The Johannesburg Statement:

Scaling up Climate-Smart Agriculture Through Local Innovations

The term Climate-Smart Agriculture (CSA)[1] was coined in 2010, and over the past seven years, considerable progress has been made in scientific research, analysis and implementation of CSA interventions. The biannual conference began in 2011 with the first site at Wageningen University and Research, the Netherlands, followed by University of California Davis, United States of America and the French Agricultural Research Centre for International Development, France. The 4th Global Science Conference on CSA was hosted by the NEPAD Agency in Johannesburg, South Africa, 27-29 November, with the aim of taking stock and building on research and implementation efforts, under the overarching theme, "*catalysing local innovations and action to accelerate scaling up of CSA"*, the conference also aimed at supporting countries, farmers, businesses and other stakeholders to implement CSA, and to place science at the very core of the "implementation energy". The conference, attended by 240 delegates from 46 countries was held for the first time in Africa and focused on IMPLEMENTATION, RESULTS and IMPACT and, to support stakeholders that contribute to addressing and engaging in the key global agreements (Sustainable Development Goals - Agenda 2030; Paris Climate Agreement; and Addis Financing for Development Agreement). The Conference endeavoured to address the key science challenges to achieve these goals, i.e. the need to catalyse within defined biophysical, agro-ecological, socio-economic and political economy circumstances, locally adapted innovations – technological, policy and management innovations, and to accelerate and expand the practice of CSA. Key outcomes of the conference are summarized in the following key messages:

Fostering implementation

- CSA is **multi-sectorial** in nature necessitating that effective implementation and scaling up of CSA will need close interaction of agricultural sectors with other fields, –including policy, financing, marketing, technology (including Information and Communications Technology (ICT) and social capital.
- CSA is a **process**, which addresses context specific issues with tailored solutions, including through technological, policy and management innovations.
- **Diversity** and **availability** of seeds for local communities is important for implementing CSA in arable systems.
- CSA can combat **land degradation** and improve **land productivity** by enhancing soil health with localised solutions developed in partnership with farmers, researchers and policy makers.
- Considerable progress has been made on conceptual insights into CSA **adoption** over the past 7 years; research should now focus on issues, which affect development and implementation of innovative CSA management.

[1] Climate Smart Agriculture is defined by the FAO as "agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces/removes GHGs (mitigation) where possible, and enhances achievement of national food security and development goals

Implications for science and research

- Build on the **synergies and complementarities** between CSA and agroecology practices to create a broader coalition to advance climate action in agriculture.
- **Develop indicators** that allow measurement of CSA progress and impact, consistent with local, national and global processes and outcomes, as appropriate.
- Accord priority to **dissemination** of scientific information and practice innovations to farmers and extension services, and to establish a **feedback** loop to set in motion an accountability framework.
- Enhance the **policy relevance** of research by embedding research outcomes into existing policy frameworks that span the sectors from local farmers to micro-finance institutions to food processors and distributors.
- Support community based organizations and farmer groups to develop **sustainable business models**, **create jobs** and **improve incomes** while implementing CSA.
- Support **landscape level planning and delivery** of CSA outcomes through multiple interventions.
- Build the **business case** for investing in CSA, for CSA interventions to be accepted, farmers must see benefits from the start.
- Ensure that CSA efforts are **simple** and **duplicable**, researchers and policy-makers should occasionally be humbled by putting themselves in the shoes of a farmer

Implications for policy and practitioners

- Recognize that **trade-offs** and synergies between CSA goals may occur, therefore efforts should choose interventions, which minimize trade-offs and maximise benefits for communities.
- CSA occurs at multiple **scales**: **local**, **national**, **regional**, **global** necessitating the need to work across scales to improve governance. This includes coherence between short-term and longer term planning working across sectors and scales.
- CSA offers an opportunity to contribute to gender **equality** in agriculture, through developing gender sensitive CSA information, technologies and practices that document and promote the implementation of best practices in the field and across scales.
- Develop approaches to **de-risk finance** and make **investments to promote resilient** climate risk strategies as well as **financial models** which enable smallholder farmers with a particular emphasis on gender parity to implement CSA.
- **Monitoring and evaluation** are needed for accountability and adjustment of policies and interventions to promote CSA across scales.
- Establish pathways to scale up CSA from the beginning for any project or effort.

Way forward

The conceptual insights and relevant research agendas and outcomes on implementing CSA has made considerable advances over the past 7 years, as witnessed at the Conference keynote and parallel session presentations. In the context of the challenges faced by agriculture and food systems in next decades, more research and action on transformative CSA innovations particularly that traverse scales that are needed to help achieve global targets. More efforts are required to address barriers to CSA adoption through resolving gender inequality, eliminating financial stress of small farmers, and by promoting sharing of information and technology transfer. More efforts are also needed in areas including aquaculture, creation of jobs, improvement of incomes, and engaging the private sector. Therefore, we call upon the CSA global community as well as all relevant public and private sectors, both at national and international levels, to work towards a transformative agriculture agenda that promotes CSA innovation and implementation.