# Climate Smart Agriculture in Kenya

## Scoping Study on Climate-Smart Agriculture in Smallholders Integrated Crop-Livestock Farming Systems

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# Objectives of the Scoping Study

- To identify and analyze Climate-Smart Agriculture initiatives taking place in Kenya, including policies, strategies, programs, projects and actions

- To gather examples of Climate-Smart Agriculture practices in non-ASAL smallholder integrated crop-livestock farming systems

# Climate-Smart Agriculture

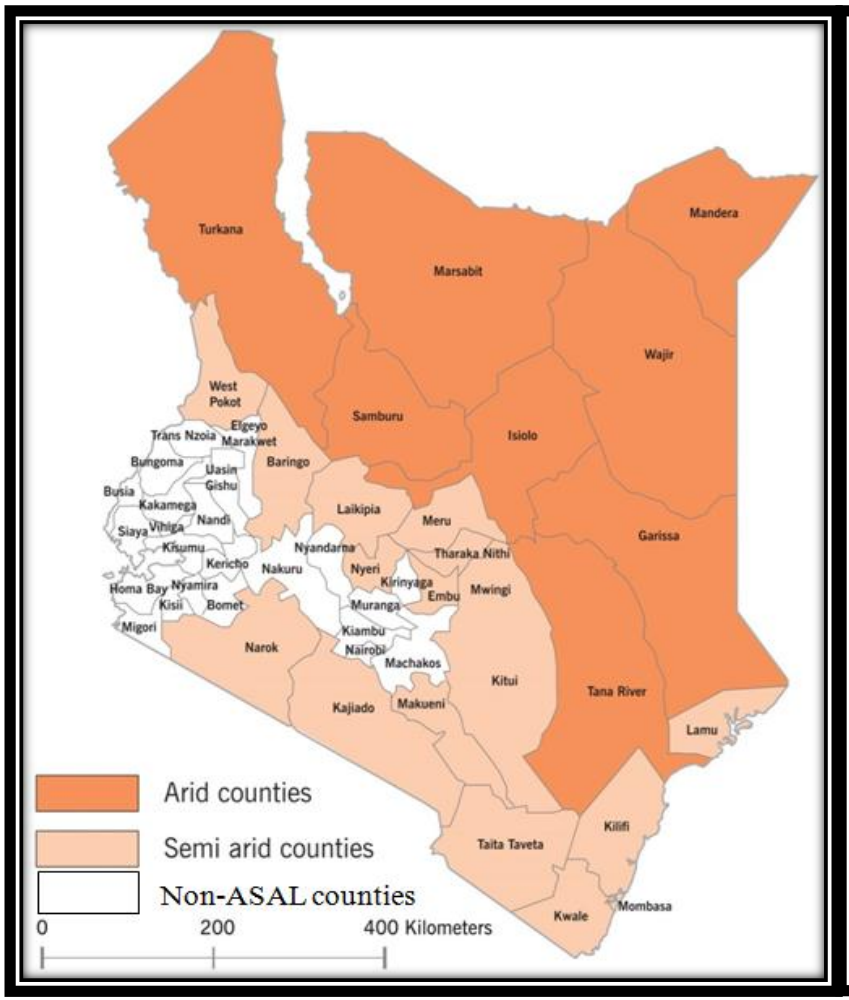
CSA is an integrative approach to address the interlinked challenges of food security and climate change, and has three objectives:

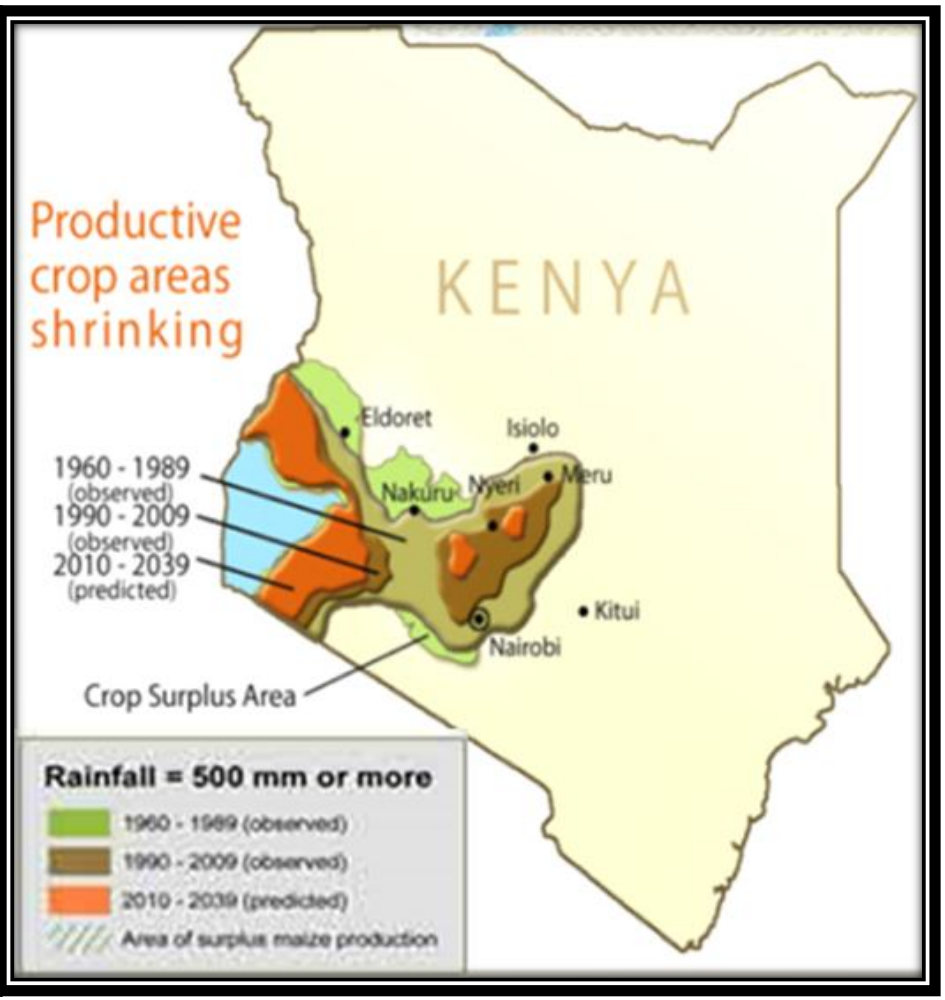
1. Sustainably increasing agricultural productivity
2. Adapting and building resilience of agricultural systems
3. Reducing GHG emissions

+ on multiple scale: farm to landscape, local to global, short and long term

+ considering national and local context and priorities

# Area of Focus



# Climate Change in Kenya

## Temperature Patterns ($T_{max}$) and Magnitude of Change in Kenya (1960-2012)

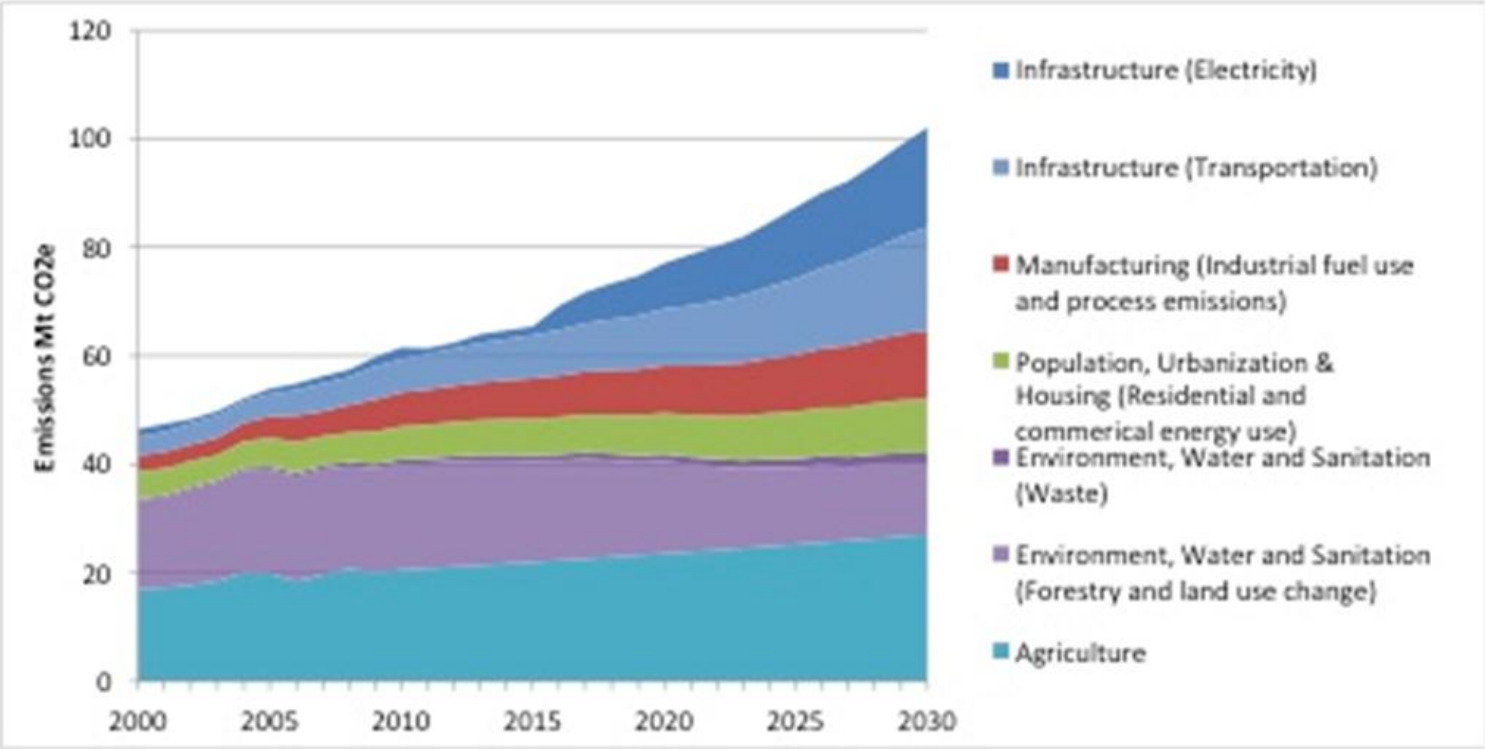
| REGION | TREND | MAGNITUDE |
|---|---|---|
| Western Kenya | Increase | 0.5 – 2.1°C |
| Northern Kenya | Increase | 0.1 – 1.3°C |
| North-Eastern Kenya | Increase | 0.1 – 1.3°C |
| Central Kenya | Increase | 0.1 – 0.7°C |
| South Eastern Kenya | Increase | 0.2 – 0.6°C |
| Coastal Kenya | Increase | 0.2 – 2.0°C |

# GHG Emissions in Kenya

- Agriculture and forestry are the largest emitters (2010) mainly due to emissions from livestock (methane) and land use change/deforestation (fuelwood, charcoal production and agricultural expansion)

- GHG emissions will rise as Kenya achieves its development goal as specified in the Kenya Vision 2030

# GHG Emissions in Kenya




*Source: CoK NCCAP Mitigation Analysis 2012*

# Policies relevant to Agriculture & Climate Change

- The constitution of Kenya: Chapter five on Land and Environment – for sustainable NRM; tree cover of at least 10% of the land area of Kenya; indigenous knowledge of biodiversity and the genetic resources of the communities

- The National Land Policy: Intensification of use in high-potential, densely populated areas, through the application of efficient methods; improvement of the condition and productivity of degraded lands in rural and urban areas; application of cost-effective irrigation methods in areas of low agricultural potential

- CAADP Compact (of NEPAD): Land and water management; incorporating Climate-Smart Agriculture into national and local programs

- Kenya Vision 2030: Environmental issues in general

- National Climate Change Response Strategy (NCCRS, 2010): Various measures for adapting agriculture to climate change, and for mitigating the emissions of greenhouse gases in agriculture

# Policies relevant to Agriculture & Climate Change

- Agricultural Sector Development Strategy (2010): Sustainable Land and Natural Resource Management – borrows heavily from the NCCRS
- National Food and Nutrition Policy (2011): recognizes climate change as an emerging issue for food and nutrition security; advocates for adaptation; recognizes the role of mitigation in addressing climate change
- National Climate Change Action Plan (NCCAP, 2012): to implement the NCCRS
- Draft National Climate Change Framework Policy (2014): Policy statements to enhance climate resilience and adaptive capacity; to promote low carbon growth; and to mainstream climate change into planning processes

# Priority Actions Identified for Low Carbon Climate Resilient Development Pathway in the KCCAP 2013-2017 www.kccap.info

4/6 options related with agriculture and environment:

- Climate-smart agriculture and agroforestry
- Restoration of forest and degraded lands
- Improved water resource management
- Clean energy solutions (incl. improved cook stoves and biogas digesters)
- Geothermal power generation
- Infrastructure

# Adaptation Options Proposed in the KCCAP

- Agroforestry
- Conservation agriculture, and integrated soil fertility mgmt.
- Drought tolerant crops
- Water harvesting
- Drip irrigation
- Price stabilization scheme for livestock
- Strategic food reserve
- Index-based weather insurance
- Climate information

# Selected Practices for Mitigation in the KCCAP

(and estimated emissions reduction by 2030)

- Restoration of forest on degraded lands 30 Mt $CO_2$ eq per year in 2030
- REDD+: avoid deforestation 6.1 Mt $CO_2$ eq, and forest degradation 1.6 Mt $CO_2$ eq
- Agroforestry: 4.2 Mt $CO_2$ eq and increase tree cover to 10% of total land area (Kenya Constitution 2010)
- Conservation tillage + limiting use of fire on cropland 1.2 Mt $CO_2$ eq
- *Rangement* mgmt.: 1.1 Mt $CO_2$ eq
- Improved cook stoves and biogas
- Mainstream CC into agricultural extension services

=> with sustainable development and climate resilience benefits

# Programmes, Projects and other initiatives in the Ministry since 2001

| Key CSA Words found in their titles | Tally in the titles of the 53 Initiatives in MALF |
|---|---|
| Climate / Weather | 4 |
| Adaptation | 1 |
| Efficiency | 1 |
| Resilience | 1 |
| Mitigation | 0 |
| Insurance | 1 |
| Sustainable NRM/SLM/WH/ | 5 |
| Soil/Water Conservation | 1 |
| Drought/ Flood | 2 |
| Paying for Env. Servs. (Objective) | 1 |
| Green | 1 |
| Ecosystem Management | 1 |
| Sustainable Intensification | 0 |
| | 19 |

Found in only 11 (21%) of the 53 Programmes/ Projects/ Initiatives since 2001, most of the 21% being in ASALs

Many initiatives have elements of CSA but are not calling them CSA, or using a climate change lens

# Challenges facing CSA

- Climate finance internationally and nationally
- Land tenure security that make investments worthwhile
- Estimating only parts/segments of the whole farm system omits potential elements/benefits
- Access to knowledge, information & practices
- Estimating benefits of CSA
- Others..

But many synergies and opportunities!

# Next steps to move forward from the KCCAP

- Operational national CC secretariat within the coordinating ministry responsible for coordination and national reporting obligations
- Develop knowledge sharing system and a capacity development strategy
- Mainstream CSA in planning processes at national and sub-national levels
- Identify and remove barriers for adaptation and mitigation
- Put in place a national performance and benefit measurement system (NPBM) for MRV of adaptation, mitigation and synergies
- Encourage investment in climate-smart agriculture and set up a national climate fund and carbon trading platform
- Move the action plan forward via climate finance mechanisms like GCF, AF, NAMAs, and REDD+

# Status on NAPs and NAMAs

National Adaptation Plans (NAPs):

- Proposed actions in KCCAP 2012 informed the drafting of the National Adaptation Plan
  - A comprehensive National Adaptation Plan (NAP) has been drafted for Kenya to accompany the NCCAP based on assessments of development needs and climate vulnerability

Nationally Appropriate Mitigation Actions (NAMAs):

- KCCAP considered the development of NAMAs for mitigation priority actions e.g.:
  - Climate-smart agriculture and agroforestry
  - Livestock (idea on the table)
  - Restoration of forest and degraded lands
  - Clean energy solutions
- NAMA framework development is still in the pipeline

# Thank you

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