Climate-Smart Village: An Integrated Scaling Up Approach to Mitigating Climate Change in African Agriculture

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Climate change increasingly threatens agricultural production and food security across Africa. Maintaining agricultural growth while minimizing climate shocks is crucial to building a resilient food production system and meeting developmental goals in vulnerable countries. This paper presents the Climate-Smart Village (CSV) approach as a means to developing technological and institutional options for climate change in agriculture and supporting the scaling-up and scaling- out of options. CSVs serve as sites for agricultural research for development that test options using participatory methods. The approach incorporates evaluation of climate-smart technologies, practices, services and processes relevant for local climatic risk management. It also identifies opportunities for maximizing gains from synergies across different interventions and trade-offs in terms of productivity, adaptation and mitigation outcomes and recognizing potential maladaptation. The CSV approach ensures that these are aligned with local knowledge and link into development plans.

Most African countries focus on adapting to climate change, rather than mitigation, especially those countries most vulnerable to climate change. The agriculture sector is the primary source of food and income, and provides up to 60 percent of all jobs on the continent. Yet agricultural emissions will become the largest source of surplus emissions by 2030, so the pressure to mitigate emissions in agriculture will increase. Also, mitigating agricultural emissions, which contribute an average of 35 percent of national emissions in developing countries, is an opportunity for many countries to meet national mitigation targets of the Paris Agreement. Thus low emission development is the emerging paradigm for mitigation in developing countries, the aim being to sustainably advance human well-being and agro-ecological productivity and sustainability in ways that also reduce agricultural GHG emissions.

To achieve adaptation and low emission development, new approaches to agriculture will be needed, including in developing countries. Mitigation measures will need to be introduced in the context of an integrative agricultural development scheme such as climate-smart agriculture. More transformational, high-impact technical and policy interventions are needed, including options that meet the needs of farmers in the developing world. The CSV work across African countries indicates that promising major mitigation opportunities in Africa include (1) intensification of livestock, (2) agroforestry, (3) increased sequestration of soil carbon, and (4) reduced food loss and waste. Assessing the economic and social feasibility of implementing these practices at scale is crucial, especially given that competitiveness with other options and need for rapid uptake will be major constraints. Therefore, incentives and support at the farm level and beyond are a must.