



## REPUBLIC OF KENYA

### **SUBMISSION TO SBSTA/SBI BY KENYA ON THE KORONIVIA JOINT WORK ON AGRICULTURE (KJWA) TOPICS 2b AND 2c**

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#### **A: Introduction**

The agricultural sector in Kenya is extremely vulnerable to the impacts of climate change because it relies predominantly on rain-fed crop and rangeland-based livestock production systems. Climate change is threatening food production systems and therefore the livelihoods and food security of millions of people. The stagnating growth in agricultural productivity, declining growth in incomes, and problems of maintaining food security already pose the greatest challenges. Smallholder farmers and livestock keepers, who are the majority of the producers, are particularly vulnerable to the impacts of climate change due to their low adaptive capacity. Unreliable, erratic and reduced mean annual rainfall, increased temperatures and more frequent and severe extreme weather events, such as droughts and floods, are expected to have multiple impacts on agriculture and require farmers to adapt to changing conditions. Such complex challenges require a systemic response to build resilience and lasting adaptation capacity for production and thus for food security. Therefore, the combination of Kenya's agriculture characteristics —importance as an economic sector, vulnerability to climate change, and contribution to greenhouse gas emissions — make resilience building to climate change the highest priority.

#### **B: Country initiatives**

Kenya's National Agriculture Policy and the Climate Smart Agriculture Strategy 2017-2026 and its Implementation Framework 2018-2027 highlight the national priorities and adaptation measures to be undertaken in order to cushion the country and farmers from the adverse impacts of climate change in the agriculture sector. Examples of targeted actions include: (i) diversification of enterprises and alternative livelihoods; (ii) restoration of degraded soils and conservation of soil biodiversity; (iii) water harvesting and storage, irrigation infrastructure development and efficient water use; and (iv) integrated farming systems comprising crops, livestock, aquaculture and agroforestry among other approaches.

Pursuant to the Koronivia Joint Work on Agriculture Roadmap, Kenya wishes to make submissions on topics 2(b) (Methods and approaches for assessing adaptation, adaptation co-benefits and resilience) and 2(c) (Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management) as follows:

## **C: KJWA 2(b). Methods and approaches for assessing adaptation, adaptation co-benefits and resilience**

Adaptation is critical in reducing agricultural vulnerability to climate change and extreme weather events. However, with increasing investments in adaptation across scales, a key challenge facing the adaptation community remains how to track adaptation progress. Most of the existing methods for measuring adaptation are based on project activities. Generally, there is a gap on methodologies for reviewing the adequacy and effectiveness of adaptation, including *inter alia*, frameworks used for assessing the effectiveness of adaptation efforts; efforts and systems to monitor and evaluate the effectiveness of adaptation efforts. Such gaps identified in the UNEP Adaptation Gap Report<sup>1</sup> and the Intergovernmental Panel on Climate Change Special Report on the impacts of global warming of 1.5°C above pre-industrial levels (IPCC SR).<sup>2</sup> Whereas the IPCC 2006 Guidelines<sup>3</sup>, as revised, are useful in assessing mitigation, limited data in agriculture sector has necessitated use of Tier 1, which is not accurate enough to help in appropriately quantifying mitigation benefits arising from interventions. **In this regard, Kenya requests SBSTA/SBI to consider the following:**

1. Undertake stocktaking of existing methods and approaches of assessing adaptation (as well as the associated risks being adapted) and evaluate their efficacy in tracking adaptation progress at different scales with specific reference to identifying gaps, challenges, opportunities and options associated with those methodologies.
2. Develop a framework with smart indicators and metrics of user-friendly methodologies for assessing adaptation, adaptation co-benefits and resilience that can be used beyond project based approaches from production to consumption
3. Explore development of additional tools to complement use of Tier 1 under the IPCC in measuring mitigation benefits and elaborate on their reliability, validity, temporality and measurement uncertainties.
4. Facilitate knowledge sharing and capacity building on methodologies for tracking adaptation progress; and
5. Facilitate international cooperation and financial support to efforts on methods and approaches for assessing adaptation, adaptation co-benefits and resilience for effective implementation of the nationally determined contributions (NDCs) and nationally adaptation plans (NAPs).

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<sup>1</sup> UNEP 2018. The Adaptation Gap Report 2018. United Nations Environment Programme (UNEP), Nairobi, Kenya

<sup>2</sup> IPCC, 2018. The Intergovernmental Panel on Climate Change Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways in the context of strengthening the global response to the threat of climate change, sustainable development and efforts to eradicate poverty, 2018.

<sup>3</sup> IPCC, 2006. IPCC Guidelines for National Greenhouse Gas Inventories

## **D: KJWA 2(c) - Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management**

While Kenyans depend on agriculture not just for their livelihood, but also for their nutritional needs; agricultural productivity has stagnated. This has been attributed to the poor state of the soils as a result of several factors including poor farming practices, cultivation without adequate replenishment of plant nutrients in soil, and lack of access to quality inputs, compounded by the adverse effects of climate change. Soil improvement measures and integrated systems are key leverages to bolster adaptation (Seo, 2010)<sup>4</sup>. Therefore, the Government of Kenya through the Ministry of Agriculture, Livestock, Fisheries and Irrigation in partnership with different stakeholders intend to foster various CSA measures such as organic farming, use of organic manure in combination with inorganic fertilizers, promotion of soil and water management measures, agroforestry and agro-ecology, crop diversification – mixed/inter/cover cropping, and integrated systems among others. While a single adaptation measure might buffer impacts in the shorter term, it will likely not be effective in the mid-term with prevailing climatic change. Therefore, adaptation should usually consist of a package of measures. An integrated response that is bundling and linking various measures in a targeted manner is thus more promising to yield greater and longer-term adaptation potential.

### **In this regard, Kenya requests SBSTA/SBI to consider the following:**

1. Facilitate comprehensive characterisation, mapping, and rapid handheld testing methods of soil carbon, soil health and soil fertility (and appropriate methods).
2. Assist in profiling, defining and evaluating integrated systems and develop guidelines on integrated systems that build on synergies between adaptation and resilience measures to balance social, economic and ecologic trade-offs.
3. Undertake stocktaking of approaches/measures being used for improving soil and water management as well as integrated systems and sustainable land management.
4. Facilitate knowledge sharing and capacity building, including information and communication technologies (ICTs) on for promoting improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management.
5. Assist to identify and assess the transaction costs for transitioning to more integrated farming systems and showcase how to overcome these barriers (including the use of mechanization for overcoming labour challenges).
6. Facilitate international cooperation and financial support to the efforts on soil health and soil fertility under grassland and cropland as well as integrated systems, including water management for effective implementation of NDCs and NAPs.

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<sup>4</sup> Seo, S. N. (2010). Is an integrated farm more resilient against climate change? A micro-econometric analysis of portfolio diversification in agriculture. *Food Policy*, 35(1), 32–40.