SBSTA Agriculture Submission by Kenya

Submission under FCCC/SBSTA/2013/L.20/paragraph 2| September 2013

Subject: **Views on the current state of scientific knowledge on how to enhance the Adaptation of agriculture to climate change impacts while promoting rural development, sustainable development and productivity of agricultural systems and food security in all countries, particularly in developing countries| SBSTA**

Introduction

This submission is made by Kenya pursuant to paragraph 2 of FCCC/SBSTA/2013/L.20 as provided for in https://unfccc.int/documentation/submissions_from_parties/items/5901.php, in which the UNFCCC invited views from Parties and relevant organizations on the current state of scientific knowledge on how to enhance the adaptation of agriculture to climate change impacts while promoting rural development, sustainable development and productivity of agricultural systems and food security in all countries, particularly in developing countries, taking into account the diversity of the agricultural systems and the differences in scale as well as possible adaptation co-benefits.

Kenya welcomes this opportunity for submission and acknowledges the progress made in Bonn, and also looks forward to participating in the exchange of views at SBSTA 39. Kenya appreciates the fruitful discussions during SBSTA 38 in Bonn, reaffirms its conviction regarding the necessity of addressing issues related to agriculture under SBSTA and considers this submission of views an important initial step in the process of addressing issues related to agriculture under UNFCCC.

Background

Agriculture is expected to ensure the food security of an increasing number of people in a changing climate. This requirement means that agriculture has to change with the times and within the dictates of a changing climate. The situation will be made worse when this changing climate is coupled with environmental degradation, especially in the most vulnerable parts of developing country territories. This scenario makes adaptation of the agriculture sector imperative for survival and not just an option, especially in aspects like food security, development and poverty reduction as well as the management of synergies and trade-offs across intervention outcomes and adaptation co-benefits including methods for quantifying and accounting for these co-benefits, and integrated MRV methodologies that might be needed for this.

Agriculture in the UNFCC Convention

The UNFCCC has an important role to play in facilitating a global response to the adaptation challenges and opportunities presented by the agriculture sector.The Convention, in its Article 2, states that stabilization of greenhouse gas concentrations in the atmosphere should be within a timeframe, which ensures that "food production is not threatened". In Article 9, the Convention establishes the subsidiary body for scientific and technological advice (SBSTA) to provide the Conference of the Parties and, as appropriate, its other subsidiary bodies with timely information and advice on scientific and technological matters relating to the Convention.

Agriculture in Kenya

Agriculture plays a major in the economy of Kenya, directly contributing 24% of GDP and another 27% indirectly through industry, services and trade. The agricultural sector employs about 65% of the workforce in the country. It also provides valuable environmental stewardship and sustainable land management. The agriculture sector is very sensitive to climate change, meaning that agricultural systems will need to adapt to ensure provision of adequate food for a growing population. Kenya has in recent years had its share of climate-related impacts: prolonged droughts; frost in some of the productive agricultural areas; hailstorms; extreme flooding; receding lake levels; drying of rivers and other wetlands; among others leading to large economic losses and adversely impacting food security. Evidence is emerging that the frequency of droughts, floods, and other extreme climate events has increased in recent years.

Climate Hazards in Kenya include:

- Temperature – reduction in the number of reliable crop growing days
- Drought and dry spells – changes in precipitation patterns are likely to directly increase short-term crop failures and long-term production declines for rain-fed agriculture
- Floods and excessive rains – unpredictability in precipitation is already having negative consequences on rural livelihoods
- Salinization of soils and water due to saline intrusion/abstraction
- Inundation of coastal lowlands due to sea level rise
- Occurrence of windstorms and hailstones
- Incidences of frost
- Wildlife migrations
- Insect pests, diseases
- Invasive plants/weeds

Vulnerabilities in Kenya include:

- Poor state of natural resources and infrastructure – degraded
- High dependence on climate sensitive livelihoods and value chains
- Inflexible behavior in a changing environment
- The poverty/deprivation trap

A combination of these factors and many others increases Kenya's vulnerability to climate change.

Kenya recognizes the valuable and diverse role this sector plays in ensuring national food security, livelihood security, income generation and poverty reduction, as well as environmental benefits. However, Agriculture is one of the most vulnerable sectors of Kenya's economy. It is therefore critical that the UNFCCC facilitates the sector's response to climate change in terms of both adaptation and its co-benefits in a way that Kenya can benefit.

Proposals by Kenya to SBSTA

With this in mind, Kenya considers that work done in SBSTA on the current state of scientific knowledge on how to enhance the adaptation of agriculture to climate change impacts while promoting rural development, sustainable development and productivity of agricultural systems and food security should include the following aspects:

Identify climatic factors that represent the greatest risk of compromising food security: Climate change is expected to impact agricultural production in Kenya. It is therefore important to anticipate effects of future climate change as accurately as possible and identify those climatic factors that represent the greatest risk of compromising food security and agricultural income security. Once these factors have been identified, appropriate and quantitatively informed adaptation strategies can be devised. However, little quantitative information is available on the extent and direction of these impacts. Without such quantitative information, however, developing appropriate adaptation strategies is difficult. SBSTA needs to provide scientific and technological advise on this not only for Kenya but for all countries.

Accurately assess climate change impacts in the agriculture sector: There is need for a comprehensive assessment of the evidence and impacts of climate change in Kenya, and a framework for impact monitoring.

Identify priority adaptation actions and methods to measure adaptation co-benefits: The adaptation interventions rely mainly on a range of assumptions about pertinent factors, with very high uncertainty. SBSTA needs to provide scientific and technological advice on priority adaptation actions to improve water management include increased domestic water supply and improved sewage systems, enhanced irrigation and drainage to increase agricultural and livestock production, effective trans-boundary water resources management, and flood mitigation schemes. These actions reduce the impact of droughts and floods on crop yields and livelihoods, and more irrigation-based agriculture reduces the reliance of crop production on rainfall. Many climate-smart agricultural practices that reduce climate vulnerability also reduce emissions and improve agricultural production potential. Methods to measure and quantity these co-benefits against adaptation initiatives will need to be developed. Further, SBSTA is requested to provide advice on:

- Pathways of ecological resilience and livelihood diversification for sustainable agriculture
- Initial and regular screening of farming community vulnerability to current climate – to prioritize response actions
- Capacity building for agro-meteorological information management
- Existing measures already being undertaken to adapt to climate change within the agricultural sector, with a view to sharing this information to increase the capacity of all countries to implement the strategies most suited to their national circumstances.
- What barriers exist to implementing adaptation & mitigation strategies in agriculture.

Downscale climate-crop/livestock models for focused interventions: Robust agricultural modelling requires detailed knowledge of a host of factors that influence agricultural systems, such as the crop variety planted, sowing densities, fertilization regimes etc. In particular the crop variety or livestock breed needs to be defined not only by name, but with a comprehensive set of attributes describing factors like timing of development stages in response to weather, growth rate etc. If all these factors are known and reliable weather and other information is available, productivity can be simulated quite reliably. Doing such an analysis is impaired by a striking shortage of necessary input data, especially in developing countries, among them Kenya. This means that even current climate cannot be reliably characterized, placing constraints on the accuracy with which the future can be projected. Observations of local weather are needed for calibrating climate models, and where no records are available, the accuracy of climate models is questionable. Similarly, soil information for these regions is scarce, yet soil data is an essential input into any agricultural model. Finally, information on what crop varieties farmers grow, how these respond to climate, and how exactly they are managed, is unavailable. Relying only on global data is too crude an approach for making site-specific decisions. SBSTA needs to provide scientific and technological advice on these aspects in a downscaled manner.

Provide advice on agricultural efficiency, resilience and productivity to respond to climate change: Kenya acknowledges that addressing climate change in the agriculture sector has challenges, but also it also presents opportunities. In that regards SBSTA needs to provide scientific and technological advice regarding actions which enhance efficiency, resilience, productivity and sustainability, including benefits to farmers and to the climate. It is within SBSTA's mandate to identify and promote development and transfer of innovative and efficient technologies and know-how. This should be done in relation to agriculture. Further, SBSTA should consider the identification of innovative agricultural technologies, practices, processes and know-how and advice on the ways and means of promoting the development and/or transfer of such technologies. Through identifying existing technologies and emerging developments and aligning these with identified priorities for adaptation in agriculture, it will be possible to implement effective responses to climate change in the agriculture sector. Technological responses which encourage the best use of available resources, increasing the efficiency of food production whilst decreasing resource intensity and protecting biodiversity, should be explored. Opportunities to share and apply this technology, taking into account local and cultural specific conditions, should be maximized.