schools are left out by the learners during drought
	Health centers	x			Community	Congestion in health centers due to spread of human diseases
	Roads			x	Community	Not often used

Summary of vulnerability Assessment

For human elements Ages 18-35, 35-50, 60 and above, PLWD are highly exposed

For the non-human elements livestock and farm are exposed.

With critical facilities -schools and health centers are high exposed to vulnerability

2.3.2 Environmental Degradation

Table 10 Table10: Hazard Characterization – Environmental Degradation

Hazard Profile	Elements at Risk	Level of Vulnerability			Location of Element at Risk	Reason for Vulnerability
		H	M	L		
Environmental degradation is the destruction of the surrounding due to either natural or human related causes which include Overgrazing, overstocking, deforestation, poor farming methods, bricks making, rainfall failure, murrum extraction and poor soil conservation measures. Some of the forces that impact the individuals include hunger, death of livestock, desertification, lack of rainfall and poor infrastructure. The warning signs are gully formation, decreased vegetation cover, high temperatures, livestock diseases and increased wind storms. This is seen in two months two months' time, moves at a medium speed monthly. The period of occurrence is between July and September and can go on for three to four years.	Human elements 0-5 years		x		At home	They tend to have low immunity and are prone to drowning and diseases that come as a result of stagnant water
	5-18 years		x		At school	This group is prone to dropping out of school, early pregnancies and child
	18-35 years	x			At home	Environmental degradation could result into drug abuse and increased crime rate due to climate vulnerability of among this group eg due to unemployment and mental health challenges
	35-60 years	x			At home	As a result of this hazard they are prone to GBV, unemployment, mental health issues, family conflicts and even separation
	60 and above	x			At home	Low immunity and exposure to degenerative/old age diseases/multi-pathological disorders
	PLWD	x			Home /work	Destruction of infrastructure such as roads makes them impassable rendering this group vulnerable due to mobility limitation.
	Productive assets Livestock		x		Home	Decreased production due to lack of fodder/pasture
	Farms	x			Home	Decreased vegetation cover and crop production
	Critical facilities Schools		x		Community	Schools are left out during the hazard invasion
	Health centers			x	Community	Congestion in market centers hence spread of human diseases

	Roads			x	Community	Not often used
Summary of Vulnerability Assessment For human elements Ages 18-35,35-60, 60 and above, PLWD are highly exposed For the non-human elements farms and are exposed						

2.3.3. Pests and Diseases

Table 11 Hazard Characterization – Pests and Diseases

Hazard Profile	Elements at Risk	Level of Vulnerability			Location of Element at Risk	Reason for Vulnerability
		H	M	L		
<p>Livestock diseases are caused by viral, bacteria and pathogens. The force is hunger and body weakness and the warning signs are loss of appetite and diarrhea. The forewarning is 5-7days while the speed of onset is medium. The frequency and period of occurrence is throughout the year due to the different livestock diseases for all the wet and dry seasons. Crop pests and diseases are caused by Virus, bacteria, pathogens, protozoa and fungus. This leads to hunger and malnutrition. The early warning signs include coiling and discoloration of crop leaves and retardant growth. The fore warning signs occurs between 1-2 weeks with a medium speed of onset. It usually occurs in the months of March to</p>	Human elements					
	0-5 years		x		At home	Under care of parents
	5-18 years		x		At school	School going age
	18-35 years			x	At home	Working on farms
	35-60 years	x			At home	prone to GBV, unemployment, mental health issues and family conflicts
	60 and above	x			At home	Low immunity and exposure to old age diseases/ and neglect
	PLWD	x			Home /work	Low immunity, hunger, Stigma and neglect
	Productive assets					
	Livestock	x			Home	Livestock are vulnerable to diseases
	Farms	x			Home	Climate change has increased the vulnerability of farms to new pests and diseases
	critical facilities					
	Schools			x	Community	Schools are left out during the hazard invasion
	Markets/MSMEs		x		Community	Congestion in markets Diminished profitability
	Health Centres	x			Community	Consumption of uninspected meat from livestock and pesticides in crops lead to spread of human diseases

April and October to November of every year.	Roads			x	Community	Not often used
Summary of vulnerability Assessment For human elements Ages 35-50, 60 and above, PLWD are highly exposed For the non-human elements, the livestock and farms are exposed For the critical facilities the health centers are high exposed						

3.52.4: Differentiated Impacts of Climate Risks

2.4.1 Women

The PCRA exercise found women to have a high level of vulnerability to identified hazards. The reason for their vulnerability emanates from the key roles of women in the county that include fetching wood fuel, collecting water, tending to livestock, tilling the land and caregiving roles. The PCRA used various tools among them access and control, the gender daily calendar and wealth ranking exercise which portrayed women were more vulnerable due to existing gender inequalities, unequal power relations and structures, discriminatory laws and customs, and unequal access and control of resources.

Drought further compromises the hygiene situation for girls and women in that the little water available is used for drinking and cooking which also implicates women's time management of household chores. Some women due to stress induced by climate hazards are lured into risky behaviors among these drug and substance abuse and prostitution especially in the urban centres of Mulolongo/Syokimau, Matuu and Masii Wards further comfounding the fight against HIV/AIDS within the county.

2.4.2 Children Under 5 Years

Children were identified to have a high level of vulnerability to hazards due to their location and dependence on their care givers for their survival and health needs. Children suffer malnutrition, low immunity and poor health during climate events among these drought and floods.

2.4.3 Youth

Youth in the county were found to have a moderate to high level of vulnerability to drought, livelihoods disruption and environmental degradation hazards. Climate insecure youth within Masinga, Yatta and Matungulu sub counties tend to drop out of school, are more exposed to child labour, early marriage and teenage pregnancies. Tala and Kalama wards identified drug and substance abuse as serious risks affecting the youth. The main reason for which youths are affected is that they are providers for other groups of people. Youth also own assets and businesses as such when their livelihoods are disrupted, they are directly affected.

2.4.4 The Elderly

The elderly (60+ years) are mainly located within the home setting/community and are dependent on youthful family members. The level of vulnerability for this group was found to be high. The aged lose their independence as they age leaving them vulnerable to loss of assets, lack of social security, and stress due to abandonment, poor health and death.

2.4.5 Persons Living with Disability

The population of persons with disability reached 33,000 persons accounting for 2.32% of the total population of Machakos County (KNBS, 2019). PWD have a high level of vulnerability to climate induced stress due to their dependent nature, are neglected, and are susceptible to suffer poor physical and mental health as alluded in the PCRA reports for Lower Kaewa, Mavoko and Machakos Sub Counties. PWDs also suffer stigma, malnutrition and difficulties in movement due to inaccessibility and poor infrastructure.

Further women, children, the elderly and persons living with disabilities are more exposed to the climate risks hence compromising on their coping capacities. The vulnerable groups do not have equal access to and control over most resources at the household level such as land due to patriarchal society that bars women and children from owning family assets. This PCRA report recognizes the role of these groups in the development of climate adaptation/resilience actions crucial for the attainment of county climate goals.

2.4.6 Productive Assets

Livestock and farms were productive assets found to experience a very high level of vulnerability during the PCRA exercise. In Masinga and Yatta Sub Counties all wards identified livestock diseases as hazards affecting their livelihoods due to poor animal husbandry. Farm lands are affected by soil degradation and invasion of livestock for pasture.

2.4.7 Critical facilities

Climate events affect critical infrastructure in different ways; schools have medium level of vulnerability as these may be left unused by learners during drought. Health care centres have a high level of vulnerability as these get congested due to spread of human diseases. Road networks have low level of vulnerability and may be washed away by floods in Tala, Athiriver, Muthwani and Kinanie/Mathatani Wards.

The differentiated impacts of climate change for different VMGs are as listed in table 12.

Table 12 : Differentiated Impacts of Climate Risks

Hazard	Vulnerable/ Marginalized Group	Climate Risk
Drought	Women	<ul style="list-style-type: none">- Greater water resource scarcity for household chores- Decreased capability to develop alternate water sources due to- compromised hygiene situation- Heavier disease burden, and limited access to quality health care due to their care giving roles- Increased exposure due to use of (fossil fuel) firewood/ charcoal for cooking & Lighting- Loss of livelihoods – womens small businesses (MSMEs) are unable to break even or stay afloat)- Increased cost of food items leading to food insecurity -family disintegration due to GBV

	Children under 5 years	<ul style="list-style-type: none"> -Increased incidences of water borne diseases - Malnutrition -Accidents when thirsty children drink harmful liquids
	Youth (Female)	<ul style="list-style-type: none"> -Existing gender inequalities -unequal power relations and structures -discriminatory laws and customs, -unequal access to and control of resources. -Teenage pregnancies -School drop out -Child labour Drug and substance abuse and other social vices
	Youth (Male)	<ul style="list-style-type: none"> -School drop out -Child labour -petty crime -drug and substance abuse and other social vices
	The Aged (60+)	<ul style="list-style-type: none"> -Neglect -Hunger -Degenerative /old age diseases -Psychological trauma due to loss of independence
	PWD	<ul style="list-style-type: none"> Stigma . They lack balanced diet Tend to have limited access to health care Low income Low immunity
Environmental Degradation	Women	<ul style="list-style-type: none"> Women look for firewood and therefore face greater resource scarcity, - Increased exposure to ill health due to use of (fossil fuel)firewood/ charcoal for cooking & Lighting - Food insecurity
	Children under 5 years	<ul style="list-style-type: none"> Malnutrition Increased incidences of water borne diseases
	Youth (Female)	<ul style="list-style-type: none"> -School drop out -Child labour Drug and substance abuse and other social vices
	Youth (Male)	<ul style="list-style-type: none"> School drop out -Child labour -petty crime -drug and substance abuse and other social vices
	The Aged (60+)	<ul style="list-style-type: none"> -Neglect - Hunger -Degenerative /old age diseases -Psychological trauma due to loss of independence
	PWD	<ul style="list-style-type: none"> Stigma . They lack balanced diet Tend to have limited access to health care Reduced income Reduced immunity
Pests and Diseases	Women	<ul style="list-style-type: none"> - Loss of livelihoods – womens small businesses (MSMEs) are unable to break even or stay afloat)

		-Increased cost of food items leading to food insecurity -family disintegration due to GBV
	Children under 5 years	Malnutrition
	Youth (Female)	Prostitution Teenage pregnancies
	Youth (Male)	Loss of livelihood Petty crime
	The Aged (60+)	Degenerative /old age diseases Hunger Malnutrition
	PWD	They lack balanced diet Low income Low immunity

Other climate vulnerable livelihoods include;

Households that depend on rain fed agriculture for livelihoods: More than 70% of the residents of Machakos County primarily depend on rain fed agriculture as the main source of livelihood. Due to climate change the, the weather patterns have changed affecting most households that depend on agriculture therefore exposing them further and making them more vulnerable to climate induced disasters.

Generally, there was low investment in irrigation due unpredictable weather patterns and decreased rain intensity within the county which compounds the vulnerability of household's dependent on crop farming. The PCRA report concludes that livestock farmers in Masinga Central, Kinanie, Muthwani and Kivaa wards suffer reduced productivity, degraded pasture lands due to poor farming technologies, increased population among other climate coping mechanisms.

Micro, Small and Medium Enterprises (MSMEs): The main economic activities in the county are small scale entrepreneurs engaged in vegetable and fruit groceries (Mangoes, Pixies, Oranges, Banana and Citrus), household merchandise, cereals, selling of poultry products transport (*bodaboda*). Seasonal variability in supplies of agricultural produce affects farmers, traders; infrastructure destruction during heavy rains affects transportation of goods especially using motorcycles and vehicles. The MSMEs as a climate vulnerable group were identified in major towns within Kathiani, Masinga, Mwala, Mavoko, Yatta, Machakos, Matungulu and Kangundo sub counties.

3.6.2.5 Spatial Distribution of Risks

Climate change causes an increase in the average temperatures leading to major environmental and economic disruptions. Increased temperatures in the county as a result of climate change have resulted in water scarcity; the drying of water sources (boreholes, rivers, springs, earth dams, and other water structures) in Mwala and Yatta sub counties; prolonged droughts leading to crop failure; and loss of biodiversity and livestock due to decrease in animal pastures in Kinanie and Muthwani wards . Low agricultural production

and yields due to erratic rains have forced the county residents, especially youths to engage in alternative but unsustainable economic activities such as quarrying and sand harvesting Masinga Central, charcoal burning in Matungulu East, Kivaa, Ndithini Katangi and Kibauni, and illegal logging in Wamunyu, Upper and Lower Kaewa wards. These activities were identified to contribute to environmental degradation.

The decline in soil fertility has resulted in the encroachment of forest land as communities explore more fertile land for agricultural production. Increased frequency of droughts has caused drying of pasture lands and water sources resulting in intra and inter-community conflicts over pasture lands and water points and escalated human-wildlife conflicts in Ekalakala, Masinga Central, Mwala, Matungulu North Muthwani and Kinanie due to the competition for scarce available resources. Human-wildlife conflict usually arises when wild animals cross over from the Masinga Dam, Athi River and the Kilimabogo game reserve in search of food and pasture, consequently invading croplands and at times leading to loss of life. Incidences of crocodile and hippopotamus attacks have been reported Ekalakala, Masinga Central, Mwala and other wards especially along Tana and Athi Rivers where people and livestock have been attacked in their quest to find water.

Flooding events were found to impact communities living in five wards of Tala, Matungulu West, and Athi-river, Mlolongo/Syokimau and Kinanie wards causing crop failure; increased soil erosion; loss of human life and animals; the outbreak of water-borne diseases and has led to the destruction of key infrastructural developments such as roads. This has further had a negative implication on the economy of the county, which is predominantly supported by the agricultural sector, whose vulnerability is increased by climate change leading to decreased food production and subsequent famines and droughts.

Table 13: Spatial Distribution of Risks

Hazard	Drought			
Sector	Climate Risk	Cause/Shock	Adaptation Strategies	Geo-Ecological Zone/Wards
Water	Reduced availability of surface water for activities Increased water loss from and siltation. Lower water levels in major rivers and streams, Increased number of people without access to clean water Increased pressure on groundwater resources	Delayed onset of rains Low level of rainfall Increased water pollution	Capacity building of staff Policies Early warning systems	Lower Midland (LM)III Lower Midland (LM)IV Lower Midland (LM)V
Environment	A decreased ability of the population to cope. Increased water	Increased frequency and intensity of droughts and	building of staff Policies Early warning	Lower Highlands (LH) II-III Upper midland (UM) II -III

	<p>pollution</p> <p>Solid waste disposal</p> <p>Domestic effluent (raw sewage)</p> <p>Increased likelihood of contestation and conflict over diminishing natural resources</p> <p>Reduced provision of environmental resources and benefits, and forestry associated economic activities.</p> <p>Decline in forest productivity</p> <p>Loss of biodiversity</p> <p>Increases in invasive species, and a resurgence of new pests and diseases.</p> <p>Increase in air pollution.</p> <p>Increased exposure to forest fire, pathogens, and invasive species</p> <p>Increased pressure on forest resource</p>	<p>floods</p> <p>Delayed onset of rains,</p> <p>-</p>	<p>systems</p>	<p>Upper Midland (UM) V</p>
<p>Agriculture Livestock & food security</p>	<p>Increased food insecurity</p> <p>Decline in overall crop yields due to insufficient availability of water and excessive moisture conditions.</p> <p>Increased pests, diseases, and weeds</p> <p>Reduced crop production due to</p> <p>Declined soil fertility.</p> <p>Livestock deaths due to drought in the County</p> <p>Low-quality livestock inputs and breeds</p> <p>Decline in production,</p> <p>Reduced access to water, and heat stress</p>	<p>Low soil moisture</p> <p>Delayed onset of rain</p> <p>Failed rainy seasons</p> <p>Increased temperature and lower precipitation, resulting in reduced soil moisture.</p> <p>lack of pasture.</p>	<p>Policies</p> <p>Early warning systems</p>	<p>Lower Midland (LM) III</p> <p>Lower Midland (LM) IV</p> <p>Lower Midland (LM) V</p> <p>Upper Midland (UM) II -III</p> <p>Upper Midland (UM) II -III</p>
<p>Health</p>	<p>Increased number of people affected by food insecurity and</p>	<p>Low soil moisture</p>	<p>Policies</p> <p>Early warning</p>	<p>Lower Midland(LM) V</p> <p>Lower Midland(LM)</p>

	malnutrition of children Increase in water-borne diseases, such as cholera, and typhoid.	Flooding Depleted water sources	systems	IV
Energy	Increased demand for biomass fuels among these firewood and charcoal	Lack of capacity for clean energy transition		Lower Midland (LM) I Lower Midland (LM) IV Lower Midland(LM) V
Education	Declines in school attendance, and rising dropout rates. Increased levels of unemployment among youthful population			Lower Midland (LM) III Lower Midland (LM) IV Lower Midland(LM) V
Infrastructure/Roads	Infrastructure, including roads and bridges due to floods. Interruptions to the road networks, Disruption of access to work, markets, education, and healthcare facilities Increase in risks from the collapse of buildings, declining health of buildings, and loss of value	flooding/ heavy rainfall events -encroachment of water catchment areas	Policies Early warning systems	Muthesya, Ndithini, Ikombe, Katangi, Mbiuni, Kinanie, Mlolongo /Syokimau and Muthwani wards
Manufacturing	Industrial effluent (chemical, Noise, Air, drainage & dust)			Machakos Central, Mua, Athi River, Kinanie, Mlolongo/Syokimau and Muthwani wards

CHAPTER THREE

FUTURE CLIMATE SCENARIOS FOR MACHAKOS COUNTY

3.7 National and Downscaled Climate Change Projections

3.1.1 Temperature

The World Bank (2021) predicts that temperatures in Kenya will continue to rise across all emission criteria and that it will continue to rise by up to 1.7°C by the 2050s and by approximately 3.5°C at the end of the century. Further the number of hot days is projected

to increase as hot nights increase faster to projected to occur on 45%–75% of nights by mid-century and on 64%–93% of nights by end of century.

Across Kenya, temperatures vary with a distinct warming trend that is evident since the 1960s as in land masses registering larger increases in minimum and maximum temperatures. The annual mean increase has risen by an estimated 1.0°C with the most significant rise in temperature observed for at the start of March to May rainfall particularly in the arid and semi-arid regions of the country (World Bank, 2021).

Studies have further shown as that temperatures rise and droughts become more prolonged water storage capacities will likely be reduced. The future scenario may be significant loss of livelihoods (economic losses), damage to agricultural lands and infrastructure as well as human casualties. Further, environmental degradation and soil erosion, exacerbated by recurrent heavier than normal rainfall and detrimental human coping mechanisms, will negatively impact agricultural productivity, affecting the livelihoods of the rural poor.

3.1.2 Rainfall

Kenya's average annual rainfall is about 680mm. it ranges from less than 250mm in the Northern Kenya ASALs to 2000 in the Western region. The high rainfall zone that receives more than 1000mm of annual rainfall is the productive agricultural areas among these central, western and parts of the Rift Valley (World Bank, 2021).

Evaporation and siltation further increase water loss from reservoirs lowering the water levels in major rivers and seasonal streams particularly during dry seasons leading to an increase in the number of people without access to clean water. There is evidence of increased pressure on ground water resources around the county with households and public institutions that solely rely on boreholes taking the blunt.

The agriculture sector county has also witnessed increased food insecurity due to increased due to increased temperature and lower precipitation, resulting in reduced soil moisture; decline in overall crop yields due to insufficient availability of water and excessive moisture conditions, increased pests, diseases, and invasive species (weeds); reduced crop production due to increased temperature and lower precipitation, resulting in reduced soil moisture and general decline in decline in soil fertility.

3.2 Machakos Climate Scenarios

Machakos County climate is semi-arid, with two distinct rainy seasons, the long and the short rain seasons. The County has a bimodal rainfall pattern with the long rain season starting at the end of March and continuing up to May, while the short rain season starts at the end of October and lasts till December. The annual average rainfall ranges between 500mm to 1,300mm, and the mean annual temperature is 26°C, which ranges between 20.4°C in the upper highlands to 34°C in the midlands. Low temperatures are experienced in July and August while January, February and March are the hottest months. Rainfall patterns within the county have become irregular and unpredictable, and when it rains, the downpour is more intense. The recently witnessed long rains between March and May 2018 left rivers such as Athi River and Mto wa Mawe that cuts across Machakos County and fed by the Ngong hills flooded and wreaked havoc to people residing near riparian land. Flooding incidences are particularly common in Matungulu and Kangundo Sub-counties.

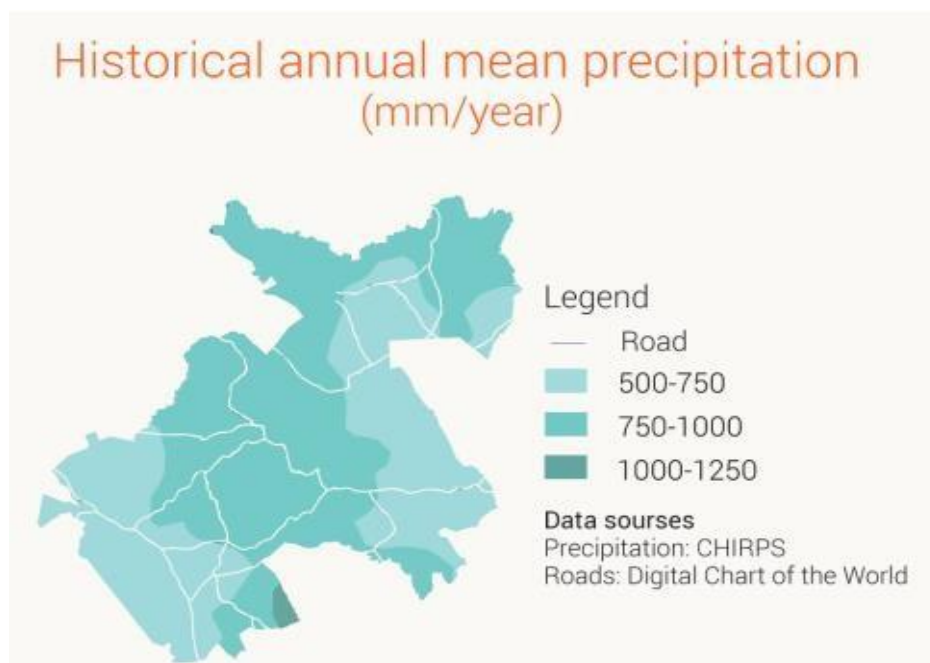


Figure 7: Historical Annual Mean precipitation of Machakos County
(Source: MoALF, 2017)

The unpredictable rainfall has further aggravated the already existing water scarcity challenge in Machakos. Most of the time women and girls are forced to walk for long in search of water to meet their domestic water demand. This has also affected pastoralist communities who solely depend on rainfall to nurture their grazing lands. Due to drought, pastureland is slowly diminishing, which is leading to increased livestock deaths due to lack of forage and water. Consequently, this has affected the livelihoods of these pastoralist communities, triggering an up rise in insecurity and conflicts within and across the County.

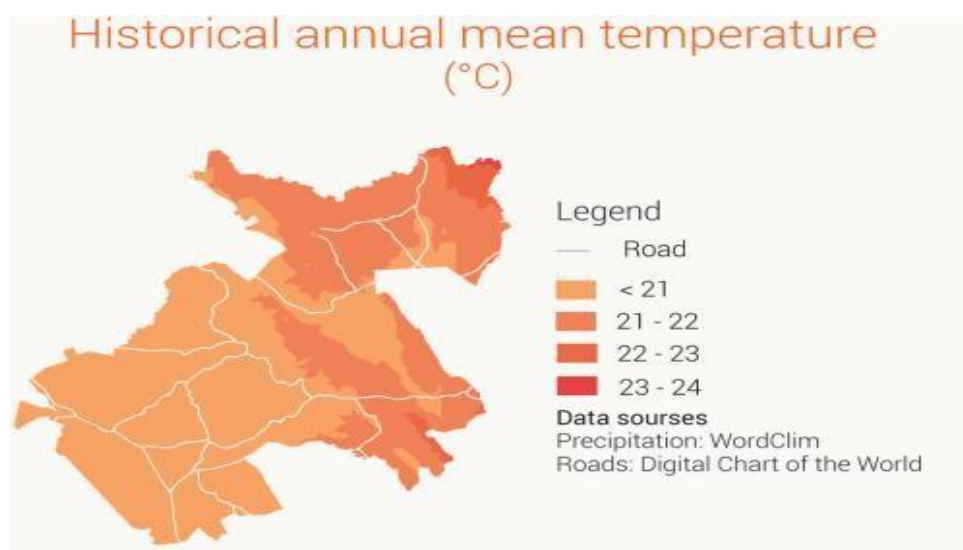


Figure 8 : Historical Annual Mean Temperatures of Machakos County
(Source: MoALF, 2017)

Some parts of the County such as Kinanie and Athi river are prone to flooding which causes widespread and more devastating impacts on communities. Floods have in recent years' submerged farms and villages and disrupted transportation networks in the County, consequently affecting food security and market distribution systems. These impacts range from loss of human life and livestock to widespread displacement of people, loss of crop yield, and damage to essential infrastructure.

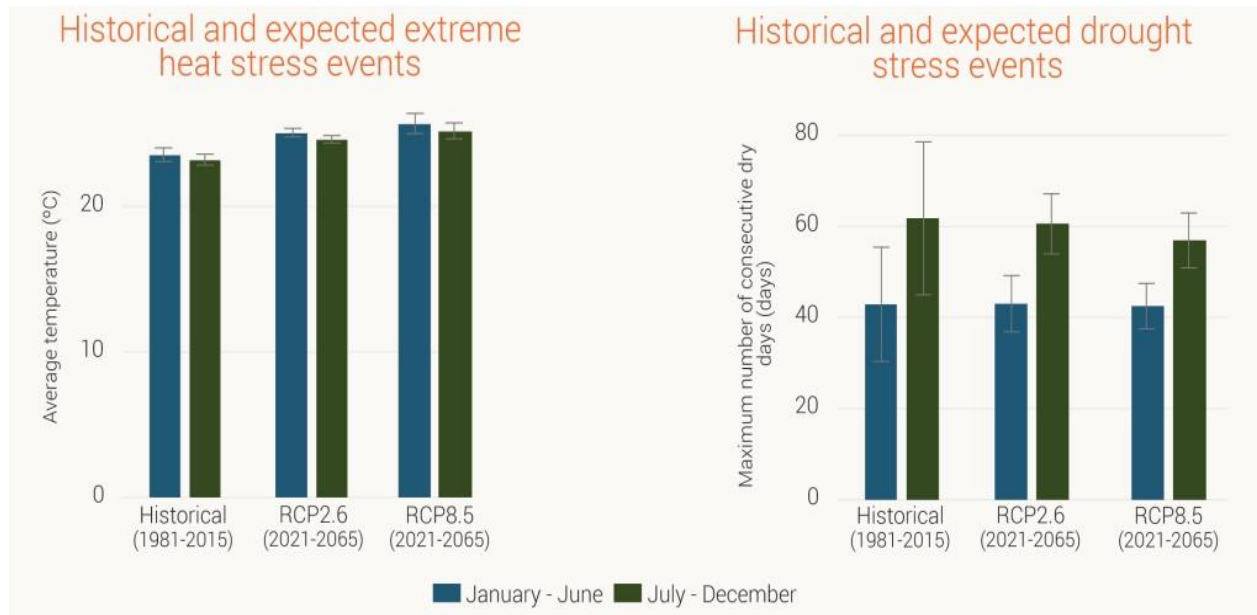


Figure 9 Historical and expected heat stress and drought events in Machakos County (Source: MoALF, 2017)

3.3 County Future Climate Scenarios

In the temperatures are usually warm, with the weather dry and partly cloudy. Over the course of the year, the temperature typically varies from 53°F to 81°F and is rarely below 49°F or above 85°F.

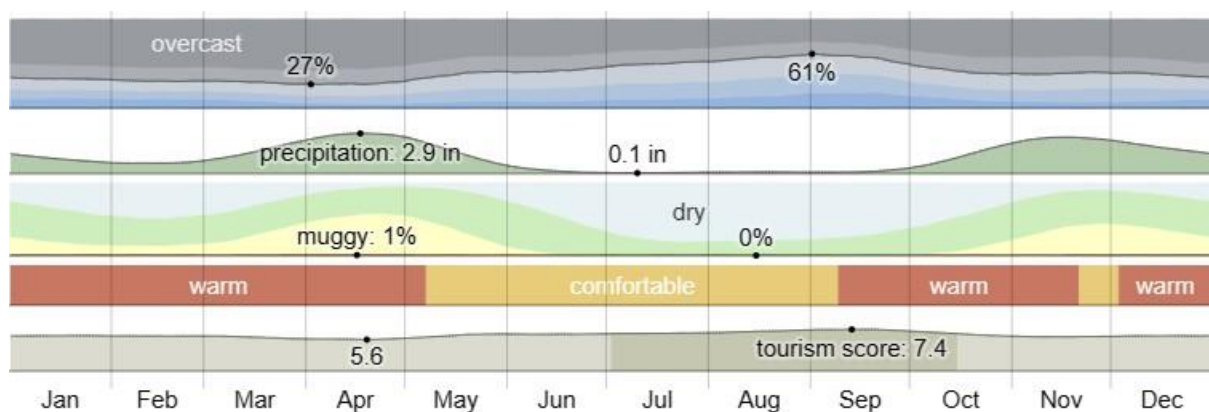


Figure 10 Average Temperature in Machakos

The warm season lasts for two months, from January 29 to March 28, with an average daily high temperature above 79°F. The hottest month of the year in Machakos is March, with an average high of 80°F and low of 59°F.

The cool season lasts for 2 months, from June 6 to August 2, with an average daily high temperature below 73°F. The coldest month of the year in Machakos is July, with an average low of 53°F and high of 71°F.

Average Temperature in Machakos

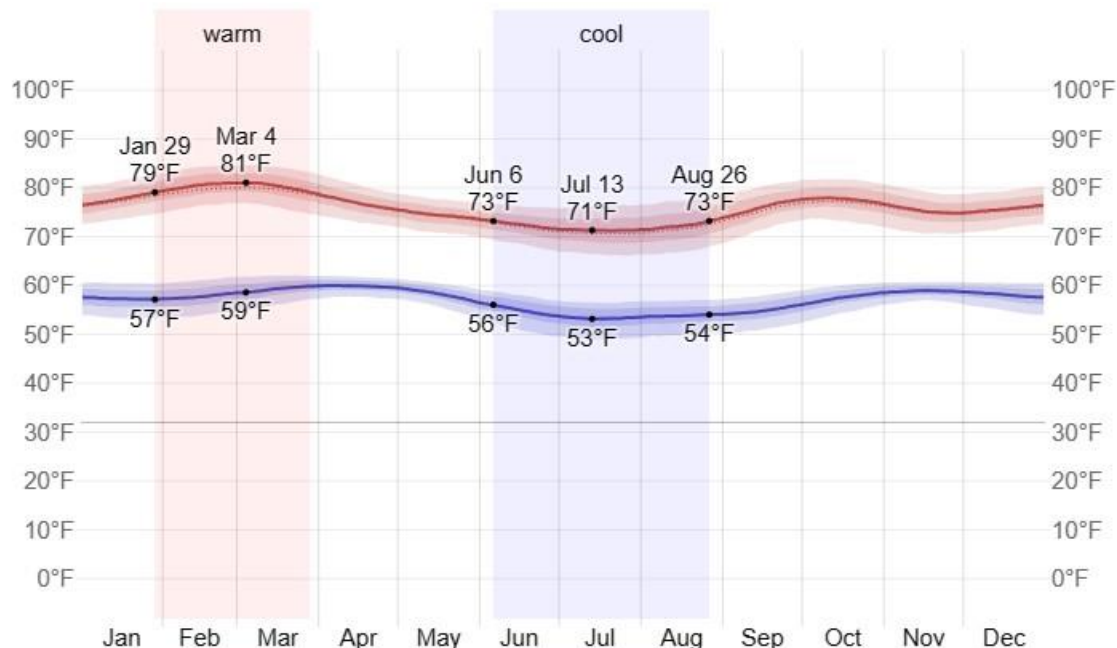


Figure 11 Average Temperature

3.3.1 Rainfall

Machakos has a bimodal rainfall pattern that show a variation within the months. When the rainfall accumulated over a month is centered around each day of the year, Machakos depicts significant seasonal variation in monthly rainfall.

Table 14 Likely climate Change Impacts by Sector

Sector	Likely Climate Change Impacts/Future Climate Risks
Water	<ul style="list-style-type: none"> Increased number of people without access to clean water both domestic and commercial use. Increased pressure on groundwater resources Increased water pollution and depreciation of water quality. Increased Rural urban migration Increased salinity of available water bodies. Increased likelihood of conflicts between the County and other Counties and within the County communities Increased water loss from reservoirs, due to evaporation and siltation Lower water levels in major rivers and streams, particularly during dry seasons
	<ul style="list-style-type: none"> Increased likelihood of conflicts between the County and other counties and within the County communities Increased conflicts for pasture for livestock. Increased human wildlife conflict

Environment	<ul style="list-style-type: none"> • Increased conflict over diminishing natural resources such as pastureland and water points • Reduced tree cover in forests and in private lands • Extinction of indigenous trees due to overuse of wood for domestic and commercial use. • Destruction of ecosystem resulting to extinction of certain species of plants and animals. • Increased sand harvesting, soil and water erosion resulting to massive gullies. • Increased noise and air pollution • Extreme temperatures likely to occur.
Agriculture & Food Security	<ul style="list-style-type: none"> • Increased food insecurity • Decline in overall crop yields due to insufficient availability of water and excessive moisture conditions. • Increased pests, diseases, and weeds • Reduced crop production due to increased temperature and lower precipitation, resulting in reduced soil moisture. • Declined soil fertility. • Uncertainty Livestock deaths due to drought in the County • Low-quality livestock inputs and breeds • Decline in production, due to lack of pasture. • Reduced access to water and heat stress • Changes in disease patterns, potential re-emergence of climate related diseases and pests • Reduced income from crops and livestock
Health	<ul style="list-style-type: none"> • Increase in incidence of malaria, • Increase in water-borne diseases, such as cholera, and typhoid. • Increased number of people affected by food insecurity and malnourishment • Increase in lifestyle and respiratory diseases because of poor eating habits
Education, Youth & Social Welfare	<ul style="list-style-type: none"> • Decline in school attendance, and rising dropout rates. • Disruption of access to work to education centers • Increased levels of unemployment among youths • Increased teenage pregnancies and early marriages • Drug and substance abuse and GBV as well disintegration of family breakages • Increased cases of Insecurity by organized criminal groups reducing investments.
Energy & Housing	<ul style="list-style-type: none"> • Increased demand for energy, as high temperatures encourage the use of air conditioners and refrigeration. • Reduction in the capacity for hydroelectric generation, due to a decline in water flows in rivers, particularly during dry seasons and, increased reservoir siltation • Increased demand for biomass fuels and solar energy • Reductions in hydroelectric generation, which could cause energy fluctuations or blackouts because of energy supply interruptions • Increased demand for housing due to urbanization (both a risk and an opportunity) • Increased demand for solid waste management • Increased domestic effluent (raw sewage)
Forestry	<ul style="list-style-type: none"> • Decline in forest productivity due to low rainfall and high

	<p>temperatures</p> <ul style="list-style-type: none"> • Loss of biodiversity • Increase in invasive species, and a resurgence of new pests and diseases • Increase in air pollution • Increased exposure to forest fire, pathogens, and invasive species • Reduced provision of environmental resources and benefits, and forestry associated economic activities • Increased frequency and intensity of droughts and floods coupled with a decreased ability of the population to cope • Reduced forest cover due to encroachment, opening of gazetted forests for development.
Infrastructure	<ul style="list-style-type: none"> • Damage to infrastructure, including roads and bridges due to floods. • Disruption of access to work, markets, education, and healthcare facilities, due to damaged infrastructure and transport services • Increase in risks from the collapse of buildings, declining health of buildings, and loss of value, due to more frequent and heavier rain events, and encroachment of water catchment areas • Interruption to the road, rail, and air networks, because of flooding, and heavy rainfall event • Air and noise pollution due to increased traffic emitting carbon dioxide • Reduced space for road expansion
Manufacturing	<ul style="list-style-type: none"> • Greater resource scarcity, such as water and raw materials that are inputs in manufacturing processes. • Greater risk of plant, product, and infrastructure damage, and supply chain disruptions due to extreme climate events such as floods • Higher operation costs to companies • Increased air and noise pollution • Increased cost of products due to importation of raw materials affecting livelihoods negatively

CHAPTER FOUR

ANALYSIS OF EXISTING RESILIENCE/ADAPTATION STRATEGIES TO CURRENT AND FUTURE CLIMATE RISKS

4.1 Overview of Existing Adaption/Resilience Strategies

4.1.1 Drought

Machakos County has employed several climate resilience/adaptation strategies among these is desilting of dams, sinking of boreholes, establishing of gabions, weirs, use of dam liners, water harvesting mechanisms among others. In 80% of the wards the community was found to have small dams, weirs and boreholes as main sources of water. However these water sources are beyond 2km of most of households. At family level children within the ages of 0 – 5 years, women, PWDs and the elderly were found to be most vulnerable.

Other strategies that address climate risks include abstraction of underground water through drilling of boreholes though this was mainly explored by the county government due to its prohibitive cost, technical complexity and high rate of failure. Modern strategies towards improved food security include development of the economic potential of small holder farmers through farmlevel interventions in agriculture, water and blue economy backed by modalities of funding among these result based financing.

Effectiveness of the adaptation/resilience strategies: To enhance the effectiveness of these strategies, the PCRA identified upscaling of construction and desilting of earth dams to cover more villages as a key adaptation strategy for the 70% of the wards. The community observed that women and children whose chores include collecting water for household use would have more time to engage in other productive activities including attending children's' school attendance and use of new farm level sources of water to grow food and vegetables and income generating activities thereby diversifying family diet and overall health. Low carbon development is key for tangible benefits of result based financing to be achieved.

More resources are therefore required towards accessible water sources among these water pans, earth dams, pipeline extensions for new household connections, water kiosks and road side stand pipes. Other strategies that are envisaged for urban areas in Machakos Central and Mavoko Sub County include green infrastructure among these rain gardens, low impact development and adoption of early warning systems.

4.1.2 Environmental Degradation:

Machakos County is faced with environmental challenges which comprise of unregulated sand harvesting, drought, inadequate solid waste management systems, insufficient sewerage networks, raw waste water discharge to rivers, air pollution, underground water sources contamination, and deforestation. These challenges arise due increasing population, change in land-use patterns and climatic conditions and rapid industrialization/urbanization.

The PCRA recommended rehabilitation of water catchment areas and degraded rivers, rain water harvesting, and enforcement of regulations on control of water pollution. The transition to green energy by households and manufacturing sector has been identified as a key strategy for building resilience to change in an increasingly fragile ecosystem.

Effectiveness of the adaptation/resilience strategies: Environmental degradation has taken place over long periods of time and the effects are also long term. Subject to availability of resources, the use of strategies among these promotion of efficient water services and multi-agency approaches for enforcement of pollution control measures are key. Tech transfer in efforts towards improvement of the natural resources management and building the capacity of farmers may be explored. Sand harvesting and quarrying ought to be rationalized and efforts made to work with stakeholders to build their capacity for ecosystem protection and restoration with such initiatives as construction of gabions, terracing, tree growing initiatives and reclaiming abandoned quarries. The county would benefit from carbon credits as a source of funding for ecosystem restoration.

4.2 County Progress in Supporting the NCCAP

Machakos County Government has made some progress by undertaking actions aimed at reducing climate change-related vulnerabilities and build the County's adaptive capacity as identified in the NCCAP (2018-2022). Key among these actions includes the integration of climate change in the Machakos County Integrated Development Plan (CIDP) 2023-2027. Table 14 shows the Machakos County CIDP sectors and the progress made in supporting NCCAP 2028 – 2022 in its key programmes.

Table 15 : Key Programmes Prioritized in the CIDP

No.	CIDP Sector	Key Programmes/Projects/Policies Prioritized in the CIDP
1.	Water, Environment and Natural Resources	<ul style="list-style-type: none"> i. Increasing the capacity of the county for improved management of water resources and supply and the environment ii. Enhanced water harvesting at household and community level iii. Adoption of solar powering for water infrastructure iv. Collaborate with departments in charge of roads and housing to promote harvesting of storm water for irrigation v. Improved early warning and action systems.
2.	Agriculture and Cooperative Development	<ul style="list-style-type: none"> i. Increasing land under cultivation through the free tractor project ii. Climate smart agriculture iii. Free farm inputs and extension services iv. Free chicks' program v. Cockerel exchange program vi. Livestock feed and nutrition information system vii. Value addition of farm produce viii. Adoption of micro irrigation and hydroponics

		<ul style="list-style-type: none"> viii. Adoption of agroforestry and fruit tree farming ix. Soil conservation measures strategies x. Initiation of early warning weather forecast
3.	Infrastructure, Energy and ICT	<ul style="list-style-type: none"> i. Climate proofing of roads and other infrastructure such as water supplies ii. Embracing alternative energy solutions (wind & solar energy) iii. New Machakos Smart City and Construction of green housing iv. Units using environmentally friendly technologies that adopt renewable sources of energy v. Create green spaces in housing developments vi. energy efficiency
4.	Health	<ul style="list-style-type: none"> i. Preventive and promotive health services ii. Curative and Rehabilitative health Services
5.	Public Administration	<ul style="list-style-type: none"> i. Leadership, Supervisory and Coordination ii. Public Finance Management iii. Social and Environmental Risk Management iv. Monitoring, Evaluation and Learning v. Development of integrated GRMs
6.	Education and Social Welfare	<ul style="list-style-type: none"> i. Economic empowerment and capacity building of the community with specific emphasis on women, youth and PWD ii. Development of ECDE centres iii. Education scholarship fund iv. Technical and vocational training v. Sports development vi. Promotion of marketing of the Akamba culture vii. Creating market linkages through aggregation mechanisms for both national and international markets viii. Promotion of livelihoods for all (women and men, including young people, the elderly and persons with disabilities).
7.	Land and Natural Resources	<ul style="list-style-type: none"> i. Spatial development frameworks ii. Preparation and adoption of county physical planning policies, laws and plans iii. Solid Waste Management iv. Afforestation and reforestation v. Landscape restoration

(Source: Machakos County Integrated Development Plan (CIDP) (2023- 2027)

In addition, the County Government has also developed the Machakos County Climate Change Finance Regulation (2019). The regulations obligate the setting aside of at least 5% of the annual development budget of the county to climate change actions. In

compliance with the recommendations of NCCAP 2018-2022, the county has also established a County Climate Change Department to integrate climate change actions into strategies and implementation plans of the county government.

The County does not have an Early Warning System (EWS) with the services being offered by the Kenya Meteorological Department (KMD) with collaboration of the Participatory Scenario Planning (PSP) group that comprises the Agricultural Sector Development Support Programme (ASDSP), the Ministry of Agriculture, Livestock and Fisheries, the Ministry of Water and Irrigation, Kenya Agriculture and Livestock Research Organization (KALRO), and the Kenya Forestry Service (KFS). The EWS system would entail forecasting weather and disseminating the information to farmers to inform their planting calendars through monthly bulletins which are broadcasted in English, Kiswahili, and the local Kamba language (Machakos County, 2015).

The County Government has also invested in offering extension services to farmers, pastoralists, and fishermen in partnership with other institutions such as the Ministry of Agriculture, Livestock and Fisheries, and research organizations such as KALRO. Machakos County takes pride in hosting key agricultural, academic, and research institutions and demo farms which include:

a) Agricultural and research institutions:

- i. Machakos Agricultural Training Centre
- ii. National Youth Service
- iii. Yatta School of Agriculture
- iv. Athi River Meat Training Institute
- v. Machakos University
- vi. South Eastern Kenya University

b) Research Institutions:

- i. Kenya Agricultural Livestock Research Organization (KALRO)
- ii. Agricultural Mechanization Research Institute within Katumani
- iii. Machakos University
- iv. South Eastern Kenya University

c) Demonstration Farms:

- i. Machakos Veterinary Farm
- ii. Machakos Agricultural Training Centre
- iii. Kenya Agriculture and Livestock Research Organization, Katumani

These institutions are instrumental in supporting the County to address climate change mitigation and adaptation challenges. The Machakos County Government has also established and implemented several programs aimed at enhancing agricultural productivity in the county through initiatives such as the provision of free seeds and fruit seedlings, subsidized fertilizers, and provision of tractors.

The key programs that are currently running include:

- ABDP-

- The Kenya Cereal Enhancement Programme Climate-Resilient Agricultural Livelihoods Window (KCEP-CRAL): the goal of the program is to contribute to the reduction of rural poverty and food insecurity of smallholder farmers in the ASALs by developing their economic potential while improving their natural resources management capacity and resilience to climate change in an increasingly fragile ecosystem.
- Kenya Climate-Smart Agriculture Project: This is a Government of Kenya project jointly supported by the World Bank and being implemented over five years (2017-2022) under the framework of the Agriculture Sector Development Strategy (ASDS) (2010-2020) and National Climate Change Response Strategy (NCCRS, 2010). The objective of the program is to increase agricultural productivity and enhance coping and resilience mechanisms to climate change risks in the targeted smallholder farming and pastoral communities in Kenya.
- The Small-Scale Irrigation and Value Addition Project (SIVAP) which seeks to increase incomes, food security, and nutrition along the agricultural value chain by raising agricultural productivity and improving agricultural market access for poor and marginalized communities.

Table 16: Adaptation/Resilience strategies to Future Climate Risks

Hazard	Livelihood/ Economic System	Climate Resilience Strategies	Stakeholder group applying the strategy	Gender and social inclusion information
Drought	Mixed farming/employment/casual laborers/trade	<ul style="list-style-type: none"> -Drought Management early warning (systems) Tech transfer Result based climate financing Support auxiliary works/desilting of earth pans and related catchment protection/management measures -Drilling, equipping and solarization of boreholes Construct and climate proof river intake structures, sustainable pumping infrastructure, upgrading of existing pipeline extensions and provision of storage tanks and support sustainable management of water services - support of farm level rain water harvesting, storage and alternative productive use (eg micro irrigation, aquaculture etc) through subsidizing excavation of farm ponds and provision of dam liners. -Support and capacity building of extension officers i.e. two per sub-location - Enhancement of 	<ul style="list-style-type: none"> National government -County government -Development partners -Farmers -Non state Actors 	<ul style="list-style-type: none"> -0-5 yrs – due to malnutrition low immunity -Girls 6-18 yrs prone to early/teenage pregnancies -Boys 6-18 yrs child labour -Both boys and girls – school dropout -19-35 yrs – Drug and substance abuse and GBV -36-60 yrs – Starvation and stress related diseases -60 yrs and above – Death and poor health -PWD – poor health and stress

		<p>irrigation farming over rain-fed agriculture</p> <p>-sinking shallow wells along water body banks and riverbeds.</p> <p>-Relief food distribution with emphasis on capacity building for alternative livelihoods</p> <p>-Ecosystem conservation and protection in all water catchment areas</p> <p>-Planting indigenous trees along banks of dams to minimize evaporation.</p> <p>-Access to draught tolerant seeds and seedlings</p>		
Environmental Degradation	Mixed farming/employment/casual laborers/trade	<p>- Capacity building for alternative livelihoods such as apiculture, agroforestry and agribusiness</p> <p>Tech transfer</p> <p>Result based climate financing</p> <p>Afforestation and reforestation</p> <p>Fencing of the dams e.g live fences and others</p> <p>- Fencing around the borehole area</p> <p>-Build capacity for farmers on sustainable farming practices.</p> <p>-Support and capacity building of</p>	<p>-County government</p> <p>-Agriculture extension officers</p> <p>-National Government (NEMA)</p> <p>Development partners</p>	<p>-0-5 yrs have low immunity</p> <p>-Girls 6-18 yrs prone to early/teenage pregnancies</p> <p>-Boys 6-18 yrs child labour</p> <p>Both boys and girls – school dropout</p> <p>-19-35 yrs - GBV-family breakup</p> <p>-60yrs and above – low immunity and old age diseases</p>

		<p>agricultural extension officers</p> <p>-Enforcing legislation and policies on sand harvesting</p> <p>-Availing tree seedlings to farmers and other groups.</p> <p>-Establish tree nurseries next to all water point.</p> <p>-Enforcement of the 5% minimum tree cover for all land owners and legislate at county level including for harvesting.</p> <p>-Rehabilitation of exhausted quarry mines.</p> <p>-Limiting livestock population to what land can accommodate through civic education.</p>		<p>-PWD – Mobility challenges due to poor infrastructure</p>
Crop pests and diseases	Mixed farming/ trade and industry	<p>For access to adequate nutritious foods the following Climate resilience strategies are proposed:</p> <p>-provision of subsidized farm inputs (certified seeds, fertilizers, pesticides etc)</p> <p>-Climate smart agriculture</p> <p>Capacity build in conservation agriculture, promotion of value chains and market linkages</p>	<p>- County Government</p> <p>- Extension officers</p> <p>- Farmers both male and female</p> <p>- Youth</p> <p>- National government departments</p>	<p>-0-5 yrs – Malnutrition and low immunity</p> <p>-Girls 6-18 yrs prone to early/teenage pregnancies</p> <p>-Boys 6-18 yrs child labour</p> <p>-Both boys and girls – school dropout</p> <p>-19-35 yrs – crime and loss of employment</p>

		<p>-post harvest management</p> <p>-Enforcement of Legislation on chemicals used in pest control to ensure quality and efficacy to avoid crop failure related to use of unsuitable pesticides and fungicides.</p> <p>-Extensive training on control and prevention techniques</p> <p>-Knowledge transfer –equip farmers with knowledge on biological control of pests and diseases.</p> <p>-increased surveillance by county department of agriculture incorporating farmers in the surveillance chain for pests such as fall army worms</p> <p>-use of disease and pest resistant crop varieties</p>		<p>and family conflict</p> <p>-36-60 yrs- low living standards and crime</p> <p>-60 yrs and above – stress and death</p>
Pollution	Trade, manufacturing, commercial housing (rentals), farming	<p>-Upgrade sewer line laterals to accommodate high population in urban areas</p> <p>-mitigate against environmental pollution of air, soil and water systems</p> <p>- Technology transfer in the management of solid waste of recycling</p> <p>- Capacity building</p>	<p>-County government</p> <p>-Development partners</p> <p>-Non state Actors</p> <p>-National Government Agencies (WRA, NEMA)</p>	<p>0-5 yrs – due to malnutrition low immunity</p> <p>-Boys 6-18 yrs exposure to child labour</p> <p>-Both boys and girls – school dropout</p> <p>-19-35 yrs – Drug and substance abuse and</p>

		<p>and sensitization on the construction of septic tanks, bio digesters and use of composting toilets (eco toilet) to prevent contamination of underground water sources and support sustainable fecal sludge management services</p> <ul style="list-style-type: none"> - Strict enforcement of existing laws on garbage and waste disposal - Enactment of legislation to support anti-pollution interventions <p>Awareness and sensitization through various citizen contact events.</p>		<p>GBV</p> <ul style="list-style-type: none"> -36-60 yrs – Starvation and stress related diseases -60 yrs and above – poor health and Death -PWDs – poor health and stress due to neglect
Livestock diseases	Mixed farming /employment/ casual labourers/ Trade (MSMEs)	<ul style="list-style-type: none"> - Support livestock and poultry breed improvement through provision of AI services and cockerel exchange programmes - Support the deployment of adequate numbers of veterinary extension service providers - Access to vaccines for livestock and poultry. - modern and sustainable animal husbandry - Increased number of cattle dips - Equip veterinary officers with adequate 	<ul style="list-style-type: none"> - Farmers -County government -Agriculture extension officers -Youth -Women 	<p>0-5 yrs malnutrition exposure to secondary infection and poor health</p> <p>6-18yrs low school attendance, child labor, early pregnancies and poor health</p> <p>36-60yrs low income, poor health, family conflicts and stress</p> <p>60 and above diseases, stress and</p>

		<p>medicaments, vaccines and means of transportation.</p> <ul style="list-style-type: none"> - Construction of adequate watering points. - Encourage adoption of cross breeding to enhance disease resistance - Encourage use of traditional methods for pest and disease control. 		<p>death</p> <p>PWD poor health, negligence, stress and death</p>
Human Diseases	Mixed farming/employment/casual laborers/trade (MSMEs)	<p>For improved accessibility to critical facilities the community identifies the following climate resilience strategies;</p> <ul style="list-style-type: none"> - Promote to health through support of mobile clinics in hard to reach climate vulnerable communities. -Retrofitting health facilities to green buildings for sustainable water and energy management. -Sensitization of citizens available on vaccination programs to ensure human labor is not degraded due to diseases which affect them as environmental care givers. -Provision of water treatment facilities, chemicals and water sources like boreholes and dams 	<p>-County government</p> <p>-Health worker officers</p>	<p>-0-5 malnutrition Low immunity and poor health</p> <p>-6-18 yrs. School dropout, child labor, crime and early marriages</p> <p>-19-45 yrs. family conflict, drug abuse and poor immunity</p> <p>-46-60 yrs low immunity, family conflict and death</p> <p>60 and above sever diseases, stress neglect and death</p> <p>-PWDs due to poor health, neglect and high dependence on others for livelihood</p>

		<p>to communities</p> <ul style="list-style-type: none"> -New farming technologies to improve access to adequate food with proper nutritional value e.g agroforestry providing vitamins through fruit tree farming. -Well managed garbage and waste disposal systems including medical waste. -Functional toilets for proper human waste disposal. -Establishment of recreational parks for relaxation which enhances mental health. 		
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CHAPTER FIVE

5.1 MACHAKOS COUNTY CLIMATE STRATEGIC ADAPTATION INVESTMENT /ACTION PLAN

The Machakos county climate strategic adaptation investment/action priorities have been categorized in a cross-sectoral perspective that aligns the action priorities with the County Integrated Development Plan as follows:

Table 17: Climate Change Actions Identified during PCRA Process

Expected change	Gaps (Missing)	Intervention/ Action	Where	Who is Responsible	Resources	
					Community	External
Improved access to water	Inadequate water availability	Rehabilitation of Water Catchments, eco-system rehabilitation including the construction of 174 new earth dams, rehabilitation of 407 earth dams and water pans and construction of 548 weirs/sand dams and the micro-irrigation and distribution schemes.	-ward based programs/ projects	Community CGM GoK NDMA Development partners	-Land -Non-skilled labor -Sand -hardcore	-Technical skills -Funds -Equipment
		Mapping out of underground water sources such as aquifers to determine the quantity and quality of underground water resources	ward based programs/ projects	Community CGM GoK NDMA Development partners	-Land -Non-skilled labor -Sand Hardcore	Technical skills -Funds - Equipmen †
		Awareness creation on rain water harvesting to increase the percentage of households harvesting rain water to 85% Support the dissemination of hazard early warning	ward based programs/ projects			Technical skills -Funds - Equipmen †

		systems eg floods, droughts, crop pests and diseases				
		Rehabilitation of degraded rivers supplying water storage tanks	ward based programs/ projects	Community CGM Development partners	Land Non Skilled Labor	Technical skills Funds
		Rehabilitation of boreholes/ Water distribution from boreholes through pipeline extension and storage tanks Reverse osmosis water systems to purify water to remove salinity Solar installation for boreholes, water tanks and water sumps	ward based programs/ projects	Community CGM GOK Development partners	Land Non Skilled Labor	Technical skills Funds
		Provision of water tanks for rain water harvesting and water conservation strategies	ward based programs/ projects	Community CGM Development partners	Sand and hardcore for tank bases -Non skilled labour	- Funds - other construction materials for tank bases
		Spring protection works to prevent contamination.	ward based programs/ projects	Community CGM GoK Development	Land Non Skilled Labor Sand	Technical skills -Funds

				partners	hardcore	
	Promote water efficiency and reduce water pollution	Reduce water wastage and non-revenue water through innovation in water metering and tracking leakages identification and reporting	ward based programs/ projects	Community CGM GoK Development partners	Land Non Skilled Labor Sand hardcore	Technical skills -Funds -
	Promote enforcement of regulations to control water pollution especially in major rivers such as Athi which is prone to pollution	Water Pollution control regulations	ward based programs/ projects	Community CGM GoK Development partners	Land Non Skilled Labor Sand hardcore	Technical skills -Funds
	Support vulnerable community groups within the County to develop small community water schemes	Number of community water schemes	Village level interventions	Community CGM GoK Development partners	Land Non Skilled Labor Sand hardcore	Technical skills -Funds
Improved agricultural practices and livelihoods	Inadequate access to nutritious food due to drought and unsustainable farming	Improved access to drought tolerant seeds and seedlings and crop diversification	ward based programs/ projects	Community CGM GoK Development partners	Land Non Skilled Labor Sand hardcore	Building the technical capacity -Funds

	practices					
		Provision of subsidized farm inputs (fertilizers, certified seeds, pesticides)	ward based programs/ projects	Community CGM GoK Development partners	Land Non Skilled Labor Sand hardcore	Building the technical capacity Funds
		Farmers Capacity building on drought tolerant breeds for livestock and poultry,	ward based programs/ projects	Community CGM GOK Development partners	Land Non Skilled Labor Sand hardcore	-Funds Building the technical capacity of county employees
		Capacity building in conservation agriculture, promotion of value chains and market linkage Establish agricultural products aggregation centers, Post-harvest management	ward based programs/ projects	Community CGM GoK Development partners	Land Non Skilled Labor Sand hardcore	Building the technical capacity funds
		Promote water efficient irrigation technologies (drip irrigation and hydrponics)	ward based programs/ projects	Community CGM GoK Development partners	Land Non Skilled Labor Sand hardcore	-Funds Capacity building of employees and farmer groups
	Inadequate pastures/ browse and low fodder production.	Capacity building on pasture and fodder value chain, provision of pasture seeds at subsidized prices and storage	ward based programs/ projects	Community CGM GoK Development partners	Land Non Skilled Labor	Building the technical capacity of employees and farmer

		Provision of mechanized processing of animal feeds at subsidized prices Promote zero grazing				groups
		Capacity building on animal feeds formulation and fodder conservation	ward based programs/ projects	Community CGM GoK Development partners	Land Skilled Labor	- Building the technical capacity of employees and farmer groups -Funds
		Mass vaccination and disease surveillance Recruit livestock/vet extension officers Activate/ Subsidized AI services Capacity building of farmers on resilient livestock production	ward based programs/ projects	Community CGM GoK Development partners	Land Non Skilled Labor	Building the technical capacity of employees and farmer groups -Funds
Increased income from farm production	Low income due to low yields and poor market linkages	Capacity building on improved farm productivity and post-harvest handling to avoid losses Enable farmers to aggregate produce and secure market linkages	ward based programs/ projects	Community CGM GoK Development partners	Land Skilled Labor	Building the technical capacity of employees and farmer groups -Funds
Improved nutrition / good human health	Lack of access to adequate nutritious food	-Capacity building on kitchen gardening with improved water conservation and	ward based programs/ projects	Community CGM GoK Development	Land Skilled Labor	Building the technical capacity of employees

		harvesting -Promote Agri-nutrition programmes -Promote access to health through support of mobile clinics to hard to reach areas. -Promote production of bio fortified foods e.g. orange fleshed sweet-potatoes, nyota beans etc -Promote provision of food supplement support for under 5s, Pregnant and nursing mothers - Timely Cash transfers for the <i>Inua Jamii</i> (social support) programmes for the elderly and PWD		partners		and farmer groups -Funds
Ecosystem restoration	Environmental degradation due to deforestation, Sand harvesting and quarrying.	Capacity building on ecosystem protection and restoration, agroforestry through establishment of tree nurseries and support for tree growing initiatives and conservation activities in and around private, public and social institutions, water catchment areas (hills)	ward based programs/ projects	Community CGM GoK NDMA WRMA NEMA Development partners CGM Quarry	Land Skilled Labor	Building the technical capacity of employees and farmer groups -Funds

		and riparian lands. Construction of gabions, cover crops in denuded lands, terracing, grass reseeding, zero grazing, destocking, Regulated sand harvesting and quarrying (mining) through policy formulation and enforcement. Reclaiming of abandoned quarries Promote CSR activities by quarry owners to entail environmental conservation		Owners Development Partners		
Green energy transition	Over dependence on fossil fuels to run machinery and to power facilities. Use of wood fuel/charcoal for cooking and kerosene lighting	Promote use of renewable energy for both productive and domestic use.	Village based programs/ projects	Community CGM GoK NDMA Development partners	Labour	Building the technical capacity of employees and vulnerable and marginalized groups -Funds
Reduced prevalence of pests and diseases	Poor use of chemicals and pesticides	Capacity building on safe pesticide application & subsidized prices Well-equipped Agro	ward based activities	Community CGM GoK NDMA Development	Land Skilled Labor	Building the technical capacity of employees and farmer

		vets Provision of quality PPE (personal protective equipment)		partners		groups -Funds
	Insufficient knowledge on management of emerging pests and diseases	Capacity building on pests and disease control	ward based programs/ projects	Community CGM GoK NDMA Development partners	Land Skilled Labor	Building the technical capacity of employees and farmer groups -Funds
Improved accessibility to critical facilities including market centers and health facilities	Climate vulnerable road infrastructure and other infrastructure	Climate-proofing of the road network, including heavy grading and harnessing surface runoff to support agro- production, construction of seven (7) drifts, three (3) bridges and three (3) culvert crossings.	ward based programs/ projects	Community CGM GoK NDMA Development partners	Land Unskilled Labor Sand Hardcore	Technical skills Funds
Climate- vulnerable youth including school drop outs, unemployed youth, teenage mothers and youth	Climate impacted families unable to support children and youth in education and productive engagement	-Upscale school feeding program in climate-impacted communities -Support climate vulnerable households with socio-economic empowerment e.g. promotion of table banking initiatives	ward based programs/ projects	Community CGM GoK Development partners	Land Unskilled Labor Sand Hardcore	Building the technical capacity of key county employees, stakeholders and VMGs groups -Funds

engaged in drug and substance abuse		-Guidance and counseling to school-going children				
	Idle youth engaged in social vices and other unproductive engagements	Engage youth on productive activities including; -sports initiatives, -youth projects in agribusiness and other climate adaptation enterprises e.g. tree nurseries - Participating in cash-for-work programs through proving labour for climate-proofing infrastructure (murrum roads and drifts) and support soil and water conservation programs (terracing, gabion construction) -Youth sensitization on effects of drug abuse and support establishment of rehabilitation centers	ward based programs/ projects	Community CGM GoK Development partners	Idle youth engaged in social vices and unproductive engagements	Building the technical capacity of key county employees, stakeholders and VMGs groups -Funds

CHAPTER SIX

Conclusion

The PCRA process identified four key hazards namely drought, environmental degradation, livestock and crop pests and diseases, human diseases. All interventions identified for climate mitigation/adaptation fall into eight sectors of water, agriculture, environment, health, energy and housing and manufacturing.

3.46.1 Emerging Issues

- i. The ever changing technology is a challenge that Machakos has to overcome in order to harness the benefits of climate change adaption/resilience building initiatives (actions). Emerging crop and livestock diseases such as fall army worm require integrated interventions by the County and National governments as well donor agencies need to work together to avoid duplication of efforts and wastage of scarce resources.
- ii. The use of digital tools shall be emphasized and embraced
- iii. GRM is crucial for impactful for climate actions. Machakos County hopes to adopt an integrated GRM that may be used all departments. Capacity building for this to be realized is key.
- iv. Desertification is a serious threat to Machakos county livelihoods. The county shall put into place strategies that promote both afforestation and reforestation around the county with emphasis on growing of indigenous tree species in the different climatic zones around the county.
- v. The County has a 25.6% uptake of solar lighting an initiative that the county would enhance for rural populations and vulnerable households to reduce the use of kerosene, charcoal and firewood (fossil fuels) for cooking and lighting

3.56.2 Conclusion

Machakos county has identified locally led climate change interventions among these:

- i. Increasing the capacity of the county for improved drought management
- ii. Enhanced water harvesting at community and household level
- iii. Adoption of solar for water infrastructure power
- iv. Livestock feed and nutrition information system

- v. Value addition of farm produce
- vi. Livelihood diversification with specific emphasis on VMGs (women, youth and PWD and children under 5)
- vii. Adoption of micro irrigation and hydroponics
- viii. Use of Early Warning Systems and weather monitoring/climate information systems
- ix. Climate proofing of roads and other infrastructure
- x. Embracing alternative energy solutions (wind & solar energy)
- xi. Creation green spaces in housing developments
- xii. Spatial planning
- xiii. Creating market linkages through aggregation mechanisms for both national and international markets
- xiv. Solid Waste Management including reuse/recycling
- xv. Measurement, Reporting and Verification (MRV)
- xvi. Embracing performance based climate financing

Annex 1

WARD BASED CLIMATE CHANGE ACTION PLAN

MASII-VYULYA WARD

Expected change	Gaps (Missing)	Intervention/Action	Where	Who is responsible	Resources	
					Community	External
Improved access to water	Inadequate water availability	Construction of earth dams and catchment management	-Kwa Kanyeles -Kwa Matu -Kwa Matolo -Kwa Maundu -Kwa Ngolya -Emwea -Kwa Ngove -Kwa Mwatu -Kwa Nyange -Mililuni -Muthike	Community GMC GOK Development partners	-Land -Non-Skilled Labor -Sand hardcore	-Technical skills -Funds -Machinery
		-Support auxiliary works/ desilting earth pans and related catchment protection/ management measures.	-Musalani -Kwa Mbole -Kwa Mbatha -Kwa Kakungi -Nzukini -Maikua -Kwa Kituku -Kwa Kivata -Kwa Kimotho -Kisaani -Kwa Ngusya -Kwa Kaivu -Kwa Nzango -Yoani -Kwa Moko -Kwa Muvuno -Kwa Kituku	- GMC -GOK -Development partners	-Land -Non Skilled Labor -Sand hardcore	-Technical skills -Funds -Machinery

			<ul style="list-style-type: none"> -Yiuni -Kwa Nthenge -Kwa Syondeti -Kwa Kieti -Kwa Mbondo -Kwa Kivala -Kwa Kanyonda -Kwa Kyongi -Kwa Kunga -Kwa Mwevu -Ithanga -Kwa Mbinda -Kwa Kakonda -Kwa Aombe -Mumbuni -Kwa Kinyota -Kwa Kavungo 			
		Construction of weirs, ecosystem restoration and installation of hydram pumps. Development of micro-irrigation and distribution schemes	<ul style="list-style-type: none"> -Ngunini -Kwa Mumbu -Wethanga -Kwa Ndavi -Katwekenye -Isivuni -Mithini -Mikuyuni -Ikaawani - Ngaatini -Kwa Mbovu -Kwa Matthew Kioko -Kwa Geoffrey -Wethanga 1 -Wethanga 2 	Community GMC GOK Development partners	Land Non Skilled Labor Sand hardcore	<ul style="list-style-type: none"> -Technical skills -machinery -Funds
		-Rehabilitation of breached weirs,	<ul style="list-style-type: none"> -Uuni -Kwa Mutili 	Community GMC GOK	Land Non Skilled Labor	<ul style="list-style-type: none"> -Technical skills -Funds

		ecosystem restoration and installation of hydram pumps. Development of micro-irrigation and distribution schemes	-Kivandini -Muthei -Kaamuka -Kwa Kitheka -Kwa Mutevu	Development partners	Sand Hardcore	
		-Drilling equipping and Solarization of new boreholes	-Kwa Kaluu -Kivutini -Kwa Kalongo -Ndaa -Mulau -Kwa Itinga -Yoani Primary -Kivandini -Ithembeni -Masee -Ianguni -Muusini Primary	Community GMC GOK Development partners	Land Non Skilled Labor	Technical skills Machinery/equipment Funds
		-Rehabilitation/ completion of stalled boreholes and solarization.	-Kavumbu -Kyaitha. -New Makutano -Muusini Sec -Kwa Muithya	Community GMC GOK Development partners	Land Non Skilled Labor	Technical skills Funds Equipment
		-Pipeline Extensions to communal water points	-Mithanga Borehole (3km) -Katithi Borehole (4km)	Community GMC GOK Development partners	-Land -Non Skilled Labor	-Technical skills -Pipes and assorted fittings -funds
		Provision of water tanks for rain water harvesting.	-All Social Institutions In the Ward	Community GMC GOK Development partners	-Land -Non skilled labor	- Funds - Technical skills

Access to adequate nutritious food	Inadequate access to nutritious food due to drought and unsustainable farming practices	Support on subsidized farm inputs (fertilizers, certified seeds, pesticides) based on ecological zones.	Throughout the Ward	Community GMC GOK Development partners	-Farmers -Arable land -Unskilled labour	- funds
		Support and Capacity building on drought tolerant breeds for livestock and poultry	Throughout the Ward	Community GMC GOK Development partners	- Farmers - Land - Unskilled labour	- Extension officers
		-Capacity building on conservation agriculture, sustainable soil and water management practices	Throughout The Ward.	Community GMC GOK Development partners	- Land - Unskilled labour	- Technical skills - Funds
		-Capacity building on quality farm yard manure and composting.	Throughout The Ward	Community GMC GOK Development partners	-Land -Unskilled Labour	Technical skills Funds
		- Support of farm level rainwater harvesting, storage and alternative productive use (e.g. micro irrigation, aqua culture etc.) through subsidizing excavation of farm ponds and provision of dam liners	Throughout The Ward	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds

		-Support capacity building for extension officers / farmers on integrated pests and disease surveillance.	Ward Level	Community GMC GOK Development partners	-farms - Unskilled labour	Technical skills Funds
		-Support capacity building on post harvesting management like aggregation centers, silos and cold rooms	Ward Level	Community GMC GOK Development partners	-Land -Unskilled labour -Farmers	Technical skills funds
	Unsustainable livestock management practices	Capacity building on pasture value chain, provision of pasture seeds at subsidized prices and pasture storage	Ward Level	Community GMC GOK Development partners	Land Non Skilled Labor	Technical skills Funds
		- Capacity building on Formulation of livestock and poultry feeds. -Support livestock and poultry breed improvement through provision of AI Services and cockerel exchange program.	Ward Level	Community GMC GOK Development partners	Land Non Skilled Labor	Technical skills Funds
Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas	Support construction of five new health facilities and upgrading of two existing health facilities including providing an	Embui, Mithanga, Mbaani, Kawaa Mithini Kathekani (Completion),	Community GMC GOK Development partners	Land Non skilled labour	Technical skills Funds

		enabling environment for health care provision	Muusini (Expansion of Maternity Wing)			
		Support access to emergency drugs and medical services at all public health facilities	All Public Health Facilities	Community GMC GOK Development partners		Technical skills Funds
	Inadequate emergency response capacity in climate-hazard-prone areas	Support on ambulances services management for referral instances	Ward Level	Community GMC GOK Development partners		Funds
	Low coverage by CHVs.	Support on capacity building for CHVs Support on provision of safety kits for CHVs Facilitation of the CHVs to ensure mobility	Ward Wide	Community GMC GOK Development partners	- Volunteers	- Technical skills Funds
Increased income from farm production	Low income due to low yields and poor market linkages	-Capacity building on improved farm productivity, value addition and post-harvest handling to avoid losses	Ward Level	Community GMC GOK Development partners	-Farm produce -Unskilled labour	-Technical skills Funds
Ecosystem restoration	Environmental degradation due to human activities; deforestation, poor farming practices, sand	- Capacity building on ecosystem protection and restoration. - Establishment of tree nurseries and support for tree	Ward Level	Community GMC GOK Development partners	Land Non Skilled Labor	Technical skills Funds

	harvesting and quarry activities	growing initiatives and conservation activities in and around all learning and social institutions, water catchment areas (Kyevaluki and Uuni hills) and riparian lands.				
Improved accessibility to critical facilities including market centers and health facilities.	Climate-vulnerable Road infrastructure	<p>Climate-proofing of the road network, including heavy grading and harnessing surface runoff to support agro-production, construction of drifts, bridges and culvert crossings.</p> <p>Climatee proofing of village wards</p>	<p>Roads</p> <p>1.Kithangathini-Kyevaluki Rd 2.Masii Girls – Muthetheni Rd 3.Aic Masii – Kikelenzu-Kavumbu Rd 4.Masii-Wetaa Rd 5.Masii – Kitooni-Kivani</p> <p>-Wethanga -Kwa Ngali -Kwa Katuta (2) -Kwa Kathumo Kwa Mutili -Kisaa (Completion) -Yiuni (2) -Ngaatini -Ithembeni -Ikaawani -Twake Muusini -Kikelenzu -Nthunguni</p>	Community GMC GOK Development partners	Land Non Skilled Labor Sand hardcore	Technical skills Funds

			<ul style="list-style-type: none"> -Katwekene -Kwa Morris -Kwa Kitheka -Kwa Muathe -Kwa Mathew -Kwa Ivuto - Embondo -Maikua -Mikuyuni -Munyuni -Kwa Muvuno -Kwa Nduva -Kwa Moko Kwa Kalani 			
Green energy transition	Unreliable energy supply	<ul style="list-style-type: none"> -Solarization of street lights -Solarization of boreholes -Solarization of schools and health facilities 	Throughout The Ward.	Community GMC GOK Development partners	Non skilled labour	Technical skills
	Use of traditional cooking methods like firewood and charcoal	Promote use of renewable energy for both productive and domestic use e.g biogas	Throughout The Ward	Community GMC GOK Development partners	Non skilled labour	Technical skills funds

Increase Sanitation coverage and complete sanitation value chain	-Lack of sewerage system for waste water disposal -Poor faecal sludge management.	-Support construction of a sewer lines and a sewerage treatment plant for Masii town. -Construct on site faecal sludge management at market centers. - Containment of sludge, emptying, transportation, treatment, disposal/reuse (soil conditioner, briquettes)	Masii Market	Community GMC GOK Development partners	Non skilled Labour Land	Technical skills Funds
	Inadequate / dirty public toilets Lack of hand washing facilities within market places	Construction and good management of public toilets in all market places in the ward. Installation and safeguarding of hand washing facilities in all social institutions	Ward Wide	Community GMC GOK Development partners	Land Nonskilled labour	Technical skills Funds
	Expensive exhauster services	Provision of subsidized exhauster services	Ward Wide	Community GMC GOK Development partners	Non skilled labour	Funds
	Unhygienic disposal of human waste (faecal matter) from filled up pit latrines	Capacity building on bio digesters	Ward Wide	Community GMC GOK Development partners	Non skilled labour	Funds

Ecosystem restoration	-Poor solid waste management -Flooding during rain seasons	-Support solid waste management; storage, collection, transportation, disposal and recycling. -Support restoration of wetlands. -Use Nature Based Solutions to control flooding; Construction of storm water drainage channels	Masii Market	Community GMC GOK Development partners	Non skilled labour	Technical skills Funds
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MUA WARD

Expected change	Gap (What is missing)	Intervention (What needs to be done)	Where	By Who (Who is Responsible)	Resources	
					Community	External
Improved access to water	Inadequate water supply for general use.	-Support auxiliary works/desilting earth pans, and related catchment protection/management measures for rural areas.	Kyai dam, Kwa Kimonyi, ka-mwele, Silanga ili, Kwa katilu, kitimbalu, kwa mutisya, kwa kosa-katelembo, kwa mbeneka, kwa mukonzu, kinaka, voo,	-Community -GoK -GMC -Development partners	-Land -Unskilled -Labour -Ballast -Sand	-Machinery support -Technical Skills

			chaimoto,kwa kosa kyanda, kwa ngeki, kwa samueli, kisikaita, ndini, mwangoni, kwa ndaa, kwambingo, kitune, ka kamangi,kwa kilea, kwa ngola,kwa kimangi, kwa mumama, kwa nzeke, kwa iseu, wa katilu, kisaka, kwa maunda, kwa katua, mieani, kwa muli, kwa mwenga, kwa major, makini, mikuyu, primary kwa mutonga, kwa mang'oka, kwa ng'atulu, kwa mutisya,Kakele Kwa Somba,Kinyali Kasilingi,Kwa Kiilu Kwa Kathuku,Kithayoni Migigo,Kwa Mutete Kyai Kwa Mujole,Kwa			
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			Ngondi Kwa Kele,Majembe Kwa Kamau,Kwa Mutia			
	Inadequate portable water supply	Support auxiliary works/desilting earth pans, and related catchment protection/management measures water treatment, pumping, storage, distribution and support sustainable management of water services in the urban centers.	Kwa Kimonyi, Ndivu, Kwa Mutonga, Kwa Mongaka, Kisikaita, Kwa Muli, Kwa Kosa, Kwa Major	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary
		Drilling, equipping and Solarization of new boreholes	Kisaka, Ndivu, Silanga ili, Kwa Somba Kinyali Kasilingi Kwa Kiilu Kwa Kathuku	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary
		Solarization of existing boreholes/pump units	Nguli, Makovo, Kiluvu, Nguu, Dedan, Makyau Booster, Radar	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary

		Support rehabilitation and pipeline extension of existing water systems.	Makyau, Kitanga Water Project, Mua Water Project, Kimonyi Water Project	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary
Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas	Support construction of three new health facilities and upgrading of five existing health facilities including providing an enabling environment for health care provision	New facilities in: Kyaani, Kitanga, and Vota -Upgarde Katelembo, Makyau, Mikuyu, People,s Park and Mua	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary
	Inadequate CHVs	Support and capacity build CHVs	Ward Level	Community GMC GOK Development partners	Unskilled labour	Technical skills Funds Machines where necessary
Green energy transition	Over dependence on fossil fuels to run machinery and to power facilities. Use of wood fuel/charcoal for cooking and	Promote use of renewable energy for both productive and domestic use.	Ward Level	Community GMC GOK Development partners	Unskilled labour	Technical skills Funds Machines where necessary

	kerosene lighting					
Ecosystem restoration	-Poor solid waste management	-Support solid waste management; storage, collection, transportation, disposal and recycling.	Market Centres	Community GMC GOK Development partners	Non skilled labour	Technical skills Funds
	-Flooding during rain seasons	-Support restoration of wetlands. -Use Nature Based Solutions to control flooding; -Construction of storm water drainage channels	Ward level	Community GMC GOK Development partners	Non skilled labour	Technical skills Funds

MUTITUNI-NGELANI WARD.

Expected change	Gap (What missing) is	Intervention (What needs to be done)	Where	By Who (Who is Responsible)	Resources	
					Community	External
Improved access to water	Inadequate water availability	Construction/desilting of 10 earth dams and catchment management measures	Kwa Nguni Kwa Tito Kwa Mumama Kwa Mutaki Kwa maila, Kisekini Kwa Mutia, Kwa Kiema Kwa Kithito; Ilumya	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

		Support in sustainable management of water provision services and repair / rehabilitation of 12 stalled boreholes.	Kivutini; Katange; Utooni Kwa Edward Mithini; Kitieni Musilili AIC Mutituni (Management issue) Kwa Ngotho Nzoweni Kithima Mutituni Health center	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Sustainable farming livelihoods	Unsustainable farming practices	Support and capacity build farmers on Climate Smart Agriculture	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
	Inadequate farm mechanization	Support farm mechanization	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
	Unsustainable livestock management practices.	-Support deployment of adequate veterinary extension service providers. -Support livestock and poultry breed improvement through provision of AI Services and cockerel exchange program.	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
	Climate impacted	-Improved market access through	Ward level	Community GMC GOK	Land Unskilled Labour	Technical skills Funds

	livestock farmers	rehabilitation and sustainable management of slaughter houses		Development partners	Raw materials	Machines where necessary
Increase Sanitation coverage and complete sanitation value chain	Poor faecal sludge management.	Support construction and management of public toilets in all market places and health facilities Support construction of 3No. on-site waste water treatment facilities. Support construction of 13 toilets in the ECDE centers. Installation and safeguarding of hand washing facilities in all social institutions Support upgrading and extension of sewer network to underserved low-income areas of the ward to address environment pollution .	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Solid waste Management	Inadequate management of solid waste	Support Solid waste collection, storage, transportation and disposal/recycling	Ward Level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Healthy climate-hazard-resilient	Inadequate emergency	Support modernization and	Mutituni/ health facility	Community GMC GOK	Land Unskilled Labour	Technical skills Funds

population	response capacity in climate-hazard-prone areas	equipping of Level 4 hospital.		Development partners	Raw materials	Machines where necessary
		Support upgrading hospital to level 3 to address climate related emergencies.	Kamuthanga	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support ambulance services for evacuation climate related emergencies.	Mutituni Kamuthanga health facilities	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Climate proof road network for access to critical services	Kya Mwilu- ngelani- Mitaboni Mutituni to National Government office7, Mutituni- Kiteini Mutituni - Mbukoni; Kivutini-Kitieni Ngelani- Yambani Yambani -Kitieni	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support retrofit of health centers to a green building; net zero energy.	Mutituni health centre Kamuthanga Health facilities	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Ecosystem restoration and protection.	Low forest coverage	Support afforestation and protection of catchment areas.	All catchment areas, water sources/points (Boreholes and dams)	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support sustainability	Wards schools	Community GMC	Land	Technical skills

		of tree planting in public institutions.	and health facilities.	GOK Development partners	Unskilled Labour Raw materials	Funds Machines where necessary
		Support construction of sand dams/weirs along Rivers, installation of gabions to control and conserve soil and water	All major rivers across the ward	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

ATHI-RIVER WARD

Expected change	Gap (What is missing)	Intervention (What needs to be done)	Where	By Who (Who is Responsible)	Resources	
					Community	External
Improved access to water	Inadequate water availability	Support auxiliary works/ desilting of 3 No. dams and related catchment protection/ management measures.	-Portland -KMC -Empakaso	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Construction of a dam and catchment management	Oloshaiki	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support hydrogeological modelling survey, drilling and equipping of 4 new	Mavoko Market, Kwa Mang'eli , Mavoko Primary,	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

		boreholes.	Empakasi Primary,			
		Support rehabilitation of 7 No. boreholes, Water distribution, extensions and provide 15 No. storage tanks to support tree nurseries.	Makandara Market, Ngimu, Athi River Stadium, KMC Chief's Camp, KMC Primary, Mavoko Police Station & Oloshaiki	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Increased income from farm production	Low yield farming	Improve access to drought resistant livestock breeds Improve access to drought tolerant seeds and seedlings	Athi River North	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
	Low crop/ horticultural production	Introduction of alternative farming: Bee keeping, zero grazing, poultry farming -Introduction of Modern Horticulture	Ward	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Ecosystem restoration and protection.	Environmental degradation due to pollution.	- Support Legislation of legal frameworks of controlling pollution; -Support Recycling of plastics and waste water through	Ward	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

		public-private partnership -Deploy nature-based solution in controlling pollution e.g tree planting to control air and noise pollution, planting of bamboo trees along riverine for denitrification.				
Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas	Support Upgrading Athi River Level 4 to Level 5 Health Facilities	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support technical capacity in health facilities to handle emergencies in climate-hazard-prone areas	Athi River Town	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support completion of one dispensary and construction of four at strategic location prone to climate hazards	Oloshaiki Mavoko, Kanaani, Athi River North, Athi River Township	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
	Inadequate community health services (Level 1) coverage.	Training and capacity building of 70 community health volunteers on identification, documentation and appropriate referral of persons with emerging danger	All sub-locations	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

		signs in the population. Facilitation and provision of safety kits to community health volunteers				
Solid Waste Management	Inadequate management of solid waste	Support solid waste collection (bins), transportation and disposal.	Strategic points	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Improve sanitation coverage and complete the sanitation value chain	Low sanitation coverage	Support construction of 7 no. public toilets	-Kanaani. -Kwa Mang'eli. -Oloshaiki. -Kosovo. -Silota. -Kasuitu. -City Cotton	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support collection, transportation, treatment, disposal and reuse of waste water	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

MULOLONGO- SYOKIMAU WARD

Expected change	Gap (What missing) is	Intervention (What needs to be done)	Where	By Who (Who is Responsible)	Resources	
					Community	External
Improved access to water	Inadequate water availability	Construct and climate-proof water sources structures, sustainable pumping infrastructure,	Syokimau	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

		upgrading of existing pipeline and extensions and provision of storage tanks and support sustainable management of water services				
		Support hydro-geological survey, drilling, equipping and Solarization of new boreholes	-Syokimau, -Mlolongo, (Chief's camp), -SNP, -Kasinnaa, -Mlolongo -Phase I (2) -Phase II (2) -Phase III (2) -Sabaki (2) -Kathangaite 1 -Kasinnaa (1)	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Desilt and expand Syokimau dam to its original size, construct treatment works, restore and protect ecosystem.	Syokimau	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Rehabilitation and solarization of existing boreholes	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support construction of water kiosks at Climate Vulnerable and low-income areas	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

Improved accessibility to critical facilities including market centers and health facilities	Climate-vulnerable Road infrastructure	Climate-proofing of the road network, including, construction of disability friendly foot bridges three (3) fourteen (14) roads, Social hall.	Rubis-Sabaki Nation Katani (ward level along the roads)	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Improve sanitation coverage and complete sanitation value chain	Low sanitation coverage	Support collection, transportation, treatment, disposal and reuse of waste water	Syokimau, Mlolongo and Sabaki	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Construct on-site sanitation treatment facility	Syokimau, Mlolongo and Sabaki	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Solid Waste Management	Inadequate management of solid waste	Support provision of a solid waste management facility; collection, transportation, disposal/recycle	Ward Level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support acquisition/ identification of dumping site preferably in one of the old unused quarries	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Establish a waste recycling facility e.g charcoal briquettes	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Ecosystem restoration and	Environmental degradation	Support of construction of	Along roads in Syokimau,	Community GMC GOK	Land Unskilled Labour	Technical skills Funds

protection.	due pollution. to	storm water drainage system and protection of wetlands	Mlolongo and Sabaki	Development partners	Raw materials	Machines where necessary
		Map and create a Buffer zone between the quarries and dwelling areas (zoning)	Mlolongo phase 3 Public land, Syokimau, Mlolongo and Sabaki	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support on enforcement on factory compliance on levels of emission	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support afforestation (indigenous trees and Japanese Cyprus) to absorb dust and noise from the blasting	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support construct of modernized bus park to manage noise pollution and emissions	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas	Support upgrading of Mavoko SNP dispensary to a level IV hospital	Mavoko SNP in Syokimau	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support Construction of 3 health centers at Climate vulnerable areas	Sabaki Syokimau Kathangaita	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

		Improve & equip Mlolongo wellness center	Mlolongo	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support technical capacity in health facilities to handle emergencies in climate-hazard-prone areas	Mavoko SNP Level IV hospital (upgraded)	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Equip the health facilities to WHO standards	Equip the health facilities to WHO standards	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support PWDs friendly inclusive infrastructure	PWDs friendly inclusive infrastructure	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

UPPER KAEWA WARD

Expected change	Gap (What missing) is	Intervention (What needs to be done)	Where	By Who (Who Responsible) is	Resources	
					Community	External
Improved access to water	Inadequate water availability	Support construction of a dam, treatment works, the auxiliary structures and related catchment protection/ management measures.	Cairo, Limbani, kiio	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support hydrogeological modelling survey,	Iveti dispensary(limbani), -Ikoleni primary	Community GMC GOK	Land Unskilled Labour Raw materials	Technical skills Funds Machines where

		drilling and equipping of 13 new boreholes.	Assistant Chief officer, Tana River Mithanga Catholic, Kiteng'e primary, Kwa Kilanga, Kwa Kyale Terry Children's Home, kaviani hospital, Kithunguini Market, Kwa Nzonzo, Ndivuni (kaviani)	Development partners		necessary
		Support Construction and protection of spring sumps	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support Desilting of Muooni dam, catchment protection and management.	Muooni dam	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Construction of weirs and ecosystem restoration	In all streams across the ward	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support construction and rehabilitation of treatment plant and water distribution network	Iveti Primary School, Kaliluni Girls Sec School, Kamwanda, Muuini, Muooni, Mukongolo	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support Capacity building on soil and water conservation	Iveti Hill	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

			Kiia, Kwa Makewa, Kwa mutuku			
Solid Waste Management	Inadequate management of solid waste	Support provision of a solid waste management facility; collection, transportation, disposal/recycle	Ward Level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Improved accessibility to critical facilities including market centers and health facilities	Climate-vulnerable Road infrastructure	Climate-proofing of the road network seven (7) roads and drainage system.	Kaviani to Isyukioni, Across the entire ward Across (limbani, Kwa Dan, Yimaindu, Kwa Mutuni, Kwa Peter, Ikoleni, Kyamutitu) Machakos to Kathiani road designation	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support development market centres, Stalls, slaughter house	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Green Energy Transition	Over dependence on fossil fuels to run machinery and to power facilities. Use of wood fuel/charcoal for cooking and kerosene lighting	Support provision of energy saving jikos, solar systems, biogas, capacity building on use of renewable energy sources.	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Solarization of security lights	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

IKOMBE WARD

Expected change	Gaps	Intervention/Action	Where	Who is responsible	Resources	
					Community	External
Improved access to water	Inadequate water supply	Support auxiliary works/ desilting six (6) earth pans and related catchment protection/ management measures.	Mathingau,Katutuni,Ng angani,Ivutini,Kakindu A, Kilaatu,	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Construction of 7 earth dams and catchment management measures	Kitololo A- Kwa Kivombo,Kwa Mbuu,KitololoB,Kwa Mututa,Syongo Ituma,Manesa-Kwa Kisangi,Kangoko	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Construction of 40 weirs, ecosystem restoration and installation of hydram pumps. Development of micro-irrigation and distribution schemes.	Mwitasyano River-(10) Mbakoni River-5 Itukatene River-20 Kwa-Usau River-2 Kakina River-3	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Drilling equipping and Solarization of new boreholes	1 Per sub-location	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Rehabilitation of six (6) boreholes/	Kwa Nzini,Neema,Kyasioni,K asalani,Ngangani,kwa Nzini,Kenyatta stadium	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

		Support Water pipeline rehabilitation/extension	Athi-Kalandini Ngomano - kamuthambya	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support Spring development and ecosystem restoration	Nthambani(Mathingau) Katutuni Kasooni Kakindu	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Ecosystem restoration	Environmental degradation due to deforestation, Sand harvesting and quarrying.	<p>Establishment of tree nurseries and support for tree growing initiatives and conservation activities in and around all learning and social institutions, water catchment areas (hills) and riparian lands.</p> <p>Tree planting along rivers</p> <p>Construction of gabions, cover crops in denuded lands, terracing, grass reseeding, zero grazing, destocking</p> <p>Controlled sand harvesting.</p>	<p>Ward level, All primary Schools (54) All Secondary Schools All churches</p> <p>Athi Kinyongo,Kanzungo,Manyenyoni,Ngangani,Kakindu,Katutuni,Mbakoni,Kitui,Ikombe,Mbembani,Mwitasyano,Kimuuni</p> <p>All rivers/Ward level</p>	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

		Support formulation of Policies on Riparian management control /use				
Improved nutrition / good human health	Lack of access to adequate nutritious food	Support deployment and facilitation of extension officers per location Access to drought tolerant seeds and seedlings Promote water efficient technologies (Smart Agriculture)	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
	Malnutrition	-Capacity building on kitchen garden farming through improving water harvesting -Promote Agri-nutrition -Promote bio fortified foods e.g. orange fleshed sweet-potatoes, nyota beans etc. -Promote food supplement for under 5s, Pregnant and lactating mothers/HIV cases		Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Sustainable farming livelihoods	Unsustainable farming practices	Support capacity building on integrated pest and	Ward level	Community GMC GOK	Land Unskilled Labour Raw materials	Technical skills Funds Machines where

		diseases management		Development partners		necessary
	Low pasture production	Capacity building on pasture value chain, provision of pasture seeds at subsidized prices and storage Support mechanization and Provision of combined harvester at subsidized prices Promote zero grazing	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
	management practices Unsustainable livestock	Support livestock and poultry breed improvement through provision of AI Services and cockerel exchange program Capacity building on Formulation of livestock and poultry feeds. -Support deployment of adequate veterinary extension service providers Access to vaccines for livestock and	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary

		poultry				
Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas	Support construction of two new health facilities and upgrading of two existing health facilities including providing an enabling environment for health care provision	New Makutano market Kionyweni market <i>Upgrade</i> Ikombe health centre Kinyaata health centre	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support technical capacity in health facilities to handle emergencies in climate-hazard-prone areas	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
	Low adoption rate	Upscale community Sensitization forums on health education	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
	Low coverage by CHVs, /development committees	Training and capacity building of community health volunteers on identification, documentation and appropriate referral of persons with emerging danger signs in the population	Ward level	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
Improved accessibility to critical facilities	Climate-vulnerable Road and	Climate proofing of road network by - Tarmacking 2 roads	<i>Tarmac</i> Katangi,kithimani road Katangi, ikombe matuu	Community GMC GOK	Land Unskilled Labour Raw materials	Technical skills Funds Machines where

including market centers and health facilities	drainage infrastructure	Grading and marruming of 5 roads	road Grading Kikesa- maiuni Makutano-Kinyaata Kyasioni- kinyaata Kinyaata-ikombe Kitololo-ikombe	Development partners		necessary
		Grading of 8 roads	Kilaatu –Ikombe Kinyaata-Mangweti Kithito-Kithangathini Kinyaata-Mbembani Ikombe Kitheuni-Kiimani-kilaatu Kikesa-Kamuthambya-kalandini Kivaani-Nguumo Muusini-Tulima Kingaata-kithoma			
		Development of 6 new roads	Ngagani- Kitololo- Mwitasyano Tulima- Kithoma- Syothwake(Nguumo – Kiusyani – Kalandi) Mathingau - Nawasa			

LOWER KAEWA WARD

Expected change	Gaps (Missing)	Intervention/ Action	Where	Who responsible is	Resources	
					Community	External
Improved access to water	Inadequate water availability	Support capacity building on rainwater harvesting and provision of subsidized water harvesting and storage structures (tanks)	Public schools & ECDE centers Health centers Boreholes Organized groups	Community GMC GOK Development partners	Land Unskilled Labour Raw materials	Technical skills Funds Machines where necessary
		Support auxiliary works/ desilting 11 earth pans and related catchment protection/ management measures	Mutitu Kwa Mulekyo Kwa Nyungu Kwa Miti Kikombe Kwa Kala Kwa Muli Kwa Savi Yambua Kwa Mutiso Muthungue			
		Construction of weirs, ecosystem restoration and installation of hydram pumps. Development of micro-irrigation and distribution schemes	Weirs to be constructed in the following rivers: Muthunzuuni Ikiwe Ithaeni Thwake Kwa Kanyole Kituluni Kwa ngulu Kiusyi	GOK MCG	Land Non-Skilled Labor Sand	Technical skills Funds
		Drilling equipping and Solarization of 20 new boreholes	Kwa Nzuki Ithaeni pr Kikombe sec	GOK MCG	Land Non-Skilled Labor Sand	Technical skills Funds

			Ithaeni mkt Kaani Mkt Kaani Lions Utini pr General Mulinge pr Musuna , Kathuni Kasioini, Ivosya Kyumu, Katineni Ukuu, Kisovo Kithia dsp Kombu Kithunguini pri St Martins.			
Access to adequate nutritious food	Unsustainable farming practices	Capacity building on conservation agriculture, agribusiness, integrated pests and diseases management Support crop/livestock value addition through construction of processing plants; slaughter house, fruit factory	Ward level	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
	Diversification of farming livelihood	Capacity building on fish farming and support subsidized excavation of farm ponds and dam liners,	Ward level	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds

		Support provision of 36000 No of chicks to vulnerable households Capacity building on kitchen garden farming and better nutrition				
	Food loss from poor post-harvest practices resulted by climatic change conditions	Support construction of two (2No.) silos	Ithaeni Kaani	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas.	Support construction of two new and upgrading of existing health facilities	New Mbuuni Imilini <i>Upgrading Kaani level 2</i>	MCG Development partners	Land. Unskilled labor	Technical skills Funds
		Support technical capacity in health facilities to handle emergencies in climate-hazard-prone areas	7 health facilities			
		Training and capacity building of 70 No. community health volunteers on identification, documentation and appropriate referral	Ward level			

		of persons with emerging danger signs in the population				
Restore and protect Ecosystem	Environmental degradation due to human activities including deforestation and poor farming practices.	-Support tree nursery establishment and management in collaboration with local CBOs. Construction of soil and water conservation structures e.g.; Gabions , terraces, check dams etc. to reduce erosion and support water conservation	Ward level	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Improved accessibility to critical facilities including market centers and health facilities	Climate-vulnerable Road and drainage infrastructure	Climate-proofing of the road network, including heavy grading and harnessing surface runoff to support agro-production, construction of drifts, bridges and culvert crossings. Climate proofing of 15kms roads	Kathiani-kaani road	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds

MUTHESYA WARD

Expected change	Gaps (Missing)	Intervention/ Action	Where	Who is responsible	Resources	
					Community	External
Restore and Protect Ecosystem	Environmental degradation due to deforestation, Sand harvesting and quarrying	Support and capacity build on afforestation based on ecological zones and tree nursery seedlings Support controlled mining activities. Support green energy cooking in institutions e.g biogas Support minimal tillage farming to conserve soil and water	Muthesya Milaani Kathukini Kikule	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Ecosystem restoration and protection	Environmental degradation	Support and capacity build on afforestation based on ecological zones and tree nursery seedlings	All public lands	Community National government County government NGOs	Land labour	Funds Technical experts
	Fragile ecosystem protection	Reclamation and protection of eight (8) wetlands	Milaani -2 Kakule -6	Community National government County government NGOs	Land labour	Funds Technical experts

	Fragile ecosystem protection	Support soil and water conservation through construction of 28 gabions	Milaani-3 Kakule-9 Kathukuni-11 Muthesya-5	Community National government County government NGOs	Land labour	Funds Technical experts
	Lack of capacity for health facilities in far flung areas of the county	Support technical capacity in health facilities to handle emergencies in climate-hazard-prone areas -Retrofit health centres to handle emergencies -Use of technology	Kathukini Dispensary	Community National government County government NGOs	Land labour	Funds Technical experts
	Lack of capacity for medical personnel	Support specialized clinics to handle complications brought about by environmental degradation and pollution (ENT, dental)	Kathukini Muthesya Milaani Kikule	Community National government County government NGOs	Land labour	Funds Technical experts
	Lack of capacity for health volunteers	Training and capacity building of community health volunteers	Muthesya ward	Community National government County government NGOs	Land labour	Funds Technical experts
		Support emergency evacuation Ambulances	Kathukini Muthesya	Community National government County government NGOs	Land labour	Funds Technical experts

Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas	Support upgrading of three existing health facilities including Retrofitting and providing an enabling environment for health care provision	Kathukini Muthesya Kikule	County gov't Community Development partners(NGOs)	Land Skilled/unskilled labour	Funding Technical support
Improved access to water	Inadequate water availability	Promote access to clean and safe water to the communities/ households and public institutions through construction of water treatment plants	Kwa Muthui Kwa Mutua Kithuluku Kwa Mwenze Kwa Kivuva	Community County government National Government NGOs Plan International	Land Labour	Funds Technical expertise
		Support in sustainable management of water provision services and repair / rehabilitation of stalled four (4) boreholes	Milaani Muthesya Kathukini kikule	Community County government National government NGOs	Land labour	Funds Technical expertise
		Drilling, equipping and Solarization of thirty (30) new boreholes	Milaani-8 Muthesya-6 Kathukini-6 Kakule-10	Community County government National government NGOs	Land labour	Funds Technical expertise
		Support auxiliary works/ desilting earth pan and	milaani	Community County government	Labour land	Funds Technical expertise

		related catchment protection/ management measures		National government NGOs		
		Construction of four earth dams and catchment management.	Kakule Kathukuni Milaani Muthesya	Community County government National government NGOs	Land labour	Funds Technical expertise
		Construction of weirs, ecosystem restoration and installation of hydram pumps. Development of micro-irrigation and distribution schemes	Milaani-4 Kathukuni-12 Muthesya-9 Kakule-10	Community National government County government NGOs	Land labour	Funds Technical expert
Improvement of crops and livestock management	Low production	Support construction of crop and livestock products processing plants.	Muthesya	Community National government County government NGOs	Land labour	Funds Technical expertise
		Support capacity build on apiculture	lthanga hills	Community County government NGOs	Land labour	Funds Technical expertise
		Support construction of silos	kathukuni	Community National government County government NGOs	Land labour	Funds Technical experts

		Support and Capacity build agricultural extension officers	Muthesya ward	County government National government	Land labour	Funds Technical experts
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KINANIE WARD

Expected change	Gaps	Intervention/ Action	Where	Who is responsible	Resources	
					Community	External
Restore and protect ecosystem.	Environmental degradation due to deforestation, Sand harvesting and quarrying	-Capacity building on ecosystem protection and restoration Establishment of tree nurseries and support for tree growing initiatives and conservation activities in and around all learning and social institutions, water catchment areas (hills) and riparian lands. Construction of gabions, cover crops in denuded lands, terracing, grass reseeded, zero grazing, destocking, Regulated sand	At community level (in the hilly areas e.g. Kaiani, kyambiti, Mathatani)	Community National government County government NGOs	Land labour	Funds Technical expertise

		<p>harvesting and quarrying (mining) through policy formulation and enforcement.</p> <p>Reclaiming of abandoned quarries. Promote CSR activities by quarry owners to entail environmental conservation</p>				
		Support drainage in urban/market centers and harness runoff water through farm ponds lined with dam liners for productive use e.g fish ponds	All main markets within the ward-especially Kyumvi market and Kinanie markets	Community National government County government NGOs	Land labour	Funds Technical expertise
Improve sanitation coverage and complete sanitation value chain	Poor sanitation	Support construction of on-site faecal sludge treatment facilities in market centers, collect, transport, treat and dispose/reuse	All main markets within the ward	Community National government County government NGOs	Land labour	Funds Technical expertise
		Support construction sewer lines and sewer treatment plant at urban centres	Kyumvi and Kinanie	Community National government, NGOs & County Govt	Land labour	Funds Technical expertise

Improve access to water supply	Inadequate water availability	Rehabilitation of seven (7) boreholes/ Water distribution from boreholes through pipeline extension, solarization and storage tanks	<ul style="list-style-type: none"> • Kiasa primary • Silanga • Masai bh • Kwa mboo • Kwa Mulinge • King'ong'o bh • Kyumvi primary • Itimboni bh <i>Reticulate</i> Itimboni BH, Masai BH	Community CGM Development partners NG NDMA	-unskilled labour -Land	- Technical Expertise - Funds
		Support hydrogeological modelling survey for aquifers, drilling, equip and solarize of 5 new boreholes	Wathia Primary, Mathatani, Kinanie secondary, Kyumvi Primary, Kwa Nguku, Kaiani market, Mount View, Lower kalimani	CGM Development partners NG NDMA	-unskilled labour -Land	- Technical Expertise - Funds
		Reticulation/distribution of two borehole	<ul style="list-style-type: none"> • Itimboni Borehole • Masai bh 	CGM Development partners NG NDMA	-unskilled labour -Local materials	- Technical Expertise - Funds
		Support auxiliary works/ desilting six (6) earth pans and related catchment protection/ management measures	Kwa itumbi, Kilili, Kwa mboo, Mathatani, Kisaka and Sinai	CGM Development partners NG NDMA	-unskilled labour -Land	- Technical Expertise - Funds
		Construction of 14 earth dams and catchment management	Kwa itumbi, Kilili, Kwa mboo, Mathatani, Kisaka, Sinai, Kyemutheke, Kiasa, Sikia, Kiluli, Kwa Stefano, Kyumvi, Kwa Paul and KMC	CGM NG	-unskilled labour -Land	- Technical Expertise - Funds

		Support construction/ rehabilitation of six (6) weirs, ecosystem restoration and installation of hydram pumps. Development of micro-irrigation and distribution schemes.	<i>Rehabilitation</i> <ul style="list-style-type: none"> • 2 No. Nthuluni • Wathia (Kavilila) • Athi –River (Kaulu) • Kwa mayor (Kinanie) <i>New</i> Along river Athi and Stone-Athi	CGM Development partners NG NDMA	-unskilled labour -Land	- Technical Expertise - Funds
Improve farm management practices	Poor/unsustainable farming methods	Improved access to drought tolerant seeds and seedlings	Ward level	Community CGM NG Development partners	Land Unskilled labour	- Funds - Technical skills
		Support water and soil conservation through minimal tillage	Ward level	Community CGM NG Development partners	Land Unskilled labour	- Funds - Technical skills
		Support storm water harnessing through excavation and dam lining of farm ponds for productive use.	Ward level	Community CGM NG Development partners	Unskilled labour	Funds Technical skills
		Support capacity building on crop and livestock modern farming methods e.g crop rotation, artificial insemination and conservation Agriculture	Ward level	Community CGM NG Development partners	Land Unskilled labour	- Funds - Technical skills

Increased income from farm production	Low income due to low yields and poor market linkages	Support provision of subsidized certified seed, farm inputs, mechanization, extension services and capacity build improved farm productivity and post-harvest handling methods	Ward level	CGM NG	Farms Unskilled labour	<ul style="list-style-type: none"> - Funds - Technical skills
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NDALANI WARD

Expected change	Gaps (Missing)	Intervention/ Action	Where	Who is responsible	Resources	
					Community	External
Improved access to water	Inadequate water availability	Construction of 2 earth dams and catchment management.	-Maasini dam -Tethi dam	Community CGM GoK NDMA Development partners	-Land -Non-skilled labor -Sand -hardcore	-Technical skills -Funds machinery
		Construction of weirs, ecosystem restoration and installation of hydram pumps. Development of micro-irrigation and distribution schemes.	-Kwa mbonge Muoki, Kwa Museele (Kasamuku), Kwa Kavita, Vomboni, Kwa Ngige, Kosovo.	Community CGM GoK NDMA Development partners	-Land -Non-skilled labor -Sand -Hardcore	-Technical skills -Funds -Machinery -Other construction materials -Water tanks -Pipes for water reticulation (20km)
		Support auxiliary works/ desilting earth pans and related catchment protection/ management measures.	-Kwa Nyambura, Mwiymbuli, Kwa Mwandavi, Kwa Matinga, Kakongo, Mutyamboo, Mukauli, Mutua Manywele,	Community CGM GoK NDMA Development partners	Land Non Skilled Labor Sand	-Technical skills -Funds - Other construction materials

			Masambia, Kwa Kamba, Mbuno, Matithini, Ndolo Musembi, Kwa Mbeke, Nthungululu, Kwa Naomi, Kwa Kulu.			
		Drilling equipping and Solarization of new boreholes	-Iviani, Mukameni, Kivingoni Primary, Kithyolo, Kwa Ngovi, Mbanda Salama, Lower Matangini, Ngoliba, Kangemi, Mavoloni, Kithiani, Kaloleni.	Community CGM Development partners	Land Non Skilled Labor	Technical skills Funds
		Rehabilitation of boreholes/ Water distribution from boreholes through pipeline extension and storage tanks Reverse osmosis water systems to purify water to remove salinity Solar installation to boreholes, water tanks and water sumps	Inyanzaani, Kwa Mboni, Kwa Labani, Kwa Nzioka Kivwau, Kwa Musau, Kwa Kyongo, Kwa Katumo, Kwa Ngulumo, Kilimwana, Uvouni, Nthungululu, Kwa Kulu, Upper Matangini, Mbanda Salama	Community CGM GOK Development partners	Land Non Skilled Labor	Technical skills Funds
		Provision of water tanks for rain water harvesting	-All learning institutions in the ward.	Community CGM Development partners	Sand and hardcore for tank bases -Non skilled labour	- Funds - other construction materials for tank bases
		Spring protection works to prevent	-Mulivuni, Maasini, Maiuni, Isooni,	Community CGM	Land Non Skilled Labor	Technical skills -Funds

		contamination.	Musilili, Kwa Kaluu, Matithiini, Kiveli, Kwa Ndeke, Banda Salama, Kwa Matata, Kasarani, Kithyululu.	GoK Development partners	Sand hardcore	- Other construction materials
Access to adequate nutritious food	Inadequate access to nutritious food due to drought and unsustainable farming practices	Improved access to drought tolerant seeds and seedlings	Throughout the ward	Community CGM GoK Development partners		
		Provision of subsidized farm inputs (fertilizers, certified seeds, pesticides)	Throughout the ward	Community CGM GoK Development partners		
		Farmers Capacity building on drought tolerant breeds for livestock and poultry,	Throughout the ward	Community CGM GOK Development partners		
		Capacity building in conservation agriculture, promotion of value chains and market linkage Establish agricultural products aggregation centers Post-harvest management	Ward level	Community CGM GoK Development partners		
		Promote water efficient Irrigation Technologies (drip irrigation)	Throughout the ward	Community CGM GoK Development		

				partners		
Increased/improved livestock production	Inadequate pastures/ browse and low fodder production.	Capacity building on pasture and fodder value chain, provision of pasture seeds at subsidized prices and storage Provision of mechanized processing of animal feeds at subsidized prices Promote zero grazing	Ward level	Community CGM GoK Development partners	Land Non -skilled Labor	Technical skills Funds
		Capacity building on animal feeds formulation and fodder conservation	Ward level	Community CGM GoK Development partners	Land Skilled Labor	Technical skills Funds
	Livestock diseases, Poor quality indigenous breeds	Mass vaccination and disease surveillance Recruit livestock/vet extension officers Activate/ Subsidized AI services Capacity building of farmers on resilient livestock production	Ward level	Community CGM GoK Development partners	Land Non Skilled Labor	Technical skills Funds

Increased income from farm production	Low income due to low yields and poor market linkages	Capacity building on improved farm productivity and post-harvest handling to avoid losses Enable farmers to aggregate produce and secure market linkages	Ward level	Community CGM GoK Development partners	Land Skilled Labor	Technical skills Funds
Improved Nutrition / Good Human Health	Lack of access to adequate nutritious food	-Capacity building on kitchen gardening with improved water conservation and harvesting -Promote Agri-nutrition programmes -Promote access to health through support of mobile clinics to hard to reach areas. -Promote production of bio fortified foods e.g. orange fleshed sweet-potatoes, nyota beans etc -Promote provision of food supplement support for under 5s, Pregnant and nursing mothers - Timely Cash transfers for the <i>Inua</i>	Ward level	Community CGM GoK Development partners	Land Skilled Labor	Technical skills Funds

		<i>Jamii</i> (social support) programmes for the elderly and PWD				
Ecosystem restoration	Environmental degradation due to deforestation, Sand harvesting and quarrying.	Capacity building on ecosystem protection and restoration Establishment of tree nurseries and support for tree growing initiatives and conservation activities in and around all learning and social institutions, water catchment areas (hills) and riparian lands. Construction of gabions, cover crops in denuded lands, terracing, grass reseedling, zero grazing, destocking, Regulated sand harvesting and quarrying (mining) through policy formulation and enforcement. Reclaiming of abandoned quarries Promote CSR activities by quarry owners to entail	Ward level	Community CGM GoK NDMA WRMA NEMA Development partners Quarry Owners	Land Skilled Labor	Technical skills Funds

		environmental conservation				
Green energy transition	Over dependence on fossil fuels to run machinery and to power facilities. Use of wood fuel/charcoal for cooking and kerosene lighting	Promote use of renewable energy for both productive and domestic use.	Ward level	Community CGM GoK NDMA Development partners	Labour	Technical skills Funds
Reduced prevalence of pests and diseases	Poor use of chemicals and pesticides	Capacity building on safe pesticide application & subsidized prices Well-equipped Agro vets Provision of quality PPE (personal protective equipment)	Ward level	Community CGM GoK NDMA Development partners	Land Skilled Labor	Technical skills Funds
	Insufficient knowledge on management of emerging pests and diseases	Capacity building on pests and disease control	Ward level	Community CGM GoK NDMA Development partners	Land Skilled Labor	Technical skills Funds
Improved accessibility to critical facilities including market centers and health facilities	Climate-vulnerable road infrastructure	Climate-proofing of the road network, including heavy grading and harnessing surface runoff to support agro-production, construction of seven (7) drifts, three (3) bridges and three	Roads: Lumumba-Kwa Kakoi, Stage Mbaya-Musingini, Ndalani AIC-Ilumanthi, Kiukuni-Kalimatula-Kithyolo, Ndalani-Mutyamboo, Kalimatula-Maasini-Nzukini, Kissiki-	Community CGM GoK NDMA Development partners	Land Unskilled Labor Sand Hardcore	Technical skills Funds

		(3) culvert crossings.	Ilumanthi-Uvouni-Nthungululu <i>Drifts:</i> Kwa Paulo, Stage Mbaya, Kwa Nduku, Kwa Kayo, Kwa Kavilaliti, Kwa Kavita, Kwa Mang'eli <i>Bridges:</i> Kwa Willy, Kwa Mutevu, Kwa Kikumu <i>Culvert Crossings:</i> Kwa Mwandiko, Kwa Mwatu, Kwa Ngile			
Climate-vulnerable youth including school drop outs, unemployed youth, teenage mothers and youth engaged in drug and substance abuse	Climate impacted families unable to support children and youth in education and productive engagements	-Upscale school feeding program in climate-impacted communities -Support climate vulnerable households with socio-economic empowerment e.g. promotion of table banking initiatives -Guidance and counseling to school-going children	Ward level	Community CGM GoK Development partners	Land Unskilled Labor Sand Hardcore	Technical skills Funds
	Idle youth engaged in social vices and unproductive engagements	Engage youth on productive activities including; -sports initiatives, -youth projects in agribusiness and other climate	Ward level	Community CGM GoK Development partners		

		adaptation enterprises e.g. tree nurseries - Participating in cash-for-work programs through providing labour for climate-proofing infrastructure (murrum roads and drifts) and support soil and water conservation programs (terracing, gabion construction) -Youth sensitization on effects of drug abuse and support establishment of rehabilitation centers				
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KIIMA KIMWE WARD

Expected change	Gaps (Missing)	Intervention/ Action	Where	Who is responsible	Resources	
					Community	External
Adequate supply of quality water for domestic use, livestock and irrigation	Inadequate water supply	Construction of river intakes structures, Pipeline repairs and extensions and provision of storage tanks	-Mikuini water project -Kivoani water project -Kaseve water project -Yandumbu	Community GMC GOK Development partners	-Land -Unskilled labour	-Technical skills -Funds -Machinery -Storage tanks -pipes and assorted fittings
		Provision of pipes for reticulation and pipeline extensions from boreholes	-Kakinduni Water project -Katoloni pri -Kiseveni			

			-Kyamuluu -Kathaayoni			
		Waterpan desiltation and construction of auxiliary structures	-Kwa Katindi -Kasarani -Ngomano -Iluvya	Community GMC GOK Development partners	Land Unskilled labor	-Technical skills -Funds -Machinery -Storage tanks
		Repair / rehabilitation of stalled boreholes	-CDF Kyangoma bh -Katoloni pri -Kiseveni -Kyamuluu -Kaseve pri	Community GMC GOK Development partners	Unskilled labor	-Technical skills -Funds -Machinery -Storage tanks
		Drilling and equipping of boreholes	-Kwa Thimbu -Kwa Mwalathei -Matuoni -Kivandini Pri -Katoloni Kwa Kimenye -Kathama -Kalanizoni -Kathemboni shrine -Kathemboni (240) -Kitulu	Community GMC GOK Development partners	-Land -Unskilled labour	- Technical skills -Funds -Machinery -Storage tanks - Pipes
		Solarlization of boreholes	-Katoloni primary Mikuini sec Uamani CDF Kiseveni Asst chief Muthini	Community GMC GOK Development partners	Land -Unskilled labour	Technical skills -Funds
		Weir construction	-Kithambioni -Ikondeni -Kyaka -Kitung'u -Kiinyu -Kyumbuni -Kyunguni -Kituvu	Community GMC GOK Development partners	-Land -Unskilled labour -Local materials (Sand, Ballast)	-Technical skills -Funds -Machinery

			-Kya Mwao -Kwa Loisi -Kyungu -Kwa Mutunga -Lower Ikiwe.			
		Provision of Subdized water tanks for Rainwater harvesting	-Kiimakimwe -Kivandini Mbilini Muvuti Katoloni	Community GMC GOK Development partners	-Land -Unskilled labour	-Technical skills -Funds -Machinery
		Installation of raised storage tanks for water distribution	Ward wide	Community GMC GOK Development partners	-Land -Unskilled labour	-Technical skills -Funds -Machinery
		Excavation of farm ponds and Provision dam liners	All sub-locations except Muthini	Community GMC GOK Development partners	-Land -Unskilled labour	-Technical skills -Funds -Machinery
		Surveying and protection works including tree planting and installation of flood lights	All 22 springs in the ward	Community GMC GOK Development partners	-Land -Unskilled labour	-Technical skills -Funds -Machinery
	Water pollution to surface water bodies (rivers, dams) and underground water sources (boreholes, springs)	-Sewer line upgrading to accommodate the high population in urban areas of the ward	Muthini and Katoloni sub location	Community GMC GOK Development partners	Unskilled labor	Technical skills Machinery/equipment Funds

	and wells)	-Enforcement by public health officers on issues of waste water disposal from residential apartments and coffee factories into rivers and open storm water drains	-Kiimakimwe -Kivandini Mbilini Muvuti Katoloni	GMC		Public health officers
		-Sensitization on soil conservation measures on the water catchment areas	-Kiimakimwe -Kivandini Mbilini Muvuti Katoloni	Community GMC GOK Development partners	-Land -Unskilled Labour	Technical skills
		Capacity Building and sensitization on construction of septic tanks, bio digesters and use of composting toilets (eco toilet) to prevent contamination of underground water sources.	-Kiimakimwe -Kivandini Mbilini Muvuti Katoloni	Community GMC GOK Development partners	-Land -Unskilled labour -Local materials	Technical skills
Food security	Inadequate food supply due to low yields.	-Provision of subsidized-certified seeds and improved livestock and poultry breeds -provision of vaccines for livestock and poultry	-Kiimakimwe -Kivandini Mbilini Muvuti Katoloni	Community GMC GOK Development partners	Land Unskilled labor	Technical skills Funds
	Local fruit varieties	Provision of improved fruit tree seedlings	-Kiimakimwe -Kivandini Mbilini	Community GMC GOK	Farmers Land	

			Muvuti Katoloni	Development partners		
	Expensive AI services	Subsidized AI Services	-Kiimakimwe -Kivandini Mbilini Muvuti Katoloni	Community GMC GOK Development partners	Farmers	
	Poor farming practices	Capacity building on conservation agriculture.	-Kiimakimwe -Kivandini Mbilini Muvuti Katoloni	Community GMC GOK Development partners	Farmers	
	Post-harvest losses	Capacity building on post harvesting management including value addition. -Construction of 1no. fruit processing plant -Construction of 1 no. aggregation center -Market linkages	-Kiimakimwe -Kivandini Mbilini Muvuti Katoloni	Community GMC GOK Development partners	Farmers Land	
	Inadequate extension and veterinary services	-Employment of 7 no. extension officers -Employment of 7 no. veterinary officers -Construction of a dairy/Vaccination Centre	-Kiimakimwe -Kivandini Mbilini Muvuti Katoloni	County government	Farmers	Technical skills Funds

KITHIMANI WARD

Expected Change	Gaps	Interventions/Action	Where	Who Responsible	Resources	
					Community Resources	External
Improved access to water	Inadequate water supply for general use	Support Construction of seven new Dams	Mukumbini,Kwa Mutaki,Kwa Muinde,Kalama, Kwa Kitema,Mavia Atatu, and Kwa Jimmy	Community Development partner Gok County Government NDMA	Labour Land	Technical skills Funds Machinery
		Support auxiliary works/desilting, of earth dams and related catchment protection management measures	Kalukuni, kwa Mutaki,Kithangathl ni and Kwa Koo.	Community Development partners County Government GOK NDMA	Labour Building materials	Technical skills Funds
		Support Protection of water springs and construction of new water sump and related management measures	Kwa Kamuys, Kwa Kitoo,MukengwaK wa Mala, Yolomuni, Mutua Mwelemva, Kwa Musango, Kwa Maweu, Kwa Muranguli ,Kea Maengo, KwaMuya, Kwa Makeup, Kathithu	Community Development partners GOK County Government	Building materials Labour	Technical skills Funds
		Support Construction of treatment plant and reticulation	Along thika river and Yatta canal	Community Development partners	Labour Land	Technical skills Funds

		including related management measures	At all ward level	GOK County Government NDMA		
		Support drilling equipping and solarization of New Boreholes	Kithimani salvation Army,Kithendu catholic,Kwa Koko,Ngumo,Sofia police post,AIC Canaan,Kathanga thini,kwa Mutinda,Kwa Muinde,Kavumbu, Kamuysla, Kamwrani,Makutan o, Yuaini	Community Development partners GOK County Government NDMA	Labour Building materials	Technical skills Funds
		Support rehabilitation/completion of stalled of boreholes, solarization, distribution pipeline extension to communal water points including provision of the water to storage tanks	Kamwanyani community,Kitema, Muthesya, Kathendu sec,Musingini primary Kalukuni primary St Mary's primary Sofia SDA,YMCA	Community Development partners GOK County Government NDMA	Labour Building materials	Technical skills Funds
		Support construction of weirs and auxiliary works	Kithendu, kathukini, kwakitema, kathuilini, mamba, sofia ,kambi ya ndeke	Community Development partners County Government GMC County Government	Non skilled Labour Building materials	Technical skills Funds
Ecosystem restoration and	Low forest coverage due to human	Support afforestation and protection of	Kithimani, Sophia, mamba, kambi ya	Community Development	Land Labour	Technical skills Funds

protection	activities ; deforestation, poor farming practices and sand harvesting	catchment areas including sustainability of tree planting in public institutions, Construction of Gabions, cover crop in denuded lands, grass reseeding, zero grazing. -Support climate smart grading and murraining ward roads Controlling sand harvesting. -Support capacity building on climate smart environment.	ndeke	partners NDMA GMC Donors		
		Support establishment of tree nurseries and tree growing at Water points	Kithimani, mamba, kauthuilini	Community NDMA County Government Donors	Land non Labour	Funds Technical skills
	Unreliable energy supply	Support green energy including; energy saving Jikos, renewable energy and Provision of solar Jikos in public institutions	Kithimani, kalukuni, kitenangola, kauthuilini	Community County Government Donors	Land Labour	Funds Technical skills

Increase sanitation coverage and complete sanitation value chain	Lack of sewerage system for waste water disposal	Improved climate proofing waste disposal including Provision of climate smart waste bins	Kithimani, mamba,Sofia, Makutano, Kambi ya ndeke,Kinu, Kalukuni Makutano AIC, Kimangu, Duka Moja,Kauthutini, Kwa Kitema, Kwa Makaa, Kitenangola, Sya Ngove	Community GMC GOK Development partners Pharmaceutical and poisons board County Government	Land Non skilled labour	Technical skills Funds
	Improper medical and pharmaceutical disposal.	Support climate proofing in construction of incinerator and pharmaceutical disposal system	Kithimani level 3, Kalukuni health center, NYS Yatta health center	Community GMC GOK Development partners Pharmaceutic al and poisons board County Government	Land Labour	Technical skills Funds
Improved accessibility to critical facilities including market centers and health facilities	Climate-vulnerable road and drainage infrastructure	Climate-proofing of the road network, including heavy grading and harnessing surface runoff to support agro-production, construction of drifts, bridges and culvert crossings Support construction of sufficient climate smart Modern toilets	Kithimani, Mamba, Kinu, Kambi ya ndeke, Kalukuni, Makutano AIC, Kimangu, Duba Moja, Kauthutini, Kwa Kitema, Kwa Makaa, Kitengola, Nigeria , Kavumbu	Community Development partners GOK Donors	Land Non skilled labour	Technical Skills Funds

		in climate prone market centers				
		Construction of market stalls Construction of livestock yard Installation of street lights and floodlight 14 Construction of modern market stalls 14 Designated place for a modern Bus Park 1	Kithimani market			
Health climate hazard resilient population	Inadequate emergency response capacity in climate hazard prone areas	Support modernization and equipping of health facilities including Kithimani level 3 to level 4 including with climate proofing modern treatment facilities ; cancer center, Ambulance services at climate prone areas -Rehabilitation center, Construction of climate smart theater and maternity Wings Support Training and capacity building of community health volunteers on identification,	Kithimani level 3, Mamba dispensary, Kauthulini, Kalukuni, NYS(2)	Community NDMA Development partners GOK GMC	Land Non skilled labour	Technical skills Funds

		documentation and appropriate referral of persons with emerging danger signs in the population				
Improved nutrition / good human health	Lack of access to adequate nutritious food	<ul style="list-style-type: none"> -Provision of subsidized farm inputs (fertilizers, certified seeds, pesticides) -Promotion of soil testing and sampling and conservation agriculture -Extension services support -Environmental conservation support -Development of micro dams and water ponds and provision of dam liners -Building and equipping of aggregation centers -Construction of grading sheds, cold rooms and packaging houses -Support in development of irrigation schemes Solarization of water pumping stations for irrigation 	<p>kithimani</p> <p>Along Athi river, Yatta furrow and Thika river Ward level</p> <p>Kithimani, mamba, Kambi ya ndeke, Kithendu</p>	Community Development partners GOK NDMA GMC	Land Unskilled labour	Technical skills Funds

KYELENI WARD

Expected change	Gaps (Missing)	Intervention/ Action	Where	Who is responsible	Resources	
					Community	External
Adequate supply of quality water for domestic use, livestock and irrigation	Inadequate water supply	Pipeline extension/ reticulation from water sources to the communities/ households	Ward wide	Community GMC GOK Development partners	-Land -Unskilled labour	-Technical skills -Funds -Machinery (excavators)
		Dam desiltation and construction of auxiliary structures	-Kwosau -Kyeleni -Mauu -Ng'alalya -Kwale	Community GMC GOK Development partners	Land Unskilled labor	-Technical skills -Funds -Machinery
		Repair of breached embankments	-Kwa Ivuku -Silanga (Kiatineni)	Community GMC GOK Development partners	Community GMC	-Technical skills -Funds -Machinery
		Repair / rehabilitation of stalled boreholes	-Kimanza Pri Sch -Kyeleni Dispensary -Kisekini -Kyeleni Health Centre -Kyeleni Pri Sch -Nzambani -Kyeleni Chief's Camp	Community GMC GOK Development partners	Land Unskilled labor	-Technical skills -Funds -Machinery -Storage tanks
		Water testing for fluoride levels	-Ndulya -Syumbuni -Kavati ECDE -Kwale Pri Sch	Community GMC GOK Development partners	Land Unskilled labor	-Technical skills -Funds

		Survey of dams	All eight (8) dams	Community GMC	Land Unskilled labor	Technical skills Machinery/equipment Funds
	Water pollution	-National government to impose strict measures on companies/ industries polluting Nairobi river which in turn pollutes Athi river. -Cleanup exercise -Solid waste management	River Athi	Community GMC GOK Development partners	Unskilled labor	Technical skills Machinery/equipment Funds
Food security	Inadequate food supply due to soil infertility and inadequate water	-Provision of certified seeds -Promotion of soil testing and sampling -Provision of technical support -Environmental conservation -Development of micro dams and water ponds and provision of dam liners -Building and equipping of aggregation centers -Construction of grading sheds, cold rooms and packaging houses -Development of irrigation schemes	Ward wide	Community GMC GOK Development partners	Land Unskilled labor	Technical skills Funds
	Inadequate	-Employment of one	Kyeleni Ward	County	-	Technical skills

	extension and veterinary services	extension officer -Employment of two veterinary officers		government		
Adequate health facilities	Inadequate health services	Construction of new health facilities	-Nzambani -Kwosau -Kwale	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary
		Upgrading of Kyeleni Health Centre to Level 4 facility and upgrading of Kikuyuni Dispensary to a Health Centre	-Kyeleni Health Centre -Kikuyuni Dispensary	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary
		Construction of maternity wings	-Kyeleni Health Centre -Kikuyuni Dispensary	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary
		-Construction of additional staff quarters and completion of existing ones -Employment of additional staff	-Kyeleni Health Centre -Kikuyuni Dispensary	GMC GOK Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary
		Repair and maintenance of grounded ambulances	-Kyeleni Health Centre	GMC Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary

		Installation of specialized clinics (ENT, dental)	-Kyeleni Health Centre -Kikuyuni Dispensary	GMC Development partners	Land Unskilled labour	Technical skills Funds
	Low coverage by CHVs	Capacity building Facilitation Provision of safety kits, uniforms and badges	Kyeleni ward	GMC GOK	Volunteers	Technical skills Funds
Adequate water supply in health facilities	Inadequate water supply and distribution in health facilities	Rehabilitation and equipping of the boreholes	-Kyeleni Health Centre	GMC Development partners	Land Unskilled labour	Technical skills Funds Machines where necessary
		Distribution of water to the Health facilities from the closest water points	-Kikuyuni Dispensary	Community GMC Development partners	Land Unskilled labour	Technical skills Funds
Improved/ good road network	-Poor road network -Poor drainage systems	-Improvement of the murram roads network to all weather roads -Improving the drainage systems of the roads		Community GMC GOK Development partners	Unskilled labour	Technical skills Funds
		Tarmacking the three (3) main roads	i. Nimrod- Matuu- Kituluni- Nzamabani- Ol Donyo Sabuk ii. Nimrod- Matuu- Kituluni- Kyeleni iii. Kantafu (46)- Ndovoini- Mililu- Kyeleni- Ol Donyo Sabuk	Community GMC GOK Development partners	Unskilled labour	Technical skills Funds Machinery

		Murram 23 feeder roads	Kyeleni ward feeder roads	Community GMC GOK Development partners	Unskilled labour	Technical skills Funds Machinery
		Construction of drifts and culverts	All 23 Kyeleni ward roads	Community GMC GOK Development partners	Unskilled labour	Technical skills Funds Machinery
		Construction of bridges	i. Kyeleni-Munyu (across River Athi) ii. Kisekini-Gatuanyaga (across River Athi) iii. Kwosau River bridge iv. Misuuni-Ituma river bridge	Community GMC GOK Development partners	Unskilled labour	Technical skills Funds Machinery
	Encroachment of roads	Road surveys	All Kyeleni ward roads	-County Surveyor -National Government Surveyor	labour	Technical skills Funds

MUTHWANI WARD

Expected change	Gaps (Missing)	Intervention/ Action	Where	Who responsible is	Resources	
					Community	External
Climate smart Clean and Safe environment	Low awareness on pollution legislation and reporting mechanisms	Support construction of climate smart sewer line including ; waste	Katani Joska Githunguri Ngelani	County gov't Community National Government	Labour Land	Funding Technical expertise

	Lack of sufficient sewer and drainage systems Lack of Solid waste recycling plants Lack of efficient garbage collection systems Unsafe disposal of untreated effluent to the environment Insufficient county legislation enforcement to control pollution	recycling plant and garbage collection system Support legislation of legal frame works of controlling pollution. Including enforcement on garbage and waste disposal support other anti-pollution intervention	Kamulu	Development partners		
	Land degradation	Support Rehabilitation of abandoned quarries	Katani Ngelani Lukenya	County gov't Community National Government Development partners	Labour	Funding Technical expertise
Improved access to water	Insufficient water source including 15 silted dams	Support desilting and management of catchment of 15 existing dams including auxiliary works Support construction of 5 dams in climate prone areas including auxiliary works	Street 92 Seme Katani Ngelani Sunshinwe Kalingile Ivovoani A Ivovoani B Muthwanni Ndovoini Musolini Kathini Kavombo Nzoiani New ones at Kavombo	Community County government National Government Development Partners	Labour Land Materials	Funds Technical expertise

			Kalingile Ivovoani A Ivovoani B Muthwani			
	Encroached Riparian lands	Support riparian marking and Pegging of rivers	Athi river Kausyani Kalingile Nzoiani Katani(Ngelani) Katani(Airways) Kamulu(CMY) Mitatini	Community County government National government NGO	Labour	Technical expertise Funds
	Insufficient water sources and incomplete boreholes	Support rehabilitation of boreholes and auxiliary works including green energy powering of the non-functional boreholes	Ngelani Katani Primary Kausyani Kalingile Kavombo Kiene Musoloini Kavilila Ivovoani Kamulu Kwa Chief Kwa Muasa Kalimatuto	Community County government National government	Labour Land	Funds Technical expertise
	Environmental degradation due to, deforestation, Sand harvesting and quarrying. Establishment of tree nurseries and Tree planting in all learning and social institutions, water catchment areas (hills) and	Enhance Environmental conservation	Muthwani Ngelani Ndovoini Kalingile Airways Mitatini Nzoiani	County government National government Community NGOs	Land Labour	Technical expertize Funds

	riparian lands Regulated sand harvesting through policy formulation and enforcement.					
Improved accessibility to critical facilities like markets and health centers	Improvement of the road network (heavy grading/ climate proofing) and construction of drifts, bridges and three (3) culvert crossings	Poor infrastructure	Joska- Muthwani- Kalingile Katani-Kamulu Seme- Mwangaza Kalusya- Muthwani	County government National government Community NGOs	Land Labour	Technical expertize Funds
Enhance Environmental conservation	Sensitization on the importance of conserving the environment including tree growing in public institutions	Environmental degradation due to, deforestation,	Hospitals, Schools, Churches, Chiefs Office Police post Homes	County government National government Community CBOs	Land Labour	Technical expertize Funds
Improved accessibility to critical facilities like markets and health centers	Improvement of the road network (heavy grading/ climate proofing) and construction of drifts, bridges and culvert crossings	Poor infrastructure	Kincar- Githuguri- Katani road Kamulu – Ngelani-Katani road Ngelani – Drumvale road Drumvale – Ngalalya road Mailand – Zebra road Ngalalya - Sunshine – Ndovoni road Sunshine-	Community County government National government	Labour Land	Funds Technical expertise

			Mitatini- Baraka Road Muselele- Kausyani Road Kalingile- St. monica – Nzoiani road Nzoiani – Kwa Kalusya road Kwa KALusya – Muthwani road			
Climate proofing farm lands	Alternative climate proofing methods of mining	Poor farming methods	Katani Ngelani Ndovoini Kwa Kalusya Nzoiani Kyaani	Community County government National government	Labour Land	Funds Technical expertise

KATANGI WARD

Desired change	GAP	Action/ intervention	Where	Who is responsible	Resources	
					Community	External
Improved access to water	Inadequate water availability	Construction of Earth dams and catchment management	Kakuyuni, Kwa Nyolo, Matinga, Mbuini, Mukonza, Kyua, Kikuyuni.	National Government County Government	Land Labour Raw materials	Technical expertise Funds
		Support auxiliary works/desilting earth pans and related catchment protection /management	Kaluluini, Musewani Katangi, MUSAALANI, Syokisinga,	National Government County Government	Land Labour Raw materials	Technical expertise Funds

		measures	Ngumbulu			
			Kakuyuni, Kwa nyolo			
		Drilling, equipping and Solarization of new boreholes	-St. martins, - Kwa Kalamu, -- Kakunike, Mwanyani, Kwa Mutinda, Katethya, Mulumu, Upper nzewani, Ndivuni, Kwa ndeti, Kwa nzaa, Kamale, Mwaani, Malatani, Iumbuni, Ngengetani			
		Rehabilitation/ Completion of stalled boreholes and solarization	Kakunike, kikeneani, liani, Mengukya, Kikuyuni, Katookini, Kavingo, Kalala	National Government County Government	Labour	Technical skills Funds
		Pipeline extension to communal water points	Sokotamu, Kyeni, Kwa kyuli, Kalala, Kiukuni, Kwa muindi, Kwa mulonzi			
Healthy climate hazard resilient population	Inadequate emergency response capacity in climate hazards prone areas Increases infant	Support construction of three new health facilities in every location and upgrading of three	Mekilingi, Syokisinga, Kyua.	National Government County Government	Land Labour Raw materials	Technical skills Funds

	mortality	existing health facilities				
		Support Upgrading of existing level 3 facility to level 4 including providing an enabling environment for health care provision	Katangi health centre, Kisesini Dispensary, Masaani Dispensary, Makila Dispensary and Ngumbulu Dispensary.			
		Support upgrading of existing dispensaries to level three hospitals including provision for a maternity wing and providing an enabling environment for health care provision	Kisesini, Masaani, Makila and Ngumbulu Dispensaries	National Government County Government	Land Labour Raw materials	Technical skills Funds
			Katangi level 3			
			In all health centers: Katangi, Kisesini, Masaani, Makila and Ngumbulu			
		Support Laboratories at all the sub-locations.	Katangi, Kyua, Mekilingi and Syokisinga.	National Government County Government	Land Labour Raw materials	Technical skills Funds
		Support construction of a new mortuary	Katangi			
Sustainable farming livelihoods	Unsustainable farming practices	Support and capacity build farmers on Climate Smart Agriculture	Katangi, Mekilingi, Kyua and Syokisinga	National Government County Government	Land Labour Raw materials	Technical skills Funds
Reduced	Increased livestock	Support deployment	Kamumbu,	National	Land	Technical skills

livestock mortality & diseases	diseases & livestock mortality	of adequate veterinary extension service providers	Kyaani, Kakunike, Maviani, Kaliani, Ngumbulu, Masaani, Kyua, Mwaani, liani, Utithini, Mweleki, Mulekya, Kaliani, utumoni, Ndivuni, kikuyuni, Kiamani, Syokisinga, Nduuni, Malatani.	Government County Government	Labour Raw materials	Funds
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MACHAKOS CENTRAL WARD

Expected change	Gaps	Intervention/Action	Where	Who is responsible	Resources	
					Community	External
Improved access to water	Inadequate water availability	Support climate proof rehabilitation of water sources, existing water supply network including solarization of pumping units, pipeline extension, storage tanks and support sustainable management of water services	Water Service Provider	Community CGM GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
		Auxiliary works/Desilting	Kaumbuthu, limba,	Community CGM	Land	Technical skills

		3 Earth pans, desilting of dams, fencing of dams	Kikandu (Iveti Hills) Tendelyani	GOK Development partners	Non-Skilled Labor Sand	Funds
		Public sensitization to minimize vandalism. Rehabilitation of boreholes/ Water distribution from boreholes through pipeline extension and storage tanks Solar installation to boreholes, water tanks and water pumps	3 boreholes	Community GMC GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
		Drilling, equipping and Solarization of new boreholes	Machakos Central Ward	Community CGM Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
		Enhance water harvesting on Roof catchment at House Hold level	Machakos Central Ward	Community CGM Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
Restored and protected ecosystem	Environmental degradation.	- Upgrade sewer line laterals to accommodate the high population in urban areas of the ward Capacity Building and sensitization on construction of septic tanks, bio digesters and use of composting toilets (eco toilet) to prevent contamination of underground water	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds

		sources and support on sustainable faecal sludge management services Tree nursery establishment of indigenous trees Sensitization on the importance of conserving the environment Tree growing in institutions and water points. Upgrading of drainage and sanitary system, terracing, Policy on Waste Management Sustainable sand harvesting.				
Sustainable farming livelihoods	High cost of food produce. Increased food demand.	Sensitize the community on garden farming and other modern technology on small space to minimize pressure on food demand	Ward level	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Increased security surveillance	Insufficient police posts Insufficient street and floodlights	Construction of one new police post. Expansion and staffing police Installation & maintenance of floodlights	Kyambuko Mavivye, Kusyomuomo Mavivye, Kwa Kyele, Retail Market, Mjini, Kariobangi and Grogan, KAFOCA bridge, Kyatia	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds

Increased health facility	Inadequate health facilities and services. Stalled health facilities	Construction of health facilities, Funding and equipping of health centres. Rehabilitation stalled health centres	Mavivye Market, Baptist Pri. (Kariobangi) Machakos Central Ward Kusyomuomo Dispensary	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Increased and improved road Infrastructure	Inadequate roads & poor drainage system.	Rehabilitation and Construction of new roads and drainage system	Ward level	Community CGM GOK Development partners	Non-Skilled Labor	Technical skills Funds
Recreational facilities	Inadequate recreational facility	Mapping out, reclaiming and fencing of recreational facilities. Rehabilitation of recreational facilities	Mulu Mutisya Gardens, Kyatia, Kithaayoni, Masaku Old Port (Opposite Machakos Police Station) Katunga Forest.	Community CGM GOK Development partners	Non-Skilled Labor	Technical skills Funds

MUTHETHENI WARD

EXPECTED CHANGE	GAP	INTERVENTION	WHERE	WHO IS RESPONSIBLE	RESOURCE	
					COMMUNITY	EXTERNAL
Adequate water supply to address the drought hazard	-Inadequate water supply	Construction of Dams Rehabilitation of Dams (Scooping/reticulation/fencing/treatment)	Kwa Kalimbi Dam, Kwa Muange Dam, Kwa Kisambo Dam, Masilu Dam Muthetheni Earth Dam, Kiongwani Dam, Kwa Muyenze Dam, Kwa Kitho Dam, Mukolekya Dam, Kwa Muema Dam, Kwa Mbunda Dam, Kwa Nzivo Dam, • Kikulumi Earth Dam,	Community, County Government National Government CBOs	Community- Unskilled labour Locally available materials Funds	Funds Technical support

			Kwa Muoto Dam, Mbaani Dam (Kwa Matinga), Kwa Masoa Dam, Kwa Mang'ethe Dam Katothya Dam Kyawikyo Dam Kwa Munyenze Dam Kwa Kisambo Dam Kwa Itinga Dam Kisayani Dam Masilu Dam Malaani Dam			
	-Inadequate water supply	Construction of weirs	Uwai River 3 Kyaimu River 3 Yondoni 3 Miu River 3	Community County Government National Government Development partners CBOs	Unskilled labour Funds Security Technical Expertise	Funds Technical support
	Inadequate water supply	Construction of sand dams	Uwai River 3 Kyaimu River 3 Yondoni 3 Miu River 3	Community County Government National Government Development partners CBOs	Unskilled labour Funds Security Technical Expertise	Funds Technical support
	Inadequate water supply	Water reticulation	Kwa Matinga Dam to all market centres in Muthetheni Ward	Community County Government National Government	Unskilled labour Funds Security Technical Expertise	Funds Technical support
Boreholes	Inadequate boreholes	Sinking more boreholes	Kaewa Market Muukuni Nursery Kyambusa Nursery Nthaani Kyaume Pre-school	Community County Government National Government Development partners	Unskilled labour Funds Security Technical	Funds Technical support

			Miu DEB, Nthuluni Primary school Ngamba Windala Primary school Muthetheni Health Centre Maritini Primary school Kiukuni Primary school Mutendeu Primary school Mbaani Market Kyethivo and Mbaani Primary school Kalyambeu Health Centre lia Ikya Nursery Ukalani Primary school Ngakaa Nursery Kyawikyo Nursery Muusini Malaani Primary Kwa Kimbo	CBOs	Expertise	
Irrigation	Unreliable water sources	Construction of weirs Rehabilitation of Dams captured under water	Isai River- Kangethe/Kionyweni Kyaimu River-Ngamba- londoni-Ngamba Miu River-Kikulumi & Kyawikyo	Community County Government National Government		Funds Technical support
Well Conserved Environment	Environmenta l degradation	Afforestation Control deforestation Building of gabions Control air pollution and proper dumping of waste	Public/Private land Near river banks within the Ward	County Government National Government NGOs Development partners Community	labour Funds Security Technical Expertise	Funds Technical support
ENERGY	Insufficient/U	Installation of flood	All shopping Centres in	County Government	Unskilled	Funds

Sufficient/Reliable source of energy	Unreliable source of energy	Installation of more power lights (security)	Muthetheni	National Government NGOs Development partners Community	labour Funds Security Technical Expertise	Technical support
	Inadequate power connections	Installation of solar street light in the major markets	Miu, Muthetheni, Mbaani, Kyethivo, Itithini	County Government National Government	Funds Security Technical Expertise	Funds Technical support
Good road infrastructure network	Poor infrastructure	Grading of feeder roads	Muthetheni→Kithiani→Nthaani→Muthetheni Health Centre→Windala→Ukalanani Salvation Army road. Mbaani→Kangemi→Ngamba→Itithini road. Kyethivo (Kwa mutilu)→Mutendeu→Kangemi road Kikulumi→Kwa kamutu→Kwa Yosia road Miu→Kiukuni road Muthetheni→Kaewa→Minanthoni road Kathumbe→Ndituni→Maalatani road Kwa Kmilelyo→Kwa Muange→Thwake road Wayani→Kwa Malama→Kwa Kivi→Ndivuni→Thwake road	County Government National Government	Community- Unskilled labour	Funds Technical support

Lack of drifts/culverts		Construction of drifts/culverts Repairing of the existing damaged drifts	In all the above roads Miu River	County government National Government	labour Funds	Funds Technical support
Quality Education	Inadequate educated facilities	Construction of tertiary/vocational Institutions Upgrading Vocational Training Institutions	Kikulumi Primary Ngakaa nursery King'utheni	Community County Government National Government	labour Funds Security Technical Expertise	Funds Technical support
	Inadequate infrastructure in Nursery school	Build more classes and equip them fully	All Muthetheni ECDE Centres	Community County Government National Government	labour Funds Security Technical Expertise	Funds Technical support
	Lack of feeding programme	Provide feeding programme in Primary and ECDEs	All Muthetheni Primary and ECDE schools	Community County Government National Government	labour Funds Security Technical Expertise	Funds Technical support
	Inadequate teachers	Deployment/employment of enough teachers	All ECDE Centre in Muthetheni	Community County Government National Government Development partners	labour Funds Security Technical Expertise	Funds Technical support
Quality Health Care	-Poor health services	Construct new health Centres i.e. dispensaries Upgrading existing level 2 hospital to 3	Kithiani nursery school, Itithini nursery school, Nzeveni dispensary, Muthetheni Health Centre	County government National government Community	Unskilled labour Funds Security Technical	Funds Technical support

		Upgrading Muthetheni Level 3 to Level 4			Expertise	
Adequate essential drugs	Inadequate essential drugs	Supply of essential drugs	All Health Centres in the Ward	County government National government Community	Funds Security Technical	Funds Technical support
Adequate Health personnel	Inadequate Health personnel/Community Health Volunteers (CHVs).	Employ/Deploy more staff	All Health Centres in the Ward	County Government National Government	Funds Security Technical Expertise	Funds Technical support
Adequate equipment	Inadequate equipment/First Aid equipment for CHVs	Equip according/to meet World Health Organization (WHO) and installation of an incinerator.	Muthetheni Level 3	County Government National Government Community Development partners NGOs	Funds Security Local materials Unskilled labour Technical experts	Funds Technical support Equipment/materials Communication gadgets
Agriculture and Food security	Inadequate crop pest and control mechanisms	Provision of certified seeds, fertilizers, spray chemicals (Agro)/Sprays Skilled agricultural officer and equipment (motorbikes) Give subsidies on agro-chemicals as well as tractor hire services Rehabilitate agriculture office in the Ward and equip	In the entire Ward Muthetheni Chief's camp	The county government National government Development partners Community	Funds Security Technical experts	Funds Technical support

		it.				
	Poor Livestock management/low yield	<ul style="list-style-type: none"> • Skilled veterinary officers • Training and sensitization of farmers on livestock farming • Artificial insemination • Provision of resilient breed • Provision of certified seeds for animal feeds e.g. bomarhodes, hay boxes, fertilizers • Provision of pesticides • Provision of motorized spraying pumps • Provision of value addition machinery through cooperatives 	<ul style="list-style-type: none"> • Ngamba, Kyethivo, Kyawikyo, Kaliambeu, Kang'ethe, Nthaani, Utithini, Kionyweni, Miu 	<ul style="list-style-type: none"> • County Government • National Government • Community • Development partners • NGOs 	<ul style="list-style-type: none"> • Funds • Security • Technical experts 	<ul style="list-style-type: none"> • Funds • Technical support
		<ul style="list-style-type: none"> • Rehabilitate cattle dips 	<ul style="list-style-type: none"> • Ngamba, Kyethivo, Kyawikyo, Kaliambeu, Kang'ethe, Nthaani, Utithini, Kionyweni, Miu 	<ul style="list-style-type: none"> • County Government • National Government • Community • Development partners • NGOs 	<ul style="list-style-type: none"> • Funds • Security • Technical experts 	<ul style="list-style-type: none"> • Funds • Technical support

MWALA WARD

Hazard	Expected change	What to be done	Gaps(what is missing)	Where	Who is responsible	Resources	
						Community	External
Crops Pests and Diseases	Food security	Provide subsidised fertilizers and seeds	Infertile farms High prized farm inputs including fertilizer	Farms at Mwala Makutano ward level	-Community -GOK -County gov't -Development partners	Labour	Technical skills Funding
	Skilled and trained farmers	Training farmers on good farming methods and practices Training farmers on Crop pest and diseases control Training farmers on variety of drought resilience seeds	Unskilled farmers	At the ward level	-GOK -County gov't -Development partners	Labour	Technical skills Funding
	Adequate Agricultural extension officers	Increase the number of Agricultural officers	Employment opportunities -Local income flow	At the ward leve	Community county gov't GOK Development partners	Land Labour Awareness	Funds
	High farm yields	Plant certified seeds	Local breeds only	At all the ward level	-Community -GOK -County gov't, Devt Partners	Land Labour Awareness	Funds

Human Disease	Healthy community	Renovate and upgrading of three dispensaries to level 3 hospitals	Health centres		County gov't Community	Land Skilled/unskilled labour	Funding Technical support
		4No. nurses 4no. lab technicians Train 4No. CHVs for one week trice a year	Nurses, lab technicians, CHVs training		County gov't Development partners (NGOs)	Venue Labour	Funding Technical assistance
		To provide modern lab equipment and	Lab equipment		County gov't Community	Land Labour	Funds Technical assistance
		Provide 5000 mosquito nets for the community	Treated mosquito nets for the community	Mwala ward	County gov't Community	Labour	Funds
		Retrofit 1 health centre and repair existing broken down ambulance	Ambulances	Mwala Ward	County gov't Community	Labour	Funding Technical expertise
Drought†	Adequate/clean water for households and livestock	Cleaning of Athi river	Polluted water	Athi river	Community County Government National Government Development Partners	Labour	Funds Technical expertise

		Construction of 80 sand dams	Inadequate water sources due to seasonal rivers and unreliable rainfall	10 sand dams at Mikwani river 10 sand dams at Miu river 10 sand dams at Nguthuke river 10 sand dams at Muvwana river 10 sand dams at Ndumbuli river 10 sand dams at Kyawango 10 sand dams at Mwaassua river 10 sand dams at Kyamwei	Community County Government National Government	Labour Land	Funds Technical expertise
		Construction of 12 new Earth dams	Inadequate water due to unreliable rainfall	1. Kivandini sub location Kwa Masaku earth dam 2. Kyawango sub location – Kwa Kimundiu earth dam 3. Ngulini Sub location –Kwa Loise earth dam 4. Kyamutwii Sub Location – Kwa kalinge earth dam 5. Mathunthini Sub location – Kwa Ndunda/Nzioki earth dam 6. Kibau Sub location – Kwa Nzioki earth dam 7. Wetaa Sub location – Kwa MWei Earth dam	Community County Government National Government	Labour Land	Funds Technical expertise

				8. Kamwala Sub location –Kwa Dr.Mbithi earth dam 9. Kyanganga Sub location – Kwa Kithu earth dam 10. Kibau Sub location – Kwa Nzioki earth dam 11. Maweli Sub location – Kawango earth dam 12. Myanyani Sub location – Kwa Nzali earth dam 13. Kangii Sub location – Kwa Munyithya Kwa Muoka earth dam			
		Desilting of 20 earth dams	Inadequate water due to siltation	1. Kangii Sub Location Kiteveni and Kwa Kisaa earth dams 2. Kibau sub location – Kwa Ngunzu earth dam 3. Kamwala Sub location –Kivuisa and Kwa Mutwa earth dams 4. Kivandini Sub Location – Kwa kivukui earth dam 5. Kya Mutwii Sub location – Kwa Mutune and kwa Molo earth dams 6. Kyanganga Sub	Community County Government National Government	Labour Land	Funds Technical expertise

				location – Kwa Kwa Mwanza earth dam 7. Kwawango Sub location – Kwa Mbeke and kwa Ngie Earth dams			
				8. Kangii Sub Location Kiteveni and Kwa Kisaa earth dams 9. Kibau sub location – Kwa Ngunzu earth dam 10. Kamwala Sub location –Kivuisa and Kwa Mutwa earth dams 11. Kivandini Sub Location – Kwa kivukui earth dam 12. Kya Mutwii Sub location – Kwa Mutune and kwa Molo earth dams 13. Kyanganga Sub location – Kwa Kwa Mwanza earth dam 14. Kwawango Sub location – Kwa Mbeke and kwa Ngie Earth dams 15. Mathunthini Sub location –Kwa ngei	Community County Government National Government		

				and Kwa Ngolya earth dam 16. Maweli Sub location – Kwa Kaaria earth dam 17. Myanyani Sub location – Kwa Mwovi earth dam 18. Ngulini Sub location – Kwa kiithya earth dam 19. Wetaa Sub location – Kwa Nzioka earth dam			
		Drilling and equipping of 20 boreholes	Inadequate water sources	1. Kangii Sub Location Kwa kiema and kiluluini bh 2. Ngulini sub location – Kwa Katunge Pri and Kya Ngii bh 3. Myanyani Sub location –Kwa Kitavi bh 4. Kivandini Sub Location – Kanzalu village and Utithi Pri bhs 5. Kibau Sub location – lukuni village bh 6. Mwonga village and Dorcus Kimilu bhs 7. Kamwala Sub location – Kanyuuku market and Kwesonga village	Community County Government National Government	Labour Land	Funds Technical expertise

				bhs 8. Kyawango Sub location – Kwa 9. Wetaa Sub location –Kithaathai and Upper Vyula bhs 10. Kyanganga Sub location – Kwa Muthini bh 11. Mathunthini Sub location Mathinthini AIC bh 12. Kya Mutwii Sub location – Kya mutwii pri and Nduu Ndune AIC 13. Maweli Sub location – Kikulini Catholic Church and Kisaani Primary School 14. Ngulini dispensary bh 15. Musaalani dispensary bh 16. Kathithya Maa Bh All 8 rivers(Muvwana, Miu, Ndumbuli, Mikwani,Nguthuke, Mwaasua,InaguniKya Mwei Location 20 at kibau sub Location 20 at Kamwala sub Location			
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				20 at Wetaa sub Location 10 at Kyanganga sub Location 25 at Mathunthini sub Location 25 at Kyamutwii sub Location 25 at Nguluni sub Location 25 at Myanyani sub Location 15 at Kivandini sub location			
		Repair and equipping of 5 boreholes	Stalled and not equipped Bore holes	2 at Maweli sub Location 3 at Kangii sub Location	Community County Government	Labour Land	Funds Technical expertise
		Reticulation of water from 10 boreholes	Bore water not reticulated		Community County Government	Labour Land	Funds Technical expertise

KIVAA WARD

HAZARD	EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
Drought	Adequate/clean water for households and	Sufficient water harvesting structures	Water harvesting strategies Desilt Existing and	Earth dams Desilting:- Kwa Kimiti,	Community County Government KENGEN	Land Labour Sand Security	Funds Technical expertise Machinery

HAZARD	EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
	livestock		Construct new earth dams Construction of New Earth Dams	Kwa Kithama, Kithia kwa Grace, Kwa Nguna, Kwa Kathivo, Kisaani, Kwa Ndiku, Kwa Moosa, Kwa Kitusya, Kwa Ngowa, Kiuwani, Kwa Ndungo, Kwa Ngule, Kwa Kanzi, Kwa Kasyima, Ngulwani, Kwa Ndote, Kamunoo, 13 homes, Kwa Muthini, Kwa Ngaa, Kwa Ngula, Katisaa, Kimuuni, Nzana,Ndelekeni, Nghiini. Kwa Maingi, Ngomano, Mililuni,Kwa Soo, Kwa Muthoka, Kwa Nzioki, Itooma Stream, Kwa Nzou,Kwa Kithimba, Kwa Timothy, Kwa Kamuti, Kwa Charles Mulinge, Siuukuni, Muthembwa, Kwa	National Government NGOs NDMA PPP		

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HAZARD	EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
				Kwa Munywoki, Masaku Primary, Kivaa Market, Kwa Mulela, Kyondoni Pri., Vondeni Mkt, Kivaa hill,Itooma Pri., Kituneni Pri. Kamuthumba Pri. Kaewa Mkt. Iiani Primary, Kiambani Pri., Kwa Nthenya, Kwa Peter Musili, Kanguu Pri., Kwa Muendo, Mutembuku, Kangangini Pri., Iuuma Sec., Kwa Mwanzia,Miangueni Pri., Mbingoni Pri., Katika Pri., Kimuuni Pri., Ndatani Pri., Ndelekeni Pri., Kithyoko Secondary, Mwatungo, Kithungo Primary, Muambani Pri., Kyaani Pri., Kwanzui Pri., Kikuuni Pri.			

HAZARD	EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
			Sand dams/weirs	Twamyao Stream:- Inyanzaa, Kwa Mumo, kwa Ngenyi, Kithoni Stream:- Kwa Mutemi, Kwa Nganda, Kwa malandi. Kamunyu Stream:- Kwa Kiiro, Kwa Kithanze. Nunguni stream:- Kwa Kavutu, Itooma Stream:- Kwa Sevu, Kwa Katoo, Kwa Mulei Kwa Mutua, Stream:- Kwa Kilungu Kakyia Stream:- Kwa Isaac Ngangani stream:- Kwa Musemi, Kwa Mulungi, Kwa Muthini luuma river:- Kwa Musyoki, Kwa Makau Kwa Mutuva, Kwa Mwela, Kwa Mbondo, Kwa Kingoo Ndeto Kwa daudi Kwa mukui Kwa makaa			

HAZARD	EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
				Irukuni stream:- Kwa Mutune, Kwa Somba, Kwa Nzali, Kwa Muthoka, Kwa Kiiro Muthoka Ndia nthei stream:- Kwa Kisuna, Kwa rose, Kwa Mulili Stream Mukengesya river:- Kwa Kathyole, Kwa Kasika, Kwa Elijah Nganga, Kwa nguli wa musyimi Kwa ngali/kinyae Kwa Kikvi stream:- Kwa mutisya wa kalii Kwa kivindyo Nguuni stream:- Kwa Nicholas mutisya Kawongo:- Kwa musili Kwa mutisya Kwa kavingaasi:- Kwa muthoka Usi wa kamunyu:- Kwa kamwilu Kithyoko river:- Molo Kwa malai Kwa mii ili			

HAZARD	EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
				Ndungoni Kwa syokia Kwa menga Kwa ndeewa Kaioni Ngomola river:- Kwa kofta Kwa nguuta Ngomola pri Kwa katiwa			
Enhance Environmental conservation		Deforestation Environmental degradation	Tree nursery, good agricultural practices, extension services, Terraces, Gabions, protection of existing trees, burn illicit human activities, good grazing activities, sensitization, improve indigenous tree cover, enforcement of existing laws and regulations	Across the ward	Community, CG, NG, Development partners,	Land, Labour	

HAZARD	EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
Reduced social disasters		Lack of sensitization, Lack of job opportunities	Sensitization and empowerment, Creation of job opportunities, Skills enhancement, Guidance and counselling, Creation of more rehabilitation centres, Regulation on sale of drugs	Across the ward	CG, NG, Community and other Development partners	Counselling and Guidance	Job creation, Funds

EKALAKALA WARD

Hazard	Expected change	Gaps	Intervention/ Action	Where	Who is responsible	Resources	
						Community	External
Drought	Adequate supply of quality water for domestic use, livestock and irrigation	Inadequate water availability	Support auxiliary works/ desilting of 8No. dams and related catchment protection/ management measures on the identified earth dams	Wendano, Tivui, Kwa Mulonzi, Kwa kalandi, kathini, Kiangeni Kyangawa Kwa Mutisya	Community CGM NG Development Partners	non-skilled labour)	-Technical skills -Funds Machinery

			Auxiliary Structures(fencing ,cattle troughs, drawing points) 2 dams	Kwa Mwenga Kwa Mulonzi	Community CGM NG Development Partners	non-skilled labour)	-Technical skills -Funds Machinery -
			Rehabilitation of three boreholes	Kathini bh, Kwa wanzilu, Kwa nziu			
			Support hydrogeological modelling survey for aquifers, drilling, equip and solarize of two (2) new boreholes	Kiageni village Kwa Mbengei Wa mboo			
			Construction of three (3)weirs (new)	Kwa Mbengei Isyukoni Kindaruma Kathini Kwa kavilu			
			Weirs rehabilitation-one (1 no)	Kwa Kasina			
			-Support of farm level rainwater harvesting, storage and alternative productive use (e.g. micro irrigation, aqua culture etc.)	Ward level/All sub locations	Community CGM NG Development Partners	non-skilled labour)	-Technical skills -Funds Machinery

			through subsidizing excavation of farm ponds and provision of dam liners				
			-Capacity building on conservation agriculture, sustainable soil and water management practices Farm yard manure and recomposition	Ward level.	Community GMC GOK Development partners	Land Unskilled labour	- Technical skills Funds
Environmental degradation	Develop mechanisms for conservation and protection of riparian areas	Encroached Riparian lands	Support riparian marking and Pegging of rivers	Along Rivers Thika, Tana , mathauta and the Masinga dam	Community County government National government NGO	Labour	Technical expertise Funds
	Enhanced sustainable environment	Lack of knowledge on environmental conservation measures -Inadequate	Support the establishment of tree nurseries and tree planting in all learning and social institutions,	All sublocations	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds

		<p>tree nurseries</p> <ul style="list-style-type: none"> - Lack of enough resources i.e seedlings -Control policies and regulations 	<p>water catchment areas (hills) and riparian lands by women, youth and PLWDs groups</p> <p>Regulated sand harvesting through policy formulation and enforcement.</p>				
	Green Energy Transition	<p>Over dependence on fossil fuels to run machinery and to power facilities.</p> <p>Use of wood fuel/charcoal for cooking and kerosene lighting</p>	<p>Support provision of energy saving jikos, solar systems, biogas, capacity building on use of renewable energy sources.</p>	Ward level	<p>Community</p> <p>County government</p> <p>National government</p> <p>NGO</p>	Labour	<p>Technical expertise</p> <p>Funds</p>
Crop pests and diseases	Access to adequate nutritious food	<p>Inadequate access to nutritious food due to drought and unsustainable farming practices</p>	<p>Support on subsidized farm inputs (fertilizers, certified seeds, pesticides) based on ecological zones.</p>	Throughout the Ward	<p>Community GMC</p> <p>GOK</p> <p>Development partners</p>	<p>-Farmers</p> <p>-Arable land</p> <p>-Unskilled labour</p>	<p>Technical expertise</p> <p>Funds</p>

	Increased food supply / food security	Inadequate food supply	Support and Capacity building on drought tolerant breeds for livestock and poultry	Throughout the Ward		-Farmers Land -Unskilled labour	Technical expertise Funds
	Reduced crop and pest diseases	Inadequate food supply	-Capacity building on conservation agriculture, sustainable soil and water management practices	Throughout the Ward.		- Land Unskilled labour -Land	Technical expertise Funds
	Adoption of irrigation farming	Inadequate water supply for water harvesting	-Capacity building and support for drip irrigation at farm level				
Human diseases	Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas	Support rehabilitation and upgrading of three health facilities including providing an enabling environment for health care provision	Ekalakala Itunduimuni Ikaatini	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds
			Support access to emergency drugs and medical	Ekalakala Itunduimuni Ikaatini	Community GMC GOK Development	Land Unskilled labour	Technical skills Funds

			services at all public health facilities		partners		
		Inadequate emergency response capacity in climate-hazard-prone areas	Support on ambulances services management for referral instances	Ekalakala	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds
		Low coverage by CHVs.	Support on capacity building for CHVs Support on provision of safety kits for CHVs Facilitation of the CHVs to ensure mobility	Ward level	Community GMC GOK Development partners	Land Unskilled labour	Technical skills Funds

KALAMA WARD

EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
Improved standards of education	Inadequate /poor learning facilities and staffing	-Support Construction of vocational training colleges to offer climate related vocational trainings.	-Kisueni, Mbukuni, Konza -Kimutwa sub loc: - Kimutwa Pri., Kwa Kavoo	-County Government, National Government -Community -Development	-Provision of local materials -Provision of land -Unskilled Labour	-Skilled Labour -Hardware materials -Funding

EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
		-Support construction of ECDE class rooms to green building -Support provision of Psychomotor materials, Education and library materials Support construction of spring box, protection and reticulation	Pri., Mbembani Pri. -Kaathi sub loc:-Kaathi pri. , Love -Kakayuni sub loc:-Kyangala DEB Pri., Kanyongo Pri, -Kyanzasu sub loc:-Malindi ECDE centre, Makakoi Pri. -Nziuni sub loc:- Mulaani Pri., Kitulani ECDE centre Kyangala sub loc: -Kyangala Township, Ulaani Pri. -Kiitini sub loc: - Makaveti Pri., Miwani Pri., Masaani -Kinoi sub loc: - Ivutini Pri., Kisyani Pri.	partners		
Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas	Support Completion of infrastructure, equipping and staffing -Improved accessibility to the health facilities -Construction of health centers to climate vulnerable areas	-Kalama Level 4 -Kimutwa Level 3 -Makakoi Dispensary -Konza Level 2 -Mutuyu Dispensary -kakayuni dispensary -Kyanzasu Dispensary -Kivutini Dispensary -Kyangala Level 4 , -Ulaani	NG, CG, Community and other development partners	-Local materials -Unskilled Labour, land	Funding, Skilled Labour, Hardware materials, CSR
Social wellness to climate vulnerable	Poor social wellness	-Support social wellness to vulnerable climate change affected	Across the ward	NG, CG, FBOs, NGOs, Community and	Land, Guidance and counselling, community	Skilled Labour, Funding

EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
community		community through: -Community affirmative action -Enforcement of the law -Youth resource centre -Engaging youth in sports and extra curriculum activities -Creation of employment opportunities -Drug and substance abuse awareness campaign.		other partners	activism	
Improve agricultural productivity in climate change affected areas	Low crop and livestock production	-Support Improvement of breeds through AI -Support and capacity build on veterinary services -Rehabilitation of cattle dips and spray races	Across the ward	NG, CG and other partners	Unskilled Labour	Technical support, Special equipment, funding and additional veterinary/livestock officers
		-Support access to Improved certified seed varieties -Support Capacity building of extension	Across the ward	Community,NG, CG, FBOs, CBOs and other development partners	Unskilled Labour, Land, demonstration materials	Funding, Skilled Labour

EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
		officers -Subsidized agro inputs -Capacity building on good farming methods -Post harvesting management technologies(hermetic bags) -Market networking				

KIBAUNI WARD

HAZARD	EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
Drought	Sufficient water supply both quality and quantity	Construction of news dams.	17 news dams	Kwanamba -Kwa ngai -Kyamusi -Kwatinde -Kwa kyuu -Muunsani -Kiusoni -Kwa mungithya Kwa Munyalo -Kwa Nganga -Kangondi -Kwa Vamula Kwa Kyaka Kyangwasi	CG Flloca NG Africa Sand dams ADSE NACODEV community	Labor Local materials Security	Finances Materials Technical skills Equipment/Machinery

				Kwa Nzioki			
		Desilted of silted water pans	6 silted dams	Konza -Kwa peter -Andu -Kyambia Kwa metho Kibauni	Flloca CG NG Development Partners		Finances Materials Technical skills Equipment/Machinery
		Desilting of 7 dams	7 silted dams	Muumduni dam Matinga dam Endau dam River –Athi Dams Kwa matinga dam Kwa mbisi dam Kwa mauwa dam	Flloca CG NG Development Partners		Finances Materials Technical skills Equipment/Machinery
		<u>Boreholes</u> 16 new BH		-Kyeni -Kyaoni -Ngumbau -Katulani -Itooni -Maleli -Wanga -Kiunguani -Nthungu -Thwanguu -Kuukuni -Tulila Pri -Kivani Pri Kitile pri -Katualni -Nzeveni -Mukuyuni -Kyelavo -Kwakulu -Matulani -Kilevu	Flloca CG NG Development Partners	Labour Local materials Security	Finances Materials Technical skills Equipment/Machinery

				Kwamanduu -Mulusyani sec -Kwa mbalu -Maelani			
		Construction of 35 weirs Weirs		-Along R-Mutanguu -Along R-Mulumya -Along R.Mbuli -Along R-Mivukoni -Along R-Mulimbi -:Aong R-Kiketa -Along R-Miu -Along River Thwake -Along R-Mwintha -Along R-Kyandui -Along R-Kisovi -Along R-Kyembua Mutanguu river -Mulumya river -Kyambuli river -Mivukoni river -Mutungauu (Kwa musumbi) -Kyambuli . Kwamutisya. Kwa Kitavi -Kwa Kisangau Mivukoni -Kwa Kasuki, Kwa matheka -Kwa Ndolo -Katulani (Mukaa Market)	CG Ffloc NG Africa Sand dams ADSE NACODEV community	Labour Local materials Security	Finances Materials Technical skills Equipment/Machinery
		Drilling of 16 new boreholes		In 11 Schools and health 5 facilities Tulila level 2 Ikalaasa level 2	Ffloc CG NG Development	Labour Local materials Security	Finances Materials Technical skills Equipment/Machinery

				Nthwanguu level 2 Kilala level 2 Kyombumbu -Mutula -Kyalavo -Kituluini(Kathianii)	Partners		chinery
		Climate proofing of rural roads		Kyonguni to Malili -Kyowani toKenze -Kenze to Syombu -Muetha to Anthi -Kastomu to Kasengela -Utangini to Kamwelu -Mwanyani to Uvanga. -Kiunguni to Malili. -Kyeni to Kiukuni -Kilawani to Matulani -Mutula- to Muthei -Kivalani to Muthei -Kwa willy to to Kwa muthyilu -Kitile sec to Mwani river -Maikima to Kiunduani -Kiteteni- to Kyonguni -Kilala to Wanzeze -Kilalla to kinani -Kitile to Kwa manduu -Wamunyu to Kalawa road -Syokauwe to Mutula	Floca CG NG Development Partners		Finances Materials Technical skills Equipment/Machinery

				-Itooni to Anthi -Ittoni to Mwingili -Kimeuni to Malili -Reuben to Kyambuli -Rose to Nzangi -Kilala to Kwa Kinai -Kilala to Kwa sima -Kilalala to Kyungoni -Mutulua to Kwa Kisanga -Mutula to AIC Thwake -Ikalaasa to Konza -Tulilia to Konza -Tulila to Kasongela -Ndiveni to Kyowani -Matulani to Mwetha			
		Provision of 132 tanks for schools, roof water harvesting		All 62 Primary Schools, 35 Secondary schools and 5 health centres	CG NG Fllaco Mwala water service	Local labour	Finances and Technical
		Solarization of Kibauni water project	Huge unsustainable electric power bills and operating costs	Kibauni water project	Flloca CG NG Development Partners	Local labour	Finances and Technical
		Securing of water resources	Lack of clean drinking water		Flloca CG NG Development Partners	Local labour	Finances and Technical

		Climate proofing of rural roads		Construction of 9 New bridges			Finances Materials Technical skills Equipment/Machinery
		Climate proofing of rural roads	Bush clearing excavation and grading	Opening up of 33 roads and grading			Finances Materials Technical skills Equipment/Machinery
				Construction of drifts			Finances Materials Technical skills Equipment/Machinery
				Upgrade of 4 level 2 facilities to level 3			
		Improved sanitation	Latrines (Lacked in public places)	Construction 32 new modern public latrines	Filloc CG NG Development Partners	Local labour	Finances and Technical
livelihoods			Lack of Hand wash points	Provision of 102 active hand washing points	Filloc CG NG Development Partners	Local labour	Finances and Technical
		Improved education standards	Lack of shoes for school	Provision of shoes to all school going children	Filloc CG NG	Local labour	Finances and Technical

			children		Development Partners		
			Retrofitting of 4 no. level 2 facilities		Floca CG NG Development Partners	Local labour	Finances and Technical
<u>Environmental degradation</u>			Polluted water	Cleaning of the Athi River	Floca CG NG Development Partners	Local labour	Finances and Technical

KATHIANI CENTRAL WARD

Hazard	Expected change	Gaps	Intervention/Action	Where	Who responsible is	Resources	
Drought	Adequate water supply	Inadequate water supply				Community	EXTERNAL
			Dams - Rehabilitation of one dam (Desilting and construction of auxiliary structures)	-Muooni	-CGM -NG -Development partners -NDMA	Manpower Security	- Technical support - Finance
			Weirs - Rehabilitation of 3 weir	-Mutondoni-Kwa Kyee -Kwa Makumi -Kwa Nguta		-Unskilled labor -Locally available materials	- Technical support - Finance

			- Construction of new weirs	-Kimanga -Musilili -Umanthi -Kwa Ndandu -Kalua -Kwa kiilu(Misuuni) -Nthunguni		-Land -Unskilled labor -Local materials	- Technical support - Finance
			Boreholes Rehabilitation of 3 boreholes(pumping system, solar panel replacement)	-Kaiani -Ngoleni -Lita Catholic church	- Community - CG	Land -Unskilled labor -Local materials	- Technical support - Funds
			Reticulation-pipeline extension -Tanks (at water points)	-Lumbwa -Ngoleni		Land -Unskilled labor -Local materials	- Technical support - Finance
			Establishment of water management committees on O&M	At ward level		Man power	- Technical support - Funds
	Expected change		Intervention/Action	Where	Who is responsible	Resources	
			Construction of new boreholes	Mukukuni Mutitu Isyukoni Kathiani Nthunguni	-CGM -NG -Development partners -NDMA	- Land - Man Power	- Technical skills - Funds

Evironemtal Degradation	Enhanced Environmental conservation	Unsustainable Environment	Tree planting	Ward level (Schools Community, public utilities)	<ul style="list-style-type: none"> - Community - GOK CBOs(manchok a) Self Help groups	<ul style="list-style-type: none"> - Land - Man Power 	<ul style="list-style-type: none"> - Technical skills - Funds
			<ul style="list-style-type: none"> - Construction of gabions and planting of cover crops in denuded lands - Terracing 	Ward level			<ul style="list-style-type: none"> - Technical skills - Funds
			<ul style="list-style-type: none"> - Community sensitization and capacity building on environmental conservation 	Community at ward level			<ul style="list-style-type: none"> - Technical skills - Funds
			<ul style="list-style-type: none"> - Enactment of regulations on sand harvesting and tree logging 	-Community at ward level			<ul style="list-style-type: none"> - Technical skills - Funds
livelihoods	Increased food production/ water availability	Insufficient food supply/inadequate water for farming	<ul style="list-style-type: none"> - Introduction of modern farming methods - Capacity building on modern farming methods - Practicing conservation Agriculture - Use of tolerant drought crop/certified seeds. - Sensitization on water harvesting technologies - Establishment of 	At community/ ward level	C.G N.G Community	Land Unskilled labor	<ul style="list-style-type: none"> - Funds - Technical

			aggregation centers. - Planting pests and diseases resistant crops				
Pests and Diseases	Reduced crop pests and diseases	Prevalence of crop pests and diseases	- Capacity building on safe use of pesticides/agro-chemicals - Better agricultural processes - Embracing Organic farming - Integrated pest management.	At ward level	C.G N.G Community		- Funds - Technical skills

KANGUNDO WEST

Expected change	Gaps	Intervention/ Action	Where	Who is responsible	Resources	
					Community	EXTERNAL
Adequate sufficient/ clean water for households and livestock	Insufficient water supply	Boreholes Rehabilitation of 6 boreholes Construction of new boreholes	- Kitongi - Kyevaluki - Mukunike - Kwa kithama - Syanthi - Kithini borehole	CGM Development partners NG NDMA	-unskilled labour -Land	- Technical Expertise - Funds

	Drilling of 8 new boreholes	<ul style="list-style-type: none"> -Kathaana market -Kathaana primary -AIC Kiu -Kikondeni primary -kiumoni/ muthwani -Kaewa -Kiomo -Mukunike dispensary 	CGM Development partners NG NDMA	<ul style="list-style-type: none"> -unskilled labour -Land 	<ul style="list-style-type: none"> - Technical Expertise - Funds
	Reticulation/distribution of one borehole	<ul style="list-style-type: none"> -Kwa Ndeto primary 	CGM Development partners NG NDMA	<ul style="list-style-type: none"> -unskilled labour -Land 	<ul style="list-style-type: none"> - Technical Expertise - Funds
	Dams Rehabilitation of 8 dams (auxiliary structures, desilting)	<ul style="list-style-type: none"> ✓ Mbusyani ✓ Kwa Mwenga ✓ Yenyeni ✓ Kwa maaye ✓ Kwa kilo ✓ Kwa kasenga ✓ Kwa mwelu ✓ Kathunguli 	CGM Development partners NG NDMA	<ul style="list-style-type: none"> -unskilled labour -Land 	<ul style="list-style-type: none"> - Technical Expertise - Funds
	Construction of new dams in the 2 proposed areas	<ul style="list-style-type: none"> ✓ Kwa kang'ethe ✓ Kathaana 	CGM Development partners NG NDMA	<ul style="list-style-type: none"> -unskilled labour -Land 	<ul style="list-style-type: none"> - Technical Expertise - Funds
	Weirs Rehabilitation/ repair of 6 existing weirs -Extension of the weirs and conservation of river banks.	<ul style="list-style-type: none"> • Kwa mbato • Kwa katung'ung'u • Ndeini • Syanamu • Kwa nyota 	CGM Development partners NG NDMA	<ul style="list-style-type: none"> -unskilled labour -Land 	<ul style="list-style-type: none"> - Technical Expertise - Funds

		Construction of new weirs	<ul style="list-style-type: none"> ✓ Kwa katiwa ✓ Kwa suki ✓ Society/ Kithongoni ✓ Nzweni ✓ Kwa mutanga ✓ Usi wa Usia ✓ Kwa itungu 	CGM Development partners NG NDMA	unskilled labour -Land	<ul style="list-style-type: none"> - Technical Expertise - Funds
		Establishment of water management committees	Ward level	CGM Development partners NG NDMA	Community	<ul style="list-style-type: none"> - Funds - Technical expertise
Enhanced and sustainable environmental conservation	Unconducive and sustainable environment Existence of crop pests and diseases	Tree planting	Ward level	Community Schools CGM NG NGOS	Land Unskilled labour Seedlings	<ul style="list-style-type: none"> - Funds - Technical expertise
		Construction of gabions in areas with gully formations	Ward level	Community NG CGM Development partners	Stones Sand Unskilled labour	<ul style="list-style-type: none"> - Funds - Technical expertise
		Capacity building on soil conservation measures	Ward level	Community CGM NG Development partners	Land Unskilled labour	<ul style="list-style-type: none"> - Funds - Technical expertise

		Establishment of environmental laws and regulations in relation to tree planting and sand harvesting	Ward level	Community CGM NG Development partners	Land Unskilled labour	- Funds - Technical expertise
Minimal crop pests and diseases		Introduction of modern methods of farming	Ward level	Community CGM NG Development partners	Land Unskilled labour	- Funds - Technical skills
		Introduction of conservation agriculture	Ward level	Community CGM NG Development partners	Land Unskilled labour	- Funds - Technical skills
		Capacity building on modern farming methods(crop rotation) and conservation Agriculture	Ward level	Community CGM NG Development partners	Land Unskilled labour	- Funds - Technical skills
High food production	Insufficient food production	Provision of certified seed	Ward level	CGM NG	Farms Unskilled labour	- Funds - Technical skills
		Provision of subsidized farm inputs	Ward level	CGM NG Development partners	Farms Unskilled labour	- Funds - Technical skills
		Provision of more Agricultural extension officers in all sub-locations	Ward level	CGM NG Development partners	Farms Unskilled labour	- Funds - Technical skills

		Capacity building on prevention and management of crop pests and diseases	Ward level	CGM NG Development partners	Farms Unskilled labour	- Funds - Technical skills
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KANGUNDO NORTH

Expected change	Gaps	Intervention/Action	Where	Who is responsible	Resources	
					Community	External
Adequate supply of quality water	Inadequate water supply	Construction of (3) earth dams	Kangundo North Ward	Community CGM GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
		Construction of sand dams	Miu River	Community CGM GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
		Auxiliary works/Desilting 3 Earth pans	Kangundo North Ward	Community CGM GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
		Sinking of new boreholes	Kangundo North Ward	Community CGM Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
		Rehabilitation of boreholes/ Water distribution from boreholes through pipeline extension and storage tanks	16 boreholes	Community GMC GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds

		Solar installation to boreholes, water tanks and water sumps				
Enhance Environmental conservation	Deforestation Environmental degradation	Tree nursery establishment of indigenous trees Sensitization on the importance of conserving the environment Tree growing in institutions and water points Construction of gabions, Cover crops in denuded lands, terracing, grass reseeded, zero grazing, Controlled sand harvesting	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Increased security	Food Low crop production	Promote conservation agriculture Subsidized manure/fertilizer Provision of Soil sampling/testing Capacity building on conservation agriculture. Capacity build terrace markers per	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds

		cluster Capacity building on modern water harvesting				
Increased food production/water availability	Low food Production Inadequate water for farming	Enhance capacity building on Roof catchment at House Hold level Upscale capacity building on harvesting of Water runoff directed to farms	Ward level	Community GMC GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Knowledge on use of pesticides and access on the same	Inaccessible pesticides and knowledge to apply the same	Training service providers and community on pesticide application & subsidize prices	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Reduced crop pest and diseases	Crop pest and disease affecting production	Capacity building on pests and disease control Provision of quality PPE (Personal Protective Equipment)	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Reduce human diseases	Poor handling of food and food products	Training on food safety and quality	Ward level	Community CGM GOK Development partners	Non-Skilled Labor	Technical skills Funds
Increased food production	Poor BAP/low crop production	Procure ward ripper Soil testing to be done Capacity building in conservation	Ward level	Community GMC GOK NDMA Development partners	Land Non-Skilled Labor	Technical skills Funds

		agriculture, BAP and provision of DTC seeds and manure at subsidized price, promotion of value chains and market linkage Establish agricultural products aggregation centers Post-harvest management				
Increased pasture production	Low pasture production	Capacity building on pasture value chain, provision of pasture seeds at subsidized prices and storage Provision of combined harvester at subsidized prices Promote zero grazing	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Reduced livestock mortality	Livestock diseases	Mass vaccination and disease surveillance Construction of crushes Train livestock service providers	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds

		Train poultry vaccinators				
Good animal health	Low animal feeds production	Capacity building on animal feeds/Fodder formulation and conservation Market linkage Recruit livestock/vet extension officers Activate/Subsidized AI services Capacity building of farmers on livestock management	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Promote livestock breeds	Poor Indigenous breeds	Promote improved indigenous chicken/ Gala goats/ dorper/ bulls/ dairy cows	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
Healthy people/ reduced distance to access health facilities	Poor infrastructure	Upgrading/equip drugs/ maternity wings/laboratories to existing health facilities/ Construct theater		Community GMC GOK NDMA Development partners	Land Non Skilled Labor	Technical skills Funds

KANGUNDO EAST

Expected Change	Gap (what is missing)	Intervention (What needs to be done)	Where	By Who	Resources	
					Community	External
Water Adequate supply of clean water. Enough water for livestock Water for irrigation Safe and potable drinking water	Inadequate water supply Silted dams Inadequate dams Broken down boreholes Low yield dams Ownership disputes Missing auxiliary structures	Construction of 10 new dams	Nzololo in Miu Kwa Ben in Miu Kathuli in Katitu Mukuyuni in Katitu Iatine Kwa Malandi Kwa Kimanthi in Naumuti Kwa mathea in Kathome Kwa Mutavi in kithunthi Kitatani in kavinguni Kwa Nthungu in Kathome	Community GMC GoK Development partners	Land Unskilled labor Locally available material(Sand and ballast)	Technical skills Funds Machinery
		Desilting of 10 new dams	Kivani dam Kwa Ngombe Kwa Thiang'u dam Kyendia dam Ngangeni dam Kwa Nduu Kwa Kilui Kwa Ngumbi Kwa Mithea Kivi Kwa Mutavi	GMC Development partners GoK	Labor (unskilled)	Funds Technical skills Machinery
		Auxilliary structures	Kivani dam Kwa Ng'ombe dam Kwa Tthungo dam Kyandia Ngangani Kwa Ndungu Kwa Kilulu Kwa Muthaaa kivi Kwa Ngumbi Kwa Mutavi	GMC GoK(CDF)	Labor Locally available material(sand, ballast)	Funds Technical skills Machinery

		BOREHOLES(NEW)	Kithuyiani primary	Community GMC GoK(CDF) Development partners	Land non-skilled labour	Funds Technical skills Machinery
		Rehabilitation(67)	Miu Manyatta primary Kivani market Kamanzi secondary Kathome dispensary Kavilinguni secondary Mukuyuni primary	Community GMC GoK(CDF) Development partners	Land Non-skilled labour	Funds Technical skills Machinery
		Solar Panel and equipping	Kivi Kwa Kathule			Funds Technical skills Machinery
		WEIRS(28)	Kwa Mutanga 4 Katongi 4 Kyaana 4 Ngumuti 4 Muu 4 Miu 4 Savi	Community GMC GoK(CDF) Development partners	Land Non-skilled labor	Funds Technical skills Machinery
		Catchment protection Springs fencing(28)	Wutu, Ngangani,Iletune kwa Kilungu,Kyandia, Ngomano,Kwamwia,Kinyae, Kwa Ivulu, Nzololo, Kwa asumamni, Kwa kamanza, Kwa Ngote, Kwa samba, Matumani,Kwa katuti, Kwa muo, Katoa,Kwa Mawea, kwa itwiku, Kwa kimanthi, Ithemboni,Kwa muo, Kwa kivwaa, Kwa Kyuvi, Ngumuti	Community GMC GoK(CDF) Development partners	Land Non-skilled labor	Funds Technical skills Machinery
LIVESTOCK Adequate	Few extension officers	Employment -4 extension officers(2	3 Kivaani location 1 Katheini location	Community GMC	Land	Funds Technical

extension officers Increased pasture production Improved livestock breed Good animal health	Less of pasture Improved livestock breeds Livestock disease	each location) Provision of pasture seeds, Artificial (AI)insemination Rehabilitation of cattle dips Construction of new cattle dips Vaccination crushes Veterinary officers	AI across east ward Kivaani market Ngangani market Kamanzi Kwa Ilinda Miu Nganagani Kamanzi Kivaani market Kwa Ilinda Miu	GoK-MoALFD		skills
POULTRY Improved poultry and poultry products-	Low production poultry	Provision of brooding machines Market linkages Capacity building on brooding	Entire ward	MoALFD Delopment partners	Local breed Land	Funds Technical skills
HEALTH Improved health care Improved access to health facilities	Insufficient health facilities Poor health infrastructure	Upgrading the facilities Provision of medical supplies Equipping the existing health facilities Construction of new health facilities	Kivaani health centre Miu dispensary Kwa Mwenze Kathome lia Itune Kithini-Kwa Yaayaa kamanzi	GMC- Department of Health Development Partners GoK-CDF,MoH	Land Non-skilled labor Locally available materials(sand, stones, ballast)	Skilled labor Funds

Improved nutrition	Malnutrition	Capacity building of CHVs Medical Camps	All health centres-Miu, Kwa Nzanze, lia Itune & Kathome	GoMC	Skilled labor	Funds Technical skills
ENVIRONMENTAL CONSERVATION Forest	Environmental degradation	Afforestation Provision of tree seedlings Planting trees and napier grass along river banks and riparian lands	Ngulini forest Kanzali hill All public schools and public land All rivers	Community GoMC Development partners Community GoMC Development partners	Land Unskilled labor Land Unskilled labor	Funds Funds Seedlings Technical skills
Farming practices	Soil erosion Land slides	Planting of cover crops Planting deep rooted plants Digging terraces Construction of gabions Micro-forest Use of solar energy Use of renewable energy	All farms and Matithini village	Community GoMC	Land Unskilled labor	Funds Seedlings Technical skills
Renewable energy adoption	Charcoal burning and firewood	Practice organic farming	Entire ward	Community GoMC Development partners	Land	Funds Technical skills
Improved	pollution	Surveillance of disease and pests	Entire ward	Community	Land	Funds Technical skills

Farming Practices Use of pesticides and herbicides Reduced crop pests and diseases	Availability of crop pest and disease		Entire ward	Community GoMC	Land	Technical skills Technical skills and funds
Improved Road Networks	Poor infrastructure	Road grading and rehabilitation Tarmacking	Entire ward Kakuyuni-Kivaani road Kangundo-Mwala road	GoMC GoK	Land Unskilled labour Locally available materials	Technical skills, machinery and funds
Improved Markets	Poor Sanitation facilities	Market toilets Market sheds Market days Market lighting(mlika mwizi) Market cleaners	Entire ward Kivaani market. Kamanzi markets Kikomba market Kwa Kathule , Kathome Katheini, Kithuntha market Entire ward	GoMC Development partners	Land Non-skilled labor Locally available material	Funds Technical skills

Improved Schools	Poor infrastructure for ECDE classes with untrained teachers	Construction of ECDE classes Employ more trained ECDE teachers Introduce feeding programme in ECDE primary schools	Katatha Maweu pri Miu primary school Mukuyuni primary Ngomani primary Mususye pri school Kivi pri school Kivaani township pri school Ila Itune pri school Kwa Kathule pri school Kathome pri school Kisekini pri school Kamanzi pri school Katheini pri school	GoMC G.O.K	Land Non-Skilled labor	Funds Technical skills
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KANGUNDO CENTRAL

Expected change	GAP	INTERVENTION/ACTION	WHERE	WHO IS RESPONSIBLE	COMMUNITY	EXTERNAL
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Adequate supply of water	<ul style="list-style-type: none"> - Uneven distribution of water - Siltation of Dams - Insecure (fencing of dams) - Breached dam (Kwa Ndulu) - Most dams are not surveyed. - Have no auxiliary structures - Boreholes not functioning (3) - Lack frequent 	<ul style="list-style-type: none"> - Construction of new dams, Treatment plant and Auxiliary Structures - Desilting all dams - Fencing - Construction of Kwa Ndulu dam - Surveying of existing dams / Encroached - Distribution network 	<p>Kwa Musyoka, Kilalani, Muisuni factory</p> <p>Across the ward</p> <p>All dams in the ward</p> <p>All dams in the ward</p> <p>Kwa Ndulu</p> <p>All dams in the ward</p> <p>Ukanga Utune, Kilalani</p>	<ul style="list-style-type: none"> - County government - Community - G.O.K - Donors 	<ul style="list-style-type: none"> - Land - Labor - Raw materials - Supervision/Project Management Committee 	<ul style="list-style-type: none"> - Skills - Funds - Machinery
		<ul style="list-style-type: none"> - Rehabilitation of malfunctioning boreholes 	<ul style="list-style-type: none"> - Kilalani, Kyaaka, Kithumuoni 			
		<ul style="list-style-type: none"> - Frequent servicing 	<ul style="list-style-type: none"> - All boreholes across the ward 			
		<ul style="list-style-type: none"> - Sinking of new boreholes 	<ul style="list-style-type: none"> - Ngiini, Katanga, mulingana, ngulini, kanzi primary, kwa kalu, matetani, christ the king kanzukea, 			

	servicing of boreholes		mukunuku.			
	Uneven distribution of boreholes	- Construction of weirs	- Kyaaka, Kanzokea, mbondoni, mukulumana, itoloni, Kwetaa, kyangwasi, kathithyamaa, kyai, ndulumoni, mulin gana, kwa ndulu, mangolotani, kwa kimenye.			
	Encroached streams and no weirs constructed	-Construction of sumps and their auxiliary structures	Kwa Ndote, Mavindu, Matetani, Kolyo, Kwa Luka, Kwa Kyuuni, Kwa Ngumi, Katumani, Kwa Malu			
		- Sinking of new boreholes	- Ngiini, Katanga, mulingana, ngulini, kanzi primary, kwa kalu, matetani, christ the king kanzukea, mukunuku.			
	Unprotected springs	- Capacity building on water conservation	- Across the ward			

MATUNGULU EAST

HAZARD	EXPECTED CHANGE	GAP	INTERVENTION	WHERE	WHO IS RESPONSIBLE	RESOURCE	
						COMMUNITY	EXTERNAL
1.Drought	WATER Adequate supply of quality water	-Inadequate supply of quality water	<u>DAMS</u> Desilting and expansion of existing 8 dams	-Muutu -Kituku -Kitonga -Kitoi -Maundu -Muoki -Uku -Ndaluni	-Community, -County Government -National Government	-Land -Unskilled labour -Materials -Security	-Funds -Skilled labour

			Construction of 4 more Dams	-Kwa Sunza (King'oti) -Kalala (Coffee factory) -Kakulutuini (factory) -Uamani (factory)			
			<u>BOREHOLES</u> Installation of Solar pumping system.	-Miseleni -Kyekoyo Primary -DEB Chief's Camp -Kambusi Primary			
			Reticulation of water from existing boreholes to market centres, schools and churches.	-DEB Primary to Kalala market to Maembeni SA -Miseleni to Kithaayoni Primary to Kithayooni Catholic Church. -Katheka BH to Catholic Church and Utetani SA -Katuluni BH to Kwa Muthusi market and Thika Ndogo market.			
			Drilling of new boreholes	Katwanyaa Primary school -Mbavini King'oti,			

				<ul style="list-style-type: none"> -Uamani-Matheini, -St.Joseph-Katheka Sec Sch -Kavumbu SA-Katheka, -Kyekoyo SA-Matheini, -Kakulutuini Primary, -Itheuni Primary -Muumoni Sec, -Mwatati Primary -King'oti Primary, ABC King'oti 			
			-Repair existing but non-functional boreholes	<ul style="list-style-type: none"> -Kinyui market -Maembeni-Muthwani Sub Location, -Kyekoyo Primary -Uamani Primary Mwatati Sub Location -Kwa Katisya-King'oti 			
			<u>RIVERS</u> Construction of 40 weirs across River Kalala	Along River Kalala			
			Construct at least 5 weirs across the 10 streams	<ul style="list-style-type: none"> -Kithaayoni -Kaukiswa -Kwa Mbuthu -Kwa Kimoli -King'oti -Kakulutuini -Kwa Sunza 		<ul style="list-style-type: none"> -Land -Unskilled labour -Materials -Security 	<ul style="list-style-type: none"> -Funds -Skilled labour -Technical Expertise

				-Mbaa Mbua -Kwa Nthambaa -Matungulu (Mwatati)			
			<u>SPRINGS</u> -Kasooni -Kwa Tula -Kwa Kalanza -Katondomini- Muthwani -Tea -Kwa Mwova -Kwa Muoki -Kwa Kathundo -Kwa Ndoo -Kwa Kaki -Kwa Kauku -Kwa Masika -Kwa Moses -Kwa Mulokya -Kwa Mbeke -Muliluni -Kwa Mwikya -Katituni			-Land -Unskilled labour -Materials -Security	-Funds -Skilled labour -Technical Expertise
	HEALTH Adequate quality health	-Poor quality health care	<u>Matungulu Health Centre</u> -Upgrade to level 4 hospital to meet the W.H.O. requirements and installation of power backup. -Completion of ongoing Community Ward	Matungulu Health Centre		Land -Unskilled labour -Materials -Security	Funds -Skilled labour
			<u>Dispensaries</u>	-Kambusu		Land	Funds

			-Construct 2 new dispensaries	(Katwanyaa) -King'oti (Kwa Munini)		-Unskilled labour -Materials -Security	-Skilled labour
			Equip and provide medical equipment and supplies to all dispensaries	-Katheka -Nduu -Kambusu		Land -Unskilled labour -Materials -Security	Funds -Skilled labour
			Provide Waste disposal facilities (incinerators)	Matungulu Health Centre		Land -Unskilled labour -Materials -Security	Funds -Skilled labour
			Deploy more medical staff to all health facilities.	All dispensaries		Land -Unskilled labour -Materials -Security	-Funds -Skilled labour
	EDUCATION Quality education	Poor quality education	-Enforcement of 100% transition -Provide school feeding programme -Sensitize the community on benefits of Education -Provision of enough teaching staff and tuition materials. -Construct and equip 3 new Vocational Training Centres.	-All ECDE Centres -All Primary schools -All Secondary Schools - Miseleni Vocational Training Centre -ABC King'oli -Kanzalu SA -Kyekoyo SA		-Land -Unskilled labour -Materials -Security	-Funds -Skilled labour
2.Environmental Degradation	Environment And Climate Change A Well	Degraded environment	-Afforestation -Reclaiming of encroached forest land	-Kwa Katunga Forest (Katheka, Kambusu, Mwatate,		-Land -Unskilled Labour -Materials	-Technical Capacity -Provide security

	Conserved Environment		<ul style="list-style-type: none"> -Fencing of forest land -Employment and deployment of forest guards -Implementation of Forest Conservation Act 2014 -Planting of trees in Public Institutions implementation of the Sand Harvesting Act 2014 -Regulation of Sand Harvesting Act 2014 -Implement EMCA 1999 Act amended in 2015 	<p>Muumoni)</p> <ul style="list-style-type: none"> -Planting of trees in all public Institutions, dooms and water catchment areas and streams -For all Rivers 		<ul style="list-style-type: none"> -Security (ownership) -Availability of community members 	<ul style="list-style-type: none"> -Fencing of dams -Funds
	<u>ENERGY</u> Increase use of green energy	Limited use of green energy	<ul style="list-style-type: none"> -Install of Biogas plants in public institutions -install and introduce Solar power usage -Solarization of all boreholes -Provide alternative cooking methods to the needy 	<ul style="list-style-type: none"> -In Kinyui Girls, Kinyui Boys, Mwatati and Kambusu. -In St. Joseph Katheka, Muumoni, Uamani, Matheini and Matungulu DEB. 		<ul style="list-style-type: none"> -Provision of unskilled labour 	<ul style="list-style-type: none"> -Funds -Provision of Technical Expertise

	<u>INFRASTRUCTURE</u> Climate proof rural roads	Poor roads	-Climate proofing of of Kinyui road -Upgarding of 2 major main roads from murram to tarmac -Upgrading of feeder roads to murram (build gabions, calverts and bridges)	-Kinyu Stadium, -Miseleni Kalala road -Tala-Mbiuni-Kinyui Road -Ngonda-Ndundui-Mwatati-Kanzalu-Uhuru-Kinyui Road -Kwa Nguli-Kwa Kalela Road -Makau-Katwanyaa-Immaculate Road -Kalala Factory-Katwanyaa-Kaukiswa-Kanzalu Road -Matungulu DEB-King'oti-Uhuru Road -DEB-Eambale-Heshima-Thika Ndogo-Katuluni Road -Molem-Mwania-Misakwani		-Provision of unskilled labour -Materials	-Funds -Technical Expertise
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				-Kakulumini Factory-Nduu Dispensary- Danger Road -Makau- Kambusu Dispensary-Kwa Nzeki Road (Bishop road) -Katulye- Masooni-Kwa Muala-Kaukiswa Factory Road -Kwa Njenga- Kwa Museu- Kituluni Factory- Ndunduni Road -Kwa Mwikya- Uamani Primary- Kwa Muisu-Kwa Nganda-Kwa Mule-Kwa Mwole Road- Kwa Nguli-Kwa Matingi Road -Mbavini- Kikaikoni Road -Kwa George Ndula-Kwa Batisya-Uhuru Road-Miseleni Kalala			
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3.CROP PESTS AND DISEASES	AGRICULTURE Need food security	<ul style="list-style-type: none"> -Food insecurity -Need certified seeds and seedlings -Untimely subsidize fertilizer -Need 2 Extension officers -Need 2 motorbikes to make the extension Officers mobile. 	<ul style="list-style-type: none"> -Employment and deployment of Extension Officers. -Provision of certified seeds and seedlings, -Provision of timely, cheaper subsidized fertilizer -Extension Officers to be mobile and provide education to farmers on crop management and pests/disease control. -Need machinery for value addition -Employment and deployment of research Officers. 	Ward level	<ul style="list-style-type: none"> -Community -County Government -National Government -Development partners CBOs 	<ul style="list-style-type: none"> -Land -Unskilled labour -Provide simple farm tools e.g. Jembe and pangas. 	<ul style="list-style-type: none"> -Funding -Technical expertise.
	LIVESTOCK Healthy and high productive livestock	<ul style="list-style-type: none"> -Lack of pedigree (Improved) animals -Lack of adequate quality feeds -Need 2 Livestock Officers -Lack of added 	<ul style="list-style-type: none"> -Need Artificial insemination (AI) -Provide seeds for quality pasture -Employ and deploy 2 livestock Officers -Need machines for value addition and 	Ward	<ul style="list-style-type: none"> - Government -National Government -Development partners 	<ul style="list-style-type: none"> Animals -Unskilled labour Land 	<ul style="list-style-type: none"> -Funding -Technical Expertise

		machine and storage -Inadequate capacity building.	storage. -Training of farmers on livestock , pests/disease control				
	TRADE Availability of ready markets	Unavailability of ready markets	-Provision of ready markets for Matungulu East products	-Ward	- County Government -National Government -Development partners	-Land -Unskilled labour -Produce	-Funding -Technical Expertise
	Security of farm produce	Insecurity of farm produce	-Registration of fruits growing farmers	-Ward			
	Good Roads	Poor transport network	-Grading and murruming of all roads	-			
	Value addition	Unavailability of value addition centres	Provision of value addition centres				
	Market sheds/storage	Market sheds unavailable.Need 3 at major markets	Construction of 3 market sheds	Ward Kinyui Katheka Katwanyaa			
	Decent Packaging	Unavailability of packaging materials	Provision of packaging materials				
	POULTRY Improved, healthy and	-Low productive poultry -Slow growth rate of	-High productive breeds -Fast growth ratw	Ward level	-County Government -National	-Poultry -Skilled labour	-Funding -Technical expertise

	high productive poultry	poultry -Shortage of VET Officers, Need 2	breeds -Need subsidized feeds and drugs -Employment and deployment of 2 VET Officers		Government		
	BEE KEEPING -High production of honey -Security of Bee hives. -Organized groups	-Lack quality bee hives-Wild bees -Predators/Insecurity -Need 2 technical personnel on bee keeping.	-Need quality/modern beehives -Building of structures to place beehive -Employ and deploy 2 technical Officers -Assist in Regulation. Registration and marketing	Ward	- County Government -National Government	-Land - Unskilled labour - Honey	-Funding -Technical expertise

MATUU WARD

HAZARD	EXPECTED CHANGE	GAP	INTERVENTION	WHERE	WHO IS RESPONSIBLE	RESOURCE	
						COMMUNITY	EXTERNAL
Floods	Good roads	• Inaccessibility	• Roads • Grading and construction of drifts	• Grading of KMTC – Mumbuni – Kwa Somba – Kwa Nyaa – Ngengi • Kivandini – Kamuu –	• The county government • National government through 'KURA'	• Labour • Murram/Material • Land	• Funds • Equipment • Technical expertise

				<p>Kathangathi ni – Yumbuni – Kwamwatu</p> <ul style="list-style-type: none"> • Mathamta – Mbingoni • Brilliant – St.Stephen – Masewani and Isaani – Kilango • Kyeni – Kwa Kitavi – Ekakala road • Kwa Mwando – Sinai – Kwamwatu • Nuti – Maiuni – Ithekeithini – Matuu (Kwa Master) road • Mukalala – Kaonyweni road • Kivandini – Kaliani – Kathangathi ni – Syuki – Musingi road 			
			<ul style="list-style-type: none"> • Construction and provision of 	<ul style="list-style-type: none"> • Equity roads links - Level 	<ul style="list-style-type: none"> • County 	<ul style="list-style-type: none"> • Labour 	<ul style="list-style-type: none"> • Funds

			drainage facilities	(iv) hospital - road	governments	<ul style="list-style-type: none"> • Murram/Material • Land 	<ul style="list-style-type: none"> • Equipment • Technical expertise
•	<ul style="list-style-type: none"> • Energy to improve the security in Matuu 	<ul style="list-style-type: none"> • Inadequate security in Matuu ward 	<ul style="list-style-type: none"> • Provision of solar street lights/repairs of the existing 	<ul style="list-style-type: none"> • Kaonyweni • Kivandini Rural • Mbingoni • Sinai • Kamwala • Kamuu • Kathangathini • KwaMwatu • Kateki • Katulani-Kasoke • Matuu • Maiuni • Masewani 	<ul style="list-style-type: none"> • County government • National government • Partners • Donors • Community 	<ul style="list-style-type: none"> • Building materials • Labour 	<ul style="list-style-type: none"> • Funds • Technical support
	<ul style="list-style-type: none"> • Lands (Regulation of land tenure) 	<ul style="list-style-type: none"> • Lack of the deeds 	<ul style="list-style-type: none"> • Regularization of land tenure (provision of title deeds) 	<ul style="list-style-type: none"> • Ward level 	<ul style="list-style-type: none"> • County government • National government • Partners • Donors • Community 	<ul style="list-style-type: none"> • Building materials • Labour • Security 	<ul style="list-style-type: none"> • Funds • Technical support
Environmental degradation	<ul style="list-style-type: none"> • Environment and climate change (Ensure environmental sustainability) 		<ul style="list-style-type: none"> • Facilities of convenience • Renovation • Construction of sewerage systems • Provision for dumpsite • Planting and growing trees 	<ul style="list-style-type: none"> • Matuu town • Kivandini • Maiuni • Matuu town • Matuu • Ward level 	<ul style="list-style-type: none"> • County government • National government • Partners • Donors • Community 	<ul style="list-style-type: none"> • Building materials • Labour • Security 	<ul style="list-style-type: none"> • Funds • Technical support
Human	Public Health		<ul style="list-style-type: none"> • Construction of 3 	<ul style="list-style-type: none"> • Isaani, 	<ul style="list-style-type: none"> • County 	<ul style="list-style-type: none"> • Labour 	<ul style="list-style-type: none"> • Funds

Diseases	& Nutrition		new dispensary at: <ul style="list-style-type: none"> • Provision of land for cemetery. • Additional facilitation and proper remuneration of CHVs. • Provision of Emergency services, ambulances and fire extinguishers. 	Kathangathi ni and lthekeithini	government <ul style="list-style-type: none"> • National government • Partners • Donors • Community 		<ul style="list-style-type: none"> • Equipment • Technical expertise
Crop pests and diseases	Improved crop and livestock farming		<ul style="list-style-type: none"> • Provision of subsidized farm inputs. • Value addition and aggregation of farm inputs • AI services • Construction of cattle dips. 	• Ward level	<ul style="list-style-type: none"> • The county government • National government through 	<ul style="list-style-type: none"> • Labour • Land 	<ul style="list-style-type: none"> • Funds • Equipment • Technical expertise

MBIUNI WARD

HAZARD	EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
Climate induced poverty	Improved standards of education	Inadequate learning facilities and staffing	-construction of ECDE classes in 23 primary schools - Posting of more teachers to the 15 public primary	Ulaani, miseleni, Ngunyumu, Kithuiani, Kwa mutula, Kathama, Kyenguli, Katithi,	-County Government, National Government -Community	-Provisional of local materials -Provision of land -Unskilled	-Skilled labour -Hardware materials -Funding

			school -Rejuvenate school feeding program -Construction of laboratories in all Junior secondary schools -Construction of boarding facilities in 7 public secondary schools	Katitu, Nthunguni, Muthwani, Manzuva, Etikoni, Kikuuni, Kimuuni, Kitwamba, Kabaa, Kwa mutia, Kundu Kamuya, Kalia kundu, Kalau, Nyaanyaa, Utithini, Mbiuni Township Primary	- Development partners	labour	
Drought	Adequate water supply	Inadequate sources of water	-Drilling of 10 boreholes -Repair of 7 non-functional boreholes -Desilting of 21 earth dams -Construction of 3 new earth dams -Construction of sand dams in selected seasonal rivers -Re-surveying of all public land earmarked for construction of earth dams -Harnessing water from river Athi using hydram	Ulaani dispensary, Kindaruma sub chiefs office, Mavindini primary, Kamuya pri Kalau bh, Kombe bh, Utithini bh, Ulaani pri, Mango bh, Nzololo pri. Kwa Malu earth dam, Kwa Kiloo, Kwa mboso, Kathama, Makiliva, Kwa Musyimi, Kwa Kamii, Kyamboo, Kwa Nguuta, Nzololo, Mutanda, Utithini, Mumbuni,	CG, NG and other development partners	Land, Local materials, Unskilled labour	Funding, Skilled labour, Hardware Corporate social responsibility Permission to use the water canal

			system -Construction of gabions -Permission to tap the kayatta water canal for irrigation	Kathemboni, Nthunguni, Wamui, Kwa Kasola, Kwa Kamba, Manyala, Kwa Kiatine, Miseleni -Across some seasonal streams			
Health	Improved healthcare/ services	Inadequate healthcare and services	Rehabilitation of 2 health facilities, Construction of 5 more health facilities, Staffing of the health facilities, Sufficient provision of essential drugs/ medical supplies, Need for mortuary and functional theatre at Mbiuni health centre	-Waani dispensary and Katithi dispensary -Kituneni, Kindaruma, Miseleni, Kwa Mutia, Kundu Mbiuni health centre	NG, CG, Community and other development partners	-Local materials -Unskilled labour	Funding, Skilled labour, Hardware materials, CSR
	Fully operational cattle dips	8 non-operational cattle dips	Rehabilitation of the cattle dips, boundary demarcation	Ulaani, Kituneni,	NG, CG	Land, unskilled Labour, local materials	Skilled Labour, Funding, hardware materials
	Support for PWLDs	Lack of sufficient support	Creation of awareness, sensitization, legal framework	Across the ward	NG, CG and other partners	Goodwill	Technical support, Special equipment
	Improved market centers	9 market sheds , 16 boda boda	construction of public toilets in	Kituneni, Miseleni, Mumbuni,	NG, CG and other	Unskilled Labour, Land	Funding, Skilled labour

		sheds, Lack of public toilets, Lack of public livestock market grounds	major market center which are PWLD friendly, Construction of 9 market sheds and 16 boda boda sheds	Katahama, Ulaani, Kindaruma, Etikoni, Mithini Mbiuni	development partners	and local materials	
	Peaceful and save community	Inadequate security personnel , 5 market centers have no police post	Construction of 5 police posts, posting of more security personnel, Empowering the Nyumba kumi stakeholders, intensify security surveillance	Police posts:- Makuti, Kundu, Ulaani, Kamuya , Lower Kwa Mutula	NG,	Land, Informants	Funding, Manpower(police officers)
	End of human aquatic life conflict	Water pollution, Proper compensation measures caused by aquatic life, Wildlife, no established markets for aquatic produce	Cleaning of the rivers, designated waste disposal areas, reserving the riparian areas, deployment of wildlife officers, establishment of aquatic produce markets, creating awareness on compensation process	Kabaa	NG, CG, community, other partners	Land, Informants	Funding, Man power

MUMBUNI NORTH WARD

HAZARD	EXPECTED CHANGE	GAP	INTERVENTION/ ACTION	WHERE	WHO IS RESPONSIBLE	COMMUNITY	EXTERNAL
Drought	Increase in the percentage of people with adequate clean water from 35% to 60%	Boreholes not reticulated Non- functional boreholes	Extension of water distribution network	Ivumbuni and Tumba	Community GOK County Government Donors	Land Labor	Funds Technical Support Capacity building Policies
		Insecure boreholes	Rehabilitation of one non functional borehole	Manza B	Community GOK County Government Donors	Land Labor	Funds Technical Support Capacity building Policies
		Project Vandalism	Fencing, installation of CCTV and Mulika mwizi	Manza B	Community GOK County Government Donors	Land Labor	Funds Technical Support Capacity building Policies
		High cost of electric bills on boreholes	Solarizing all the boreholes (8)	Kateve, Tumba,Ivumbuni , Ngengeta, Ithingu, Manza B, Mukuni ABC and Mung'ala	Community GOK County Government Donors	Land Labor	Funds Technical Support Capacity building Policies

		No frequent servicing of boreholes	Ensure frequent servicing of boreholes (8)	Kateve, Tumba,lvumbuni , Ngengeta, Ithingu, Manza B, Mukuni ABC and Mung'ala	Community GOK County Government Donors	Land Labor	Funds Technical Support Capacity building Policies
		Water sources are not equitably distributed	Drilling of new boreholes (12)	Miwani, AIC Katisa, Miwongoni, Kenya Israel, Kwa Kaluku, Uiini, AIC Baraka, ABC Kyonde, Kyanganga, Kiangini, AIC	Community GOK County Government Donors	Land Labor	Funds Technical Support Capacity building Policies
			Development of distribution networks	Miwani, AIC Katisa, Miwongoni, Kenya Israel, Kwa Kaluku, Uiini, AIC Baraka, ABC Kyonde, Kyanganga, Kiangini, AIC	Community GOK County Government Donors	Land Labor	Funds Technical Support Capacity building Policies
		Distribution system not working	Capacity building of the communities/ project management committees	Kasinga, Kiiyuni	Community GOK County Government Donors	Land Labor	Funds Technical Support Capacity building Policies
		Lack of water	Development of a	County	Community GOK	Land Labor	Funds

		governance structures and management	policy for water governance	Hedquarters/wards	County Government Donors		Technical Support Capacity building Policies
Environmental Degradation	Enhanced environmental conservation and catchment protection	Degraded environment	Construction of Weirs (18)				
		Sand harvesting	Controlling of sand harvesting Operationalization of Machakos county Sand harvesting Act, 2014	ensitizing the community on the catchment conservation			
			Sensitizing the community on the catchment conservation	Manza, Kyundu, Kasinga and Kaluku Kwa Mbunga, Ngengeta, Kalangai, Kwa Tunguti, Ithingu, Kwa Musila, Kwa Kavola and Kwa Nzalai			
			Securing, installation of auxiliary structures (7)	Kwa Mbunga, Kathese, Kikumbo, Kiliku, Kwa James, Kwa Munyao, Kwa Kasanga			

			Spring protection	Kwa Mbunga			
		Deforestation	Afforestation - Establishment of tree nurseries to be run by youth, women and PWDs	Iveti forest			
		Forest fires Inadequate tree species Lack of Apiary sites	- Creation of fire breaks Provision of drought tree species Demarcation of apiary sites	Iveti forest			
		Lack of tourists' sites	Developing and branding of tourism sites (2)				
		Soil erosion /gullying	Construction of gabions (13)				
			Planning of all market centers (14)	Wamaa, Katisaa, Kathese, Kwa Nzioka, Kwa Kombo, Manza, Kwa Musia, Kwa Kiilu, Kwa Dickson, Kwa James, Kwa Kimuyu, ABC Kwa Mbunga, Ikungu			

				Deliverance church			
		Undeveloped markets	Construction of drainage systems -Provision of garbage bins -Installation of solar security lights -Construction of market stalls -Construction of bodaboda sheds - Establishment of market days	Tumba, Kwa Kamukwa, Kwa Musyoka, Kateve, Ikungu A, Ikungu B, Ivumbuni, Miwuongoni, Miwuani, Kenya Israel, Sweet Waters, Kiangini, Kyanganga			
			Construction of drainage systems -Provision of garbage bins -Installation of solar security lights -Construction of market stalls -Construction of bodaboda sheds - Establishment of market days				

	Enhanced environmental conservation		<ul style="list-style-type: none"> - Construction of non-motorable traffic - Upgrading market roads to bitumen/grading and gravelling - Construction of a slaughter house (1) 	<p>Iveti forest</p> <p>Iveti forest</p> <p>Kwa Nthungu, Kamba village and Iveti forest</p>	-	-	-
		<p>Unregulated sand harvesting</p> <p>Conventional energy sources</p> <p>Poor road networks</p>	<p>Formulation of policies to regulate sand harvesting</p> <p>Provision of energy saving jikos, solar systems, bio-gas, rural electrification and capacity building on use of renewable energy sources</p> <p>- Climate proofing of rural roads by Upgrading the roads to bitumen standards</p> <p>Grading and gravelling</p>	<p>Manza river, Kiondu river, Kaluku river, Munga river, along the roads / Shambas</p> <p>Across the ward</p> <p>Kwa Kitu to Kteve Road, Kenya Israel to Mumbumi Road AIC Manza to Uiini,</p> <p>Kwa Mukeka to</p>	-	-	-

			<p>Drainage works (Culverts, Bridges and Drifts)</p> <p>Road protection works (Gabions, Scour checks and meter drills)</p> <p>Road survey</p> <p>Road furniture</p>	<p>Ngeengeeta, Kateve to Kyanganga, Kithimani Tumba to Ikungu B, Nduani to Mbunga, Ngeengeeta ECD to Mbukoni, Kanyangi to Ivumbuni, Tumba to Ikungu, Ngeengeeta to Kiinyuni, Kwa Mutiso to Ivumbuni, Charity to Uiini, Kwa Musyoka to Uiini, Sweet Waters to Miwongoni primary, Mumbuni Girls to Uiini, A.I.C MT Olives to Manza to Katisaa, Kwa Kamukwa To Ikungu, Thika Motors to AIC Thome, Kwa Lau to Justice mbaluto, Kamukwa to</p>			
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			Road maintenance	Ivumbuni, Kwa Isai to Ikungu B, Kwa Musyoka to Kwa Nthenge, Coner plaza to Baraka, Piston to Montenzuma, Kithayoni to Katisaa to Kwa Musyoka.			
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WAMUNYU WARD

Hazard	Expected Change	Gap	Intervention/Action	Where	Who is Responsible	Resources	
						Community	External
Drought	Adequate supply of quality water	Inadequate water supply	Construction of 15 earth dams	Wamunyu Ward	Community CGM GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
			Construction of 40 sand dams/sump	The entire Wamunyu Ward	Community CGM GOK NDMA Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
			Auxiliary works/Desilting of 23 Earth pans	Wamunyu Ward	Community CGM GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds

			Sinking of new boreholes	Wamunyu Ward	Community CGM Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
			Rehabilitation of boreholes/ Water distribution from boreholes through pipeline extension and storage tanks Solar installation to boreholes, water tanks and water sumps	31 boreholes	Community GMC GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
			Installation of solar power and reticulation of water.	Wamuya Water Project Ndethye Nitethye Water Project	Community CGM GOK Development partners	Land Non-Skilled Labor Sand	Technical skills Funds
	Enhance Environmental conservation	Deforestation Environmental degradation	Tree nursery establishment of indigenous trees Sensitization on the importance of conserving the environment Tree growing in institutions and water points Construction of gabions, Cover crops in denuded lands,	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds

			terracing, grass reseeded, zero grazing, destocking Controlled sand harvesting				
	Increased Food security	Low crop production	Promote conservation agriculture Subsidized manure/fertilizer Provision of two tractors drawn rippers/sub soiler /threshers/shellers Soil sampling/testing at cluster level Capacity building on conservation agriculture. Capacity build terrace markers per cluster Capacity building on modern water harvesting	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
	Increased food production/water availability	Low food Production Inadequate water for farming	Enhance capacity building on Roof catchment at HH level Upscale capacity building on harvesting of Water	Ward level	Community GMC GOK NDMA Development partners	Land Non Skilled Labor	Technical skills Funds

			runoff directed to farms				
	Knowledge on use of pesticides and access on the same	Inaccessible pesticides and knowledge to apply the same	Training service providers and community on pesticide application & subsidize prices	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
	Reduced crop pest and diseases	Crop pest and disease affecting production	Capacity building on pests and disease control Provision of quality PPE (Personal Protective Equipment)	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
	Reduce human diseases	Poor handling of food and food products	Training on food safety and quality	Ward level	Community CGM GOK Development partners	Non-Skilled Labor	Technical skills Funds
	Increased food production	Poor BAP/low crop production	Procure ward ripper Soil testing to be done Capacity building in conservation agriculture, BAP and provision of DTC seeds and manure at subsidized price,	Ward level	Community GMC GOK NDMA Development partners	Land Non-Skilled Labor	Technical skills Funds

			<p>promotion of value chains and market linkage</p> <p>Establish agricultural products aggregation centers</p> <p>Post-harvest management</p>				
	Increased pasture production	Low pasture production	<p>Capacity building on pasture value chain, provision of pasture seeds at subsidized prices and storage</p> <p>Provision of combined harvester at subsidized prices</p> <p>Promote zero grazing</p>	Ward level	<p>Community CGM GOK Development partners</p>	Land Non-Skilled Labor	Technical skills Funds
	Reduced livestock mortality	Livestock diseases	<p>Mass vaccination and disease surveillance</p> <p>Construction of crushes</p> <p>Train livestock service providers</p> <p>Train poultry</p>	Ward level	<p>Community CGM GOK Development partners</p>	Land Non-Skilled Labor	Technical skills Funds

			vaccinators				
	Good animal health	Low animal feeds production	Capacity building on animal feeds/Fodder formulation and conservation Market linkage Recruit livestock/vet extension officers Activate/Subsidize d AI services Capacity building of farmers on livestock management	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
	Promote livestock breeds	Poor Indigenous breeds	Promote improved indigenous chicken/ Gala goats/ dorper/ bulls/ dairy cows	Ward level	Community CGM GOK Development partners	Land Non-Skilled Labor	Technical skills Funds
	Healthy people/ reduced distance to access health facilities	Poor infrastructure	Retrofit the Wamunyu jealth centr /equip with drugs/ maternity wings/laboratories to existing health facilities/		Community GMC GOK NDMA Development partners	Land Non Skilled Labor	Technical skills Funds

MASINGA CENTRAL

Hazard	Expected change	Gaps	Intervention/Action	Where	Who is responsible	Resources	
						Community	External
Drought	Adequate supply of quality water	Inadequate water supply	Construction of earth dams	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor Sand	Technical skills Funds
			Construction of sand dams & Water Weirs	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor Sand	Technical skills Funds
			Desilting of earth dams	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
			Extension of water pipeline from Masinga dam	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor Sand	Technical skills Funds
	Increased forest cover	Deforestation	Tree nursery establishment	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Increased Food security	Limited farm inputs	Provision of subsidized farm inputs	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Increased food production	Poor GAP/low crop production	Capacity building in conservation agriculture, GAP and provision of DTC	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Increased pasture production	Low pasture production	Pasture production across the ward	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds

	Reduced animal mortality	Animal diseases	Mass vaccination and disease surveillance	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Good animal health	Low animal feeds production	Capacity building on animal feed formulation	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Healthy people/ reduced distance to access health facilities	Poor infrastructure	Upgrading of existing health facilities	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
Drought	Adequate supply of quality water	Inadequate water supply	Construction of earth dams	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor Sand	Technical skills Funds
			Construction of sand dams & Water Weirs	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor Sand	Technical skills Funds
			Desilting of earth dams	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor Sand	Technical skills Funds
			Extension of water pipeline from Masinga dam	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor Sand	Technical skills Funds

Environmental Degradation	Increased forest cover	Deforestation	Tree nursery establishment	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Increased Food security	Limited farm inputs	Provision of subsidized farm inputs	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Increased food production	Poor GAP/low crop production	Capacity building in conservation agriculture, GAP and provision of DTC	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Increased pasture production	Low pasture production	Pasture production across the ward	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Reduced animal mortality	Animal diseases	Mass vaccination and disease surveillance	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Good animal health	Low animal feeds production	Capacity building on animal feed formulation	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Healthy people/ reduced distance to access health facilities	Poor infrastructure	Upgrading of existing health facilities	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
Livestock	Increased	Low pasture	Pasture production	Masinga Central	Community	Land	Technical skills

diseases	pasture production	production	across the ward	Ward	GOK CGM	Non-Skilled Labor	Funds
	Reduced animal morbidity/mortality	Animal diseases	Mass vaccination and disease surveillance	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Good animal health	Low animal feeds production	Capacity building on animal feed formulation	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Improved animal breed	Indigenous animal breeds with low production	Support on AI	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Reduced animal morbidity	Animal diseases	Rehabilitation of cattle dips/crushes	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Good animal health	Poor infrastructure	Training and capacity building on animal sheds construction	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
Crop, Pest and diseases	Increased food production/water availability	Low food production Inadequate water for farming	Training on Roof catchment at Household level. Training on harvesting of Water runoff directed to farms	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
	Knowledge on use of	Inaccessible pesticides and	Training of Agro vet	Masinga Central Ward	Community	Land	Technical skills

	pesticides and access on the same	knowledge to apply the same	service providers.		GOK CGM	Non-Skilled Labor	Funds
	Reduced crop pest and diseases	Crop pest and disease affecting production	Capacity building on pests and disease control Provision of quality PPE(personal protective equipment)	Masinga Central Ward	Community GOK CGM	Land Non Skilled Labor	Technical skills Funds
	Increased food production	Low food production	Training on CA technology/GAP/S MART agriculture	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
			Provision of subsidized certified seeds Capacity building farmers on use of certified/drought tolerant seeds	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds
			Construction of soil and water conservation structures	Masinga Central Ward	Community GOK CGM	Land Non-Skilled Labor	Technical skills Funds

MITABONI WARD

Hazard	Expected Change	Gap (what is missing)	Intervention (What needs to be	Where	By Who (Who is	Resources
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			done)		Responsible)	Community	External
Drought Water Dams (23)	-Safe, clean and adequate water. -Time/ distance taken to water resources shortens -Enhance food production. -Reduction of water borne diseases. -Improved living standards.	Encroachment -Fencing -Treatment Plant. Distribution systems.	-All need surveying and boundary fixing. (23) -All need fencing. (23) -All need a treatment plant. (23).	Kakele Kwa Somba Kinyau Kasilingi Kwa Kiilu Kwa Kathuku Usi Umu Misuuni Kwa Muunge Kwa Malandi Mathunya Matinga Muliluni Kwa Kathuka Kithayoni Migigo Kwa Mutete Kyai Kwa Mutole Kwa Ngondi Kwa Ke;le Majembe Kwa Kamau Kwa Mutia	-Community -County Government -National Government	-Land -Unskilled Labour	-Machinery -Technical Skills
		-Desilting	-21 Need desilting.	Kakele Kwa Somba Kinyali Kasilingi Kwa Kiilu Kwa Kathuku Kithayoni Migigo Kwa Mutete Kyai Kwa Mujole Kwa Ngondi			

		-Access Roads		Kwa Kele Majembe Kwa Kamau Kwa Mutia			
		-Expansion	-6 Need access roads.	Kakele Kasilingi Kwa Kathuku Kwa Kiilu Matinga			
		Embankment	-13 Need expansion.	Kasilingi Kinyali Kwa Kiilu			
		Construction and Repair of spillways.	-13 Need embankment walls	Kakele Kwa Somba Migigo			
		Construction of new dams.	-4 Need repair and -Construction of spillways (climate proofing)	Kinyau Migigo Kwa Kakele Kwa Kathuka			
		-Repair	-4 New dams are needed	Kwa Misange Thinu Water Project			
Borehole(12)			-5 Need repair	Kwa Mukembi Kwa Nzesya Kilikya B Ngiini Market Kwa Katua			Funds Technical Expertise.
		-Storage and Distribution system -Fencing	-12 Need Storage and Distribution System -1 Need Fencing	Mitaboni Chief's Office (Fencing) Mitaboni secondary Kwa Mukembi Kwa Kivanyu Kalikya A/ B Kwa Katua			

				Ngiini Market Mumbuni Asst. Chief Mumbuni Secondary Mumbuni Market Kwa Nzesya			
		-Power System	-5 Need Improvement on Power System.	Kalikya A Kwa Katua Kwa Nzesya Mitaboni Primary Ngiini Market			
		-Drilling of New Boreholes	-13 Areas Need New Boreholes.	King`ong` Kitulu Kavete Yinza shrine Mwaga Primary Maanzoni Primary Komarock Primary Kenol Police Post Kwale Primary Kiatineni Kyawanyingi Ndisulya Kwa Thuma	Community GMC GoK-MoALFD	Land	Funds Technical skills
Springs		Encroachment -Fencing -Spring Protection -Catchment Area Protection	-All Need Rehabilitation	Unga (2) Yinza Kwa Mua Kwa Kinyoli Kwa Ngomo Kwa Mukita Soon Kwa Kitau Kwa Lumya Kwa Kisengeu Kwa Kitine		Local breed Land	Funds Technical skills

				Kwa Nthiku Kasovya Kwa Kavoo Kwa Mulovi			
Weirs (11)		-Desilting -Repairs -Encroachment Construction of new weirs.	-All Need Rehabilitation -New weirs in 5 areas	Ngiini Mbuku Kwa Lole Kwa Maua Muvaa Kwa Ilmothi Kwa Ntheeu Kwa Makaa Kathaana Kaivisi Kwa Kasuu Kithima Kwa Katule Syulunguni Kwa Ntheeu (Kasyoki)	GMC- Department of Health Development Partners GoK-CDF, MoH	Land Non-skilled labour Locally available materials(sand, stones, ballast)	Skilled labour Funds
Health Facilities	-Improved Health -Improved Nutrition	-Expansion -Equipping/ Staffing -Lab Construction, equipping and Lab Technician -Health Hazard -Water Source/ Storage	-1 Needs Expansion -3 Need Equipping and Staffing. -4 Need Lab Construction, Equipping, and Lab Technician. -Removal of Asbestos (2) -Need Water Supply.	-Ngiini Dispensary Mathunya and Kinyau Dispensary Thinu Miumbuni Ngiini Mathunya Kinyau Mitaboni, Thinu Thinu	-Community -County Government -National Government	Skilled labour	-Funds Skills

		-CHV's Facilitation and Staffing	-They Need Adequate Facilitation. -Protective Gear -Capacity Building	-Every CU to have 20 CHV's (120)			
Environmental Degradation	Increased Forest Cover. Improved Soil Fertility. Increased Pasture Availability	-Bare Land	-Planting of trees.	-30 Public Schools (15,000 seedlings) -Churches (12,000 seedlings) Households (40,000 seedlings) -Shrines (2,000 seedlings) -Kwa Oveti -Kenol Kangundo Road. -King`ong`o Kwa Kyalo	Community -County Government -National Government	-Land -Skilled Labour	-Seedlings -Skilled Labor
		Gulleys	Construction of Gabions.	-Seekea- Thinu -Kwa Katune- Mitaboni-Miumbuni Road. -Kwa Oveti-Kwituta -Mumbuni Market- Kathuku Dam	Community -County Government -National Government	-Land -Unskilled Labour	Building Materials Machinery Skilled Labour.
	Improved Roads.	Unmaintained Roads	-Climate proofing of rural roads by Maintenance	-Jeshi la Wokovu- Kathuku Dam -Kwa Mukusa- Kwa Ng`ondu -Mutung`a Road	Community	-Land -Unskilled Labour	Construction Materials

	Reduced Pollution	Cutting Down of trees. -Use of Non-renewable Energy.	<ul style="list-style-type: none"> -Road Surveying -Tarmacking/ Grading -Adoption of renewable Energy for Cooking and Lighting. 	<ul style="list-style-type: none"> -Kalikya- Matinga- Kasia -Kalikya-Kwa Kathuka-Nduliba -Schools Households(homes) -Churches -Hotels 	<ul style="list-style-type: none"> -County Government -National Government -Community -County Government -National Government 	<ul style="list-style-type: none"> Land -Unskilled Labour 	<ul style="list-style-type: none"> -Machinery -Skilled Labour -Funds Skilled Labor -Materials.eg (electricity poles, wires) -Funds
Crop Pests and Diseases.	Increased food Production	Low Yield Production	<ul style="list-style-type: none"> -Certified Seeds -Subsidized Fertilizers -Affordable Chemicals -Recruitment of Extension Officers 	<ul style="list-style-type: none"> -At Ward Level -At Ward and Sub location levels. 	<ul style="list-style-type: none"> -County Government (Department of Agriculture) -GOK Development Partners -County Governance -Community -County 	<ul style="list-style-type: none"> -Farms -Man Power 	<ul style="list-style-type: none"> Technical Skills/Expertise -Farm Machinery -Funds Technical Skills -Funds

			<p>-Aggregation Centres.</p> <p>-Processing Equipment</p> <p>-Provision of Post-Harvest Equipments (moisture meters, solar driers)</p>	<p>- At Ward Levels</p> <p>-At Ward Levels.</p> <p>-At Ward Level</p>	<p>Government -GOK -Development Partners</p> <p>-County Government -GOK Development Partners -Community</p> <p>-County Government of Machakos -Community Development Partners</p> <p>-Community -County Government of Machakos -GOK -Development Partners</p>	<p>Unskilled Labour -Farm</p> <p>Unskilled Labour Land Security Locally available materials (Sand, hard cores, ballast) -Unskilled Labour</p>	<p>-Technical Expertise -Funds</p> <p>-Technical Skills -Funds</p> <p>-Technical Skills -Funds</p>
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			-Provision of orphan crops /drought tolerant crops	At Ward Level	-County Government of Machakos. -GOK -Development Partners	Unskilled labour -Farms	-Funds Technical Expertise -Machinery (planting)
			Capacity Building of Service Providers and Argo- Dealers.	At Ward Level	-County Government of Machakos. -GOK -Development Partners	Skilled Labor -Technical Expertise.	-Funds Technical Expertise. Machinery (motor bikes, A.I Kit, personal Protective Equipment)

TALA WARD

Hazard	Expected change	What to be done	Gaps(what is missing)	Where	Who is responsible	Resources	
						Community	External
Human Disease	Healthy community	Construction of 3 laboratories	No modern laboratories	Sengani dispensary Kyaume Dispensary	Community County gov't Development partners	Land labour	Funding Technical experts
		Staffing	3medical doctors 7clinical officers Train 50 CHVs 4watchmen,4cleaners	Sengani HC Kyaume Dispensary	County gov't Development partners(NGOs) Community	Labour	Funding Technical assistance
		Construction of new Health Centre	No HC	Katine sub location at Syanthi	County gov't Community National government	Land Labour	Funds Technical assistance

		Construction of 1 Level 4 hospital	No Level 4 Hospital	Silanga in Tala	County gov't Community National Govt.	Labour Land	Funds External expertise
		Construction of a sewerage system	No sewerage system	Tala Town	County gov't Community National Govt.	Labour Land	Funds External expertise
		Construction of a water treatment Plant	No treatment plant	Tala Market	County gov't Community National gov't. Development partners	Labour Land	Funds External expertise
		Dam protection	Not fenced	Tala Dam	County gov't Community National Govt	Labour	Funds
		Construction of auxiliary facilities	No dam auxiliary facilities	Tala Dam	Community County government	Labour	Funds External expertise
		Create awareness on health & hygiene	Inadequate knowledge on health matters	Tala Town	Community County government	Labour	Funds experts
Drought	Adequate, clean and sufficient water for domestic and livestock	Construction of 9 sand dams and rehabilitation of the 3 existing sand dams	-3washed away -Construction of 9 new ones	Kyamole River 2 Katine - 1 Kyaume – 3 Sengani – 3 Katine - 3	Community County government National Government	Labour Land Materials	Funds Technical expertise
		Riparian Marking and Pegging of rivers	Riparian lands not protected	River Katine River Kyamole	Community County government National government	labour	Technical expertise Funds
		Excavation of 2 new dams in the	2 dams	Kyaume sub location – Kwa	Community County	Labour Land	Funds Technical

		ward		Mathei Katine sub location – Kwa Sam Niko Cattle	government National government		expertise
		Desilting of 7dams	Silted up	Tala dam Kwa Ndeto Kwa Musui dam Kwa Nzuna dam Kwa Ndookwa Kwa Mangoi	County government National government Community NGOs	Land Labour	Technical expertise Funds
		Fencing of 8dams	Not fenced	Maluva dam Tala Dam Kwa Ndeto dam Kwa Savano dam Kwa Nzuna dam Kwa Musui dam Kwa Ndoo dam Kwa Mangoi dam	County government National government Community	Land Labour	Funds Technical expertise
		Construction of two treatment plants	No treatment plant	Maluva dam – sengani Kwa Ndeto dam	Community County government National government	Land Labour	Funds Expertize
		Drilling of 6 Boreholes	No enough water	Kwa Syokau Kwa Ndambuki Kwa Thome wa Atumia Kwa Ngungu St Anne Catholic	Community County government National government	Land Labour	Funds Expertise

		Rehabilitation of 3 boreholes	Vandalised	Mukalawa primary Kyamulindu primary Katine HGM primary	Community National Government County Government	Land Labour	Funds Expertize
		Construction of 2 High volume metallic tanks	No storage tanks	Kyaume Kyakatiwa	Community National Government County Government	Land Labour	Funds Expertize
		Reticulate water for irrigation	No water for irrigation	Katine River Kyamwole river	National Government County Government	Land Labour	Funds Expertize
		Planting & growing of 200,000 trees in the ward	Re-afforestation	Riparian zones Schools Hospitals	Community County & National governments	Land Labour Tree seedlings	Funds
Drug and Substance Abuse	Character change	Construction of Rehabilitation centre Construction of a Psychiatric hospital	Rehabilitation centre Psychiatrist	Tala Town	Community National Government County Government	Land Labour Local Materials	Funds Technical experts
		Hire 4 Counsellors	Counselling officers	Katine Sengani Kyaume Tala town	Community National Government County Government	Labour	Funds Experts
		Hire 4 Civic educators	Civic educators	Katine Sengani Kyaume Tala town	Community National Government County	Labour	Funds Experts

					Government		
		Deployment of more enforcement officers Construction of 1 police post	15 Enforcement officers 1 Police post	Kyaume – 7 Sengani – 3 Tala town – 5 Kyaume	Community National Government	Labour Land Local Materials	Funds Experts
		Creation of jobs & Alternative income generating activities (IGAs) Establishment of youth active programs	Employment & other sources of income Active Youth activities	Katine Sengani Kyaume Tala town Katine Sengani Kyaume Tala town	Community National Government County Government	Labour	Funds
		Activation and facilitation of the GBV committees	Dormant GBV committees	Katine Sengani Kyaume Tala town	Community National Government County Government NGO	Labour	Funds
		Training on Moral, Social and Cultural values	Inadequate moral, social and cultural knowledge	Katine Sengani Kyaume Tala town	Community National Government County Government NGO	Labour	Funds Experts
		Strengthen the coordination between the administration and	Adequate coordination between administration and	Katine Sengani Kyaume Tala town	National Government	Labour	Funds

		the Judiciary	Judiciary				
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NDITHINI WARD

HAZARD	EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
Environmental Degradation	Restore and protect ecosystem	Environmental degradation due to human activities; deforestation, poor farming practices, sand harvesting and quarry activities	Establishment of tree nurseries and support for tree growing initiatives and conservation activities in and around all learning and social institutions, water catchment areas (Kyevaluki and Uuni hills) and riparian lands. Tree seedlings Forest surveillance Public awareness Fencing of forest and waterbodies Materials Labour Machineries	All public schools, markets and public spaces in Ndithini wards	Community FLOCCA County Government KFS	Labour Security	Financing Seedings Water Pesticides
		<i>Land reclamation</i>		Greenhill Kaewa Mbusyani Kayole Ndithini Kaewa St. Micheal Kavilila Kwa Musungu Kwa Kivindyo	Community FLOCCA County Government NEMA TARDA	Labour Locally available tools and materials	Finances Machineries Technical Expert and skills
				Along Tana River,	Community	Surveillance	Financial Capacity

HAZARD	EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
		Pollution control	Knowledge gap Strict enforcement	along Miu ya Nganga and Ndela rivers Market centres (Kiatineni, Mananja)	FLOCAA NEMA Investors		building
			Slaughter houses	Ndivuni Kasuvilo Mananja Construction of incinerator in Ndithini and all other public facilities All homestead in Ndithini	Community FLOCA County GovernmeNEMA Investors Community FLOCA County GovernmeNEMA Investors Community FLOCA County GovernmeNEMA Investors	Venue Trainees Mateials	Finacing Technical Support Material
		Sensitization and capacity building	Lack of proper waste disposal system (Incinerator) Lack of energy saving cooking methods \\	All community members	National Government, FLOCCA Community Community Owned Resource Person e.g CHVS, youth leaders		Finacing Technical Support Material

HAZARD	EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
		Construction of TVET & Secondary school	Inadequate knowledge on environmental conservation Engagement of idle youth Inadequate TVET institutions & Schools	Tumutumu Kiatineni Ndithini Mathunguni (Secondary)	National Government, FLOCCA Community	Locally available materials Labor	Finance Technical expertise materials Finance Technical expertise materials
2.Poor Road Network	Good and passable all weather roads	Tarmacking,	Tarmacking Roads	Kitini- Ndithini Road Kiatineni Mithini road	FLOCA County Government of Machakos KERRA	Locally available materials	Finances Technical expertise Machinery Materials
		Grading	Well graded roads	Mananja- Ndovoini Road Mbusyani-Mithiini Road Ndithini-Kivaini Rd St Micheal- Kawethei Rd Kiatinei –Tana Rd	FLOCA County Government of Machakos KERRA	Locally available materials	Finances Technical expertise Machinery Materials
		Construction of	Lack of good bridges		FLOCA	Locally	Finances

HAZARD	EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
						COMMUNITY	EXTERNAL
	Food security	Boreholes	Lack of boreholes	Tana Nguumo Mbusyani Kakuyuni, Mananja Kiatineni Mathunguli Kwa Kavati Kivani Kavilila Katulye	-National - Government, -County government	Labour Locally available materials	Finances Technical expertise Materials Machines
		Provision of drought torelant seeds and Fruit tree seedling	Drought torelant seeds and fruit tree seedlings	Kwa Muthike Tumutumu Kawethei Ndithini ward Kiatineni Ndithini Kiatineni	FLLOCA -National - Government, -County government	Labour Locally available materials	Finances Technical expertise Materials Machines
		Agregation centres	Aggregation centre	Katulye Kavilila Ndithini Kiatineni Katulye	FLLOCA -National - Government, -County government		Finances Technical expertise Materials Machines

MATUNGULU WEST

EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL

EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
Improve access to water	Support hydrogeological modelling survey for aquifers, drill, equip and solarize 22 new boreholes.	Inadequate water availability	2 boreholes in each sub location -Kwa ngii -Nguluni -Kithuani -Kithimani -Koma -Mukengesya -Kalandini -Katangini -Mbuni -Wendano -Matuu	GoK MCG Development Partners	Labour Security Security	Finances -technical expertise -materials machinery
	Rehabilitation/ completion of stalled 7no.boreholes and solarization.		One dam in 1 Katangini 2 Kalandini TWO DAMS in Kwangii,Nguluni, Ithuni, Kithimani, Koma, Mbuni, Mukengesya, Wendan, Matuu		Land -Labour -Security	
	Support Construction of twenty (20) earth dams and catchment management	-	Isooni Katulu Kwa Uku Kwa Mutolo Mweta Kithimani Kwa Nguyo Mbeleti Kwa Muisyo Kwa Muthike	GoK MCG Development Partners	Land Labour Locally available materials	Finances Materials Technical expertise

EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
	related catchment protection/ management measures.		Kwa Muteti Kyawaa Kwa-Mbata Kithini Mutata Nduluni Kwa-Mwiitu Kwa Ngalae Kwa Valusi Kwa Kikumu Kwa Dc Kazi Kwa Vijana Dam Kwa Maingi Kwa Manthi Ngalalya weirs Along kyawaa river Kyamutwooi Maluva Katine Syulunguni Kithwani Kathaana ituma			
	Spport construction of 29 No. weirs, ecosystem restoration			GoK MCG Development Partners	Land Labour Locally available materials	Finances Materials -technical expertise
	Support rain water harvesting through guttering and installation of 1,500 tanks to public					

EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
	<p>institutions</p> <p>Support storm water harnessing through excavation of farm ponds lined with damliner for productive use e.g fish farming</p> <p>Support provision of veterinary services though capacity building of extension Officers</p> <p>- Support livestock and poultry breed improvement through provision of AI Services and cockerel exchange program.</p> <p>Support provision of improved chicken breeds(chicks)</p> <p>Support capacity building on apiculture and provide Langstroth bee hives.</p>		<p>All public institutions.</p> <p>Ward Level</p> <p>Kisukioni Matuu Koma Kithuani Mukengesya</p>	<p>GoK MCG Development Partners</p>	<p>Land Labour Locally available materials</p> <p>-</p>	<p>Finances Materials -technical expertise</p>

EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
Improve farm productivity	Provision Support capacity building on smart agriculture to mitigate climate change.	Low crop and livestock production	Ward level	GoK MCG Development Partners	Land Labour Locally available materials	Finances Materials -technical expertise
	Support value addition on processed products e.g fruit juice					
	Support access to drought resistant seeds and seedlings		Ward level			
	Support afforestation based on trees ecological zones and protect catchment areas.		Ward level			
	Support reclamation of abandoned quarries.		Ward level			
	Support solid waste management from collection, transportation,					

EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
	disposal/recycle and incinerator Support construction of ablution blocks Construction and rehabilitation of drainage systems Support disposal of Medical waste through construction of an incinerator -establishment of burning chambers Provision of energy Saving jikos -provision of solar energy systems construction of Biogas digesters Establishment of talent centres and sports academies Provision of guidelines and counselling services and centres.		Village based Ward Level (Around all dams) -kwa matingi Kwa muthike Katuu dam Kisooni dam Kwa mweta Kwa musyo Kathaana Kalie Kwa mathai Kwa matinga Nguluni mkt Matakutha mk	GoK MCG Development Partners	Land Labour Locally available materials	

EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
Ecosystem Restoration and protection	Increase number of -volunteers for ecosystem restoration -Erection of solar street lighting.		Kisukioni mk Katangini mkt Matuu mkt Mbuni mkt Malaa mkt Joska mkt	GoK MCG Development Partners	Land Labour Locally available materials	
		Land degradation	Koma mkt And all market centers			
		Solid waste pollution	Koma mkt And all market centers			
		Poor Sanitation	Kimiti level4 -all other health facilities.			
		lack of an incinerator -lack of burning chambers	Community Schools -household			
Green energy transition		Lack of energy saving jikos	institutions			
		-lack of biogas digesters	Koma Kithimani Matakutha		Land Labour Locally available materials	
Social support to climate change vulnerable		Lack of talent centres	Nguluni	GoK MCG Development		

EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
community		-construction of rehabilitation centres -construction of social centres Lack of adequate security personnel	Nguluni Koma police post Matuu post Matakutha Nguluni post Utooni mkt Kithimani mkt Katangini mkt -nguluni-kathaana Rd Iviani-matakutha Rd Kisukioni -makutano-kithuani Rd Kisukioni-matakutha-kwa matingi Rd Kisukioni-matakutha-mbuni Rd 46-misuuniRd Katangini-matakutha-kwa matingi-kwa matingi Rd Nguluni-ngomeni Rd Nguluni-kithimani Kiamba-matuu rd Nimrod-matuu Rd Ndauni-kithimani Rd Kwa muindi-nguluni Rd	Partners	Land Labour Locally available materials	

EXPECTED CHANGES	WHAT TO BE DONE	GAPS (WHAT IS MISSING)	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
					Land Labour Locally available materials	

MATUNGULU NORTH WARD

EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
Adequate Improved access to water	Inadequate sources of water	-Support hydrogeological modelling survey of aquifers, Drilling and equipping of boreholes	Mithini Pri., Kitambaasye Pri, Itetani Pri. , Kivani Pri., A.i.c Kumbu, Kithuiani ECDE, Kianzabe Pri., Kwa Mulinga S.A church, Kistimani Pri., Kwa Mutu Pri., Wendano area, Kwa Nthela, Kwa Mwaura dispensary, Kayatta dispensary, Kwa Katumo, St. Philips Pri., kwa Mumo	CG, NG and other development partners	Land, Unskilled Labour, Security, Local materials	Funding, Skilled Labour,

EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
		Support auxiliary works/ desilting earth pans and related catchment protection/ management measures.	<p>ECDE, Kayatta Pri., A.i.c Zion, Kiliku dispensary, Kyumbuni Pri., Kwa Nguu dispensary, Kwa Kimondole</p> <p>Rehabilitation Kiboko Pri., Kiboko sec., Uamani Pri., Ngunga Parish,</p> <p>Desilting -Kitambaasye -Munyu mweu -White salt -Mithini -Kwa Mangoka -Mwa Muthike -Kwa Munyao</p> <p>New earthdams -Kwa mbaluka, Kwa Kasyoki, Kwa Katumo, Kwa Mumu, Kwa Mbithi, Kwa Mailu, Kwa Kamandi, Maindaindu (isooni),</p>			

EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
		<p>Construction of earth dams and catchment management</p> <p>Construction of weirs, ecosystem restoration and Support rain Water Harvesting and storage at public institutions.</p>	<p>Weirs/Sand dams Makadara stream:- Kwa Kimiti, Kwa Musina, Kwa Kithuvi,</p> <p>Maindaindu stream:-Kwa John Nthei, Kwa Victoria Katumbi, Kwa Asumpta, Kwa Kamitii, Kwa Rose Wambua, Kwa Ndeti, Kwa Malai, Kwa Willy wambua, Kwa Metho, Kwa Mboo, Kwa Nzau Muthembwa, Kwa Muia, Kwa Ndolo, Kwa Kimaile, Kwa Musembi, Kwa Mukila, Kwa Jane Munguti, Kwa Molo, Kwa Ivuti</p> <p>Munyu Mweu stream:- Kwa Kimeu, Kwa Sammy Kambela, Kwa Munandi, Kwa Ndunge</p>			

EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
			Mutiso, Kwa Kivua, Geoffrey Muindi, Kwa Kyungu Maendeleo stream:- Kwa Joshua Mwanja, Kwa Musyoka Mbili, Kwa Peter Mbatha Kilungu Stream:- Kwa Musembi, languni stream:- Kwa Manthi, Kwa Mbithi, Tanks All public schools, Churches			
Healthy climate-hazard-resilient population	Inadequate emergency response capacity in climate-hazard-prone areas	Support technical capacity in health facilities to handle emergencies in climate-hazard-prone areas	-Kwa Mwaura	NG, CG, Community and other development partners	-Local materials -Unskilled Labour	Funding, Skilled Labour
Ecosystem restoration and protection.	Environmental Degradation	Support Survey of the contamination level and source -Support Cleaning of river Athi	-River Athi -Across the ward	NG, CG , NGOs, Delmonte	Informants	Funding, Enforcement

EXPECTED CHANGES	GAPS (WHAT IS MISSING)	WHAT TO BE DONE	WHERE	WHO TO DO	RESOURCES REQUIRED	
					COMMUNITY	EXTERNAL
		-support Treatment of raw sewer -Legislation -Support Enforcement, Proper drainage of contaminated water to treatment plant				
		Support soil and water conservation through afforestation, construction of Gabions, terracing, minimal tillage				
Improved farm management	Low crop and livestock production	-Support capacity building of livestock diseases management, improvement of slaughter house	Across the ward	NG, CG	Land	Funding, skilled labour
		-Support Provision of certified seeds -Control of pest and diseases -Capacity building on proper farming methods	Across the ward	NG, CG	Land, Information, unskilled labour	Funding, technical skills

NDALANI

Expected change	Gaps (Missing)	Intervention/ Action	Where	Who is responsible	Resources	
					Community	External
Improved access to water	Inadequate water availability	Construction of 2 earth dams and catchment management.	-Maasini dam -Tethi dam	Community CGM GoK NDMA Development partners	-Land -Non-skilled labor -Sand -hardcore	-Technical skills -Funds -machinery
		Construction of weirs, ecosystem restoration and installation of hydram pumps. Development of micro-irrigation and distribution schemes.	-Kwa mbonge Muoki, Kwa Museele (Kasamuku), Kwa Kavita, Vomboni, Kwa Ngige, Kosovo.	Community CGM GoK NDMA Development partners	-Land -Non-skilled labor -Sand -Hardcore	-Technical skills -Funds -Machinery -Other construction materials -Water tanks -Pipes for water reticulation (20km)
		Support auxiliary works/ desilting earth pans and related catchment protection/ management measures.	-Kwa Nyambura, Mwiymbuli, Kwa Mwandavi, Kwa Matinga, Kakongo, Mutyamboo, Mukauli, Mutua Manywele, Masambia, Kwa Kamba, Mbuno, Matithini, Ndolo Musembi, Kwa Mbeke, Nthungululu, Kwa Naomi, Kwa Kulu.	Community CGM GoK NDMA Development partners	Land Non Skilled Labor Sand	-Technical skills -Funds - Other construction materials

		Drilling equipping and Solarization of new boreholes	-Iviani, Mukameni, Kivingoni Primary, Kithyolo, Kwa Ngovi, Mbanda Salama, Lower Matangini, Ngoliba, Kangemi, Mavoloni, Kithiani, Kaloleni.	Community CGM Development partners	Land Non Skilled Labor	Technical skills Funds
		Rehabilitation of boreholes/ Water distribution from boreholes through pipeline extension and storage tanks Reverse osmosis water systems to purify water to remove salinity Solar installation to boreholes, water tanks and water sumps	Inyanzaani, Kwa Mboni, Kwa Labani, Kwa Nzioka Kivwau, Kwa Musau, Kwa Kyongo, Kwa Katumo, Kwa Ngulumo, Kilimwana, Uvouni, Nthungululu, Kwa Kulu, Upper Matangini, Mbanda Salama	Community CGM GOK Development partners	Land Non Skilled Labor	Technical skills Funds
		Provision of water tanks for rain water harvesting	-All learning institutions in the ward.	Community CGM Development partners	Sand and hardcore for tank bases -Non skilled labour	- Funds - other construction materials for tank bases
		Spring protection works to prevent contamination.	-Mulivuni, Maasini, Maiuni, Isooni, Musilili, Kwa Kaluu, Matithiini, Kiveli,	Community CGM GoK Development partners	Land Non Skilled Labor Sand hardcore	Technical skills -Funds - Other construction materials

			Kwa Ndeke, Banda Salama, Kwa Matata, Kasarani, Kithyululu.			
Access to adequate nutritious food	Inadequate access to nutritious food due to drought and unsustainable farming practices	Improved access to drought tolerant seeds and seedlings	Throughout the ward	Community CGM GoK Development partners		
		Provision of subsidized farm inputs (fertilizers, certified seeds, pesticides)	Throughout the ward	Community CGM GoK Development partners		
		Farmers Capacity building on drought tolerant breeds for livestock and poultry,	Throughout the ward	Community CGM GOK Development partners		
		Capacity building in conservation agriculture, promotion of value chains and market linkage Establish agricultural products aggregation centers Post-harvest management	Ward level	Community CGM GoK Development partners		
		Promote water efficient irrigation technologies (drip irrigation)	Throughout the ward	Community CGM GoK Development partners		
Increased/improved livestock production	Inadequate pastures/ browse and low fodder production.	Capacity building on pasture and fodder value chain, provision of pasture seeds at subsidized prices and	Ward level	Community CGM GoK Development partners	Land Non Skilled Labor	Technical skills Funds

		storage Provision of mechanized processing of animal feeds at subsidized prices Promote zero grazing				
		Capacity building on animal feeds formulation and fodder conservation	Ward level	Community CGM GoK Development partners	Land Skilled Labor	Technical skills Funds
	Livestock diseases, Poor quality indigenous breeds	Mass vaccination and disease surveillance Recruit livestock/vet extension officers Activate/ Subsidized AI services Capacity building of farmers on resilient livestock production	Ward level	Community CGM GoK Development partners	Land Non Skilled Labor	Technical skills Funds
Increased income from farm production	Low income due to low yields and poor market linkages	Capacity building on improved farm productivity and post-harvest handling to avoid losses Enable farmers to aggregate produce and secure market linkages	Ward level	Community CGM GoK Development partners	Land Skilled Labor	Technical skills Funds
Improved nutrition / good human health	Lack of access to adequate nutritious food	-Capacity building on kitchen gardening with improved water conservation and harvesting -Promote Agri-nutrition programmes	Ward level	Community CGM GoK Development partners	Land Skilled Labor	Technical skills Funds

		<ul style="list-style-type: none"> -Promote access to health through support of mobile clinics to hard to reach areas. -Promote production of bio fortified foods e.g. orange fleshed sweet-potatoes, nyota beans etc -Promote provision of food supplement support for under 5s, Pregnant and nursing mothers - Timely Cash transfers for the <i>Inua Jamii</i> (social support) programmes for the elderly and PLWD 				
Ecosystem restoration	Environmental degradation due to deforestation, Sand harvesting and quarrying.	Capacity building on ecosystem protection and restoration Establishment of tree nurseries and support for tree growing initiatives and conservation activities in and around all learning and social institutions, water catchment areas (hills) and riparian lands. Construction of gabions, cover crops in denuded lands, terracing, grass	Ward level	Community CGM GoK NDMA WRMA NEMA Development partners Quarry Owners	Land Skilled Labor	Technical skills Funds

		reseeding, zero grazing, destocking, Regulated sand harvesting and quarrying (mining) through policy formulation and enforcement. Reclaiming of abandoned quarries Promote CSR activities by quarry owners to entail environmental conservation				
Green energy transition	Over dependence on fossil fuels to run machinery and to power facilities. Use of wood fuel/charcoal for cooking and kerosene lighting	Promote use of renewable energy for both productive and domestic use.	Ward level	Community CGM GoK NDMA Development partners	Labour	Technical skills Funds
Reduced prevalence of pests and diseases	Poor use of chemicals and pesticides	Capacity building on safe pesticide application & subsidized prices Well-equipped Agro vets Provision of quality PPE (personal protective equipment)	Ward level	Community CGM GoK NDMA Development partners	Land Skilled Labor	Technical skills Funds
	Insufficient knowledge on management of emerging pests	Capacity building on pests and disease control	Ward level	Community CGM GoK NDMA	Land Skilled Labor	Technical skills Funds

	and diseases			Development partners		
Improved accessibility to critical facilities including market centers and health facilities	Climate-vulnerable road infrastructure	Climate-proofing of the road network, including heavy grading and harnessing surface runoff to support agro-production, construction of seven (7) drifts, three (3) bridges and three (3) culvert crossings.	<p><i>Roads:</i> Lumumba-Kwa Kakoi, Stage Mbaya-Musingini, Ndalani AIC-Illumanthi, Kiukuni-Kalimatula-Kithyolo, Ndalani-Mutyambo, Kalimatula-Maasini-Nzukini, Kissiki-Illumanthi-Uvouni-Nthungululu</p> <p><i>Drifts:</i> Kwa Paulo, Stage Mbaya, Kwa Nduku, Kwa Kayo, Kwa Kavilaliti, Kwa Kavita, Kwa Mang'eli</p> <p><i>Bridges:</i> Kwa Willy, Kwa Mutevu, Kwa Kikumu</p> <p><i>Culvert</i></p> <p><i>Crossings:</i> Kwa Mwandiko, Kwa Mwatu, Kwa Ngile</p>	<p>Community CGM GoK NDMA Development partners</p>	<p>Land Unskilled Labor Sand Hardcore</p>	<p>Technical skills Funds</p>

Climate-vulnerable youth including school drop outs, unemployed youth, teenage mothers and youth engaged in drug and substance abuse	Climate impacted families unable to support children and youth in education and productive engagements	<ul style="list-style-type: none"> -Upscale school feeding program in climate-impacted communities -Support climate vulnerable households with socio-economic empowerment e.g. promotion of table banking initiatives -Guidance and counseling to school-going children 	Ward level	Community CGM GoK Development partners	Land Unskilled Labor Sand Hardcore	Technical skills Funds
	Idle youth engaged in social vices and unproductive engagements	<p>Engage youth on productive activities including;</p> <ul style="list-style-type: none"> -sports initiatives, -youth projects in agribusiness and other climate adaptation enterprises e.g. tree nurseries - Participating in cash-for-work programs through proving labour for climate-proofing infrastructure (murrum roads and drifts) and support soil and water conservation programs (terracing, gabion construction) -Youth sensitization on effects of drug abuse and support establishment of rehabilitation centers 	Ward level	Community CGM GoK Development partners		

KOLA

Expected Changes	What To Be Done	Gaps (What Is Missing)	Where	Who To Do	Resources Required	
					Community	External
Sufficient supply of water for domestic and agricultural Availability of adequate water.	A , <u>WATER</u> Sinking of 18 New BHS -Rehabilitation of 5 BHS	18 New BHS	Kitonyini,muuma andu pri sch,kaveta,kyam uthinza,kyanguli pri,lumbwa, kivandini,kyamun yuu,kyaani,mikon o,katanga,kyakitt ove,	Filoca CG NG Wellwishers	Labour Security Security	Finances -technical expertise -materials machinery
	<u>DAMS</u> -Excavation of 20 new dams -Desilting of 18 dams Construction 100 sand dams	-20 New dams	10 in lumbwa location 10 in kola location. -Desilting of the following DAMS Lumbwa Masauni Kwa mwavu Kwa muiva Kitundu Kya muta Makunga Kwa sola Kola dam Kwa mutuu Kwa muinge	Filoca CG NG Wellwishers	Land -Labour -Security	Finances Machinaries Technical Expert and skills -materials

Expected Changes	What To Be Done	Gaps (What Is Missing)	Where	Who To Do	Resources Required	
					Community	External
B) Agriculture	4 more extension officers		-50 in lumbwa -50 in kola	Filoca CG NG Wellwishers	Security labour	Finances materials
	3 new slaughter houses 6 new slaughter houses	Employment of 4 more extension officers	2 in lumbwa 2 in kola	Filoca CG NG Wellwishers Filoca CG NG	Security Labour Local materials	Finances machinery -Finances
	Lack of tree population	Construction of 6 cattle dips	Muumaandu mkt Katuua mkt Kola mkt 3 in kola location 3 in lumbwa		Security Labour Local materials	
		Tree planting		Filoca CG NG	Security Labour Local	Finances
C) environment			Kalamanzalu Muumaandu Forests All public institutions Mbevo hill Kwa nganga spring Kiiwani spring Kaliu spring Kyanguli 1 in lumbwa			

Expected Changes	What To Be Done	Gaps (What Is Missing)	Where	Who To Do	Resources Required	
					Community	External

ANNEX 2**1. MBIUNI WARD**

S/No.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DIABILITY YES/NO	AGE GROUP
1	Titus M. Maundu	20046153	0727096897	M	NO	36-59
2.	Catherine Musyoki	28686855	0710786984	F	NO	18-35
3	Everline N. Nzioka	23652187	0727576061	F	NO	18-35
4	James Ratama	1105222	0725235728	M	NO	36-59
5	Paul Masai	1474873	0720916171	M	YES	36-59
6	Petronilla Musyoki	23667763	0717574248	F	NO	36-59
7	Felister Mbevi	13309449	0702066876	M	NO	36-59
8	Damaris M. Kathoka	21990637	0718134097	F	NO	36-59
9	Catherine M. Manthi	24821711	0700022575	F	YES	36-59
10	Anna M. Mutua	8350952	0723081773	F	NO	36-59
11	Caroline Ngumbi	21645200	0712205362	F	NO	36-59
12	Martha S. Mutuku	25281749	0719872525	F	NO	63-59
13	Dorothy N. Muendo	11165693	0791067054	F	NO	36-59
14	Urbanus Mitaboni	11165719	07256351	M	NO	36-59
15	Francis Munzyu	2978941	0748091447	M	NO	36-59
16	Henry Mulei	23614397	0722146048	M	NO	36-59
17	Robert Musembi	6440931	0723967920	M	NO	36-59
18	Chris Mwanza	22281054	0727743891	M	NO	36-59
19	Elizabeth Kathoni	23973274	0717208206	F	NO	36-59
20	Margaret Mueni Kioni	21549423	0703902143	F	NO	36-59
21	Simon Kivuva	31266244	0702983049	M	NO	18-35
22	Penina Ndunge	20657663	0710449123	F	NO	36-59
23	Justus Ndani Maia	9345740	0714975909	M	NO	36-59
24	Ambrose Nduku Ndunge	1165734	0712706133	M	NO	36-59
25	Richard Muinde Madaraka	23024298	0727886767	M	NO	36-59
26	Peter Mutuku Kyengo	36218108	0705868881	M	NO	18-35
27	Ann Ndunge Ndongye	7928154	0727265525	F	NO	36-59
28	Benedict Christina N. Katua	11405300	0721526316	M	NO	36-59
29	Sarah Mueni Nthambi	21639723	0712180069	F	NO	36-59
30	Mary Christina N. Katua	8318338	0720736063	F	NO	36-59

2.KITHIMANI WARD						
S.No.	Name	ID NUMBER	PHONE NO.	GENDER	DISABILITY YES/NO	AGE GROUP
1.	John Katundu	8058268	0710808503	M	NO	36-59
2.	Bernard Muema	8556257	0725827101	M	NO	36-59
3.	Livingstone Macharia	29087181	0706165240	M	NO	18-35
4	Jonathan Ngila	1666269	0714024412	M	NO	60 & Above
7	Victoria Mumo	11676420	0702669148	F	NO	36-59
8	Gideon Karanja	23478698	0725898120	M	NO	36-59
9	Bonface Mutuku	27065119	0703081455	M	NO	18-35
10	Agnes Vaati Muneeni	37974508	0742112756	F	NO	18-35
11	Agnes Nzuki	11254454	0720903639	F	NO	36-59
12	Lucia Kitonga	11404036	0721348327	F	NO	36-59
13	Stella Ndunge	12867096	0705217618	F	NO	36-59
14	Beatrice Nguna	41202501	0790156627	F	NO	18-35
15	Ann Mueni	21700630	0715631612	F	NO	36-59
	Penina Syombua Muya	22259695	0723153615	F	NO	36-59
16	Samuel Kimuyu	29465261	0768856868	M	NO	36-59
17	Winfred Nzisa	20662148	0701065693	F	NO	36-59
18	Christine Kilonzo	26481592	0727382423	F	NO	18-35
19	Millicent Kamau	23091158	0722558053	F	NO	36-59
20	Briguer Nini	0799316	0716673855	F	NO	60 & Above
21	Ruth Nduku Mutua	33184576	0794887370	F	NO	18-35
22	Philip Mutunga	506 8643	0702193212	M	NO	60 & Above
23	Jaosoh Kitonyi	27654686	0727360114	M	NO	36-59
24	Nicodemus Mutisya	20122843	0716823107	M	NO	36-59
25	Timothy Mutua	30549370	0757379858	M	NO	18-35
26	Eunice Wambua	30212722	0725126089	F	NO	18-35
27	Jane Kisangai	9224381	0710849893	F		36-59
28	Mark Kiitili	166615	071894150	F	YES	60 & Above
29.	Ruth Mueni	23779766	0724663263	F	NO	36-59
30.	Absalom Wambua	26128484	0728072022	M	NO	18-35

3.MASINGA CENTRAL WARD						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	GROUP AGE
1.	Peter Ngumbi	0321712	0727962430	M	NO	60& Above
2.	Philip Muithi	0314336	0720440435	M	NO	60& Above
3.	Titus Mutiso	22004756	0798871353	M	NO	36-59
4.	Catherine Mutiso	21217832	0712105914	F	YES	36-59
5.	Veronica Ndunge	104258	0722172898	F	NO	36-59
6.	Hudson Kyalo	0797362	070112556953	M	NO	60 & Above
7.	Dickson Mutiso Nyilu	11165972	0728412621	M	NO	36-59
8.	Josaphat Shikuku	9850577	0721678689	M	NO	36-59
9.	David M Kanyolo	6127667	0714563038	M	NO	60 & Above
10.	Richard Manthi	11203383	0727069079	M	NO	36-59
11.	Pauline Kioko	30802326	0701465940	F	NO	36-59
12.	Mary Nzuki	3963792	0725290127	F	NO	36-59
13.	Ndunge Kiiti Mulwa	7055744	0724855336	F	NO	36-59
14.	Lucy Mwati	11033939	0727925701	F		36-59
15.	Ezekiel Kimeu	28310473	0791889801	M		18-35
16.	Boniface Musau	22589514	0727677285	M		36-59
17.	Vincent Mutuku	30727646	0705096388	M		18-35
18.	Josephat Wikiku	12862715	0720610882	M		36-59
19.	Robert Kituku	6123427	0729207764	M		60 & Above
20.	Charity Muindi	35703439	0115031020	F		18-35
21.	Joseph Ngui	33013135	0706402978	M		18-35
22.	Bernard Mbithi	30468306	0701729061	M		18-35
23.	Bibiana Kitivo	20732477	0722993352	F		36-59
24.	Lucy Mutisya	20786934	0726547074	F	NO	36-59
25.	Nicholas Musyimi	21879643	0716460458	M	NO	36-59
26.	Emmaculate Ndambuki	38864286	0791961497	F	NO	18-35
27.	Felix Muthusi	27139370	0718853225	M	NO	18-35
28.	Benedetta Syengo	20685823	0713247883	M	NO	36-59
29.	Anastacia Mukui	21026169	0722172899	F	NO	36-59
30.	Richard Muteti	3348073	0724039511	M	NO	36-59

4.MUTHESYA WARD						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	WARD	DIABILITY YES/NO	AGE GROUP
1	Joseph S Kiilu	0234832	0725393225	M	NO	60 & Above
2	James Musau	24036476	0723863889	M	NO	36-59
3	Janet N Musembi	22087620	0728292505	F	NO	36-59
4	Agnes Mbulwa	37052802	0748221434	F	NO	18-35
5	Anthony K Mutua	22469474	0724167632	M	NO	36-59
6	Magdalene Muia	8528202	0716132932	F	NO	36-59
7	Bernard Kilu	22657523	072242091	M	NO	36-59
8	Joseph Mutisya	23728060	0700447611	M	YES	36-59
9	Peter Ndolo	33145717	0719776153	M		18-35
10	James Wambua	9271179	0728993015	M		36-59
11	Joshua Wambua	29595661	0716275784	M		18-35
12	Stephen Mutisya	23166758	0718508785	M		36-59
13	Christina N Mutuku	20163625	0713004469	F		36-59
14	Peter Mulwa	20284917	0714911035	M		60 & Above
15	Margaret Mbula	11270038	0726438170	F		36-59
16	Scholastica Mbula	9429898	0710882982	F		36-59
17	Mary Nzula	21210734	0703509181	F		36-59
18	Joel M Kimweli	8343219	0720679537	M		60 & Above
19	Peter Mutua	5928500	0727009871	M		60 & Above
20	Jacinta Sila	16132122	0719497073	F		36-59
21	Laban Sila	5928514	0718319596	M		60 & Above
22	Christopher Kituku	13640848	0791596847	M		36-59
23	Thathi Mutava	9783390	0114636941	M		36-59
24	Francis Mutiso	12610816	0726380373	M		36-59
25	Peter Mutiso Ngumbi	2032352	0714232542	M		60 & Above
26	Luke Mbithi	22843911	0726947080	M		36-59
27	Mbinya Muia	3142191	0759780722	F		60 & Above
28	Jackline Mauta	11269143	0728724953	F		36-59
29	Nicholas Mutiso	2743612	0727488931	M		60 & Above
30	Cecilia Wavinya	21675736	0704188654	F		36-59

5.KATHIANI CENTRAL						
S/NO	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGR GROUP
1	Rosemary Kisulu	8826590	0721257245	F		60 & Above
2	Vincent Munyao	22262060	0725011454	M		36-59
3	Cecilia Musyoki	21604277	0726856396	F	YES	36-59
4	Henry Munyambu	14469950	0740162010	M		36-59
5	Vincent Maingi	25901130	0714518100	M		36-59
6	Gibson Kioko	23073934	0727209771	M		36-59
7	Michael M Muasya	0521985	0727558919	M		60 & Above
8	Abed W Katei	14578352	0725472838	M		36-59
9	Charles Musembi	26196683	0113717685	M		18-35
10	Peter Kitavi Nzuki	29552007	0758252882	M		18-35
11	Janet W Mutua	21660509	0727736994	F		36-59
12	Anastacia M Kioko	21799052	0721921957	F		36-59
13	Danet M Musyoki	21174459	0712832235	M		36-59
14	Jackson Mutheka Nthenge	35278380	0723667026	M		18-35
15	Eric Kabita	29595398	0708162413	M		18-35
16	Cosmas M Muli	24719647	0725173523	M		36-59
17	Juliana M kyengo	13312431	0797092242	F		36-59
18	Sabina Munguti	604766656	0718061394	F		60 & Above
19	Juliana Mutua	24365835	0700873409	F		36-59
20	Jonathan Makau	25285910	0726862562	M		36-59
21	Emma Mumbe	35629833	0790985995	F		18-35
22	PST Esther	201853598	0759502305	F		36-59
23	Abednego Wambua	26821621	0724231155	M		18-35
24	Sebastian Baraka	28792557	0740010006	M		18-35
25	Mutisya Musau	7866198	0728444967	M		36-59
26	Peter Kiema	10360812	0710218233	M		36-59
27	Fransis Ngila	32891548		M	YES	36-59
28	Rose Ndambuki	7773657	0729100231	F		36-59
29	David Mbuva	0512853	0711428518	M		36-59
30	Nancy Mutuku	21706866	0704046683	F		36-59

6. NDITHINI WARD						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Peter Mbondo	25320425	0729351575	M		36-59
2.	Elijah Kitulu	12902663	0723868305	M		36-59
3.	Joab kimenye	9011835	0724111237	M		36-59
4.	James Mulei	28463678	0792475752	M		18-35
5.	Onesmus Musyoka	22770039	0712328954	M		36-59
6.	George Mwanzia	264881908	0712645702	M		36-59
7.	Patrick Kimeu	0900434	0720693484	M		60 & Above
8.	Sammy Makau	6143734	0725537225	M		60 & Above
9.	Patrick Mutisya	9429804	0723905686	M		36-59
10.	Nicholas Mwanja	7382093	0720400882	M		60 & Above
11.	Daniel Nzioki	1079508	0723904686	M		60 & Above
12.	Benjamin Nduva	136470580	0783527781	M	YES	36-59
13.	Francis Musyoki	24796778	0713535324	M		36-59
14.	Magdaline Kitheka	11077138	0746083422	F		36-59
15.	Ruth Kamakya	21556992	0711819412	F		36-59
16.	Jennifer Mwanzi	25827007	0728551404	F		18-35
17.	Peter Mutevu	1676774	0728556137	M		60 & Above
18.	Makau Mwangangi	3962833	0724514965	M		36-59
19.	Michael Musyoka	23951435	0719843431	M		36-59
20.	Kyalo P Maina	28191260	0718738187	M		18-35
21.	Irene Nzilani	31821725	0715206528	F		36-59
22.	Winfred Mwikali	9551647	071053556	F		36-59
23.	Mary K. Muli	20139429	0711179049	F		36-59
24.	Gladys Mutheu	11623558	0769874651	F		36-59
25.	Peter Kitwiku	34145104	0791882663	M		18-35
26.	Felistus Mueni	29600472	0710476153	F		18-35
27.	Hellen Kamene	25779407	0727291003	F		60 & Above
28.	Peter Mbithi	21370050	0719610788	M		36-59
29.	Stephen Mbuvi	22199224	0710572196	M		36-59
30.	Moses Thyaka	2238732	0713199973	M		36-59

7. UPPER KAEWA WARD						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Janet M Musyoka	10359673	0703910472	F		36-59
2.	John Kyalo Daniel	5042674	0700528656	M		60 & Above
3.	Ann K. Muoki	10041368	0713015722	F		36-59
4.	Felister Mbithe Mutisya	8966195	0720866669	F		36-59
5.	Kenton M Muteti	27785186	0707048071	M		18-35
6.	James Muema Kilonzo	25653974	0746191092	M		36-59
7.	Nicholson M Nzombe	23422213	0707278622	M		36-59
8.	Charles K Loki	7797603	0728803095	M		36-59
9.	Felistus Nzemba	26420469	0723614021	F		18-35
10.	Veronica M Paul	10115960	0727347118	F		36-59
11.	Rosemary Nknuu	27962547	0720350334	F		18-35
12.	Mary S. Kaloki	20078994	0718771495	F		36-59
13.	Festus Muteti	21833202	0743332981	M		36-59
14.	Daniel M Kimondio	7272101	0715671092	M		36-59
15.	Everlyne Mwikali Ngina	33381014	0743142557	F		18-35
16.	Pascalina Mukonyo	12867841	0713677545	F		36-59
17.	Elizabeth Kamanthe	31040178	0746552087	F		18-35
18.	Simon Kasyoka	27629729	0712857706	M		18-35
19.	Muia Mule	1692940	070433972	M	YES	36-59
20.	Nicholas Mumu	32333910	0710996418	M		36-59
21.	Agnes Mutuku	30479236	0790930677	F		18-35
22.	Dennis Mutua	34269113	0708568999	M		18-35
23.	Ndinda Ndivo	7409280		F		36-59
24.	Lazarus Muasya	22950132	0723720445	M		36-59
25.	Faith Ngile	40459457	0700433801	F		18-35
26.	Innocentia Mutheu	24969202	0716779776	F		36-59
27.	Stephen N Mutua	6051940	0720396265	M		60 & Above
28.	Petronila Nzioka	22058917	0721617528	F		36-59
29.	Cornelius Mumo	38896832	0768282232	M		18-35
30.	Janet Muema	22016022	0711655603	F		36-59

8. . KIBAUNI WARD						
S/No	Name	Id No.	Mobile No	Gender F/M	DISABILITY YES/NO	AGE GROUP
1.	Priscilla Y. Makau	8556688	0725501414	F	No	36-59
2.	Patrick Mungala	8378294	0726524557	M	No	60 & Above
3.	Janet Mutisya	6051774	0727620630	F	No	60 & Above
4.	Charles Manduu	10205339	0729342984	M	No	36-59
5.	Victoria N. Syindu	25575997	0728285262	F	No	36-59
6.	Edward M. Mutuku	11862254	0723954331	M	No	36-59
7.	Annah Kioko	11517441	0743086954	F	No	36-59
8.	Jonathan Mutinda Mutua	20598829	0706587331	M	No	36-59
9.	Paul N. Nguli	6029818	0725221642	M	Yes	60 & Above
10.	Cyrus Malonza	24784916	0723598224	M	No	36-59
11.	Michael Katuti	21393517	0711848259	M	No	36-59
12.	Catherine Mwalyungu	11272000	0718120678	F	No	36-59
13.	Peter Mwasuna	7273144	0723275907	M	Yes	36-59
14.	Jackson Masai	6029663	0740636985	M	No	36-59
15.	Joseph Musembi	29762618	0703617546	M	No	18-35
16.	Judith Malila	10421841	0713816923	F	No	36-59
17.	Benedetta M. Mutinda	29011949	0717207780	F	No	36-59
18.	Joseph Kyule	9065421	0793477140	M	No	36-59
19.	Daniel Mutua	34309922	0728596806	M	No	18-35
20.	Anna M. Mbalya	9617328	0728461854	F	No	36-59
21.	Morris Mwanthi	5570308	0722785271	M	No	60 & Above
22.	Rose M. Kivuitu	5043586	0729254899	F	No	60 & Above
23.	Sebastian Ndolo	7868947	0723432145	M	No	36-59
24.	Jacinta K. Kimani	20405040	0713261046	F	No	36-59
25.	Fridah M. Mbindyo	20402186	0704183474	F	No	36-59
26.	Nicholas Kisilu	6029735	0729036226	M	No	60 & Above
27.	David K. Mutie	14578207	0729564716	M	No	36-59
28.	Mutuku M. Mwanja	6134537	0796542639	M	No	60 & Above
29.	Daniel M. Mutie	27672653	0707667248	M	No	36-59
30.	Anthony Mutuu	20097182	0769824049	M	No	36-59

9.	IKOMBE WARD					
S/No	Name	ID NO.	Mobile No.	Gender F/M	Disability Yes/No	Age Group
1.	Isaiah Kimeu	21873032	0725732600	M		36-59
2.	Jane W. Kyalo	10358591	0727270970	F		36-59
3.	Benedetta M. Kiema	22201276	0724613106	F		36-59
4.	Peter Kasyima	6051874	0797237692	M		60 & Above
5.	Bernard Kulu	6145579	0719642998	M		60 & Above
6.	Daniel Mutisya	83522657	0729395334	M		36-59
7.	Benson Kaloki	1471600	0727818115	M	YES	60 & Above
8.	Stephen Masyula	11203788	0798251291	M		36-59
9.	Patrick Muole Munyao	23158324	0721667713	M		36-59
10.	Nicodemus Mulei Lonzi	33031465	0798553423	M		18-35
11.	Abednego N. Mutisya	37380930	0716490399	M		18-35
12.	Bernard M. Ndungi	6145928	0710963235	M		60 & Above
13.	Joseph N. Nzioka	22349524	0704752470	M		36-59
14.	Jeremiah Masila	6145438	0720729408	M		60 & Above
15.	Catherine Mwikuyu	27712810	0792380123	F		36-59
16.	Peter Kivindyo Mbithi	10978167	0718949407	M		36-59
17.	Celestine Musili	22653904	0720740687	M		36-59
18.	Priscilla Kitiku	2987611	0723088807	F	YES	60 & Above
19.	Eunice Mbondo	1662482	0740502783	F		36-59
20.	Alice M. Nzioka	12531659	0710446086	F	YES	36-59
21.	Celina King'oo	6047066	0712277068	F		60 & Above
22.	Elizabeth Kaluli	10818037	0713227387	F		36-59
23.	Boniface Katuku	21870898	0725577835	M		36-59
24.	Jennifer Mwanja	22139813	0706506500	F		36-59
25.	Peter Kieti	12869484	0701783086	M		36-59
26.	Kimeu Musembi	7805546	0112325918	M		36-59
27.	Jacinta Solo	24252837	0720445983	F		36-59
28.	Faith M. Muendo	14654586	0710170714	F	YES	36-59
29.	Janet Nthenge	22110214	0718280275	F		36-59
30.	Andrew Kimatu	22584985	0722295283	M		36-59

10.	MATUU WARD					
S. NO	NAME	ID NUMBER	PHONE NUMBER	GENDER F/M	DISABILITY YES/NO	AGE GROUP
1.	Veronica Mumbua Kamwele	4943757	0714338577	F		36-59
2.	Ancient Muinde	21669771	0718854956	M		36-59
3.	Boniface Nzau	7258531	0701132062	M	YES	36-59
4.	William Mwenga	7002420	0702134612	M		36-59
5.	Serah Mbaluka	1675124	0710389632	F	YES	60 & Above
6.	Leonard Kivuva	11403251	0700548606	M		36-59
7.	John Muli	9072071	0710959980	M	YES	36-59
8.	Jackson Munguti	20592269	0792191066	M		36-59
9.	Stanley Munguti	10359843	0768740429	M		36-59
10.	Mathew Mutisya	14429798	0725867767	M		36-59
11.	Paul S. Kathukya	1699386	0722101160	M		60 & Above
12.	Rose M Nzioki	1674144	0710808631	F		60 & Above
13.	Christine Mwelu	1675006	0729027485	F		60 & Above
14.	Simon Mutua	7405572	0720916932	M		36-59
15.	Syomiti Musomba	14472753	0701068065	F		36-59
16.	Rose Mutiso	12866908	0729948601	F		36-59
17.	Solomon Matheka	23977321	0721628188	M		36-59
18.	Zacharia Muendo	12866393	0729205944	M		36-59
19.	Charles Mwanzia	21835732	0745872768	M		36-59
20.	Joseph M Mwaiu	0977233	0726034262	M		60 & Above
21.	Fredrick Kimeu	22550232	0725030881	M		36-59
22.	Nancy K Mueke	31109321	0729419152	F		36-59
23.	Jacinta Kitonyi	12531282	0727673657	F		36-59
24.	Charles Mutie	32585253	0707848390	M	YES	18-35
25.	Magdalene Sikuku	27864070	0714866737	F		18-35
26.	John Mbatha	11203313	0716115327	M		36-59
27.	Alexander Kioko	29615187	0708806174	M		18-35
28.	Mercy N. Mwendwa	28537602	0714574160	F		18-35
29.	Stephen Matiku	29939478	0707580955	M		18-35

11. KYELENI WARD						
S/NO.	NAME	ID NO.	PHONE NO.	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Matthew Muisyo	34608464	0797193192	M	No	36-59
2.	Harim Kimatu	1462371	0728100972	M	No	36-59
3.	Henry Muli	22755236	0742248451	M	No	36-59
4.	Mulwa Musau	7272584	0741057199	M	No	36-59
5.	Patrick Mwanzia	28644050	0723840097	M	No	36-59
6.	Mbithi Nthenge	10925233	0702819612	M		36-59
7.	Jonathan Kyengo	12860127	0727910738	M		36-59
8.	Rose K Kuvalya	25318863	0701736771	F		36-59
9.	Mary M. Kimathi	13226547	0714667767	F		36-59
10.	Paul Makau Muli	10275508	0741076930	M		36-59
11.	Francis M. Kioko	22694264	0710463562	M		36-59
12.	Joseph Ngau	12533036	0712966730	M		36-59
13.	Veronicah Nzilani	14621676	0715914567	F	Yes	36-59
14.	Ann M. Mawioo	29058541	0700288910	F		18-35
15.	Bonface Nguyo	32728982	0705518081	M		18-35
16.	Mwende Mbithi	12860513	0700262831	F		36-59
17.	Ruth N. Muswii	11254625	072356698	F		36-59
18.	Caroline N. Wambua	24208111	0710172285	F		36-59
19.	Magdalene N. James	11315409	0708466233	F		36-59
20.	Caroline M. Mwanzia	29869181	0702050249	F		36-59
21.	Edward Kariba	8433812	0727744337	M		36-59
22.	Bernard M. Ngovi	11405605	0711944755	M		36-59
23.	George M. Nzoka	6266162	0735981597	M		60 & Above
24.	Samuel Wathome	2564001	0702528612	M		60 & Above
25.	Bernard K. Kaluki	25269480	0703495831	M		36-59
26.	Faith Mutheu	39734398	0707613587	F		18-35
27.	Joseph Muthama	8058474	0704256737	M		36-59
28.	Rehema Suleiman	28460848	0709204324	F		18-35
29.	Philip Mutua	13638693	0712180217	M		36-59
30.	Benedetta Kioko	27465121	070642050	F		36-59

12. ATHIRIVER						
S.No.	Name	ID Number	Phone number	Gender F/M	DISABILITY YES/NO	AGE GROUP
1.	Anthony Kiilu	26363632	0727558859	M		18-35
2.	Janet Kavili	11269046	0720411725	F		36-59
3.	Munywoki Beatrice	24139666	0710736994	F		36-59
4.	Rev Titus Mwendwa	13097847	0722655298	M		36-59
5.	Rachael Mungai	11101375	0724943139	F	Yes	36-59
6.	Vincent Xaler	29812748	0731619937	M		18-59
7.	Christine T. Kaala	30361659	0728295927	F		18-35
8.	Mercy Mukai	25373548	0792248101	F		18-35
9.	Eunice Njihia	7816633	0722629855	F		36-59
10.	Serah M. Kiuti	12533839	0721901055	F		36-59
11.	Abraham Kisuli	25106207	0712347025	M		36-59
12.	Esther Mutunga	29502145	0745516803	F		18-35
13.	Victor Masila	31744776	0704530262	M		18-35
14.	Catherine K. John	27933056	0710560105	F		18-35
15.	Joseph Kimatu	11255439	0722213544	M		36-59
16.	Beatrice Musyimi	7259462	0722554341	F		36-59
17.	Kisangi Musyoka	11424126	0724454742	M		36-59
18.	Stanslaus Mulinge	8528888	0715487300	M		36-59
19.	Joram Onyaiti	20215101	0710927244	M		36-59
20.	Paul Nzuki	23652646	0727353498	M		36-59
21.	Peris Ngige	12534050	0724031780	F		36-59
22.	Mercy Mbula	7710625	0722994423	F		36-59
23.	Julius Kyalo	9478477	0722615491	M		36-59
24.	Wilson Kiratian	11587448	0723376480	M		36-59
25.	Marietta Mutuku	8346177	0721199392	F		36-59

26.	Moses Kola	34064763	0704339459	M		18-35
27.	Sammy Muoki	35903033	0743150102	M		18-35
28.	Nzau Komu	11354878	0722945502	M		36-59
29.	Jackline Muya	233405729	0726075746	F		36-59
30.	Maryanne Ndanu	25285671	0726075746	F		18-35

13.KINANIE WARD						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Jonathan Muli	9224778	0705345304	M		36-59
2.	Dishon Matolo	2318968	0720882003	M		36-59
3.	Faith Maweu	11734940	0725899900	F		36-59
4.	Esther Mueni	36193104	0757736618	F		18-35
5.	Samson Mutuku	28497213	0703114496	M		18-35
6.	Derrick Kioko	20839771	0725602054	M	YES	18-35
7.	Daniel Muthoka	22386934	0713561535	M		36-59
8.	Gideon Muthama	22399040	0725101607	M		36-59
9.	Damaris Mbatha	22815217	0723476188	F		36-59
10.	Elizabeth Mwikali	35604653	0715096044	F		18-35
11.	Esther Kivindyo	29678946	0703715164	F		18-35
12.	Redempter Mueni	25952384	0720238725	F		36-59
13.	Virginia Mutanu	34146028	0704612712	F		18-35
14.	Angelina Muthoka	8967855	0720098946	F		36-59
15.	Florence Ngao	20957390	0712338964	F		36-59
16.	Susan Katunge	35589873	0713537702	F		18-35
17.	Kelvin Muendo	37244044	0111535002	M		18-35
18.	Dominic Mutua	11646017	0725681699	M		36-59
19.	Susan Mwamodo	5705566	0722891796	F		36-59
20.	Benson Musyoka	13311406	0710810380	M		36-59
21.	Anne K. Musonga	26982143	0717010339	M		18-35
22.	Lilian N. Peter	22362821	0727903432	F		36-59
23.	Maxwell Kyangu	30723374	0723639578	M		18-35
24.	Daniel K. Kilonzo	277344931	0729523426	M		18-35

25.	Benson M. Makau	13830032	0727281579	M		36-59
26.	Rev.Musau Kisilu	12722632	0722231954	M		18-35
27.	Veronica Mutava	12591072	0750679000	F		36-59
28.	Angeline Nzeki	27832951	0708055390	F		36-59
29.	Carlos Musyimi	33338738	0705818261	M		18-35
30.	John Mulandi	21837448	0721310840	M		36-59

14.KANGUNDO CENTRAL						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Peter Musyoki	21571759	07241788544	M		36-59
2.	Margret K. Munyao	12856218	0723297456	F	YES	36-59
3.	Justinah Kakuvi	11404093	0715847426	F	YES	36-59
4.	Daniel Musembi	21573637	0716043517	M		36-59
5.	Alfonse Wambua	27743770	0717070828	M		36-59
6.	Rose Mutindi	9316984	0717042054	F		36-59
7.	Faith Mueni	30429334	0711370496	F		18-35
8.	Rev. Joshua Mbondo	11202760	0741441418	M		36-59
9.	Henry M. Mutua	7711023	0723604649	M		36-59
10.	Rev.Kyalo Ndunda	10798375	0715750150	M		36-59
11.	Charles Mulao	0702652	0710128939	M		36-59
12.	Anna Nzioka	22280431	0729950185	F		36-59
13.	Emelda Kyalo	22743797	0728289223	F		36-59
14.	Veronicah Mwangeli	25282035	0713356535	F		36-59
15.	Eunice Joel	34361634	0711775371	F		36-59
16.	Reginah K. Mutua	14576979	0712442541	F		36-59
17.	Matilda Muia	7944230	07953700427	F		36-59
18.	Joyce Maingi	28754374	0706345460	F		18-35
19.	Theresia Mutisya	7049998	0714753433	F		36-59
20.	Edward Peter	25414551	0700134086	M		18-35
21.	Joyce Kamau	7544735	0722843670	F		36-59
22.	Jackline Kyalo	25836142	0742135747	F		18-35
23.	Bridgit Kisome	22502355	0727143477	F		36-59
24.	Patricia Ngoma	25654216	0710443798	F		36-59
25.	Peter Kilonzo	10041230	0726070638	M		36-59
26.	Francis Nzau	0700788	0724573251	M		36-59

27.	John K. Muli	109710863	0716375877	M		36-59
28.	Patrick Mutuku	27981991	0710748219	M		18-35
29.	Moses Wambua	33471343	0714494265	M		18-35
30.	Cornelius Mumo	38896832	0768257232	M		36-59

15.	MUTITUNI/NGELANI					
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Alex M. Gideon	24062966	0729247920	M		36-59
2.	Lucia K. Mbithi	24199122	0726124840	F		36-59
3.	Cynthia N. Musyoki	34059686	0705599474	F		18-35
4.	Lilian Mutua	32489368	0790577018	F		18-35
5.	Janet Maingi	22262515	0720439370	F		36-59
6.	Erastus Mulwa	23049493	0705541740	M		36-59
7.	Prexedes Idi	2565368	0727125546	F		36-59
8.	Anna Musyoka	36052822	074373178	F	YES	36-59
9.	Bernard K. Munyao	11359099	0722864006	M		36-59
10.	Cynthia Nzisa Kimeu	22649653	0710593703	F		36-59
11.	Eunice Mwendu	35400094	0799176633	F		36-59
12.	Caroline Muthoka	25116774	0798320410	F		36-59
13.	Humphrey Mutua	24516502	0727524585	M		18-35
14.	Julius M. Mutiso	0961416	0723202630	M		36-59
15.	Cornelius Matheka	6095677	0723991701	M		36-59
16.	Patrick Ndunda	2564759	0727252119	M		36-59
17.	Augustine Mutua	11734227	0725807274	M		36-59
18.	Ngao Daniel	23623281	0724557885	M		36-59
19.	Josephat Malei	112023339	0710168590	M		36-59
20.	Cornelius Kavoi	6095115	0714936074	M		36-59
21.	Damaris Wambua	34593181	0714260658	F		36-59
22.	Sterne Muia	23719659	0727056160	M		36-59
23.	Patrick N. Nthuku	1326152	0724689556	M		36-59
24.	Aucen N. Mutua	11053843	0720577887	M		36-59
25.	Daniel Nzoi	13657731	0723957516	M		36-59
26.	Musa Mutisya	36746043	0739064657	M		18-35
27.	Jackson M. Musyimi	13640465	0716388216	M		36-59
28.	Ruth N. Mutua	11359473	0727445716	F		18-35

29.	Festus Muli	22795017	0724460288	M		36-59
30.	Joshua Mukasa	20031084	0723771083	F		36-59

16.	MLOLONGO/ SYOKIMAU WARD					
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Gertrude Kioko	22592786	0726525389	F	YES	36-59
2.	Anne Kimeu	222840	0723213100	F		36-59
3.	Lydia Ngina	10893804	07211711733	F		36-59
4.	Sadia Adani	13853462	0798705192	F		36-59
5.	Jennifer Katungwa	29093408	0712230116	F		18-35
6.	Faridah Nzioka	11734775	0722281163	F		36-59
7.	Florence Mumo	14653408	0728565250	F		36-59
8.	Leah Njeri	22668050	0729935637	F		36-59
9.	Augustine Mutua	20920864	0723677238	M		36-59
10.	Paul Kilungu	23227817	0743217851	M		36-59
11.	Malonza Tech	24553230	0720991303	M		36-59
12.	Angeline Mutheu	21956190	0724543154	F		36-59
13.	Irene Mwikali	30386649	0713042833	F		36-29
14.	James Gitonga	10378645	0721577798	M	NO	36-59
15.	Pius Mutunga	26471263	0710417748	M	NO	18-35
16.	Josephine Kithuka	24528143	0710140640	F	NO	18-35
17.	Shedrack Kyalo	31736469	0718978552	M	NO	18-35
18.	Boniface Mutua	22302089	0712903993	M	NO	36-59
19.	Wanene Njuguna	20705208	0721956143	M	NO	36-59
20.	Isaac Mutula	13630969	0727603204	M	NO	36-59
21.	Titus Mutwota	12589218	0726622653	M	NO	36-59
22.	Francis Wambua	13422994	0727491168	M	NO	36-59
23.	Abraham Nzeu	25105201	0712347023	M	NO	36-59
24.	Dolly Odhiambo	8153853	0722826838	F	NO	36-59
25.	Matilio Mutuku	23178116	0724475212	M	NO	36-59
26.	Saenyi Sheilah	31286614	0707953716	F	NO	18-35
27.	Carol Kamene	21040487	0724663326	F	NO	36-59
28.	Stephen Makau	29561250	0713462923	M	NO	36-59
29.	Kilonzo Muthoka	10048093	0713101996	M	NO	18-35
30.	Mwende Hope	4126781	0706589571	F	NO	36-59

31.	Mary Kimeu	23409980	0731615326	F		18-35
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17. MUTHWANI WARD						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Patriciah Nzeki	21647932	0726111736	F	NO	36-59
2.	Mustafa Ondara	1139706	0713110670	M	NO	36-59
3.	Jane Muthee	98333105	0728226261	F	NO	36-59
4.	Gabriel Onga	7423835	0721303166	M	NO	36-59
5.	Harrison Ontiri	4122743	0724220689	M	NO	36-59
6.	Mary Njiru	32819562	0721228435	F	NO	36-59
7.	George Masinde	20796222	0720060317	M	NO	36-59
8.	Joseph Were	9819921	0722767107	M	NO	36-59
9.	Winfred V. Kithome	14455836	0722670599	F	NO	36-59
10.	Lucy Mainga	12768951	0729056631	F	NO	36-59
11.	Bernadette Mandi	11271467	0720875859	F	NO	36-59
12.	Damaris Nduku	72728993	0712675599	F	NO	36-59
13.	Mercy Munyua	20824347	0725231936	F	NO	36-59
14.	Boniface Muthama	7773477	0716718248	M	YES	60 & Above
15.	Festus Munyao	22109547	0726852539	M	NO	36-59
16.	Henry Kioko	10895483	0794679559	M	NO	36-59
17.	Tirus Musyoka	14429375	07219640001	M	NO	36-59
18.	Agnes Joseph	26190611	0727576608	F	NO	36-59
19.	Michael Odero	33170598	0790514207	M	NO	18-35
20.	Noses Mulandi	2662231	0729084283	M	NO	36-59
21.	Sammy Musyoki	12445818	0714753402	M	NO	36-59
22.	Kovolo Mutisya	25152074	0705392200	M	NO	36-59
23.	Michael Mutunga	22434892	0726599829	M	NO	36-59
24.	Charles Moda	8585841	0716693052	M	NO	60 & Above
25.	Salome Nduye	14438836	0724499523	F	NO	36-59
26.	Mark Mwathi	25820135	0705013666	M	NO	36-59
27.	Dan Okumu	29310058	0723413260	M	NO	18-35
28.	Samuel Kariuki	25827672	0720665477	M	NO	18-35
29.	Jane Nzuki	4943728	0720652568	F	NO	60 & Above
30.	Grace Katumbi		0729643721	F	NO	60 & Above

18. MACHAKOS CENTRAL						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Samora Leon	32319386	0707727410	M		18-35
2.	Elizabeth Mutiso	23881483	0708297069	F		36-59
3.	Pascalyn Mueni	30618604	0717584494	F		18-59
4.	Macdonald Muli	1701567	0727103246	M	YES	36-59
5.	Winfred Nzilani	31586193	0701448348	F		18-35
6.	Festus Mutuku	28903301	0722719564	M		18-35
7.	Jacob Ngumi	13421667	0721695890	F		36-59
8.	Marriam Juma	23041423	0725991277	F		36-59
9.	Kango Vui	9426281	0725895666	M		36-59
10.	Timothy Musyoka	22104703	0729879796	M		36-59
11.	Kingola Musyimi	13266884	0725263695	M		36-59
12.	Rosephela Mating	7797833	0727265300	F		36-59
13.	Sabina Nduva	9193022	0721950750	F		18-35
14.	Shadrack Mutie	29463244	0718848926	M		36-59
15.	Joseph Maingi	5476257	0768384181	M		60 & Above
16.	Daniel Ngui	0321783	0721464599	M		60 & Above
17.	Patrick Kituku	10818461	0727772207	M		36-59
18.	Albanus Joel	22164381	0729578428	M		36-59
19.	Josephine Mutiso	10978321	0700879723	F		36-59
20.	Esther Mulwa	41274499	0708993844	F		18-35
21.	Ann Wambua	42036336	0111911474	F		18-35
22.	Bibiana Mwanzia	9265897	0710844046	F		36-59
23.	Cosmas Muisu	11358105	0723080934	M		36-59
24.	Adan Molid	27474202	0727322142	M		36-59
25.	Elizabeth Kioko	20981492	0727078361	F		18-35
26.	Eunice Muteti	14430850	0700879720	F		18-35
27.	Christine Musau	1559563	0721375515	F		36-59
28.	Erick Kyalo	22677101	0720561384	M		36-59
29.	Christine Mueni	286623111	0729455105	F		36-59
30.						

19. MUMBUNI NORTH						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Denton Soo	26294100	0759407830	M		18-35
2.	Julius Muthuka	24062882	0716708721	M		36-59
3.	Nelson Mumo	29596956	0724365415	M		18-35
4.	Lydia Mumo	30598042	0706767982	F		18-35
5.	James Ndunda	7795064	0710523922	M		60 & Above
6.	Timothy Silingi	10301992	0712251448	M	YES	36-59
7.	Martha Mwendu	14654402	0741990107	F		36-59
8.	Gregory Kavua	6420053	0726607248	M		60 & Above
9.	Rose Kaloki	3078442	0716815310	F	YES	36-59
10.	Veronicah Mutunga	13421512	0718112393	F		36-59
11.	Marioncurt Mumbi	296739	0790804578	F		36-59
12.	Joseph Kyengo	10938180	0726366684	M		36-59
13.	Edison Nduya	7806390	0711345823	M		36-59
14.	Robin Wambua	1325029	0719227153	M		36-59
15.	Susan Mulika	21155474	0722992225	F		36-59
16.	Florence Wambua	23041893	0720824594	F		36-59
17.	Pius Kithendu	0537513	0723636301	M		36-59
18.	Zipporah Mumo	0537514	0715495491	F		60 & Above
19.	Josephine Munyao	16108947	0720272141	F		60 & Above
20.	Damaris Mutune	12870153	0721645445	F		60 & Above
21.	Jacqueline Ndambuki	1327353	0721309177	F		36-59
22.	Mweu Kaunda	41394027	0718443049	M		36-59
23.	Richard Mutunga	2981261	0711612583	M		18-35
24.	Dominic Ndeto	9225061	0712138966	M		60 & Above
25.	Magdalene Ngina	10860604	0725654764	F		36-59
26.	Joseph Kasoma	10114691	0797386198	M		36-59
27.	Fred Musau	21454418	0758420604	M		36-59
28.	Steve Mutuku	13310303	0735126677	M		36-59
29.	Elizabeth Mutisya	24784388	0719255980	F		36-59
30.						36-59

20. MUA						
S/NO	NAME	ID NO	PHONE NO	GENDER	PWD	AGE GROUP
1.	Raymond Muindi	9265317	0703943132	M		36-59
2.	Dominic Mutuku	24644260	0713219774	M		36-59
3.	Titus Jonathan	8826065	0725755427	M	YES	60 & Above
4.	Benson Kenzi	12869204	0722358309	M		36-59
5.	Josephine Wambua	0952874	0712529186	F		36-59
6.	Ruth Kalii	34066835	0712206365	F		36-59
7.	Masia Nindi	41514107	0111466806	M		36-59
8.	Charles Ngonzi	8826632	0722748709	M		36-59
9.	Mary Kongo	13311063	0705950434	F		36-59
10.	Catherine Mwendu	25296928	0726245204	F		18-35
11.	Abraham Mwendwa	22536329	0796975953	M		36-59
12.	Christine Mbinya	11202208	0707558486	F		36-59
13.	Catherine Musyoki	12868927	0723862795	F		36-59
14.	Fransisca Mumo	9224386	070104907	F		36-59
15.	Joyce Ndanu	7928637	0723633634	F		36-59
16.	Susan Katunge	42036472	0740236438	F		36-59
17.	Jacob Mulwa	28336606	0729816774	M		18-35
18.	Rebecca Mutisya	1465519	0720551832	F		36-59
19.	Philomena Muteti	7824848	0725084487	F		36-59
20.	Francis Mutuku	10174694	0713748990	M		36-59
21.	Florence Mativo	9225967	0722816178	F		36-59
22.	Rinson Kilonzo	16118171	0723502968	M		36-59
23.	Patrick Makenzie	12869943	0706850021	M		36-59
24.	Sabeth Jones	4939978	0701339444	F	YES	60 & Above
25.	Regina Muli	27335550	0705330739	F		36-59
26.	Solomon Musyimi			M		36-59
27.	Josephrida Syokau	6444557	0719326631	F		60 & Above
28.	Esther Kioko	13424675	0704115667	F		36-59
29.	Rev. Daniel Maweli	20752523	0724781877	M		36-59
30.	Brian Muli	27963849	0711779399	M		36-59

21.	KIVAA					
S/No.	Name	ID Number	Phone Number	Gender	Disability	AGE GROUP
1.	Urbanus Muinde	25657126	0723516855	M		36-59
2.	Luka N Kioko	4251961	0726938225	M		36-59
3.	Peter Kiio	12865807	0722835879	M	Yes	36-59
4.	Shadrack Mulwa	26975215	0718372164	M		18-35
5.	Philip M Sila	8346710	0725406909	M		36-59
6.	Jacinta Mutuku	26597978	0728297758	F		18-35
7.	Jonathan Mulandi	5692580	0711351927	M		36-59
8.	Esther Ndanu	29765746	0705234553	F		36-59
9.	Mary Musembi	13521369	0723291329	F		36-59
10.	Julius M Ngumba	4907306	0720950161	M		18-35
11.	Simon Kiilu	4347150	0727029414	M		36-59
12.	Josephat Mawia	12862681	0720991906	M		18-35
13.	Francis Mutavi	9428349	0713076987	M		36-59
14.	Alihaji Isa	1273204	0722526839	M		36-59
15.	Peter Mutiso	20787635	0722107645	M		60 & Above
16.	Pauline Nzioka	28636057	0728752936	F		36-59
17.	Philomena Mutuku	20546218	0703263057	F		60 & Above
18.	Tabitha M Mbusa	20787064	0723874173	F		36-59
19.	Purity Kawira	13554121	0704454406	F		36-59
20.	Shadrack Muthini	13310625	0742192929	M		36-59
21.	Abednego Mulei	10681653	0715852188	M		18-35
22.	Meshack Muthengi	29567782	0726509875	M		36-59
23.	Onesmus N. Katee	32558189	0710486399	M		18-35
24.	Bernard Mutuku	421792424	0720909990	M		36-59
25.	Urbanus Kioko Munyao	12957402	0712042047	M		36-59
26.	Josephine Kisilu	10558829	0725126883	F		36-59
27.	Bosco Mutua Mumo	29949154	0717286534	M		18-35
28.	Mbula Matheka	8828912	0723437695	F		60+
29.	Paul Muinde Mulwa	314401901	0725973242	M		18-35
30.						

22. MWALA WARD						
S/No.	Name	ID Number	Phone Number	Gender	Disability	AGE GROUP
1.	John M. Isika	11052957	0719535194	M		36-59
2.	James Mutala	3497217	0712198279	M		36-59
3.	Agnes M. Kilosa	21057887	0726397791	F		36-59
4.	Anthony Kyalo	20097127		M	Yes	36-59
5.	Mathias Muya	11480226	0712778245	M		36-59
6.	Geoffrey Wambua	32764747	0718445593	M		18-35
7.	Benard Mwanzia	11088089	0700592021	M		36-59
8.	Cynthia Mumbua	32115144	0795957647	F		18-35
9.	Ancent M. Matheka	14429575	0711294209	M		36-59
10.	Daniel Nyalita	9364868	074576688	M		36-59
11.	Francis Muwa	11211162	0711814307	M		36-59
12.	Chris Muasya	32095160	0725637354	M		18-35
13.	Fredrick W. Muia	11053400	0725935248	M		36-59
14.	Martine Nzivo	34398161	0795555839	M		18-35
15.	Miriam Maweu	24613834	0790680505	F		36-59
16.	Amabius Mutwiwa	7273993	0729238603	F		36-59
17.	Justus W. Kasuri	0449193	0728883541	M		60 & Above
18.	Damaris Wambua	9851462	0715105692	F		36-59
19.	Margaret Kamende	1674048	0728075159	F		60 & Above
20.	David M. Kimandi	1699761	0714995933	M		36-59
21.	Naumy Kituvu	10204412	0710672325	F		36-59
22.	Elizabeth Kavoko	20069387	0724306385	F		36-59
23.	Purity William	24816566	0729303892	F		36-59
24.	James Mawia	1466988	0712570448	M		60 & Above
25.	Colleta Wayua	32138549	0706956586	F	Yes	18-35
26.	Agnes N. Mutua	12870974	0723552400	F		36-59
27.	Samuel Kinyanjui	28236991	0705478592	M		18-35
28.	Francis Musyoki	27834235	0729435518	M		18-35
29.	Joseph Musa	10680996	0725125783	F		36-59
30.	Joel W. Kutu	1874692	0712431814	M		36-59

23. WAMUNYU						
S/No.	Name	ID Number	Phone Number	Gender	Disability	AGE GROUP
1.	Joshua Makau	12534987	0760062676	M		36-59
2.	Richard Nduta	6122816	0726543031	M		60 & Above
3.	Raphael Kituku	3038056	0725625709	M		60 & Above
4.	Jadilis Kalunda	21220748	0713133121	F		36-59
5.	Violet Mbiti	22786957	0720227300	F		36-59
6.	Eunice N Ndolo	9923661	0712277361	F	Yes	36-59
7.	Stephen Maundu	0776604	0710441898	M	Yes	60 & Above
8.	Daniel Kikuvu	10040527	0729800363	M		36-59
9.	Raphael Nzioki	1092983	0704943224	M		60 & Above
10.	Festus Muthoka	25400305	0725823294	M		36-59
11.	Stephen Kiki	10890363	0711745724	M		36-59
12.	Veronicah Mueni	23788585	0723029133	F		36-59
13.	Mercy Musau	39663023	0113192480	F		18-35
14.	Reuben Musyoka	12534806	0720451518	M		36-59
15.	Japheth Munyao	1696820	0703373370	M		60 & Above
16.	Titus Muteti	7049841	0704755857	M		36-59
17.	Nicholas Mwanzia	14577204	072897254	M		36-59
18.	Onesmus Mwendwa	32960043	0793011954	M		18-35
19.	Amos Kisinga	34106640	0745223157	M		18-35
20.	Agnes S. Ndei	3045809	0700067008	F		36-59
21.	Emmaculate M. Nzuki	31026969	0743475551	F		18-35
22.	Josphine Mutuku	26267316	0702444951	F		36-59
23.	Joseph Kaunda Ndambuki	20132626	0724693329	M		36-59
24.	Maacali Musyoki	33590564	0791781040	F		18-35
25.	Sammy Ngati	7635567	0724771061	M		36-59
26.	Boniface Mwilu	7258186	0718507357	M		36-59
27.	Samuel Ndolo	11108351	0797773824	M		36-59
28.	Albanus Mutisya	35832790	0792332330	M		18-35
29.	Rose Kanini	0918007	0702004541	F		36-59
30.	Veronicah Ngui	22180692	0720271855	F		36-59
						18-35

24.	MASII/VYULYA WARD					
S/No.	Name	ID Number	Phone Number	Gender	Disability	AGE GROUP
1.	Maurine Wambua	35223703	0794405532	F		18-35
2.	Eric Katambo	23085787	0713574558	M		36-59
3.	Alexender M. Musau	9710268	0727293196	M		36-59
4.	Charles W Katumo	10114017	0721155812	M		36-59
5.	Susana Mueni Katuku	1696480	0707574644	F		36-59
6.	Stanley Muange Kyalo	11255679	0703344660	M		36-59
7.	Susan Chemutai	13414288	0710320101	F		36-59
8.	Penina W Muema	22560559	0725602898	F		36-59
9.	Joseph M Muoki	28376202	0720804490	M		18-35
10.	Evanson Mualuko	1696005	0714033439	M		60 & Above
11.	Felix M. Mbondo	22422112	0721744065	M		36-59
12.	James Kasaia	13420645	0726533805	M		36-59
13.	Samson Muli	8352594	0714800691	M	Yes	36-59
14.	Pst. Jonah	22878889	0726208320	M		60 & Above
15.	Rose Mutuwi	7521655	0727284325	F		36-59
16.	Rose Musyoki	10289096	0713682535	F		36-59
17.	John Bosco Maingi	1696668	0726087855	M		60 & Above
18.	Raphael K. Musau	29576486	0748182265	M		18-35
19.	Jennifer N.Nguu	20320252	0706637063	F		36-59
20.	Martin M. Kilelo	27877632	0728575189	M		18-35
21.	Kanini Ngovi	28941383	0727327216	F		36-59
22.	Miriam Muthini	32309037	0718943347	F		36-59
23.	Mary Wambua	20501484	0712353985	F		18-35
24.	Felix Muoki	26774720	0722747035	M		18-35
25.	Muthui Mutisya	8556061	0713277042	M		36-59
26.	Margaret Musyimi	13422871	0725138818	F		36-59
27.	Robert Nyumu	13522545	0727944619	M		36-59
28.	Gvus Kituku	15179813	0799653811	M		18-35
29.	Charles Musembi	21870838	0728575572	M		36-59
30.	Faith Mutheu	39734398	0727691275	F		36-59
25.	KATANGI WARD					
S/No.	Name	ID Number	Phone Number	Gender	Disability	AGE GROUP
1.	Josphat Malonza	736842352	0728699000	M		36-59
2.	Stellamaris Muthama	28926909	0748234807	F		36-59

3.	Janet Nthenge	22110214	0718280275	F		36-59
4.	Francisca Mutinda	5598301	0722895711	F		36-59
5.	Mueni Mutuku	36367996	070819193	F		18-59
6.	Muzizi Wambua	24207579	0713168550	M		36-59
7.	Fredrick K. Nthenge	33058015	0790770979	M		18-35
8.	Damaris Maive	12409541	0710727050	F		36-59
9.	Patrick Matu	21759839	0727307129	M		36-59
10.	Gabriel Muviku	8059966	0725519135	F		36-59
11.	Hellen Kioko	9265475	0712002821	F		36-59
12.	Monicah Mutanu	38018461	0110288904	F		18-35
13.	Dennis Mumo	26250100	0726593681	M		18-35
14.	Margaret Kalekye	222748305	0718656211	F		36-59
15.	Martha Mbungu	11539964	0703355408	F		36-59
16.	Partricia Wambua	26744659	0728407314	F		36-59
17.	Benjamin Muli	14563793	0714329854	M		36-59
18.	Mbithi Mulwa	7368467	0708280356	M		36-59
19.	Benson Kimithi	20542748	0720306097	M		36-59
20.	Bernard M Mithya	7540790	0758177799	M		60 & Above
21.	Sabastian K. Maingi	1660389	0703565491	M		60 & Above
22.	Agnes Kyengo	3051731	0723405174	F		60 & Above
23.	Reuben Nyika	6144707	0715857876	M		60 & Above
24.	Pauline Wayua	12869779	0705865227	F		36-59
25.	Peter Mutuku	7387760	0714598191	F		36-59
26.	Ann Kalondu	14622318	0713409853	F		36-59
27.	Purity Mutua	21643773	0720016176	F		36-59
28.	Joyce Mueni Kavinya	16112981	0728384193	F		36-59
29.	Daniel Mutua	25896742	0714958322	M		36-59

26.	MUTHETHENI					
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY	AGE GROUP
1.	David Mutua	3549751	0713872876	M	Yes	36-59
2.	Leonard Kinywa	7946421	0728168110	M		36-59
3.	Bernad Nzioka	0536444	0721710653	M		36-59
4.	Raphael M. Mutua	9937256	0722921519	M		36-59
5.	Onesmus N. Katee	32558189	0710486399	M		18-35

6.	Bernard Mutuku	421792424	0720909990	M		36-59
7.	Urbanus Kioko Munyao	12957402	0712042047	M		36-59
8.	Josephine Kisilu	10558829	0725126883	F		36-59
9.	Winfred Mutiso	22298541	0729758962	F		18-35
10.	Jacinta Kilonzo	28543428	0702938167	F		36-59
11.	James Mboloi	29793128	0724376412	M		36-59
12.	Bernard Mwilu	32420992	0741414452	M		18-35
13.	Emma Munguti	11270843	0725635685	M		36-59
14.	Mary Nzioki	33162523	0796954138	F		36-59
15.	Felistus Mutuku	146547661	0703306243	F		36-59
16.	Anna Kalunda Ngui	31023498	0742137191	F		18-35
17.	Magdalene Musyoki	7347583	0729303399	F		18-35
18.	Magdalene Wambua	13311602	0704180226	F		36-59
19.	Janet K. Mwatu	14469789	0726381999	F		36-59
20.	Jacinta M. Mbatha	21723438	0706430347	F	Yes	36-59
21.	Elizabeth Nzioki	13712644	0714943190	F		36-59
22.	Francis Masoa	35881913	0793634826	M	Yes	36-59
23.	Stephen Wambua	14493721	0711808920	M		36-59
24.	Sarah Solomon	214273106	0703752028	F		36-59
25.	Kioko Kimuyu	22048163	0721104152	M		36-59
26.	Mutinda Mbithi	14570063	0711455731	F		36-59
27.	Nicodemus Kiilu	12661701	0723005859	M		36-59
28.	Juliana Mbuvi	25083061	0725105014	F		36-59
29.	Petronillah Nduku	14654761	0703306243	F		36-59
30.	Ian Martin	10111404	0779546282	M		36-59
31.	A. Kimatu	5549253	0726059725	M		60 & Above

27.	MUVUTI/ KIIMA KIMWE					
S/No.	Name	ID Number	Phone Number	Gender	Disability	AGE GROUP
1.	Fairfay Muinde	16040455	070681465	M	Yes	60 & Above
2.	Stellamaris Kavita	13638291	0716250135	F		60 & Above
3.	Bernard Ndito	2624043	0720713975	F		36-59
4.	Jacinta K. Nzuki	9018420	0726304949	F		36-59
5.	Samuel Mburu	20461874	0711247665	M		36-59
6.	Catherine Mbatha	34627847	0727918559	F		18-35
7.	Isaac Wambua	21800233	0720770511	M		36-59

8.	Francis K. Kyule	11110250	0718828133	M		36-59
9.	Nicholas Nyamai	28234772	0707813058	F		36-59
10.	Victoria K. Mutinda	22857088	0741870064	F		36-59
11.	Jamimah Kitema	9291990	0708280708	F	Yes	36-59
12.	Dorcas Ngina	8966822	0726866907	F		36-59
13.	Elizabeth Mualuko	010581012	0718114250	F		36-59
14.	Joyce Mutei	10890738	070473825	F		36-59
15.	Scholastica Musya	26418871	0722462373	F		18-35
16.	James Mutangili	3216981	0727255319	M		36-59
17.	Isaack Kimeu	14471253	0726692479	M		36-59
18.	Maryanne Mumbi	26903438	0722563405	F		36-59
19.	Richmond Mutua	22943339	0727718019	M		36-59
20.	Pastor Salome	23074178	0728651211	F		36-59
21.	Alexander Kaloki	22689619	0712721014	M		36-59
22.	Simon Ndaka	6051276	0720909581	M		36-59
23.	James Musyimi	9225199	0711228833	M		36-59
24.	Simon M. Mutua	6133052	0718522571	M		36-59
25.	Joseph K. Kathuku	1325116	0727275731	M		36-59
26.	Patrick M. Mang'eli	20483059	0707576795	M		36-59
27.	Alies N.Musa	8966815	0712389686	F		36-59
28.	Dorcas Mutangili	13417432	0757723677	F		36-59
29.	Ruth Mutanu Kalungu	22944754	0723941063	F		36-59
30.	Catherin N. Munyao	8966864	0746606273	F		36-59
31.	Jackline Wavinya	13713395	0714096079	F		36-59

28.	NDALANI WARD					
S. NO	NAME	ID NUMBER	PHONE NUMBER	Gender F/M	DISABILITY YES/NO	AGE GROUP
1.	Stephen Mutunga Muli	26667721	0723041298	M		18-35
2.	Charles Kioko Mutua	11361423	0711843646	M		36-59
3.	Felistus M Nzuki	12718162	0712771641	F		36-59
4.	Cosmas M Kaloki	9936773	0729712697	M		36-59
5.	Paul Musyoki	29896303	0701589075	M		18-35
6.	Franklin Mutua	21428723	0727825246	M		36-59

7.	George Kilonzo	24192888	0724663300	M		36-59
8.	Martin Nzukii	9265440	0700611746	M		36-59
9.	Lucia Kimatu	20052680	0716673064	F		36-59
10.	BR. John Mutie	22118182	0768536318	M		36-59
11.	Monica Ngonyi	9192151	0710652072	F		36-59
12.	Alice Musembi	8056110	0706315088	F		36-59
13.	Patrick Kimuyu	32082588	0729241037	M		36-59
14.	Luisa Ngina	7777660	0719848799	F	YES	60+
15.	Fridah Mutuku	39633026	0702384975	F		18-35
16.	Elizabeth Syombua	30655035	0758459316	F		18-35
17.	Oscar Kambona	11733937	0729099278	M	YES	36-59
18.	Eunice Mbaluka	13830906	0705887776	F		18-35
19.	Susan Ndinda	28159540	0715861542	F	YES	18-35
20.	Josphine Ngina	38879862	0708829493	F		18-35
21.	Peter Nganda	20831705	0726826006	M	YES	36-59
22.	Catherine S Musau	13422882	0708812698	F		36-59
23.	Agatha Ndinda	28743287	0700860527	F		18-35
24.	Benjamin Kimanzi	9264903	0713301929	M		36-59
25.	Rosalie M. Kiswii	22199052	0711433260	F		36-59
26.	Jonathan Muia	2345914	0724567528	F		60+
27.	Jonathan T. Masila	9707491	0728830144	M		36-39
28.	Ann K. Mulevu	1674358	0718676890	F		36-59
29.	Raphael Kyule	35559263	0740147832	M		18-35
30.	Br. Shadrack	27757329	0712361912	M		36-59
31.	Kamene Kilonzo	39581139	0758976129	F	YES	18-35
29.	KANGUNDO EAST WARD					
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY YES/NO	AGE GROUP
1.	Job Ngotho	0954495	0724808463	M		60+
2.	Gideon Kaloki	27847027	0712506888	M		18-35
3.	Titus Musyoki	28446576	0702018657	M		18-35
4.	Catherine Musembi	14430666	0728472225	F		36-59
5.	Stephanina Mukena	23773163	0723861733	F		36-59
6.	Matthew Mutunga	32893666	0740236858	M		18-35
7.	John Muthiani	31780931	0715866979	M		18-35

8.	Agnes Mwilu	12531425	079748951	F		36-59
9.	Petronila Malia	28578942	0728205257	F		36-59
10.	Anthony Kioko	24589831	0724033324	M		36-59
11.	Sarah Musyoka	7000902	0710517464	F		36-59
12.	Julius Kitaka	27580315	0712956202	M		18-35
13.	Regina Ngotho	1314381	0713807650	F		60+
14.	Rose Muthoka	3238810	0722960532	F		60+
15.	Regina Titus	7272806	0728/364317	F		36-59
16.	Martin Mutatu	4942128	0725073560	M		18-35
17.	Domiana Muli	21186035	0712948681	F		39-59
18.	Wilfred Musau	22292377	0746636661	M		36-59
19..	Anthony Matheka	0992099	0799543050	M	YES	36-59
20.	John Mutua	13224257	0727974522	M	YES	36-59
21.	Josephine Ngina	7273945	0706419470	F		36-59
22..	Monica Kioko	3033163	0716115081	F		36-59
23.	Alfred Kamili	7129743	0711372719	M		36-59
24..	Lucy Ndinda	23647738	07061145080	F	YES	36-59
25	Ann Mutisya	22265747	0710861810	F		36-59
26.	Alice Kalekye	20353005	0716669381	F		36-59
27.	Benson Nzuma	21575053	0729352189	M		36-59
28.	Michael Ndoo	7822298	0729690792	M		60+
29.	John M. Musembi	4866202	0713727410	M		36-59
30.						

30.	MITABONI WARD					
S/NO.	NAME	ID NUMBER	MOBILE NUMBER	GENDER	PWD	AGE GROUP
1.	Victor Ndeti	20887903	0724633044	M		36-59
2.	Francis Kiletu	13829300	0724348622	M		36-59
3.	Munyao Mutisya	2983829	0714923506	M		36-59
4.	Muli Cosmas	24719647	0725173523	M		36-59
5.	James Masila	27270538	0717141189	M		18-35
6.	Nicholas M Nzomo	0914799	0727143719	M		60+
7.	Anthony N Mwololo	22232663	0725635200	M		36-59

8.	Augustine Kiteme	22805759	0722440853	M		36-59
9.	Boniface Mutua	25707999	0728849657	M		36-59
10.	Lawrence Mutua	28406178	0723893107	M		18-35
11.	Musungu Wambua	27857055	0703151960	M		18-35
12.	Philip Nzioka	29552098	0717473182	M		18-35
13.	Peninnah Nthenya	20015168	0705373221	F		36-59
14.	Elizabeth M Masila	20114501	0724336580	F		36-59
15.	Eunice Mueke	24472345	0725598997	F		36-59
16.	Muli Munyau	20004684	07204822561	M		36-59
17.	Robert Muthomi	27295779	0740840146	M		18-35
18.	Joseph Solii	14429363	0740861903	M		36-59
19.	Esther Loko	61395700	0716543347	F	YES	60+
20.	Patricia Musembi	0989132	0725229842	F		36-59
21.	Mary Nzioka	5052188	0724038849	F	YES	36-59
22.	Josephine Wambua	144722352	07138622207	F		36-59
23.	Daniel Kimenye	10041517	0706777435	M		36-59
24.	Rev. Isaac Muteli	6138786	07164314448	M		60+
25.	Aaron Makau	14471123	0114828234	M	YES	36-59
26.	Muinde Ndeti	5052228	0715013292	M		60+
27.	Michael M Makumi	7947102	0746492692	M		36-59
28.	David Ngumu	14076762	0714772124	M		36-59
29.	Leonida Ngolo	33512367	0792783501	F		18-35
30.	Brenda Kyalo	28386860	0790553816	F		18-35

31.	MATUNGULU EAST					
S/NO	NAME	ID NUMBER	MOBILE NUMBER	GENDER	PWD	AGE GROUP
1.	Albanus Nzuki Wambua	13224284	0726279417	M		36-59
2.	Isaac Nzioki Nthenge	20199126	0712397137	M		36-59
3.	Simon Muinde Kitonyi	1671379	07271151031	M		60+36-59
4.	Martin Muloli Nzau	11603623	0723765719	M		36-59
5.	Domitila Mueni Kyalo	28759924	0715343498	F		60+
6.	Samuel Mutinda Mbithi	7944976	0711182760	M		36-59
7.	Benson Kavita	12583056	0724549475	M		36-59
8.	Joseph Musembi	20100082	0721803626	M		36-59

9.	Moses Ndunda	9240310	0722722618	M		36-59
10.	John Muli	14496307	0727484601	M		36-59
11.	Joel Wambua	10969424	0727552304	M		36-59
12.	Mary Munyao	1470592	0728358225	F		60+
13.	Jacinta Mbatha	24727548	0740654431	F		36-59
14.	Kanini Helena	7405853	0711439891	F		36-59
15.	Magdaline Muange	4889077	0701246342	F		60+
16.	Fabian Mutua	6266874	0726499868	M		60+
17.	Johnson Muia Kithuka	8352710	0706606838	M		36-59
18.	Elizabeth M Nzau	21462194	0784922194	F		36-59
19.	Stephen Munyao Munyanza	32192158	0706009568	M		18-35
20.	Esther Ndunge Mutua	28204147	0710548558	F		36-59
21.	Rose Kanyiva Nganga	13639003	0711110117	F		36-59
22.	Florence Kamene Kavita	31896369	0721750416	F		18-35
23.	Eric Kilonzo Ndonye	25192664	0721627925	M		18-35
24.	Peter Muthiani Musyoki	11402093	0728004278	M		36-59
25.	Joel Nzuki Ng'ang'a	13311162	0724904091	M		36-59
26.	Grace Mbeke Makau	13227259	0710257950	F		36-59
27.	Bosco Mutua Mumo	29949154	0717286534	M		18-35
28.	Mbula Matheka	8828912	0723437695	F		60+
29.	Paul Muinde Mulwa	14401901	0725973242	M		60+
30.	Jaqueline Malavu	11647122	0705253873	F		36-59

32.	TALA WARD					
S/NO	NAME	ID NUMBER	PHONE NUMBER	GENDER	PWD	AGE GROUP
1.	Juliana Mumu	1461142	0738573761	F	YES	60 & ABOVE
2.	Syokau Musyoka	1316325	0711436887	F		60 & ABOVE
3.	Aphia Nyamai	9930526	0726259964	F		36-59
4.	Janet Mueni Kiio	4888731	0700686914	F		60& ABOVE
5.	Joseph Muema	21743563	0781248628	M		36-59
6.	Lesa Mueke	1460930	0723348677	F		60+
7.	Mwelu Thyaka	1465854	0720025778	F		60+
8.	Domitila Mueni	10175950	0715848085	F		36-59
9.	Samuel Kiio	36803999	0769544576	M		18-35
10.	Joseph Musyimi	3696542	0710275700			60+

11.	Peter M Kuthita	3238149	0727706027	M		60+
12.	Hassler Mamunye	12590145	0724213359	M		36-59
13.	Dennis Mutunga	35350376	0740092718	M		36-59
14.	Joel Mwendwa	24839770	0701730983	M		36-59
15.	Jackson Muli	29949211	0785532560	M		18-35
16.	Jackson Muli	24592575	0701426944	M		36-59
17.	George Mutuku	9787722	0715275738	M		36-59
18.	Anna S Ngungu	0701087	0714724322	F		60+
19.	Benedetta M Nzau	4888507	0711943835	F		60+
20.	Jane Mulinga	1462172	0711999532	F		60+
21.	Susan N Mwanza	14412470	0707384053	F		36-59
22.	Mary W Babu	10925849	0758050908	F		36-59
23.	Agnes Ngei	12860156	0717048584	F		36-59
24.	Winnie O Alwang'a	26885215	0797263832	F		18-35
25.	Peter Musya Muia	1315496	0711682788	M		60+
26.	S Muthusi	8828755	0729744529	M		60+
27.	Josphat Vei	24416625	0704110402	M		36-59
28.	James Kiasyo	11646961	0799646416	M		36-59
29.	Francis M Mulinge	10421266	0729608151	M		36-59
30.	John Mbithi	22340848	0712592972	M		36-59

33. MATUNGULU NORTH WARD						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	PWD	AGE GROUP
1.	Boniface Kisaila	22901461	0726236920	M		36-59
2.	Salome Nyange	222368188	0712050437	F		36-59
3.	James Kilonzo	23170189	0726016670	M		18-35
4.	Theresa Mailu	0235084	0722826918	F		60+
5.	Mary Ndinda	8897066	0727212942	F		60+
6.	Jane Muthama	13226554	0720526288	F		36-59
7.	Patricia Kathangu	31198521	0705669651	F		36-59
8.	Margaret Mumbua	11812190	0727044934	F		36-59
9.	Sophia Kaleli	31314126	0714654257	F		18-35
10.	Francis Kiswili	3570814	0725616444	M		36-59
11.	Emmanuel Nthela	0320391	0727876223	M		60+

12.	John N Muia	13311321	0727465714	M		36-59
13.	Colleta Nduku	9922485	0713955512	F		60+
14.	Bentah Peter	12861154	0735358220	F		36-59
15.	Grace Mumbua	20734659	0727963052	F		36-59
16.	Martha Kamene	13227293	0723130869	F		36-59
17.	Janet Muatha	11811580	0725116167	F		36-59
18.	Neufridah Musyoki	24585111	0718258145	F		36-59
19.	Paul M Ngwili	7797916	0721113703	M		36-59
20.	Josphine N Ngila	9479337	0725736754	F		36-59
21.	Ruth Kasiva Mutui	34303742	0711390912	F		36-59
22.	Benedetta Muthio	29268999	0717397104	F		36-59
23.	Victoria Katumbi	12861300	0713063414	F	YES	60+
24.	John Kyalo	23126688	0706824646	M		36-59
25.	Joseph Mwanzia	24787646	0720159650	M		36-59
26.	Martin Musyoka	7386986	0712071268	M		36-59
27.	Bernard Mutua	11016484	0724237941	M		36-59
28.	Anthony Muthoka	28116836	0721129371	M		18-35
29.	Francis Mwanzia	24238574	0705167529	M		36-59
30.	Francis Matheka	8802494	0729511800	M		36-59

34.KANGUNDO NORTH						
S/NO	NAME	ID NO	PHONE NO	GENDER	PWD	AGE GROUP
1.	Grace Lai	23166860	0727968863	F		36-59
2.	Mary Mutunga	7786813	0725318968	F		36-59
3.	Annastacia Mutuku	22069391	0716967599	F		36-59
4.	John M Mutuku	11860970	0712966511	M		36-59
5.	Mary Nduku	39019815	0742111313	F	YES	18-35
6.	Mercy Mbithi	33958089	0799646484	F		18-35
7.	Judith Nzioki	25829505	0722178539	F		36-59
8.	Ceciliah Nzomo	14653839	0724973312	F		36-59
9.	Jonathan Ngui	786630-8	0727330187	M		36-59
10.	Fidelis Mutuku	22899745	0726710930	M		36-59
11.	Eric Ngei	30260846	0704704952	M		18-35
12.	Peter Kiamba	23039723	0757738413	M		36-59
13.	Benjamin M Maina	22707861	0724282187	M		36-59
14.	Gilbert Munyao	7945161	0713254984	M		36-59

15.	Isaac Maithya	22023627	0726960244	M		36-59
16.	Emmanuel Maingi	24695559	0716735489	M		36-59
17.	Mutua Kimanthi	0702764	07233983	M		60+
18.	Daniel Kituku	13224055	0727115650	M		36-59
19.	Fidelis Ndunda Ngui	0698305	0722293036	M		60+
20.	Pascal Maundu	21464565	0713730844	M		36-59
21.	Raphael Kinzilo	4824382	0112372085	M		60+
22.	David Muthungu	9479736	0727651547	M	YES	36-59
23.	John Muli	23834041	0710779755	M		36-59
24.	Martha Nduku Musyoki	29367936	0723821369	F		18-35
25.	Pastor Pasqualine Mulusya	3430111	0722312620	F		60+
26.	John K Nzioka	4855274	0722492518	M		60+
27.	Gabriel Maingi	0702209	0715621102	M		60+
28.	Immaculate Nzioki	1315768	0721365631	F		60+
29.	Regina Ngotho	134381	0713807650	F		60+

35	EKALAKALA					
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY	AGE GROUP
1.	Benedict M.Mutavi	29436547	0795609579	M		18-35
2.	Felister N. Mbaluka	26359354	0769188583	F		18-35
3.	Isaiah M. Muli	6444362	0700922433	F		60+
4.	Sharon Nthiwa	11202117	0721867757	F		36-59
5.	Pauline K. Mutinda	20429857	0701817076	F		36-59
6.	Mercy N. Kangethe	25155028	0798603380	F		36-59
7.	Zacharia Muli	1737677	0724042252	M		60+
8.	Lucy Mbutu	20420595	0729232551	F	Yes	36-59
9.	Sammy Kioko	12868607	0718976178	M	Yes	36-59
10.	Zipporah M. Mutiso	22375923	0720134900	F		36-59
11.	Mary M Musau	26771498	0716377701	F		36-59
12.	Solomon Mulei	11268155	0717783174	M		36-59
13.	Danson Muli	23683240	0723539132	M		36-59
14.	Dominic Kivuvo	3477268	0718813031	M		36-59
15.	Japheth Kimithi	7946831	0740819355	M		36-59
16.	Phoebe Nzau	7259264	0725646252	F		36-59
17.	Charles Ngundo	25070570	0720619880	M		36-59
18.	Martha Mwongeli	27723796	0714216431	F		36-59

19.	Danford Munyasya	34168072	0707739284	M		18-35
20.	Stephen Mulwa	0915552	0715068911	M		36-59
21.	Patrick M Muli	1146486	0729947498	M		60+
22.	Elizabeth N Nthenge	23280054	0726829015	F		36-59
23.	Patrick Wambua	27925902	0716758999	M		18-35
24.	Raphael Ndeto	7000968	0721253685	M		36-59
25.	Monicah Muluvi	14430186	0710970505	F		36-59
26.	Christopher Mutua	28698292	0712901868	M		18-35
27.	Stephene Matimbii	1324044	0728349338	M		36-59
28.	Catherine Musili	24895104	0742571710	F		36-59
29.	Josphine N Ngila	9479337	0725736754	F		36-59
30.	Benjamin M Maina	22707861	0724282187	M		36-59

36. MATUNGULU WEST						
S/NO.	NAME	ID NUMBER	PHONE NUMBER	GENDER	DISABILITY	AGE GROUP
1.	Musembi Kioko	7944947	0713298662	M		36-59
2.	James Mutisya	0698539	0727056255	M		36-59
3.	Peter Ndambuki	6684725	0725084420	M		60+
4.	Timothy N Mutinda	2474615	0713555357	M		60+
5.	Eric Mutua	25736262	0722688184	M		36-59
6.	Annah Kalunde	32891005	0711815706	F		18-35
7.	Nicodemus Kiilu	27471351	0713810959	M		18-35
8.	Nicholas Muli	0702165	0710401607	M		60+
9.	Timothy Muasya	8529357	0727514197	M		36-59
10.	Paul Nzisyo	13226600	0724881478	M		36-59
11.	Josephine Katunge	21422115	0712219529	F		36-59
12.	Susan Ndunge	34908016	0703282578	F		18-35
13.	Gilson Mutua	13714042	0725590034	F		36-59
14.	Bernard Mutua	4343287	0721229896	M		60+
15.	Monica Ngami	21837378	0729684386	F		18-35
16.	Jemimah Syombua	12861053	0741483759	F		36-59
17.	Ruth Mwendu	14575553	0713428682	M		36-59
18.	Florence Mbithe	21225772	0727729038	F		36-59
19.	Beth Munyau	22660682	0725810657	F		36-59

20.	David Kilonzo Mbuvi	24314809	0705585149	M	YES	36-59
21.	Raphael Musyoki	13224223	0724735292	M		36-59
22.	Kasyoka Mwololo	0917683	0720359659	M		60+
23.	Juliet Muya	31831626	0748785075	F		18-35
24.	Agnes Mutio	31708179	0716413938	F		18-35
25.	Monica Makali	25897001	0724714611	F		18-35
26.	Prudence Munyao	24590446	0725722257	F		36-59
27.	Peter M Maingi	9344490	07289744580	M		36-59
28.	Veronica Ndila	9344490	0718278772	F		36-59

37.	KOLA/MUUMAANDU					
S/NO	NAME	ID NUMBER	PHONE NUMBER	GENDER	PWD	AGE GROUP
1	Daniel Mulinge Makenzi	13424053	0720090160	M		36-59
2	Johnnes Mwanzia Kyalo	6276617	0722691862	M		60+
3	Kennedy M Ndambuki	34310605	0798539173	M	YES	18-35
4	Festus Musa Muiya	7794882	0712967833	M		36-59
5	Samson M Musyoka	20797967	0722677791	M		36-59
6	Evans M Kimwele	22668914	0726833951	M		36-59
7	Titus N Mutunga	2614859	0727223956	M		60+
8	Julian Mutisya	2612178	0711908022	M		60+
9	Samuel Vuva	4828480	0722858192	M		60+
10	Juliana Nzungo	98550901	0723660171	F		60+
11	Paul K Mukusya	0494324	0729885148	M		36-59
12	Matthew M Muindi	6051972	0722504235	M		36-59
13	Irene Mbinya	14423145	0729447568	F		36-59
14	Eunice Velenza	22437693	0715061879	F		36-59
15	Joseph Musembi	21644985	0721693224	M		36-59
16	Joyce Mbithi	22156945	0710251907	F		36-59
17	Jackson Keli	21550746	0713537352	M		36-59
18	Thomas Musyoki	22135156	0718489275	M	YES	36-59
19	Eric Mathendu	12767635	0703574025	M		36-59
20	Paul Vamaise	6044849	0714693327	M	YES	36-59
21	Mariana Mumbua	13638639	0705503879	F		36-59

22	Zipporah W Kimiaka	9711085	0720550094	F		36-59
23	Annastacia Wavinya	23064609	0723852535	F		36-59
24	Elizabeth Mueni	2936320	0741399222	F		18-35
25	Jackline Maithya	23387871	0713737413	F		36-59
26	Dennis Muuo	30167701	0700634534	M		18-35
27	Julius Munuve	5647663	0713975358	M		36-59
28	Nelson Muthiani	3463038	0729741717	M		60+
29	Justus Mwikya	6031626	0715430294			60+
30						
38	KALAMA WARD					
S/NO	NAME	ID NO	PHONE NO	GENDER	PWD	AGE GROUP
1	John W Kutu	10514823	0714580599	M		36-59
2	Joseph Muinde	26124694	07106835464	M		36-59
3	Rosalia Munyaka	10819241	0707942576	F		36-59
4	Hellen Musembi	10114890	0729553476	F		36-59
5	Joseph Nzeki	1325798	0722248874	M		36-59
6	Cyrus Nzioka	23881426	0792325336	M		36-59
7	James Kyalo	12585043	0727762012	M		36-59
8	Anthony Muteti	24946484	0702686336	M		36-59
9	Philip M Ngumbi	7944742	0711929561	M		36-59
10	Catherine K Kinama	24192675	0723024512	F		36-59
11	Joseph M Kimeu	5046294	0724975274	M		60+
12	Jackson Musila	5061988	0722630980	M		60+
13	Akata Kavato	7820959	0728643166	F		36-59
14	Patricia Muoki	21931384	0727380853	F		36-59
15	Bernard Kitonyi	4424824	0725538872	M		36-59
16	Judah Mwanthi	3044067	0713669374	M		60+
17	Judith Mutheu	33351789	0799176154	F		18-35
18	Benedette Musa	7806146	0721649398	F		36-59
19	Muithi Mutisya	10174474	0701222159	M		36-59
20	Josephine Muema	10580675	0715037330	F		36-59
21	Samuel Mativo	2771467	0792635088	M	YES	60+
22	Rose Munyao	10420934	0726933070	F		36-59
23	Elizabeth Makau	27964477	0718989617	F		18-35
24	Alex Kalii	234048743	0708175028	M		36-59
25	Peter Ngui	11734667	0723792564	M		36-59

26	Bendeter Mulinge	13830186	0727453186	F		36-59
27	Annastacia Wavinya	7820959	0723852535	F		36-59
28	Elizaphanson Njoroge	13740273	0702384824	F		36-59
29	Catherine Somba	22839272	0703148314	F		36-59
30	Josphine Makato	25244157	0715240543	F		36-59

39.	LOWER KAEWA WARD					
S/NO	NAME	ID NO	PHONE NUMBER	GENDER	PWD	AGE GROUP
1	Domitila Muema	24195316	0715591669	F		36-59
2	Stephen Mutuku Mbithi	7813228	0713277398	M		60+
3	Boniface Nzuki Kyalo	30796649	0702695168	M		18-35
4	Timothy Kaloki Musyimi	26958601	0713321721	M		18-35
5	Pastor Daniel Muniee	16102870	0723429502	M		60+
6	Lesa Musyoka	0989645	0714709850	F		60+
7	Bernadette Kaloki	23858250	0704441904	F		36-59
8	Benedict Muli Munyao	20004684	0720482561	F		36-59
9	Anthony Maina	27624141	0714562997	M		36-59
10	Daniel Nzioka	0494613	0720439799	M		60+
11	Lucas Ndonge	22139633	0700156849	M		36-59
12	Josephine Peter	13638279	0728244378	F		36-59
13	George Mutunga	7001765	0713331679	M		36-59
14	Isaac Lonzi	3152980	0713489073	M		60+
15	Francis Muli	8790878	0710938971	M		60+
16	Catherine M Kimeu	10274039	0711690156	F		36-59
17	Fridah M Wambua	295340823	0706243123	F	YES	18-35
18	Juliana Muoki	23043819	0719153614	F		18-35
19	Margaret David	2053435	0798447186	F		36-59
20	Jane Mwanzau	0534905	0717196016	F		60+
21	Jane Mulwa	20600996	0701240073	F		36-59
22	Margaret Muasya	10891502	0714679218	F		36-59
23	Peter M Nicholas	20018424	0716386221	M		36-59
24	Patrick K Mbithi	214524688	0714345356	M		36-59
25	Emily M Muoki	34303982	0741316141	F		18-35
26	Vincent M Munyao	13523661	0726526325	M		36-59
27	Amos Mutua	34187734	0792461605	M		18-35

28	Caroline Ndunda	11202004	070824346	F		36-59
29	Sammy Muoki	35908033	0743150162	M		18-35
30	Daniel Mutua	258967442	0714958322	M		36-59

40.	KANGUNDO WEST					
S/NO	NAME	ID NO	PHONE NO	GENDER	PWD	AGE GROUP
1	Martin Kioko	26538311	0725860299	M		36-59
2	Cecilia N. Mulinge	4823927	0714137792	F		60+
3	Jennifer Mwende Kamakya	23454114	0714051721	F		36-59
4	Rose Nzilani Kamunzyu	30637379	0725647968	F		36-59
5	Richard K. Ndunda	1314440	0710149927	F		60+
6	Joseph Mutie	8966342	0701900129	M		36-59
7	Damaris M. Matheka	24695825	0743570074	F		36-59
8	Lawrence M. Kilonzo	11271015	0726928930	M		36-59
9	Daniel Muindi	12533567	0718051370	M		36-59
10	Rev.Jacob M. Mativo	62661760	0724352885	M	YES	60+
11	Kennedy Kivuva	7386034	0720293907	M		36-59
12	Martin Kilonzo	22360157	0728075189	M		36-59
13	David Wambua	12533567	0724602627	M		36-59
14	Samuel Kakunzu	12536831	0712094393	M		36-59
15	Ruth Mutisya	7273363	0721295133	F		36-59
16	Cliff B. Kimeu	22150260	0718062057	M		36-59
17	Bis.Titus Kakonzi	1315570	0723028959	M		60+
18	John Kyalo	11052629	0712052284	F		36-59
19	Esther Mutuku	29256203	07173703710	F		18-35
20	Penina Kioko	7405894	0727797409	F		36-59
21	Patricia Kisoi	21501875	0746419095	F		36-59
22	Faith Nduva	20316120	0724557093	F		36-59
23	Salome Munyao	11017963	0727431847	F		36-59
24	Margaret Kiseli	5082046	0716406332	F		36-59
25	Mary Musau	7001276	0713087931	F		36-59
26	Carolyn Kitonga	25497207	0726948866	F		36-59
27	Johnson Kilu	25448693	0717648243	M		36-59
28	Damaris Kithuka	21775531	071`0670915	F		36-59
29	Tabitha Musyoka	10288961	0729387963	F		36-59
30	George Kimani	20760198	0721706866	M		18-35

