



DaCCA

**Devolution and Climate Change
Adaptation Program (DaCCA)**

Kisumu and Homabay County

Baseline Report

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1.0 INTRODUCTION

1.1 Background on climate Change

Climate change has become one of the global key challenges in the 21st century (IPCC, 2001). The harmful effects of climate change are acutely affecting developing countries that have populations living in poverty and communities that are not able to adapt and mitigate to these effects (IPCC, 2007). Harmonizing these communities' development and efforts to manage climate change will make it possible to accelerate socio-economic progress.

The low level of awareness on climate change across Sub-Saharan African countries is attributed to limited awareness campaigns on one hand and the fact that African countries have got other problems ranging from poverty to political conflicts on the other hand hence climate change is never a priority issue (UNDP, 2007; UNFCCC, 2007) However it is increasingly being identified and recognized as a developmental and environmental issue whose mitigation and adaptation needs to be mainstreamed into all development policies, programs and activities, and funding decisions to achieve sustainable development (Agrawal & Perrin, 2009).

Kenya is already extremely susceptible to climate-related events and such events pose a serious threat to the socio-economic development of the country. The county governments and the relevant devolved government departments and officers should be sensitized on the importance of supporting climate change adaptation and in order for community concerns on climate adaptation to find their way into planning documents such as County Integrated Development Plans (CIDPs) and yearly county budgets.

Upon the inauguration of the new 2010 constitution of Kenya which enacted county (devolved Governments) it has made it possible to discuss climate change at regional and county levels. DACCA program is currently focusing on western region starting with the Kisumu and Homabay counties along the Lake Victoria region.

1.2 DaCCA Programme

DaCCA is a DANIDA funded project through Sustainable Energy (SE) which is designed to advocate for devolved funds to support climate change adaptation projects in the communities. The DaCCA project envisages an increasingly qualified CSOs sector which works in collaboration with the most vulnerable groups (right-holders) and duty-bearers on climate change adaptation interventions. The project further seeks to empower the vulnerable communities with relevant skills and knowledge that will help them adapt to climate change and lobby for development of climate change policies and devolved funds to support these initiatives in Kisumu and Homabay counties.

1.3 Purpose and Scope of the baseline survey

The overall objective of the baseline survey was to establish benchmarks for effective project planning and implementation, as well as to establish a basis for the progressive monitoring of the achievement of the planned outputs and results, through the collection of quantitative and qualitative facts, figures and indicators of the situation at the beginning of the project in the targeted project sites.

The findings will be used to determine the level of awareness on climate change and its potential impact on livelihood, the existing climate change adaptation practices and technologies, the stakeholders supporting climate change adaptation initiatives including the county governments in the targeted project sites in the two counties. It will assist in determining the status of the legislative processes and support with regards to climate change policies and laws in the two counties of Kisumu and Homa Bay.

The baseline study is intended to provide program staff with detailed baseline data on key project indicators to enable them to track changes over the course of the project. The data collected is both qualitative and quantitative in nature, and includes information gathered on the outcome indicators and on knowledge, attitudes and practices in the areas of climate change awareness, climate change adaptation best practices/technologies and the status of the legislative process regarding climate change in the two targeted counties.

1.4 Population and coverage

The Devolution and Climate Change Adaptation (DaCCA) programme is being implemented in Kisumu and Homa Bay counties. Kisumu and Homa Bay counties are both located along the shores of Lake Victoria in Western Kenya.

Homa Bay County covers an area of 4,267.1 Km² inclusive of the water surface which on its own covers an area of 1,227 km². The county is located in South Western Kenya along Lake Victoria where it borders Kisumu and Siaya counties to the North, Kisii and Nyamira counties to the East, Migori County to the South and Lake Victoria and the Republic of Uganda to the West. Based on projections from the 2009 Kenya Population and Housing Census, Homa Bay County has an estimated population of 1,038,858 persons consisting of 498,472 males and 540,386 females by the end of the year 2012. This population is projected to rise to 1,177,181 persons in 2017. Of this total, 564,843 will be males while 612,338 will be females. Homa Bay County has eight parliamentary constituencies and 40 electoral wards

Kisumu County is one of the 47 Counties in Kenya and borders Homa Bay County to the South, Nandi County to the North East, Kericho County to the East, Vihiga County to the North West and Siaya County to the West. The County covers a total land area of 2,009.5 km² and another 567 km² covered by water. The population of the county according to the 2009 Population and Housing Census was estimated at 968,909 persons with 474,687 males and 494,222 females. The County consists of seven constituencies namely: Kisumu East, Kisumu West, Kisumu Central, Seme, Nyando, Muhoroni and Nyakach

DaCCA coverage is as indicated in the following Table:

County	sub-county	Village /ward	Implementation Partner
Kisumu	Central Karachuonyo	Kamser A	OSIENALA
		Kamser B	
		Kogembo	
		Kogwenokawour	
		Kokondi	

		Kakola	CREPP
		Kochogo	
Homabay	North Karachuonyo	Obaria Beach	Umande Trust
		Chuowe Beach	
	Rachuonyo North	Wanchieng	CREPP
	East Kano / Wawidhi	Magina	OSIENALA
		Nyakongo	
		Katolo	
		Achego	
	Ayweyo		
Kisumu and Homabay	All	All	Suswatch

2.0 METHODOLOGY

This baseline used both qualitative and quantitative data. The baseline survey was achieved through the use of mixed methods of primary data collection as well as household surveys. A reasonable and sufficient sample size of households was surveyed through questionnaires. Some of the households was outside the project area while most of the households was those that were expected to have benefited from the DaCCA project.

A part from focus groups discussions, the DaCCA team also spoke to few Key Informants for example the County Chief officers in charge of climate change desks, environment, water and sanitation etc. to collect systematic information on climate change adaptation and mitigation.

Existing secondary data from a range of public and private sources, including the project's own records, were also examined.

3.0 THEMATIC AREAS OF FOCUS FOR THE BASELINE STUDY

The study gave priority to the following (seven)⁷ thematic Areas;

- ❖ Knowledge levels of climate change in the region
- ❖ Changes in development of county laws and policy
- ❖ Proportion of Climate Change investment
- ❖ Changes in activism and mobilization
- ❖ Changes in people's lives/livelihoods
- ❖ Climate Change Adaptation technologies

- ❖ Natural Resources conservation

3.1 Knowledge levels of Climate change in the region

During the Baseline Study, It was noted that the people of Kisumu and Homabay counties have indigenous knowledge on weather patterns of the Lake Victoria basin. They also have knowledge on the seasons of the year especially for planting food crops. Traditionally, there existed two planting seasons, during the long rains between March and May and the short rains between September and December. To improve food security in their households and communities, they plant food crops that are hardy and that can grow during the dry season and during droughts.

Residents in the project area have noticed a change in the rainfall patterns and the frequency of droughts in the region. World Agroforestry (Kandji, Verchot, & Mackensen, 2006) reported that food crises were reported countrywide in the years 1997, 2000, 2004 and 2005 amidst other major droughts that occurred in the country. In the counties of Kisumu and Homabay, there have been reported cases of water shortages, soil erosion due to flooding, diminished sources of fuel due to diminished forests and land use change.

Knowledge on Climate Change is still very low within the county which has led to challenges in Adaptation and mitigation. This has not been made easy by lack of a Policy framework guiding Climate Change in the 2 counties.

A significant number of respondents stated that the growing season has changed. The reasons stated are multiple and include less rainfall, followed by more erratic and unpredictable rainfall. About half of respondents stated that there are more frequent periods with drought, a few think that the temperature has increased. The perceptions on changing climate and changing rainfall are backed up by evidence from national data and higher temperatures. There is not specific evidence for less rainfall but there is evidence that it is more erratic, leading to more droughts and flooding.

3.2 Changes in development of county laws and policy

There are no Climate Change Policies in the 2 counties despite a potential from development partners who are willing to support initiatives or interventions emanating from County Climate Change policies.

The Counties ability to effectively respond to climate change vulnerability of population and systems include policy, institutional and regulatory frameworks coupled with capacity development and finance. However, the 2 counties do not have a climate change policy. Kisumu County has a draft policy for addressing climate change while Homabay does not. In both counties, climate change mainstreaming is slowly or yet to be integrated in all county sectors and operations.

However, in the County Integrated Development Plans (CIDP) for the 2 counties, elements of Climate change have been put for consideration even though no regulatory framework has been designed to guide their implantation.

As a way of promoting the uptake of Green energy technologies and climate change strategies for transition to a low carbon resilient pathway for Kisumu County, the department of Green Energy and climate change was established. One of the key task of the department is mainstreaming of climate change into CIDP programs and sector plans. Very little progress has been achieved in this sector with a policy document on climate change being the only relevant policies that is currently being developed in collaboration with stakeholders.

In Homa Bay County, climate change issues are being handled by the Department of Energy and natural resources. One of the key mandates of the department is Coordination of Climate Change Affairs. So far, no law or policy has been passed in the county assembly to address climate change issues.

3.3 Proportion of Climate Change investment

From the study, it was established that the climate change Act 2016 provides for each county government to mainstream climate change in their respective county integrated development plans. The devolved functions include Agriculture, Health, waste management and disposal and control of

air pollution amongst other responsibilities including county planning and development, land survey and mapping and energy regulation.

The study established that in the 2012-2017 CIDP for Kisumu County, Climate Change has been merged with Environment. In the document, Major contributors to environmental degradation have been defined as; Solid and Liquid Wastes, Sand harvesting, Invasive Species (water Hyacinth).

Some of the effects associated with Climate Change from the CIDP include; increased temperature resulting in increased algal blooms in the lake which favor invasive species such as the water hyacinth, increased amount and intensity of rainfall resulting in frequent flooding especially in the Kano Plains as well as frequent dry spells leading to droughts.

Further, Climate Change Adaptation strategies outlined in the CIDP for Kisumu County include; undertaking major environmental impact assessment, water catchments conservation and protection, improvement of information communication systems, intensify capacity building among stakeholders at all levels and Climate Smart Agriculture. In addition, there will be need to promote tree planting to increase the carbon sink level improve research programs on the assessment of climate change impacts, and changes in the climate system and enhance the linkage between research finding and the general population and stakeholder institutions on climate change.

Climate Change Investment as envisaged in the CIDP for Kisumu County entails the following;

Sub Sector	Project Name	Cost	Time Frame
Agriculture	Promotion of sustainable land use, environmental conservation and climate change mitigation.	898M	2012-2017
Livestock	Climate Change Mitigation and Adaptation	93.45M	2012-2017
Environmental Management	Climate and Weather Information	6M	2012-2017
	Climate Change Mitigation and	54M	2012-2017

	Adaptation		

For Homa Bay County; Environment has also been merged with Climate Change. It was noted that Climate Change was a problem in the county notably, with the ever declining stock of fish in Lake Victoria, drying up of water ways and worsening weather conditions, the local populations have not been able to sustain food production at a level commensurate with growth in the population. Without appropriate planning and intervention measures in place, many residents will lose their livelihoods especially in fishing, agriculture, tourism and forestry where it is the bulk of majority of employment.

Some of the measures proposed to mitigate, even reverse the effects of climate change and environmental degradation included cleaning up of Lake Victoria and protection of riparian reserves, increasing forest and tree cover, adoption of sustainable farming and settlement practices, rehabilitation of degraded lands and protection of wetlands.

The government has embarked on tree planting programs of re-afforestation in hills such as Gembe, Gwassi, Ruri, Wire and Koder Forest. In additional measures have been put in place to control and manage sand harvesting. NEMA is expected to enforce the Environment Management Act in ensuring that industries operating within the towns treat their effluents to the required standards so as to reduce pollution. All stakeholders will have to be sensitized to put proper and sustainable environmental conservation measures in place so as to keep the county’s environment clean.

From the 2012-2017 Homa Bay County CIDP, under Environmental Degradation and Climate Change, the county government planned to increase forest cover on farms and hills; enforce existing laws on forestry and land use together with Environmental management and coordination act of 1999. However, no tangible budget has been allocated for this and other Climate Change initiatives.

According to a study by FES (2016), less than 15% of the climate change related forums in the counties are organized by the county government of which less than 10% of the residents claimed to be engaged in climate change related issues, consultative meetings and in strategy implementation. Most of the climate change forums were organized by NGOs.

Kisumu County had a Green energy and climate change department and is working towards integrating climate change in all its sectors.

3.4 Changes in activism and mobilization

The study established that there was limited knowledge on Human rights even though they can be found in the 2010 Constitution. The Constitution is a way of devolving power and ensuring increased public participation in the government following principles of transparency, participation and accountability. The above can only happen if the citizens know their rights.

Advocacy plays a vital role in enabling interactions between right holders and duty bearers. More platforms are needed to increase the engagement of duty bearers and policy and law makers.

From the study, the participants mentioned that during the budgetary process, the wards and Sub County implementation units are expected to organize for Wards Citizens' Fora and sub-county citizens' fora to push for devolution and natural resources governance in Kisumu and Homa Bay Counties. These units would allow for inclusion of all the wards in resource allocation and push for projects that are beneficiary to the community. Some wards did not have the ward and sub county implementation units and instead had village level committees dealing with local development issues. Advocacy work should be contextualized in the pressing needs of the community members and Civil Society members in both Kisumu and Homabay Counties. The advocacy risks identified during the study included; shrinking civic space and knowledge on devolution and climate change, Political change and instability and Failure by communities to engage in advocacy as an approach to the problem identified.

The participants mentioned that public participation in governance is promoted by the constitution 2010 which looks to increase transparency and accountability. Public participation in the budget process ensures that the communities are fully engaged in the decision making when it comes to projects that are being implemented by the county government. This ensures inclusion and ensures that people, particularly those who are most vulnerable in the two counties, are able to:

- Have their voice heard on issues that are important to them.
- Defend and safeguard their rights.

- Have their views genuinely considered when decisions are being made about their lives
- Express their views and concerns through organized forums
- Access information and services
- Defend and promote their rights and responsibilities.
- Explore choices and options
- Have projects that would be beneficial to their lives approved

In the two counties, there was a minimal involvement of the local population in the budgetary process. There was a tendency to involve the elite community that comprised NGOs and CSOs who would not shoot down the projects selected for implementation. The participants would be given short notice to participate in a process that required a lot of time to engage in discussions and decision making. There was also no prior circulation of the budgetary allocation document for scrutiny by the local communities.

The community members mentioned that there were no campaigns organized to influence budget participation. Most of the campaigns were organized by other stakeholders but touching on commemoration of certain world days like World AIDs Day, Health campaigns and for political rallies.

On Citizen Evaluation/Social Audit of County services; The residents of the two counties appreciate social accountability in promoting quality service delivery. However, they felt that more time was required to delve into the individual tools including citizen reports, community score-cards, social audits, participatory budget monitoring and public expenditure tracking surveys. Citizens require organizing themselves into groups to be able to actively engage in public process which is a great challenge.

There was minimal knowledge on human rights. Most of the community members said they have never participates in budget making and therefore no ideas went into CIDP originating from the community. No major campaign organized by the community addressing community concerns. Youth group have however organized for clean ups

3.5 Changes in people's lives/livelihoods

The respondents mentioned that livelihoods of the residents in Both Kisumu and Homabay Counties mainly depend on fisheries and rain fed agriculture that are highly vulnerable to

environmental degradation, climate variability and the consequent effects of climate change. The residents are exposed to diseases that are climate sensitive such as malaria and cholera that reduce productivity and increase morbidity and mortality of the vulnerable populations.

At the onset of the project, there was lack of clean water and contamination of the available clean water sources by surface runoff and extreme climatic events such as flooding. The adaptive capacity of the residents in the region is hampered by lack of knowledge in climate change and lack of resources to carry out climate smart agriculture and other climate smart economic activities.

Small scale farming, livestock keeping and fishing are the main economic activities of the residents in the region. In Homabay County, fishing is the main economic activity and it engages over 18,300 people and 3,600 families (Omweya, Abila, & Lwenya, 2006).

Soil erosion with continued loss of fertile soils and siltation of rivers and water ways in Kisumu County leads to frequent flooding especially in the lowlands. The unorganized sand harvesting activities in some parts of Kisumu County threatens to contribute further to increased soil erosion.

The total unemployment level in the County is estimated at 12.5 per cent due to lack of startup capital and entrepreneurial skills. The majority of the population is still water insufficient and even depends on untreated open water systems. Kisumu County is yet to design and develop suitable waste disposal systems to help manage its sprawling large quantities of solid waste (garbage) and effluents. Provision of sanitation facilities in urban and local fishing areas of the county is inadequate. The mushrooming of informal settlements in urban areas and local beaches exacerbates the already poor sanitation.

In both Wawidhi and Central Karachuonyo wards, approximately half of all respondents define themselves as farmers, and one-third as self-employed small businessmen/women. Very few responded that fishing is their main occupation. Another small percent are employed or otherwise occupied. Unemployment, especially among the youth is rife in both Wards.

In general, in both Wards the food security situation among respondents is inadequate and chronic food insecurity and poor nutrition is wide spread. A considerable proportion of the households

stated that they do not get enough to eat. A relatively small number of respondents mention that they often go hungry. The main reason mentioned for not having enough to eat is lack of money to buy the type of food they prefer, thus not being able to eat a varied diet.

On average there is from 300-400 income per person in a month in Obaria and chuowe beaches

3.6 Climate Change Adaptation technologies

The respondents in both counties mentioned that some of the climate change adaptation technologies included;

- ❖ Solar Housing Systems provided by Mkopa, D light, Mobisol, Sunny Money, B box etc.
- ❖ Upesi Jiko
- ❖ Solar lanterns
- ❖ Biogas
- ❖ Wind Mills in Rusinga Islands

The respondents mentioned that despite the above being available, majority of the respondents were still using the Kerosene (Nyangile) Lanterns because the cost of setting up Solar Housing Systems was expensive. Most of the residents are still using Wood Fuel for Cooking, leading to high amount of trees being cleared annually.

The fishermen were largely using Nyangile lanterns while they go fishing at night to attract Omena and fish. They however mentioned that the cost of paraffin/Kerosene was expensive overtime.

In Homa Bay, the use of solar household systems was about 1 in 10 household through initiatives of an NGO called Mango

In Kisumu Only the use of solar lanterns was found in the targeted project site, the D light types in about 5% of the households.

In both counties, the use of roof water harvesting technologies was less 2% of the households.

Surface water harvesting at a low level (less than 5%) is more prevalent in Ahero Ward, about 30% of the targeted households have a small water harvesting point for domestic use. On the other hand, in Wanchieng Ward, this was less than 1%.

There is very little effort to conserve soil and water in Homa Bay County. There was use of farmyard manure by about 5% within the County.

Most farmers within Kisumu County used small dykes during crop production to prevent floods from their farms which could further lead to acidic soils. Use of farm yard manure and compost is very low because most of their farms were fertile naturally by silts from River Nyando whenever it broke its banks.

Technologies related to drought tolerant crops and early maturing crop varieties

- Homa Bay

The lower cluster near the Rakwaro- Kendu bay road was practicing cassava farming which was introduced by CREP Programme earlier but the other practices of other drought tolerant and early maturing crops were not yet introduced and in the upper cluster all drought tolerant crops and early maturing crop varieties were not being practiced as the community lacked knowledge

- Kisumu County

The practice / the technology of drought tolerant crops and early maturing crop varieties were adopted by only 10% of the targeted population.

Technologies related to agro forestry and fruit farming

- Homa Bay County

The technology of fruit farming in Homa bay was practiced by 20% of households and agro-forestry, the practice was only being practice by 10% of the targeted communities

- Kisumu County

The practice /technology of agro-forestry and fruit farming was only practiced by 10% of the targeted population

Technologies/practices related to improved livestock production

In both counties the communities only rely on indigenous livestock production (cattle, sheep, goats and poultry) which have minimal yield production.

Technologies/practices related to diversification of farm enterprises

- Homa bay County

In both counties 30% of the targeted communities had practices /practices related to diversification of farm enterprises

Technologies/practices related to farm irrigation

- Homa Bay County (Wangchieng ward)

Irrigation using watering can and on rare occasions motorized water pumps

- Kisumu county-(Ahero ward)

Irrigation using Irrigation using watering cans, moneymaker and motorized water pumps

Practices related to seed conservation

In both Homa Bay county (Wanchieng ward) and Kisumu county-(Ahero ward) respectively, some households were using traditional methods of seed preservation and storage, while at the same time depended on local agro-vets or seed outlets for improved seeds.

Technologies/practices related to soil fertility improvement

- Homa Bay county (Wangchieng ward)

Depended on animal manure which they used to spread on their farms especially for those who has livestock animals in their homesteads. Otherwise majority used to plant their crops without either synthetic or organic fertilizer

- Kisumu county-(Ahero ward)

Depended on river Nyando silts especially when it floods, its depositories are rich in nutrients. Most soils are fertile apart from few cases where some farmers apply animal manure.

Community savings mobilization and credit access by the targeted communities

- Homa Bay county (Wangchieng ward)

Kenya women microfinance and Merry-go-round

- Kisumu county-(Ahero ward)

Community savings and mobilization-COSALO

Awareness level on climate change and its potential impact on climate change

- Homa Bay County (Wangchieng ward)- 1%

Kisumu County-(Ahero ward) - 1%

Value chains developed /under development

Homa Bay county (Wanchieng ward) - Pawpaw fruit

Kisumu county-(Ahero ward) - Improved Cassava

3.7 Natural Resources Conservation

The county governments are also required to implement specific national government policies on natural resource and environmental conservation and they are also responsible for ensuring and coordinating the participation of communities in governance at the local level.

Homa Bay County is endowed with many natural resources and very good prospects for energy sources including hydro, geothermal, solar and wind. Power constitutes a big part of production cost and its availability and price has a strong bearing on the cost of goods and services produced which would influence the county's competitiveness. Currently, power supply in Homa Bay is unstable with voltage fluctuations and frequent outages. This has seriously affected the investment climate in the county.

Some of the Natural Resources mentioned in Homabay County Included; sand, quarry, land and forest, Rivers, Beautiful hills of Lambwe and Homa Hills, Lake Victoria, Several Wetlands etc. From the Homabay County CIDP, About 30% of the household have access to portable water and this expected to increase with the implementation of the devolved fund for community development projects. Water supplies are operational and other small water projects do exist serving smaller areas. About 60% of the population is adequately served. Over the last five years the Ministry has rehabilitated water supplies, drilled boreholes, de-silted and constructed new dams and pans.

During the study, It was noted that Homabay County allocated 40M for Natural Resources Management program in its 2012-2017 CIDP.

The management of Water resources and wetlands is vested with the Water Resources Management Authority (WRMA), which is a state corporation in partnership with the community based Water Resource Users Associations (WRUA's) in accordance with the sub catchment management plans (SCMPs) for WRUAs within the Lake Victoria South Catchment Area (LVCSA).

The catchment management strategy is to provide mechanism and facilities for enabling the public and communities to participate in managing the water resources within each catchment area (Water Act 2002 section 5)

Therefore, the catchment management strategy encourages and facilitates the establishment and operation of Water Resources Users Associations for conflict resolutions and co-operative management of water resources in catchment areas.

Chuowe beach settlement was found to fall under the Sondu- Miriu Water Users Association (WRUA), while Obaria beach is covered by Awach Kibuon River WRUA. However, the study findings revealed that the local beach communities were not aware of the existence of both WRUAs.

What is the average percentage tree cover per household in the targeted areas?

Kisumu County

- Kakola location- average 5 trees in the homesteads , Kochogo location- average 4 trees in the homesteads

Homa-bay County (Wanchieng)

- Kajieyi location- average 3 trees in the homesteads
- No farmers using IPM (Integrated Pest Management) eg. Use of compost manure and herbal pesticides etc