ARC • LNR
Excellence in Research and Development

2024 CONFERENCE
agriculture, land reform & rural development
Department: Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

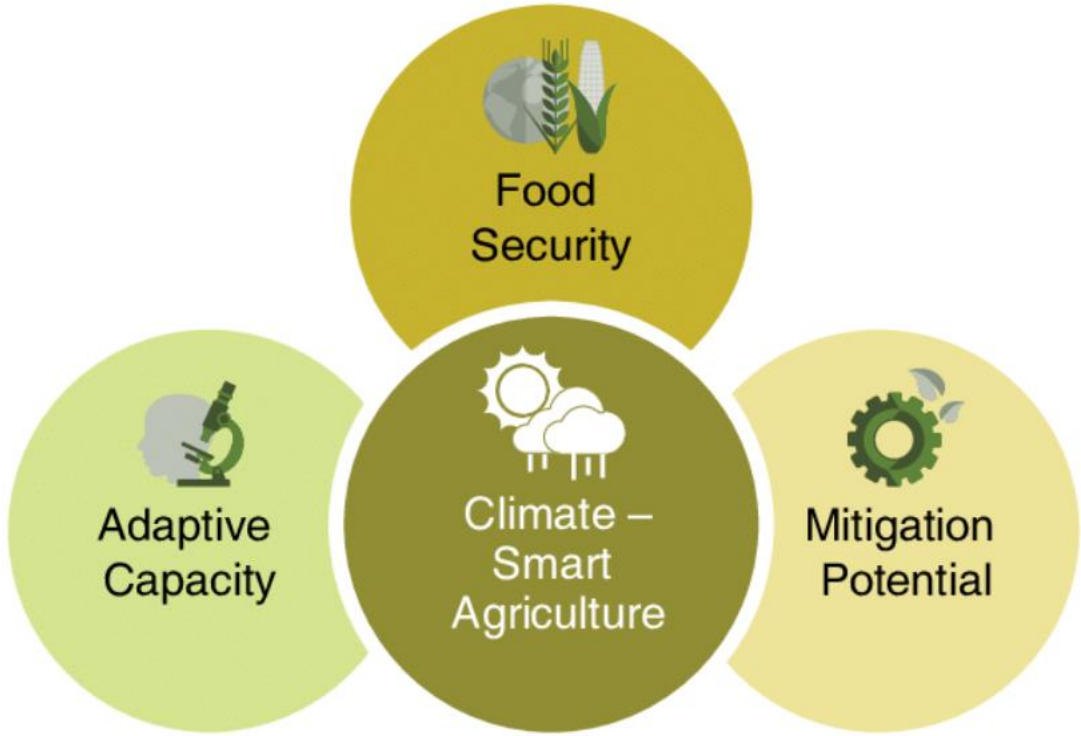
Science transforming food systems for a better future

Climate Smart Agriculture: Setting the Scene

K Chueu, S.L Venter and M.J Mamabolo

CLIMATE SMART AGRICULTURE

- Climate Smart Agriculture (CSA) provides a **Beacon of Hope** for tackling the challenges related to effects of climate change
- FAO definition of CSA: an approach that helps guide actions to **transform agri-food systems towards green and climate resilient practices**



CSA PILLARS

Jat et al, 2020

CLIMATE SMART AGRICULTURE

- Adaptability and sustainability of farming systems and food systems
- Reduction in agriculture’s greenhouse gas emissions from the atmosphere
- Increase carbon sequestration
- Deliver environmental benefits and economic stability
- Increase sustainable productivity and incomes
- Strengthen food and nutrition security,
- Strengthen farmers, livelihoods and ecosystems resilience

SNAPSHOT OF CSA IN SOUTH AFRICA

- CSA research started to gain momentum from 2014 in Africa -
- Wealth of Research by ARC, Government departments, Universities, Industry, etc
- Climate Smart Agriculture Strategic Framework (DALRRD)
- 8 National Greenhouse Gas Inventory Report published (AFOLU)
- Actionable guidelines for the implementation of climate smart agriculture in South Africa (DFFE)
- Climate-Smart Agriculture: Evidence-based case studies in South Africa (DALRRD, 2023)
- South Africa is a member of the Global Research Alliance

WHAT'S NEW IN SA'S CSA AGENDA

- **Centre of Excellence on Climate Smart Agriculture**

Purpose: To provide an integrated approach towards sustainable water utilisation and food systems resilience

✓ Facilitate research, innovation, co-learning, and knowledge-sharing among all relevant stakeholders from science-policy-practice- *multi-disciplinary*

✓ Provide training and capacity building for farmers, academics, communities, practitioners, policy-makers and other stakeholders- *Leave no-one behind*

Goal: leading to the development of effective policies and strategies to mitigate the negative effects of climate change that will lead to increased food systems resilience

Schematic framework for the development of an integrated approach towards sustainable water utilisation and food systems resilience

- Improved nutrition & food security
- Improved household income
- Improved water utilization
- Diversified, accessible & stable food basket
- Sustainability
- Healthy diets

Scaling up interventions for impact [CoP]

Overarching methodological approach

Establishment of village level demonstration centers of the integrated system

- Driving the rural economy prosperity
- Domestication & promotion of indigenous & indigenized commodities
- Crop and livestock production systems and integrated production and value chain systems
- Participatory & co –creation approach
- Collaboration (Universities, Local Municipalities, SMMEs)
- Provinces
- Resilience Community Centres

Cross cutting science block

- Water efficiency / water footprint
- Value chain focus (including agro-processing & consumer studies)
- Gender & youth inclusion
- Aim for integrated agricultural system
- Capacity development (community PDP) & multidisciplinary

Multi-disciplinary R&D

NB: Shocks assumed (climate variability & drought; food & nutrition insecurity; market forces)

Science block

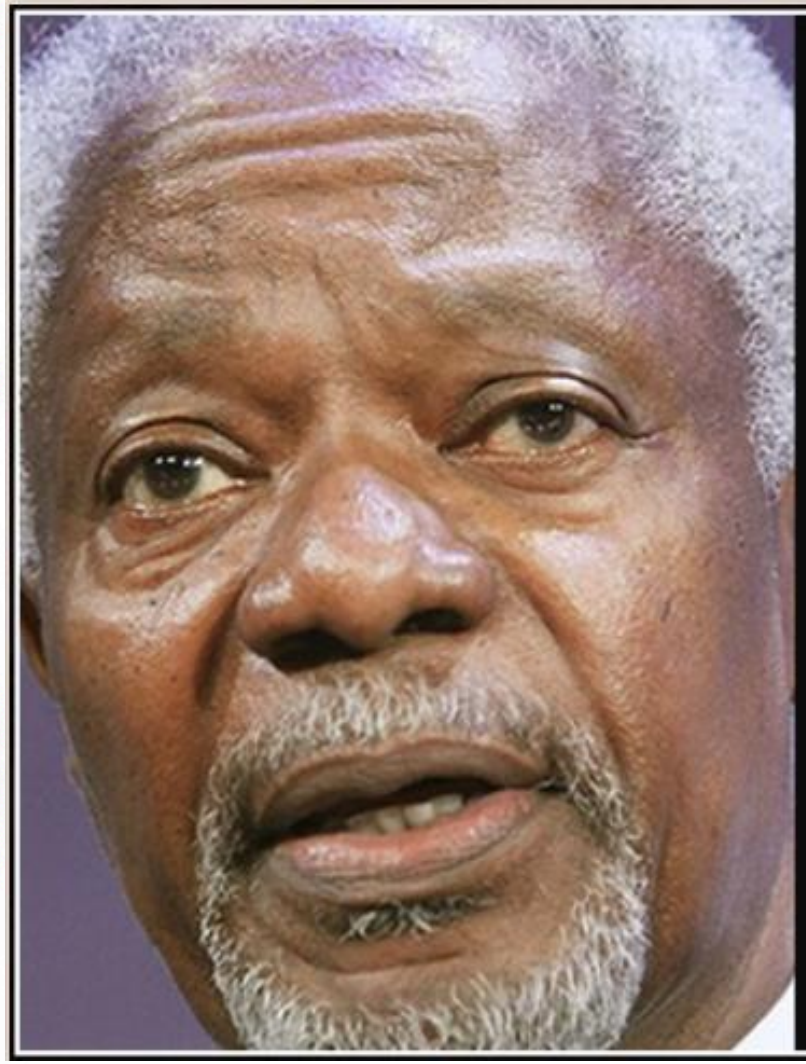
Livestock | Vegetables | Fruits

Non-food crops | Grains | Plant based proteins

The Research and Development Phase of the Programme

So what?

- Continued support to ongoing Research projects that advance the climate-smart agriculture and food systems transformation agenda – including investment in long term research, technology and infrastructure.
- Strengthen Partnership and Collaborations, including unlocking PPP funding mechanism.
- Co-creation of knowledge with the farming and industry partners
- Recognition of IKS and involvement of local communities is data collection (Citizen Science)
- Awareness and Human resource capacity development in the science-policy-practice area
    - Concentrated efforts on Knowledge and Skills Transfer to farmers



If we get agriculture right in Africa, where most of the people now are working in that sector, not only would it help boost development but we will be secure in terms of food and nutrition and then be able to move on to other areas.

— Kofi Annan —

AZ QUOTES