



# GENDER MAINSTREAMING GUIDELINES

## FOR CLIMATE SMART AGRICULTURE AND CLIMATE CHANGE ADAPTATION

KITUI COUNTY

October 2022





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## ACRONYMS

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**CCA:** Climate Change Adaptation

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**CIDP:** County Integrated Development Plan

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**CSA:** Climate Smart Agriculture

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**GHG:** Greenhouse Gas

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**UNFCCC:** UN Framework Convention on Climate Change

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**EACCCP:** East African Community Climate Change Policy

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**MTP:** Medium Term Plan

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**FGD:** Focus Group Discussion

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**CGK:** County Government of Kitui

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**SEKU:** South Eastern Kenya University

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**ICT:** Information Communication Technologies

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**PWDs:** People Living with Disabilities

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**UNEP:** United Nations Environment Programme

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**NEMA:** National Environment Management Authority of Kenya

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**KEPC:** Kitui Enterprise Promotion Company

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**ASAL:** Arid and Semi-Arid Lands

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**KCSAS:** Kenya Climate Smart Agriculture Strategy 2017-2026

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**ATC:** Agricultural Training Centre

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**SACCO:** Savings and Credit Cooperative Society

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**FAO:** Food and Agricultural Organization

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**UNW:** United Nations Women

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## ABOUT GROOTS KENYA

In response to the inadequate visibility of grassroots women in development and decision-making platforms that directly impacts them, Grassroots Organizations Operating Together in Sisterhood in Kenya (GROOTS Kenya), was conceived with a mission to facilitate effective participation of grassroots women in the development of their communities. Inspired by the 1995 Fourth UN Conference on women held in Beijing China, it therefore became a national movement in Kenya. GROOTS Kenya is composed of grassroots women organized in 3,500 community-based organizations. Its membership is drawn from more than 18 different Kenyan counties, among them: Tana River, Kiambu, Nairobi, Laikipia, Kilifi, Kwale Busia, Kakamega, Homa bay, Baringo, Migori, Kitui, Murang'a, Nanyuki, Isiolo, Marsabit and Nakuru.



## 1.0 INTRODUCTION

Climate-Smart Agriculture, a new heuristic approach to agriculture and food systems that aims to provide and increase sustainable food production, improve farming systems' resilience and adaptive capacity, and mitigate the effects of climate change, has become a part of the global development agenda among local communities living in harsh climate conditions. In response to a changing environment and rising food demand, CSA seeks to achieve both food security and more general development goals. Through CSA activities, productivity, resilience, and greenhouse gas (GHG) emissions are all increased sustainably.

Globally the Government of Kenya has been actively participating in discussions on how to incorporate climate change into agriculture policies, strategies, and activities. Kenya is a signatory to the UN Conventions on Climate Change, Combating Desertification, and the Conservation of Biodiversity (UNCBD). Consequently, the Government of Kenya has filed two national communications to the UN Framework Convention on Climate Change (*UNFCCC*)

committing itself to addressing global warming and climate change through enacting relevant policies, strategies, and operational plans. At regional level, The Government of Kenya is adopting the East African Community Climate Change Policy (EACCCP) and the Comprehensive Africa Agriculture Development Programme (CAADP) Framework (2010). The emphasis of these two frameworks is on sustainable land and water management for improved agricultural productivity through research, technology adoption and dissemination, and agricultural GHG emissions reduction. Nationally, Kenya has a number of state-of-the-art platforms that offer opportunities for increased agricultural production, systemic adaptability, and climate change mitigation. The Kenya Climate-Smart Agriculture Programme (2015-2030) in particular is essential for coordinating regional and global CSA activities. The transfer of responsibility for agricultural decision-making to county governments benefits farmers by speeding up the implementation of CSA adoption-incentive policies, directing investments in rural infrastructure, and providing timely information to farmers through systems like early warning systems and agricultural extension services, etc. In order to mainstream CSA, a thorough mapping of



successfully completed, on-going practices, prospective institutional, and accessible financial possibilities, is required. Particularly gender mainstreaming in relevant climate change mitigation and adaptation strategies and action remains key since evidence now clearly points to the links between effective, global climate action and gender empowerment and to be more specific empowerment of women.

Transforming Kitui for Inclusive and Sustainable Development is the focus of the Kitui 2018–2022 County Integrated Development Plan (CIDP). By embracing the idea of “leaving no one behind,” the County’s development strategy gives everyone the chance to contribute to the socioeconomic transformation of Kitui County, achieve gender equality, and empower all women and girls by promoting gender mainstreaming as an important driver of the County economy. As outlined in Articles 10 and 232 of the Constitution, the CIDP seeks to advance the values and principles of governance, which is in line with sustainable development goal (SDG) No. 5, which is to realize gender equality and uplift all women and girls. The CIDP is aligned to the goals of the Kenya Vision 2030 and its Third Medium Term Plan (MTP), the “Big 4” development agenda of

the National Government, and the aspiration of the Agenda 2030 for Sustainable Development Goals. Since agriculture is the mainstay of the people of Kitui, there is need to support strategies, programs, plans, and related incentives for CSA implementation and scaling up. In Kitui County, there is evidence, though limited, of implementation of CSA technologies and practices, hence the need for scaling up. Therefore, for the effective, widespread implementation of CSA policies and practices, an integrated landscape management plan, greater gender mainstreaming methods when designing CSA initiatives, as well as suitable institutions and financial mechanisms, are required.

The purpose of this assignment was thus to develop guidelines for the alignment of the County Integrated Development Plans (CIDPs) with the Climate Smart Agriculture (CSA) and Climate Change Adaptation (CCA) policies and regulations and strategies for CSA gender mainstreaming, for the Economic Empowerment of Women through Climate Smart Agriculture Programme. Kitui County was selected from among the pool of counties along the ASAL region of Kenya.



## METHODOLOGY

This assignment established twenty five (25) CSA Gender mainstreaming guidelines that are outlined under nine (9) thematic areas. They were developed based on multi-stakeholder consultations, documentary reviews, as well as collection and analysis of empirical data among local farmers. The Consultants administered questionnaires and Focus Group Discussions (FGDs) among selected farmers. Additionally, Key Informant Interviews carried out among county officials and representatives from non-state agencies. The Consultancy team comprised of experts in the field of public policy, agricultural economics, and gender. A total of 99 farmers were administered semi-structured questionnaires, 17 FGDs were conducted among farmer groups, and an additional 5 key informant interviews. The information collected was mainly on farming enterprises. The county manifested decreased crop yields over the years, relatively poor agronomic practices, worsening soil fertility, and dire food insecurity. It is important to acknowledge that government and non-governmental agencies are already investing in climate change adaptation initiatives but investments in such

efforts will need to be escalated and expanded following well thought out policies and strategies.

## CONTEXTUAL REVIEW

Kitui County is located in the eastern part of Kenya and it borders Tharaka-Nithi and Meru Counties to the north, Embu to the northwest, Machakos and Makueni to the west, Tana River to the east and southeast, and Taita Taveta to the south. The county has an altitude that ranges between 400-1800 meters above sea level (County Government of Kitui, 2018). Due to its semi-arid climate, the county is among the most drought-vulnerable regions in Kenya. The average annual precipitation range is 400-1000 mm, with an annual average annual of 750 mm.

The eastern part of the county is the driest, receiving less than 500 mm of rainfall, on average, every year. Precipitation in the long rainy season, from March to May, is erratic and unreliable; precipitation in the short rainy season, October to December, is more reliable in





terms of its amount and distribution. Most farmers in Kitui County depend on the short rainy season for agricultural production, thus contributing 60% of the county's crop production, compared to 40% during the long rainy season. The annual average temperature for Kitui is 21-31°C. The western part of the county is nearly 10°C cooler than the eastern part. Kitui county has eight sub-counties namely: Mwingi Central, Mwingi North, Mwingi West, Kitui South, Kitui East, Kitui Rural, Kitui West, and Kitui Central. Kitui County is majorly classified as an Arid and Semi-Arid area. Kitui County has seven agro-ecological zones namely: Upper-Midland 3-4; Upper-Midland 4; Lower-Midland 3; Lower-Midland 4; Lower-Midland 5; Inner Lowland 5; and Inner Lowland 6 (see Table 1).

Agriculture is the main economic activity in Kitui County thus contributing to food security and generating 87% of rural household income. Food insecurity is rampant in the county due to low agricultural productivity associated with factors such as pests, weather variability, and prohibitive input prices. An estimated 39.4% of the population is considered food poor. Among children under five, 38.2% are stunted and 4.2% are wasted. Poverty remains high in Kitui County with a total of 48% of the population being considered poor which is on a higher prevalence rate than the national rate of 36% thus accounting for 3.2% of the poor in Kenya.

Source: Author

**Table 1:** Agro-Ecological Zones by Sub-County

S. No	Zone	Sub-County	Agricultural Development Potential
1	UM 3-4	Kitui Central, Kitui East, Mwingi West, Kitui Rural	Coffee, Maize, Sunflower, Vegetables, Sorghum, Avocado, Millet, Sweet Potatoes, Cabbage, Pawpaw
2	UM4	Kitui Central, Kitui Rural, Kitui West, Mwingi West, Mwingi North	Coffee, Maize, Sunflower, Vegetables, Sorghum, Avocado, Millet, Sweet Potatoes, Cabbage, Pawpaw, Bananas, Mango, Fodder And Pasture
3	LM3	Kitui East, Mwingi North	Cotton, Dry Land Maize Varieties, Sweet Potatoes, And Beans
4	LM4	Kitui Central, Kitui Rural, Kitui West, Kitui East, Kitui South, Mwingi Central, Mwingi West, Mwingi North	Sorghum, Millet, Dry Maize Varieties, Green Grams, Ground Nuts, Cow Peas, Sunflower, Vegetables, Dolichos
5	LM5	Kitui East, Kitui South, Kitui Rural, Kitui Central, Kitui West, Mwingi Central, Mwingi North	Livestock, Millet, Sorghum, Fodder And Pasture
6	IL5	Kitui East, Mwingi North, Mwingi Central	Livestock, Millet And Sorghum
7	IL 6	Kitui South, Kitui East, Mwingi Central, Mwingi North	Livestock, Millet And Sorghum

Source: Kitui County Statistical Abstract 2016



Kitui County topography is suitable for irrigation production system and the irrigation potential in the County is estimated to be 11,095 hectares of which only 1,850 hectares is utilized. The potential for exploitable irrigation can be expanded to 500,000 hectares through development of the Tana and Athi River basins. There are 5 irrigation schemes in Yatta/Kwavonza, Tseikuru, Zombe/Mwitika, Kitui Rural and Kyangwithya West wards, and 31 irrigation clusters. The irrigation schemes are financed by the National government, while the clusters are mainly financed by the County government.

The main food crops grown in Kitui County include cereals such as maize, sorghum, and millets; pulses such as green grams (Ndengu), cowpeas and pigeon peas; root crops such as cassava, sweet potatoes and arrow roots; industrial crops such as cotton, sisal and sunflower, and horticultural crops that consists of mainly fruits such as mangoes, pawpaw, and water melons as well as vegetables such as tomatoes, kales, onions and bullet chilies. The main livestock types kept in Kitui County include cattle (beef and dairy), goats (meat and dairy), sheep and poultry (indigenous and exotic). Farmers have also ventured into bee keeping especially in Kitui South.

The county has invested in the implementation of various environmental adaptation and mitigation measures. For instance, the County has embarked on a tree Growing and forest conservation initiative. The objective is to increase forest cover throughout the County in order to mitigate climate change. This is being done through promotion of drought tolerant tree species for propagation. The community is supported to participate in growing commercial production of high value and multipurpose tree species. In addition to the attempts to develop the County forest and farm forestry conservation policies and bills, the county is also undertaking forest resource mapping for better monitoring and management.

It is also notable that the county is also involved in the Climate Change Adaptation and Mitigation by building their adaptation capacity and resilience against impacts of climate change and variability Impact. They also involved in creating awareness creation on climate change adaptation and mitigation measures. The county has been working on the County Climate change legislative framework and operationalizing the climate change fund regulation



The CIDP II has also prioritized wealth creation through a Value Chain Approach that will seek to create an enabling environment for agriculture-based value addition chains. In particular, the Ndengu Value Chain; Livestock and Poultry Value Chain, the Textile/Garment Value Chain, Mango and other fruits Value Chain, Honey value chain, Ballast crushing, milk processing, soap and detergent making, furniture making, charcoal and sand charcoal harvesting; and the pottery and ceramics value chains. The partners in the implementation of the CIDP include the people of Kitui, Executive County Assembly, National Government Agencies, Civil Society organizations, Cooperatives, Women groups, private sector, neighbouring counties, training and research institutions and development partners.

The county has also invested in the promotion of conservation agriculture. This is aimed at building adaptive capacities and climate change resilience of the Kitui County community. Such initiatives include training households and technical staff on conservation agriculture annually. It also provides for the conservation agriculture implements, tools, equipment and inputs (jab planters,

seed planters, sub-soilers, rippers, shallow weeders, knapsack sprayers and chemicals) to households. In addition, the county annual conservation agriculture demonstrations in plots have been established in the county. Particularly, the tractor through the procurement of 40 ploughing tractors one for each ward helped improve farming practices in the county and thus benefitted over 1000 farmers across the county.

The county has also supported harvesting and conservation of water catchment areas. It is notable that the County is carrying out irrigation programmes to enhance access to water for domestic use and irrigation through water harvesting which includes drilling of boreholes, water dams, supply and installation of water storage tank, extensions of water piping and conservation of water catchment areas. The County has tried to increase accessibility of water by reducing the distance from 15km to 12km and increasing kilometres of pipeline through mobilizing 10 water bowsers which have been distributing water to the entire county. Rehabilitation of 60 out of 107 moribund boreholes commenced to serve water to 100,000 residents and 80,000 livestock. Training was undertaken



for 558 people drawn from all wards on operation, maintenance, and management of rural water schemes. Construction of two masonry storage tanks i.e 225,000 and 500,000 litres for the River Athi-Kanyangi-Mutomo water project was completed. The County Government of Kitui in partnership with Netfund, Caritas Kitui, Groots Kenya, CAFOD Kenya and the impacted communities of Kitui County came up with an energy master plan whose aim was to make clean and sustainable energy a priority for Kitui from grassroots to County level.

There are other CSA interventions by other non-state actors. The Dryland Development Program for example, funded by World Vision aims to strengthen the adaptive capacity of communities in responding to the adverse effects of climate change. Their focus is largely on agriculture and food systems through integrated climate and natural resource management approaches. The program also includes support for rain water harvesting and integrated water and soil management techniques such as improvement of soil fertility and erosion control. In 2010, the Economic Stimulus Program (ESP) was initiated by the Government of Kenya with the aim of

encouraging aquaculture in Kenya. Kitui Central Sub- County benefited with 200 fish ponds under the ESP programme.

SASOL Foundation, a local NGO is commonly associated with provision of support to build sand dams in Kitui County in order to provide the community with long term water and food security. Also, Caritas Kitui undertakes efforts that promote environmental protection; mitigation and response to climate change; and access to safe, clean and affordable energy. The program aims to achieve increased reduction in CO2-emissions responsible for climate change by using the new cook stoves by rural communities of Kitui County by targeting 15,000 households.

In 2017, the Kenya Red Cross Society, in partnership with Kitui County launched the Ndengu Revolution initiative (Kiuutani Kya Uthui), also known as “Inua Mkulima” food security project. The project was designed to revamp food security and livelihood of Kitui residents, reduce poverty through rural development and train small-scale farmers alongside provision of financial services to farmers. Each household is issued with a 2Kgs packet of seeds for planting



and they are also equipped with mechanized planting system. At least 350,000 kg of certified Ndengu seeds were distributed to 184,000 households. Kenya Red Cross Society did collaborate with the county government to secure ready market for the farmers by organizing them into cooperatives that can market their produce in bulk.

In 2018-19 South Eastern Kenya University (SEKU) partnered with the County Government of Kitui to plant various types of indigenous grass. The project was to help farmers get grass during dry spells when there is scarcity of pasture. The project targeted 500 kilogrammes of grass seeds to be harvested from 100 acres at the university's main campus.

## GAPS IN THE EXISTING CIDP FOR KITUI COUNTY

Despite these investments and priorities, there is need for more prioritization, funding, extension facilitation, linking of farmers to

the markets, and broader inclusion of women in decision making platforms. A number of areas of intervention have been singled out from the study report in the following proposed guidelines. Although the CIDP for Kitui County has also prioritized wealth creation through a Value Chain Approach that will seek to create an enabling environment for agriculture value addition, there are a number of existing gaps that require attention. Such gaps include:

- Although there is emphasis on protection of vulnerable groups to climate changes, there are no specific policy measures captured in the CIDP to address that
- The CIDP does not provide special provision for small holder farmers except the emphasis on milk production and extension personnel provision hence not directly addressing the interests of many other smallholder farmers
- The CIDP fails to clearly specify the value addition measures that should be taken up by the smallholder farmers
- There is no emphasis on use of ICT for revitalization of agriculture in the CIDP



## 2.0 CLIMATE SMART AGRICULTURE TECHNOLOGIES AND PRACTICES GUIDELINES

Based on the information acquired from the baseline survey, expert knowledge and a literature review, appropriate CSA techniques and technologies guidelines are recommended. In order to track the infusion of these guidelines in to the third generation CIDP through public participation forums, it is recommended for the formation of special county implementation taskforce for this purpose. The proposed guidelines (under thematic areas) are hereunder:

### THEMATIC AREA 1: PUBLIC PARTICIPATION

#### **GUIDELINE NO. 1: Ensure meaningful involvement and participation of women in environmental management.**

- This study showed that women bear the greatest brunt of climate change. Women generally remain more vulnerable to climate change, since they have limited livelihood assets

to allow them to adapt although they remain key actors in uptake of climate-smart agricultural practices. During the FGDs it was noted that Kitui rural women and girls still spend considerable amount of time collecting water, firewood and taking care of the young ones, elderly and sick in the household which limits school attendance for the girls and work options for the women. Women and PWDs are disadvantaged when it comes to access to and control over key productive resources such as land, education, and employment opportunities. Women can have the resources but have no control over environmental management (access and control). There is need for mind-set change among women in order for them to take up environmental conservation role. Thus, interventions that would help empower women's bargaining and decision-making power on environmental management are recommended. Sensitization of women on key policy instruments such as the UNEP policy, NEMA gender policy, Kenya constitution of 2010, Kitui County empowerment fund, vision 2030, Governor's manifesto and 100%transition in education



sector that will empower women to participate in matters of environmental management in Kitui County. There is also the need for the finalizing and adopting of the draft Kitui County gender policy and incorporating environmental management as a specific strategic objective in the CIDP through the Ministry of sports, gender and culture.

### **GUIDELINE NO. 2: Ensure meaningful participation of women in the formulation and reform of agricultural policies**

- Women in this study expressed that they were isolated in the arena of policy making. They indicated that men are mostly engaged in providing policy suggestions on issues affecting agriculture. This is largely because these conversations are usually held in the urban areas where mostly men gather. Women therefore do not get equal or adequate opportunity to participate in influencing the decisions that shape eventual policies that affect them. Even at home men make most of

the decisions including what type of farming enterprise to engage in with very limited input from the women.

- It is therefore imperative for the Ministry of sports, gender and culture and the Ministry of Agriculture, Water, and Livestock Development to ensure that there is involvement of both women, men and youth in policy formulation, encourage women to voice out their issues during policy formulation and reform of agricultural policies. Sensitization of women on key policy instruments such as the UNEP policy, NEMA gender policy, Kenya constitution of 2010, Kitui County empowerment fund, vision 2030, Governor's manifesto and 100% transition in education sector that will empower women to participate in matters of policy formulation in Kitui County. This could be done by engaging existing women group caucuses in regular structured deliberations on ways to improve agriculture into a more valuable, productive and desirable enterprise.





## THEMATIC AREA 2: MARKET AND LINKAGES

### GUIDELINE NO. 3: Establish measures to link farmers with ready markets for their farm produce

- The study established that brokers had significant influence on pricing of farm produce, and women farmers emerged to be most vulnerable. Brokers tend to exploit the farmers by offering lower prices for the agricultural productions hence receiving high profit margins at the expense of the farmers. This coupled by poor infrastructure especially rural access roads leading to high transaction costs, improper handling of produce, poor storage and wastage of produce during bumper harvest for example in case of mangoes.
- Thus, the county should put mechanisms in place that will enable farmers to access not only local markets but also regional and international markets. The county government through the Ministry of Trade, cooperatives and investments and Ministry of Agriculture, Water, and Livestock Development should build partnership with the private sector to promote market facilities such as cold storage facilities and market information systems. The county government through the Ministry of Roads should ensure all-weather rural access roads and communication facilities are in place in order to promote agricultural marketing in the county.
- Other initiatives should include encouraging the farmers to use collective action as an institutional arrangement to help improve market access of farmers in the study area. Such initiatives but are not limited to forming functional aggregation groups at all levels of production, promoting farmer cooperative societies and organized farmer groups. This will enable farmers enjoy the collective bargaining power for their produce and reduce the risks of market participation. It will also enable farmers to access markets which may be out of reach for individual smallholder farmers in the study area. Ministry of Trade, cooperatives and investments and Ministry of Agriculture, Water, and Livestock Development and Ministry of Gender, Sports and Culture will play a key role in this.



**GUIDELINE NO. 4: Include ways to improve the chances of farmers to access credit (Climate Change Financing):**

- Credit facilities are a critical element in the commercialization of rural economies and a means towards improved livelihoods. Access to credit among farmers does not only remove their financial constraints, but also improve their ability to experiment with newer climate smart technologies.
- 4.6% of the population in Kitui County had a disability. At 2.4%, visual impairment was the most prevalent. 62.3% of the disabled people in Kitui County indicate that it is difficult to engage in economic activity. Due to their relative inability to comply with the high transaction costs, difficulty in assessing and managing their risk profile, lack of the necessary financial documentation as well as the provision of collateral, and other factors, traditional financial institutions tend to avoid lending to youth, women, and PWDs. In order for young people and women with disabilities to receive government assistance, this asks for disability mainstreaming and empowerment programs

through the Ministry of Gender, Sports and Culture. Kitui County climate change fund regulation, climate change policy draft enactment, Kitui County empowerment fund and climate change act at national level will empower farmers to access funding for adoption of CSA technologies. Further, initiatives that would help improve credit access among crop and livestock producers that will enable them fully exploit the potential of crop and livestock production in Kitui County are recommended.

- This study proposes that the county government establish a climate change carbon credit funding to help compensate farmers for implementing measures that have significant cut on carbon emissions through the Ministry of Environment, Tourism and Natural Resources.



## THEMATIC AREA 3: ENHANCEMENT OF SPECIFIC FARMING ENTERPRISES

### GUIDELINE NO. 5: Build the capacity of non-traditional farming enterprises (like fish farming and bee keeping):

- Findings from this study indicated that only a few farmers, estimated at 21% engaged in bee keeping. Kitui County generally has about 5000 bee keepers and 30,000 traditional beehives.
- Further, women often concentrate on low-value crops, which limit the potential economic returns on their farms.
- Thus, the County should put some fund for capacity building in modern bee keeping practices such as the use of modern beehives and value added honey processing especially in Kitui South where bee-keeping is common. Training of women especially on harvesting and handling will be beneficial to them. Experimentation with other non-traditional livestock enterprises such as fish farming and crops such as arrow roots, sweet potatoes, dolichols, preservation of

indigenous fruits and Kunde with support from the Ministry of Agriculture, Water, and Livestock Development is also preferred. Promotion of water harvesting techniques for irrigation through the department of water and irrigation services is recommended.

### GUIDELINE NO. 6: Support farmers to grow feeds for own and commercial purpose:

- Livestock feeds especially during drought are an enormous challenge especially in semi-arid areas like Kitui County. The quantity and quality of animal feed available in the study areas remain a major challenge leading to overgrazing and farmers walking for long distances in search of water and pasture for their livestock. Thus the county government should promote indigenous pasture farming as a novel technique for bridging the 'livestock feed gap,' particularly during periods of drought. Pasture and fodder production especially in agro-ecological potential areas such as UM4 and LM5 will help reduce overgrazing and result in land restoration through reseeding the pasture.



County government efforts should be geared towards upscaling the pasture value chain in Kitui County through encouraging farmers to produce livestock pasture and fodder. The commercial case for pasture farming with value addition especially in the making of hay will help improve the profitability of livestock production. It will yield higher profits when compared to overdependence on conventional pasture for livestock production.

- Thus, fast tracking the on-going fodder Development bill with input from Ministry of Agriculture, Water, and Livestock Development and the Ministry of Trade, cooperatives and investments would help strengthen the pasture and fodder value chain in the county.

### **GUIDELINE NO. 7: Support and promote women Initiatives in fruit and vegetable farming**

- Vegetable and fruit farming remain a potential source of family income and nutrition. The two enterprises are commonly undertaken by women. Fruit and vegetable farming is normally undertaken on small acreage mainly

for home consumption and the excess is sold in almost all the agro-ecological zones of Kitui County. For example, on average, cabbage was planted on an average of 0.70 acres, indigenous vegetables covering 0.63 and tomatoes and pumpkin covering a land size of 0.46 acres and 0.44 acres respectively. The common vegetables grown include tomatoes, kale, spinach, pumpkin, cowpeas, amaranth, cabbage etc while the common fruits grown include pawpaw and mangoes etc. Thus, the Kitui County Government should embark on encouraging and supporting a shift towards drought-resistant and high-value fruit and vegetable crops such as chillies, capsicum, French beans, watermelon, dragon fruit and tree tomato through their provision of seed, pesticides and training. Kitui County empowerment fund and women fund policy initiatives will enable women access funds for investment the above key areas identified. This could be achieved through the Ministry of Sports, gender and culture in partnership with the Ministry of Agriculture, Water and Livestock Development.



### **GUIDELINE NO. 8: Devise Strategies to promote post-harvest storage, packaging, and processing.**

- Value addition of agricultural produce refers to the process of improving the economic value or state of a commodity through particular processes such as innovation. Although value addition activities were not a common venture in the study sites, with only 1.5% of the farmers participating in value addition activities, it has great potential to improve agricultural production and marketing in the study area. Training on value addition in the study area remain limited with only about 20% of farmers having received some form of training on value addition activities offered by Agricultural Extension Officers at the county level and NGOs especially on packaging of vegetables and making of sour milk only. Thus, the county government of Kitui should build partnership with the private sector to promote postharvest storage, packaging and processing facilities. Efforts of such partnership such as that Kitui Enterprise Promotion Company (KEPC), a mango processing firm in Kitui in collaboration with the National Environment Trust Fund to reduce postharvest

loses in mango should be replicated throughout the county to enable the farmers improve their value of their produce. Further commissioning of tomato and fruit processing factory like the one already existing at the Agricultural Training Centre, Kitui should be replicated throughout Kitui County. Kitui County Government should further consider training farmers on “value chain technologies” in partnership with other relevant stakeholders through the Ministry of Trade, Cooperatives and Investments and the Ministry of Agriculture, Water and Livestock Development.

### **THEMATIC AREA 4: GROUP MOBILIZATION**

#### **GUIDELINE NO. 9: Devise strategies to organize farmers into groups in order to enhance their collective advantage.**

- It was noted in this study that farmers who had actively organized themselves in groups or cooperatives had an advantage toward climate change adaptation. They were quick to access and share information on best farming



practices. When groups are organized, they have better chances to access opportunities such as technical extension services, funding, and establishment of market linkages. Additionally, they have higher chances of accessing nearer markets for their farm produce such as local schools and hospitals. Group based approaches are also important when testing and evaluating climate-smart agriculture practices. However, people with disabilities, youth and women are not completely incorporated especially in cooperative activities. This may be due to attitude, a lack of enthusiasm, or current ownership systems that give abled men an advantage over the others.

Thus, there is need for scaling up group-based approaches for marketing and buying inputs purposes through the Ministry of Trade, Cooperatives and Investments and the Ministry of Agriculture, Water and Livestock Development. The National policy (guidelines) on formation of groups and cooperatives will help offer strategic support for women and youth farmer groups. This may include support for the formation of table banking models with an aim of developing them into SACCOS. When these structures are put in

place, collective benefits will accrue, and loans can be accessed at lower interest rates.

### **GUIDELINE NO. 10: Suggest ways to mobilize youthful farmers to join and engage in farmer groups**

- Recruitment of the current project revealed that groups were predominantly a preserve of the older generation, averaging at least 50 years of age in each county. This could be explained by the fact that the young generation do not see the economic value in engaging in agriculture, and prefer more off-farm enterprises. There is also the notion among youth that farming is for the old.
- This presents the county governments with the opportunity to conduct media awareness campaigns with tailor-made slogans such as “ukulima sio ushamba”, meaning, “Farming is not primitivity”; “kilimo biashara”, i.e “agribusiness”. The current Competency Based Curriculum of Education, revitalization of 4K agriculture clubs in schools and institutions will provide opportunities to involve more youth



in agriculture. Initiatives that would help offer government stimulus to youths in agriculture are recommended. Thus, the Ministry of Agriculture, Water and Livestock Development should work closely with the Ministry of Basic Education in order to revive the agricultural initiatives among the youth. Further lobbying with the national government especially with the Youth Enterprise Fund to fund agribusinesses among youth groups will help expand opportunities for youth to engage in agriculture.

## THEMATIC AREA 5: ENABLING ENVIRONMENT AND STRUCTURES

### **GUIDELINE NO. 11: Establish comprehensive strategies for sustainable water collection and supply methods beyond rain fed agriculture.**

- Kitui County is located along the arid and semi-arid belt (ASAL) of Kenya which implies that safe, clean and accessible drinking water is still a problem with the cost of drinking retailing as much as Kshs. 30 for a 25 litre jerrican.

Trends show that Kitui County remains dry for a better part of the year. Farmers rely on rain for their agricultural activities. Although the County has tried to increase accessibility of water by reducing the distance from 15km to 12km and increasing kilometres of pipeline through mobilizing 10 water bowsers which have been distributing water to the entire county, water is still a scarce commodity in the area. Thus, the County Government should put more efforts towards increasing water accessibility through increasing to a browser each to all the 41 wards of the county. Rehabilitation of the other 57 moribund boreholes will help to increase water access to more households and livestock. Training of at least another 558 people drawn from all wards on operation, maintenance, and management of rural water schemes will be useful. Construction of two more masonry storage tanks for the River Athi-Kanyangi-Mutomo water project would help improve water access. Filtration of water to remove salt from the water and other contaminants will help improve the quality of water for human and livestock use.



- Subsidy on water tanks, as well as mobilization of organized groups to purchase water tanks will help improve rain water harvesting and storage among households.

### **GUIDELINE NO. 12: Improve road infrastructure to facilitate transportation in farming related activities**

- Road infrastructure is considered as the backbone of many rural farm transport systems. Rural transport provides assurance for the supply of the agricultural inputs and facilitates the delivery of the farm outputs to the markets. Kitui County had for a long time had dilapidated road network. The government initiated projects that included tarmacking, road maintenance and repair, construction of drifts, slabs, box culverts and bridges. This was done in view of enhancing connectivity, accessibility, mobility, reduced travel distance, time and cost as well as to improve safety and security. The projects include construction of 132 drifts (8,100m) located throughout the county thus benefiting an estimated 50,000 users daily. Opening up, grading and graveling of 2934.1 Kms of roads in various points of the county. Construction

of 1 Bridge and 4 Box Culverts connecting several wards. There is also the opening up of the Kibwezi – Mutomo – Kitui – Kabati – Migwani – Mbondoni Road and the Wikililye – Katulani – Nthwake dam – Wote road which has helped improve access to urban centres.

- Thus, through the Ministry of Roads and Public Works the county needs to open up more access through 30km grading of all the sub county roads. Further, maintenance of the roads throughout all the sub counties through graveling and murrarming is recommended. Further, initiatives such as revival or promotion of food for assets, nyumba kumi and street lighting will not only help discourage vandalism but it will also promote community mobilization to do spot road maintenance and road water diversions.

### **GUIDELINE NO. 13: Provide for the establishment of sustainable energy supply and generation accessible to farmers**

- Energy use in agriculture in Kenya is very critical in achieving food security since it is used for crop drying,





processing and preservation, cold storage, heating and lighting in modern farming. Energy supply is key in water pumping (Hybridization or Solarization of water sources) for irrigated agriculture and for animal rearing too. Thus, the role of energy in Climate Smart Agriculture (CSA) cannot be underestimated.

- 54.4% of the households in Kitui County are connected to the grid or off-grid electricity system with 17.1% being connected to the national grid while 37.3% being connected to the off grid system. The level of energy access in the rural areas is substantially low (less than 1%). This implies that at least 45.6% of the household are currently not accessing electricity while over 80% are not connected to the national electricity grid. About 82% of the households in Kitui County use firewood for cooking compared with the national average of 55%.
- Thus, there is a great need and opportunity to introduce farmers to alternative sources of energy beyond connecting

them to the national grid. The county government of Kitui should lobby towards the increased connectivity of its households to the national electricity grid through the Rural Electrification Programme. Improving the on and off-grid connect to at least reach the minimal national average of 70% access rate is recommended. Measures that would help improve adoption of cleaner source of energy such as solar, wind power, biogas, biofuel and sustainable biomass are recommended since the county has a great potential to exploit these sources of energy due to its hot and windy climate. Thus, it will be critical for the county government to invest in energy training and incubation centres. The county government should double the amount allocated towards clean cooking energy from the 100m allocated in the 2018-2022 CIDP to 200m in the next CIDP to promote and train the local communities and women groups on the installation of clean stoves and reduce the use of firewood or charcoal for cooking.



## THEMATIC AREA 6: CAPACITY BUILDING

### **GUIDELINE NO. 14: Establish capacity building support programs for extension officers.**

- It emerged that the agricultural extension officers lack advanced knowledge and skills that have potential to match farmers' needs during these harsh climatic changes and conditions. In terms of capacity building, much of the capacity building happens to staffs at the County headquarters but it's not trickled down to the village levels. The Kenya Climate Smart Agriculture Strategy 2017-2026 (KCSAS) is yet to be cascaded well to the county government levels. Thus this guideline recommends that there need to sensitize all extension staff on the National Climate Smart Agriculture Strategy 2017-2026. and farmers.
- It is critically important therefore, for the Ministry of Agriculture, Water and Livestock Development to conduct staff training needs assessment in order to link existing officers with training programs that can orient them to the

latest CSA technologies and practices for climate change adaptation.

### **GUIDELINE NO. 15: Design on-going training programs for small scale farmers to boost their adoption of CSA technologies and practices.**

- The study established that the level of education among farmers is generally low. It revealed that majority of farmers in Kitui County had only primary education, with only 3% of the respondents from each county reporting to have attained university education.
- In order to enhance farmers' knowledge and skills, it will be paramount for the Ministry of Agriculture, Water and Livestock Development with the relevant stakeholders to plan for regular training programs and sensitization forums among farmers in a bid to enhance the adoption of the latest technologies and practices. These spaces will provide farmers with useful climate adaptation strategies that are customized to suit their respective conditions. These trainings may be targeted to the lowest village levels for



more effectiveness.

- Again, with the extension agents mainly being male they may not be very responsive to the needs of the female farmers. Thus, there is need for the Ministry of Agriculture, Water and Livestock Development to provide gender-mainstreaming for extension agent training curricula since often men and women respond differently to extension services. The design of the extension program should bear in mind the needs of women so as to reach more women effectively.
- Evidence and policies that can help women shift into higher-value activities are recommended. For example, changing the behaviour of male for example through targeting the extension training to cater for both spouses and putting in place programmes that target cash grants to couples would help improve women farmers' outcomes.

**GUIDELINE NO. 16: Suggest plans to enhance the recruitment of more agricultural extension officers.**

- Access to extension services is important since agricultural extension officers are an important link between research

and farmers. They facilitate and communicate thus helping farmers to make decisions. They also ensure that appropriate knowledge is implemented especially through training in order for the farmers to obtain their desired results with regard to sustainable production and general rural development.

- However, the number of extension agents is still minimal with the existing numbers being skewed towards more male than female. It was also noted that extension officers are expected to cover a large area, of approximately 10 kilometres radius with the households being sparsely populated. In Kitui County, one extension officer can cover more than 50 different farmer groups and more than 2800 individual farmers which is way below the recommended number of one extension officer to 400 farmers.
- Thus, the county government should recruit more extension officers to keep pace with the high demand for extension services. Further, the county should consider increasing the number of female extension agents.



### **GUIDELINE NO. 17: Establish County Gender Commissions to respond to Gender Based Violence.**

- Though women and girls have unlimited potential, there exists a number of ways that prevent them from fully exploiting their potential. In the study area gender-based violence (GBV) related to the ownership, access, and control of land and proceeds from the sale of farm outputs remains common.
- Thus, the Kitui County's Ministry of Gender, Sports, Culture and Social Services should help the women understand the laws that offer various protections as regards to various forms of GBV. Creating the much needed awareness in the community about gender related issues through educating women and supporting them to cascade the knowledge to the village level will assist in empowering women. Thus, the gender technical working groups should be established at ward level and even at village levels. Further, mobilizing a multi-sectoral forum that convenes regularly at county and sub-county level will be an important initiative that

would serve to ensure expedited and holistic response to community gender issues.

- The resource allocation such as land should be in line with the Kenya constitution 2010 and therefore through the Department of Lands and physical Planning it should ensure that the land and property succession considers the rights of women and girls.

## **THEMATIC AREA 7: INFORMATION AND EVIDENCE DRIVEN POLICY**

### **GUIDELINE NO. 18: Research and Innovation.**

- Evidence indicates that research and innovations organized by the county governments are minimal and uncoordinated. For example, in Kitui County there is one Agricultural Training Centre (ATC) and one Agricultural Mechanization Station (AMS). The two institutions are located at County headquarters in Kitui town. The ATC hosts demonstration plots while the AMS provides agricultural mechanization



services through which they generate revenue. There is therefore need for the Ministry of Agriculture, Water and Livestock Development to consider opening up branches of ATC in every sub-county to enable many farmers to access modern agricultural technology transfer with ease.

- Organizing expos and holding conferences on agricultural innovations by farmers, researchers and practitioners has the potential to collect and experiment with some of the best farming methods and innovations, tailored to withstand harsh climatic conditions. Such events can be designed to include participants from other counties and internationally.
- It was also established that generally, policies at county level are not generated based on evidence. If the county is to advance its agricultural enterprises, the need to create an environment where policy decisions are guided and based on empirical evidence cannot be overemphasized. The CIDP should thus vouch for the establishment of a policy on research and evidence.

### **GUIDELINE NO. 19: Use Social Media and ICT as Platforms for Information dissemination.**

- ICT is widely recognized as a potential enabler of social economic development through delivery of public services and governance. The forms of ICT systems include telecommunications products (such as telephones); information kiosks and transaction machines; World Wide Web sites; multimedia; office equipment such as copiers and fax machines. Access to ICT systems in the rural areas remains limited in terms of mobile broadband and network coverage. This mirrors the situation in Kitui County where only 13% and 43% of residents have access to internet and owned mobile phones, respectively, by 2019. Most parts of Kitui rural have not had mobile broadband and network coverage since independence in 1963 but only benefitted from broadband extension in November 2020. Because of poor network coverage and lack of money, majority of women farmers did not possess smartphones, and therefore were not in a position to access any information through multimedia and other related ICT platforms. In order to



facilitate regular flow of information, this study recommends that the county governments of Kitui take advantage of multimedia and other ICT platforms as channels for information sharing. The County Government needs to partner with relevant stakeholders to digitize agriculture. Resources should be allocated towards establishing land utilization patterns, to predict the weather as well as monitor the crop growth at various stages to detect deficiencies so as to carry out appropriate intervention for optimal production. Efforts such as soil testing and recording climate change information so as to be able to appropriately advise the farmers on the correct seeds' varieties and other inputs is necessary. Embedding ICT strategies in all County programmes and projects in the 3rd generation CIDP is recommended through the Ministry of Agriculture, Water, and Livestock Development working closely with the Ministry of Basic Education, ICT and Youth Development.

### **GUIDELINE NO. 20: Develop Early Warning and Response Mechanisms**

- This study showed that in Kitui County, farmers were not adequately prepared to manage shocks due to unexpected weather and climatic conditions. Early warning systems, which use integrated communication networks to assist communities in getting ready for dangerous climate-related occurrences, are an adaptive response to climate change.
- Weather based agro-advisory services from the Ministry of Agriculture, Water and Livestock Development in conjunction with relevant stakeholders such as Kenya Agricultural and Livestock Research Organization will enable farmers plan the cropping patterns and prepare for any adverse weather conditions.



## THEMATIC AREA 8: PROVIDE AGRICULTURAL SUPPORT SERVICES

### GUIDELINE NO. 21: Design Strategies for Providing Price Subsidies on Farm Inputs:

- Agricultural faces many market oriented challenges such as small-scale farmers having little or no access to basic inputs and services, such as seeds, fertilizer, machinery services, market information and credit. This study established that the cost of farm inputs has gone increasingly high. For instance, farmers reported to spend an average of KES. 1482, KES. 1909 and KES. 1324 on veterinary treatment, breeding and veterinary consultancy costs respectively.
- Farmers indicated that although they had received training through the county agricultural extension officers on how to venture into new livestock breed and crop varieties, however, they were unable to secure markets and right prices for their improved farm outputs. The county government of Kitui through the Ministry of Agriculture, Water, and Livestock Development should partner with

other relevant stakeholders such as NGOs, Ministry of Trade Cooperatives and Investments and private sector to assist resource-poor farmers and farmers' groups by providing advisory services to emerging farmers, improving access to rural credit, improving the availability of quality seed and other modern inputs, supporting measures for crop protection and plant quarantine and establishing an agricultural market information system. Thus, an agricultural subsidy programme should be included and budgeted for in the CIDP.

### GUIDELINE NO. 22: Design strategies for the elimination of counterfeit farm inputs sold in local markets

- The field study revealed that cases of counterfeit farm products are on the rise. Fertilizers, pesticides, herbicides and other products have been faked so much that when applied, do not produce intended effects on the farming enterprise, leading to significant losses.
- Regular surveillance by the quality control department would help support crop protection and plant quarantine measures especially to counter the cases of counterfeit



farm inputs and product in the markets in the study area. Formulation of standards for quality control of agricultural inputs and products by the Ministry of Agriculture, Water and Livestock Development in partnership with Kenya Bureau of Standards is recommended

## THEMATIC AREA 9: OWNERSHIP AND CONTROL OF LAND AND STOCKS AMONG WOMEN

### GUIDELINE NO. 23: Design measures that facilitate ownership and control of land among women:

- Land ownership is particularly important since it is a pre-requisite for CSA adoption. It presents a significant potential for the enhancement of user rights and access to financing for adoption of CSA innovations and technologies.
- Results in this study indicated that male farmers owned larger land sizes than their female counterparts. Similarly, the land size under crop production was higher among male farmers than female farmers.

- Therefore, interventions that would help improve land rights and ownership of other assets especially among women will help improve the adoption of CSA technologies and practices. Measures that would help women access land for example through renting or acquisition for agricultural activities would be beneficial. Such measures can be realized for example through access funds through cooperatives or SACCOs. The Ministry of Trade, Cooperatives and Investments would spearhead such programmes.
- Also, there is need for the sensitization seminars for both male and female in order to facilitate dialogue and gradual consensus over this subject matter through the Ministry of Gender, Sports and Culture. And because it is a deep cultural issue, it may take time and thus the need for the establishment of a long-term strategic plan on how to achieve the desired outcome. These subliminal messaging could be infused in public participation forums.

### GUIDELINE NO. 24: Create and expand chances for women to own and control proceeds from Livestock

- Results in this study showed that in both Kitui County, women were more likely to own small stock such as goats,





sheep and poultry whereas males were more likely to own large stock such as cattle. It was also established that it was commonplace for women to obtain ownership to livestock assets through inheritance, markets, or collective action methods than it is to acquire land or other physical assets or control other financial assets.

- Thus, the county government through the Ministry of Agriculture, Water and Livestock Development and the Ministry of Gender, Sports and Culture should design measures that are geared toward boosting asset ownership among women, including large and high value livestock. This will include measures that have the potential to shield women from dispossession of their assets. This has a huge potential toward bridging the gender asset gap in the households, and could help women move along a pathway out of poverty. Availing access to funding such as through the Women Enterprise Fund that would help women in all the agro-ecological zones of Kitui County to acquire livestock will ensure women's economic empowerment.

### **GUIDELINE NO. 25: Establish a gender mainstreaming steering implementation committee for the CSA guidelines**

- These guidelines are characterised by complexity and interconnectedness of critical issues pertinent to CSA/CCA gender mainstreaming in the drafting of CIDP III 2022/2027. To this effect, the establishment of a special steering committee for the purpose of providing guidance toward the implementation of the third generation CIDP is highly recommended. The Committee will ensure the design, planning, implementation, budgeting, monitoring and evaluation of the gender mainstreaming CSA policies within the 5-year period. It will guarantee coordination of relevant departments within the county, national government agencies, development partners, members of the public, and all other stakeholders. Thus, members in this proposed team will be required to undertake the customization of these guidelines to suit specific gender dynamics, social-cultural context, as well as ecological zones.



GROOTS Kenya contacts:

Divyam Apartments, Cedar Road, Off Lantana Road, Westlands

P.O. Box 10320-00100, Nairobi Kenya

Cell Phones: +254 720 898222 +254 734 365566

Email: [grootsk@grootskenya.org](mailto:grootsk@grootskenya.org)

