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Organisation des Nations Unies pour l'alimentation et l'agriculture
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A submission to the UNFCCC Secretariat on possible areas of further work on impacts, vulnerability and adaptation to climate change under the Nairobi work programme

Subject: Climate-Smart Agriculture

Mandate: FCCC/SBSTA/2011/2, paragraphs 24 and 25

The Food and Agriculture Organization of the United Nations (FAO) thanks SBSTA for the opportunity to make available to Parties its views in the context of possible areas of further work on impacts, vulnerability and adaptation to climate change, including proposals for upcoming activities, under the Nairobi work programme.

Agriculture[1] is among the productive activities, if not THE productive activity, most vulnerable to climatic changes, given that yields are directly affected by climate variability/change and the majority of the poor are dependent on agriculture for their livelihood. Agriculture's crucial role in food security, poverty reduction and in the economies of a large number of countries – including many developing countries and least developed countries in particular - makes it an issue of importance, meriting close attention under the Nairobi work programme .

FAO would like to propose climate smart agriculture, which aims to improve food security and adaptation to climate change, as well as to contribute to mitigate climate change, as a possible area of further work under the Nairobi work programme, which relates to several potential activities already identified in in Annex 1 of document FCCC/SBSTA/2011/2, entitled "*Potential activities under the Nairobi work programme on impacts, vulnerability and adaptation to climate change"*. These activities include:

"(c) Strengthening sector-specific and cross-sectoral activities to address impacts, vulnerability and adaptation issues relating to, inter alia: …

(ii) Food security (including agriculture and subsistence livelihoods);…

(e) Further developing targeted knowledge products to engage stakeholders and decision makers, including, inter alia, lessons learned with respect to adaptation at different governance levels and in different sectors, based on knowledge generated under the Nairobi work programme, and syntheses of information generated under the Nairobi work programme into knowledge products targeted at users in specific sectors or other thematic areas;

(f) Enhancing knowledge on the economic aspects of adaptation through, inter alia, pilot projects on applying different methods and tools for assessing the costs and benefits of adaptation (and the documentation and sharing of lessons learned from these projects), calls for action and further activities on reducing reliance on vulnerable economic sectors, including through economic diversification;"

[1] The FAO definition of agriculture is inclusive of forestry and fisheries.

In developing countries, agricultural growth is urgently required to support the food security of growing populations. FAO has estimated that agriculture production needs to increase globally 70% to meet a projected population of more than 9 billion by 2050 and that the largest increase in demand will be in developing countries. However, the adverse impacts of climate change will increase the difficulty of obtaining needed agricultural growth.

Agriculture is perhaps the most climate sensitive sector, with output directly affected by even slight climatic variability, not to mention the more frequent and intense extreme climate events already being experienced. Slow onset changes in temperatures and precipitation are expected to affect seriously food and livelihood security, in the absence of adequate adaptation and mitigation efforts. It is usually the rural poor, who depend directly on agriculture for their livelihoods and food, who suffer disproportionately from climate change impacts. Increasing the resilience of agricultural and aquatic systems to climate change is thus imperative for their adaptation to climate change.

At the same time, agriculture accounts for around 12-14% of global greenhouse gas emissions. If land-use changes, including deforestation are considered (agriculture is a main driver of deforestation and draining of wetlands), its share becomes around 30%. 70% of the technical mitigation potential of agriculture is in developing countries and more than 75% of this potential could come from sequestering carbon in agricultural soils. Although low in absolute terms, rates of GHG emissions from agriculture in developing countries are growing due to increases in demand for agricultural produce, as well as the need of developing countries to meet their own food security and development goals.

Meeting increasing demand for food, fuel, fiber and carbon storage from agriculture, as populations, climate change impacts and emissions from agriculture increase, will ultimately require transformation of agricultural production systems. However there are knowledge gaps which limit transition. Enabling farmers to make more climate-smart choices requires improved knowledge of which agricultural practices would be most promising in this regard, within specific agro-ecological regions. It would also require a better understanding of the constraints and opportunities to farmer adoption of such practices.
"Climate Smart Agriculture" addresses the challenges of building synergies among climate change mitigation, adaptation and food security that are closely related within agriculture and minimizing their potential negative trade-offs. It seeks to enhance the capacity of the agricultural sector to sustainably support food security, incorporating the need for adaptation and the potential for mitigation into development strategies. There is no blueprint for climate smart agriculture and the specific contexts of countries and communities would need to shape how it is ultimately implemented. The specific conditions, circumstances, and capacities within countries will define opportunities and barriers to implementation, and hence policy choices. Countries are also not starting from zero and ongoing initiatives and activities can be used (e.g. conservation agriculture, sustainable land and forest management, ecosystem approaches to fisheries and aquaculture).

Some types of agricultural practices generate synergies between mitigation, adaptation and food security – such as conservation agriculture that increases soil carbon sequestration as well as water holding capacity that contributes to drought and flood resilience. In other cases there are tradeoffs: e.g. conversion of forested lands to agriculture use. Countries with a large share of their population engaged in agricultural production and high rates of food insecurity are often obliged to make urgent and difficult policy choices on their agricultural growth strategies based on insufficient evidence.

Transformation of agricultural production and food systems to meet increasing demand from an additional 3 million people in 2050, changing dietary habits and the continuing need for more sustainable use of natural resources provides an opportunity to also consider how climate change adaptation and mitigation might also be addressed through some of the same practices.

FAO is developing an array of knowledge tools (e.g. a Climate Smart Agriculture knowledge platform, weather-based tools) and a number of climate-smart agriculture pilot projects to support countries in building capacity, experience and leadership to make their agricultural production systems more climate smart within the context of nationally-owned planning instruments and processes (e.g. National Adaptation Plans).