

## Theme 7 – Climate Smart Agriculture in East Africa<sup>1</sup>

Conference “Research & Policy: two peas in a pod? A dialogue for food security impact”

Concept note drafted by: Dawit Solomon, Catherine Mungai, Maren Radeny - CCAFS East Africa.

### Key statements

- Without adoption of Climate Smart Agricultural (CSA) technologies and innovations farming and pastoral communities in East Africa will not be able to deal with the effects of climate variabilities and change.
- Current and emerging policies need to include options to facilitate and accelerate uptake and scaling up strategies of CSA in East Africa, and to be informed by research to achieve this.
- Without innovative finance mechanisms that link and blend climate and agricultural finance and investments from public and private sectors, National Adaptation Plans (NAPs) and Nationally Appropriate Mitigation Actions (NAMAs) will not be effective.
- In a climate change affected context private sector engagement alone will not be sufficient to develop inclusive small and medium-sized enterprises (SMEs) in the agriculture, value chain and food sector.

### Rationale

The Intergovernmental Panel on Climate Change (IPCC) categorizes East Africa as the most vulnerable continent to climate variability and change<sup>2</sup>. The many complex and compounded impacts of climate variability and change on agricultural production are contributing to food and nutrition insecurity, poverty, migration, conflicts and other destabilizing challenges in the region. Projections indicate that East Africa will experience an increase in average temperatures projected to rise between 4 to 6 °C by 2100, accompanied by more frequent heat waves and stress. Approximately 75.5 million people in the region are economically involved in agriculture, either in full-time employment or as a main livelihood activity. About 95 percent of the food in the region comes from rain-fed subsistence agriculture that is highly vulnerable to adverse weather conditions such as droughts, dry spells and variable rainfall<sup>3</sup>. Recognizing the vulnerability of East African agriculture to climate variabilities and change, and the sector’s potential to contribute to GHG emissions, agriculture and other land-uses in the region offer the significant potential co-benefit to reduce emissions and support countries in the region to develop their economies along low emission development (LED) pathways through more efficient agricultural and food production systems. CSA<sup>4</sup> offers unique opportunities to meet the multiple objectives of improving food and nutrition security, enhance adaptation to climate change and reduce GHG emissions at local scales. Agriculture in the current context is broadly defined to include crops, livestock, fisheries and forests. CSA is thus an approach that helps to guide actions to transform and reorient agricultural systems to support development and food and nutrition security effectively and sustainably under a changing climate.

### GCP-4 – Eight newly funded research projects on CSA about to start

The session will bring together eight projects that have recently been funded within the fourth GCP Call, a collaboration with CCAFS<sup>5</sup>. To strengthen the CCAFS efforts, and further promote scaling up of CSA,

<sup>1</sup> A [background document](#) has been provided for further elaboration on the issues described – please consult for more information.

<sup>2</sup> IPCC, 2014. Summary for policy makers. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Edenhofer, O., Pichs-Madruga, R., Sokona, Y., Farahani, E., Kadner, S., Seyboth, K., Adler, A., Baum, I., Brunner, S., Eickemeier, P., Kriemann, B., Sovolainen, J., Schläumer, S., von Stechow, C., Zwickel, T., and Minx, J.C. (eds.)). Cambridge University Press, Cambridge.

<sup>3</sup> FAO, 2016. Eastern Africa Climate-Smart Agriculture Scoping Study: Ethiopia, Kenya and Uganda. By Njeru, E., Grey, S. and Kilawe, E. Addis Ababa, Ethiopia.

<sup>4</sup> “CSA is defined as agriculture that sustainably increases agricultural productivity and incomes, adapts and builds resilience to climate change, and reduces and/or removes GHG emissions where possible” FAO. 2013, Climate-Smart Agriculture: Sourcebook. Rome, Italy: Food and Agriculture Organization of the United Nations.

<sup>5</sup> Since its inception in 2010, international and regional organizations and countries are actively implementing policies, strategies and programs to promote and upscale CSA. As part of this initiative, the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) have been working with policy makers and other stakeholders in East Africa (i.e., Ethiopia, Kenya, Tanzania and Uganda) to identify suitable policy and institutional frameworks that support uptake of CSA. This entails making available both technology and evidence from research to support policy development and implementation at different levels—local, national, regional and global—through continued engagement with policy makers in Ministries of Environment, Agriculture, Livestock and Fisheries, to ensure emerging policies and strategies on climate change, agriculture and food security are informed by scientific evidence (Dinesh D, Aggarwal P, Khatri-Chhetri A, Loboguerrero Rodriguez AM, Mungai C, Radeny M, Sebastian L, Zougmore R. 2017. The rise in Climate-Smart Agriculture strategies, policies, partnerships and investments across the globe. Agriculture for Development 30:4-9).

CCAFS and GCP collaborated in this Call to identify approaches for scaling of CSA in East Africa. As part of this partnership, the following eight projects were recently funded. They will start their research activities early 2018 and will be presented during the session in the conference, which allows policy representatives to engage from the onset:

- [Business models Ethiopian and Kenyan dairy chains](#): This research aims to describe business models of chain actors and supporters to identify opportunities for scaling up good climate smart practices. It is linked to the CCAFS “*Nationally Appropriate Mitigation Actions*” (NAMA) project in Kenya to reduce GHG emissions from dairy production.
- [Understanding and scaling Organizations for Stallholder Resilience](#): This project seeks to understand when and how the organization of new business models linking farmers to markets leads to resilience of smallholders, in particular youth and women. Resilience will be assessed in terms of development of farmers’ adaptive capacity and their engagement with other stakeholders in the system.
- [Upscaling climate smart agriculture via micro finance](#): This project will provide practical and conceptual insight in the appropriate combinations of business training (through Farmer Field and Business Schools - FFBS) and financial services (through Village Savings and Loans Associations – VSLA) that support community-based adaptation (CBA) action plans.
- [Inclusive Low-Emission Development \(i-LED\): East African dairy](#): This research analyses institutional conditions for scaling i-LED interventions that account for the diversity of practices, development pathways and interests in the Kenyan and Tanzanian dairy sectors.
- [Scaling climate-smart nutrient management tools in Africa](#): This project aims to improve the delivery and uptake of nutrient management advisory tools that aim to increase African maize production while avoiding increases in greenhouse gas emissions.
- [Citizen’s Science for climate smart nutritious varieties](#): This project will bring “citizen science” into use in variety testing and registration by farmers in Ethiopia and Uganda, with a focus on selection of varieties adapted to climate stress and with high nutritional value.
- [Promoting climate resilient maize varieties in Uganda](#): The uptake of certified maize seed by smallholder farmers is persistently low despite certified seeds having much higher yield potential and more tolerant to drought than the varieties traditionally grown by farmers.
- [Climate-Smart Financial Diaries for Scaling in Kenya](#): This project will support upscaling of the combination of drought-resistant breeds of small-ruminants, horticulture, agroforestry as a promising strategy that is climate-resilient and climate smart in closing nutrient cycles.

### Purpose of the session

This session aims to inform Dutch policy representatives that work on policy/interventions related to CSA on the approaches of the GCP-4 projects. It will highlight key issues and entry points for consideration with regard to policy and institutional requirements to enable inclusive and sustainable scaling of CSA for agricultural transformation in East Africa. The session will explore the proposed approaches of the GCP-4 projects and how these may be fed by, or feedback to, questions in development of policy on scaling of CSA. Additionally ongoing ARF research around CSA could feed the discussion.<sup>6</sup>

### Outcomes of the session

- Increased mutual understanding between researchers and Dutch policy makers; who is working on what, where and how with regard to CSA in East Africa;
- Increased understanding of the contributions of CSA to food security in East Africa, and how this could inform Dutch foreign and economic policy;
- Evidence-based and impact-driven policy proposals to better integrate CSA in food systems and improve the livelihoods of farmers and other low-income food system players in East Africa;
- Insights on the possibilities and limitations of Dutch public and private sector involvement in tackling CSA solutions in East Africa;
- Policy recommendations (land tenure, trade regulations, price setting mechanisms, energy policy, governance issues etc.) on how to upscale CSA in East Africa and increase investments from public and private sector.

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<sup>6</sup>[Farmer-led agroforestry innovation research results in Ethiopia](#) - [Non-timber forest products in reforestation schemes and tree-crop farms in Ghana](#) - [Apps for irrigation Bangladesh](#) - [Resilience inland fishers Benin](#) - [Biochar-Urine Nutrient Cycling for Health Bangladesh](#)