The purpose of this memorandum is to share scenario-guided recommendations for the implementation of the Kenya Climate Smart Agriculture (CSA) Strategy. During a workshop held on 18 and 19 October 2017 in Nairobi, representatives of the Ministry of Agriculture, Livestock and Fisheries, the Ministry of Environment, the Ministry of Water and Irrigation, as well as academia and NGOs met to assess the feasibility of the implementation framework of the CSA Strategy in the face of future uncertainty. To this end, they performed a scenario-guided review of the implementation framework, using a set of four scenarios developed by stakeholders from the East African region, a process that was led by the CGIAR Research Programme on Climate Change, Agriculture and Food Security (CCAFS). This scenario-guided review process was part of a UN Environment World Conservation Monitoring Centre (UNEP-WCMC) project on land-use related decision-making in the Lake Victoria Basin region, funded by the John D. and Catherine T. MacArthur Foundation. For more information on the project, visit: https://wcmc.io/commodities.

This memorandum gives an overview of the recommendations that were formulated during the scenario-guided review. The workshop participants prioritised four of the CSA Strategy's Strategic Issues, for which the recommendations are described below. These recommendations serve to strengthen the implementation of the CSA Strategy, both in the coming years, and in the long-term.

**Strategic issue 1: Vulnerabilities due to changes in temperature regimes and precipitation patterns**

- **To improve the network of weather stations countrywide,** it is recommended to
  i. Add a centralized data processing and dissemination centre (e.g. in Nairobi)
  ii. Enhance the performance of county-level weather stations by linking them to regional weather stations
    - Therefore, county capacity should be improved, for example in terms of equipment and personnel.
  iii. Invest in proper institutional arrangements/linkages for dissemination of weather information among central, county and regional centres
  iv. Improve network of weather stations countrywide, so smallholders can access information on their own
  v. Put in place functional governance structures form local to national level
  vi. Involve the international community
- **To integrate scientific and indigenous technical knowledge in weather forecasting,** it is recommended to
  i. Work with civil society and other actors in rural economy to mobilize resources and lobby government
  ii. Invest more in modern technology for weather date collection, to be linked with national weather management unit
  iii. Process real time weather data and provide feedback
- **To enhance human capacity in weather data collection, analysis and packaging,** it is recommended to
  i. Engage development partners to specifically focus on capacity building of actors, or to precondition their development financing to national and county-level government to include a component of capacity building of actors
  ii. Promote the formation of functional farmer organizations at grassroots level for information exchange and learning
  iii. Raise awareness of citizen's rights
iv. Establish sub-county/ward-level units to relay weather information to beneficiaries

- To **provide early warning information on seasonal weather patterns**, it is recommended to
  i. Involve civil society and farmers, pastoralists and fisherfolk in the prioritization of resource allocation for smallholders, focusing on early warning systems, packaging and dissemination
  ii. Prepare and operationalize early warning systems
  iii. Prepare county land and water use master plans

- To **promote breeding of crop varieties, livestock and fish breeds, and tree species, that are adapted to weather variations and tolerant to pests and diseases**, it is recommended to
  i. Enhance this with support to research centers to integrate indigenous technology such as germplasm selection adaptable to climate change and focused breeding
  ii. Promote effective information packaging and dissemination
  iii. Strengthen and support research institutions to carry out both basic and adaptive research for crop varieties, livestock and fish breeds that can withstand extreme weather variations/conditions
  iv. Establish germplasm conservation centres for both indigenous and improved crop varieties, livestock and fish breeds
  v. Integrate use of harvested water for livestock, fish and crop farming

- To **conduct participatory research on improved technologies and practices informed by needs of users and agro-ecological zones along prioritized value chains**, it is recommended to
  i. Mobilize other extension providers such as the private sector and NGOs to support, disseminate and upscale research findings by KALRO, ILRI, etc. and support participation of smallholders

- To **conduct on-farm research into low-cost appropriate technologies and practices and deliver them as packages**, it is recommended to
  i. Engage non-state actors in on-farm research activities
  ii. Operationalize national agricultural extension services up to grassroots level

- To **build the capacity of extension service providers, producers and other stakeholders in the use of existing/new/improved CSA technologies and practices**, it is recommended to
  i. Involve civil society to engage smallholders to mobilize demand driven extension services
  ii. Support the formation of common interest community level advocacy groups
  iii. Establish stakeholder fora led by individuals who are able to advocate and lobby for stakeholders interests
  iv. Establish knowledge management systems and build capacity of beneficiaries
  v. Establish ICT centres in villages and distant smallholder communities
  vi. Give financial support from national government resources to farmer organizations
  vii. Improve the extension service delivery system (in terms of content, funding, capacity and performance) at all levels
  viii. Develop and support a functional extension system with focus on adaptation and resilience

- To **promote integrated farming systems comprising crops, livestock, aquaculture and farm forestry**, it is recommended to
  i. Engage civil society and other non-state actors

**Strategic Issue 3: Vulnerabilities due to unsustainable natural resource management**

- To **establish baselines and undertake inventory for natural resources (agricultural land, water, pastures, fisheries and forestry)**, it is recommended to
  i. 8.3 Develop and maintain a database for natural resources at Regional, National and County levels (activity)
  ii. 8.3 Update the database at regional, national and county level (measure achievement)

- To **promote Sustainable Natural Resource Management**, it is recommended to
  i. 9.1 Develop a framework for coordinated sustainable natural resource management
  ii. 9.2 Promote integrated land use management (activities)
iii. 9.2 Monitor no. and types of Land use technologies promoted and adopted (measure achievement)

iv. 9.3 Restore degraded Land (activities)

v. 9.3 Mainstream Sustainable Natural Resources Management into programmes and projects
    Develop and implement programmes and projects on sustainable land management and use of
    natural resources including alternative livelihoods (e.g. protection of riparian reserves, fish landing
    stations, wildlife corridors, stock routes and off-farm activities) (activities)

vi. 9.3 Integrate Sustainable Natural Resources Management in CIDPs (country government
    responsibility)

vii. 9.3 Seek technical support (Development partners and International Research Institutions) (other
    stakeholders responsibility)

- To promote sustainable water catchment protection, harvesting and storage, and technologies for
  efficient water use, it is recommended to
  i. 10.1 Incorporate components that enhance resilience (irrigation of crops, aquaculture, livestock
      watering and agroforestry) in designs and development of water harvesting and storage structures
      at regional and national levels, as well as household and community level (activities)
  ii. 10.3 Promote effective and efficient agricultural water use, including waste water management
      through community led governance (activities)

Strategic Issue 7: Inadequate capacities and weak coordination among institutions and stakeholders in climate smart agriculture

- To establish CSA coordination structures, it is recommended to
  i. Strengthen technical and institutional capacity
  ii. Create an inclusive environment for all stakeholders involved in the different aspects of CSA
      (production, service provision and environmental management)
  iii. Adhere to international sustainability and environmental agreements
  iv. Ensure all key actors are represented
  v. Establish a clear monitoring framework to ensure no sectors are overlooked
  vi. Involve civil society to ensure good leadership
  vii. Establish regional structures to support coordination
  viii. Create awareness/sensitize all stakeholder involved on their roles and responsibilities, through
        participatory planning, budgeting, implementation, monitoring & evaluation (for sustainability and
        ownership)

- To promote partnerships between stakeholders to enhance joint planning and implementation of
  CSA, it is recommended to
  i. Ensure partnerships’ focus towards CSA is maintained in the longer term
  ii. Ensure progressive realization of strategic objectives of CSA
  iii. Develop a clear monitoring system
  iv. Advocate for a bottom-up approach
  v. Strengthen institutions that ensure inclusivity and localized decision-making
  vi. Ensure that public participation is setup in a way that safeguards the intended democratic process
  vii. Seek partnerships with private sector actors
  viii. Cascade/domesticate regionally agreed-upon protocols to the local level
  ix. Put in place formalized agreements for engagements and partnerships (such as MoUS, legal
      committees)
- To **support linkage between National and County CSA institutions with National Climatic Change Council (NCCC) and Climate Change Directorate**, it is recommended to
  1. Establish a system to facilitate the linkage between national and county level structures
  2. Mobilize private sector financing to facilitate the planning and implementation
  3. Ensure accountability and transparency
  4. Strengthen PPP models
  5. Strengthen and involve intergovernmental institutions by ensuring CSA is part of their agenda
  6. Ensure priorities are first set at the county level
  7. Harmonize and coordinate national and county priorities
  8. Ensure a strong presence and participation of CSOs and NGOs
  9. Establish a system to facilitate linkage with regional CSA organizations
  10. Establish an ombudsman office
  11. Review and monitor continuously to address emerging issues

- To **strengthen institutions involved in CSA by providing support (technical, financial, human resource)** to CSA institutions at National and County level, it is recommended to
  1. Allocate funds from the ex-checker (national budgets)
  2. Ecosystem services should be ‘price-tagged’ to enhance natural resources management in CSA
  3. ‘Ring fence’ government allocations to ensure the allocations are strictly spent on what is planned for and also develop regulations on ring fencing
  4. Incentivize the private sector to invest in supporting institutions on CSA
  5. Involve civil society as a key actor to ensure aspects of accountability
  6. Consider global frameworks such as SDGs in support to national and county level CSA institutions
  7. Ensure support goes to CSA priority areas
  8. Involve global CSA proponents such as World Bank, CGIAR and FAO

- To **capacity build institutions**, it is recommended to
  1. Focus on both technical and financial capacity
  2. Focus on capacity building of both private, NGO and public institutions
  3. Sensitize institutions to international agreements
  4. Concentrate on capacity building at county level, as they are the main implementers

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**Strategic issue 12: Inadequate data and information on Climate Smart Agriculture**

- To **establish and maintain a data and information management system**, it is recommended to
  1. Bring on board the KNBS, Meteorological Department and WARMA
  2. Assign clear roles to county governments
  3. Strengthen KALRO to establish website portal
  4. Let ICT Authority implement an open data policy
  5. Gather adequate data on quality and quantity of water, land productivity, soil carbon, plant uptake (of nutrients, water), efficient use of water per crop variety, and residue levels in crops
  6. Provide data on value addition; quantity and quality of commercial products
  7. Develop information link with KEINVEST to provide data and information for exports.
  8. Work with institutions that undertake agricultural exports
  9. Promote non-mainstream crops for industrial use e.g. sorghum
  10. Market Access provides opportunities for value addition
  11. Government open data policy should provide the opportunity for data sharing.
  12. Develop an effective and efficient regional food balance sheet
  13. Devolution provides opportunity for County Government to undertake capacity needs (TNA).
  14. Promote e-market among the regional countries
  15. Because of demand, warehouse receipting system becomes key
To **Build capacities on data collection and information management**, it is recommended to
i. Develop consumer and customer friendly websites
ii. Link the CSA info management system to the indigenous/local communities’ gene bank for their local varieties, to address issues of adaptation and climate change, e.g. local maize varieties, pumpkin and vegetables
iii. Document and record the indigenous knowledge to update the existing mechanisms
iv. Document information on water usage, traditional water harvesting technologies and scenarios, and indigenous irrigation technologies and systems

To **Promote data management, information generation and dissemination**, it is recommended to
i. Recruit professional staff
ii. Establish, strengthen and upgrade ICT infrastructure
iii. Build capacity and exchange programmes and standardization of data collection methodologies
iv. Increase number of exchange programmes for learning
v. Strengthen the link between local communities and researchers
vi. Information packaging to be accessible to farmers
vii. Use mobile phone technology in dissemination of information
viii. Organize demos and show to enhance farmers’ knowledge and skills
ix. Translate information to local languages
x. Assign county governments to allocate funds for these activities