Overview of the South African Climate Smart Agriculture Framework

AFRICAP- South Africa National Policy Dialogue

22 February 2021

matigam@dalrrd.gov.za

Climate Change and Disaster Management

CD: Natural Resources Management

Department of Agriculture, Land Reform and Rural Development (DALRRD)

agriculture, land reform & rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

Outline

1. Introduction
2. Socio-economic and food security dimensions of climate change in the agricultural sector
3. Vulnerability Assessment to the impact of climate change
4. Sensitivity of crop suitability to the impacts of climate change
5. Why Climate Smart Agriculture
6. South Africa's CSA Strategic Framework: Overview
7. Aims and Objectives
8. Key outputs of CSA Strategic Framework
9. Monitoring and Evaluation
10. Implementation coordinating framework
11. Conclusion & Way Forward

Introduction

- SA is a signatory to the Paris Agreement(PA) to the United Nations Framework Convention on Climate Change (UNFCCC) – 2016

- Agriculture is included in SA's Nationally Determined Contributions (NDC)

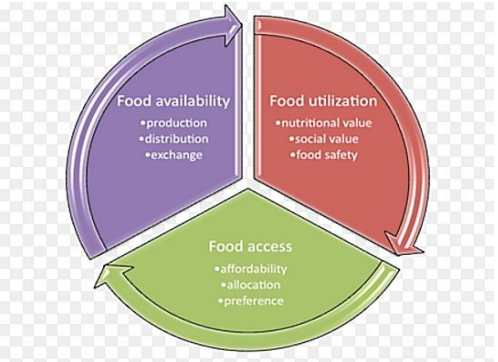
- Agriculture is a source and sink. The sector contributes about **7%** of the SA's national greenhouse gas (GHG) emissions

- The National Climate Change Response White Paper (NCCRWP), 2011 mandates sectors to develop response measures to address Climate Change
- The Agriculture sector developed climate change adaptation and mitigation plans, strategies and frameworks respond effectively to the impacts of climate change.

- Declining crop yields may be a fact and decrease of 10 to 25 percent and more, may be widespread by 2050 and rising temperatures are projected to reduce catches of main fish species by 40 percent (IPCC report. 2014).

Socio-economic and food security dimensions of climate change in the agricultural sector

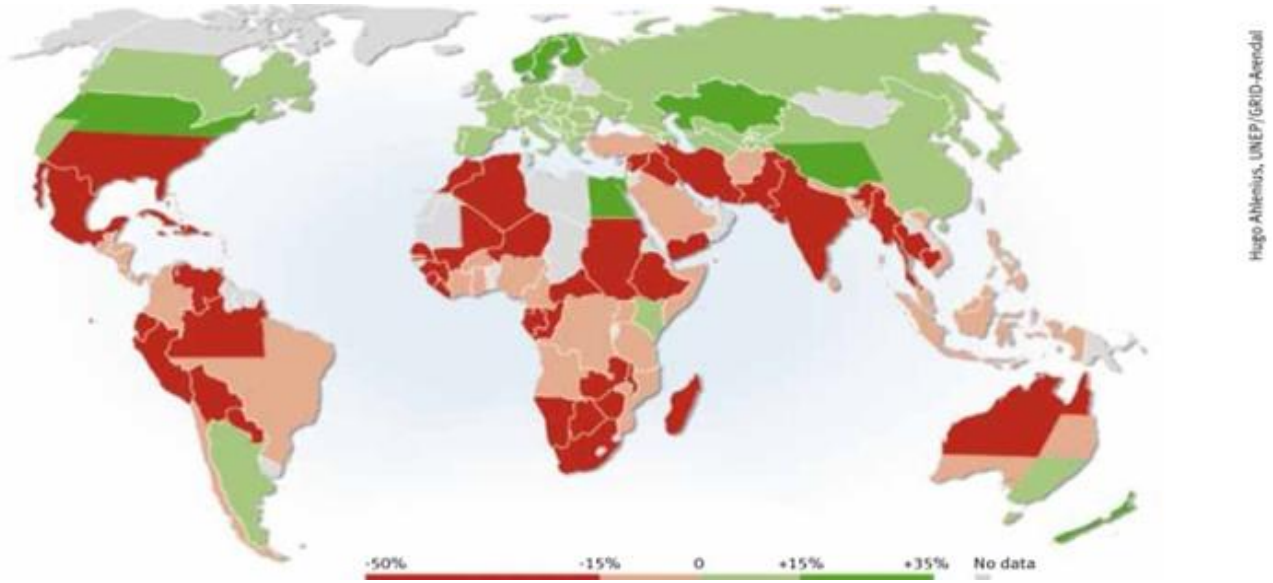
- At household level, SA is about 20% food in secured.
- In the short-term, climate change presents a high risk of compromising South Africa's food security status due to the negative impact on crop productivity (Wheeler & Braun, 2013)
- Food access and utilization is anticipated to be affected through individuals' changes in incomes (people lack purchasing power).
- Food utilization is bound to be limited as a result of less access to drinking water and damage to health.



agriculture, land reform & rural development

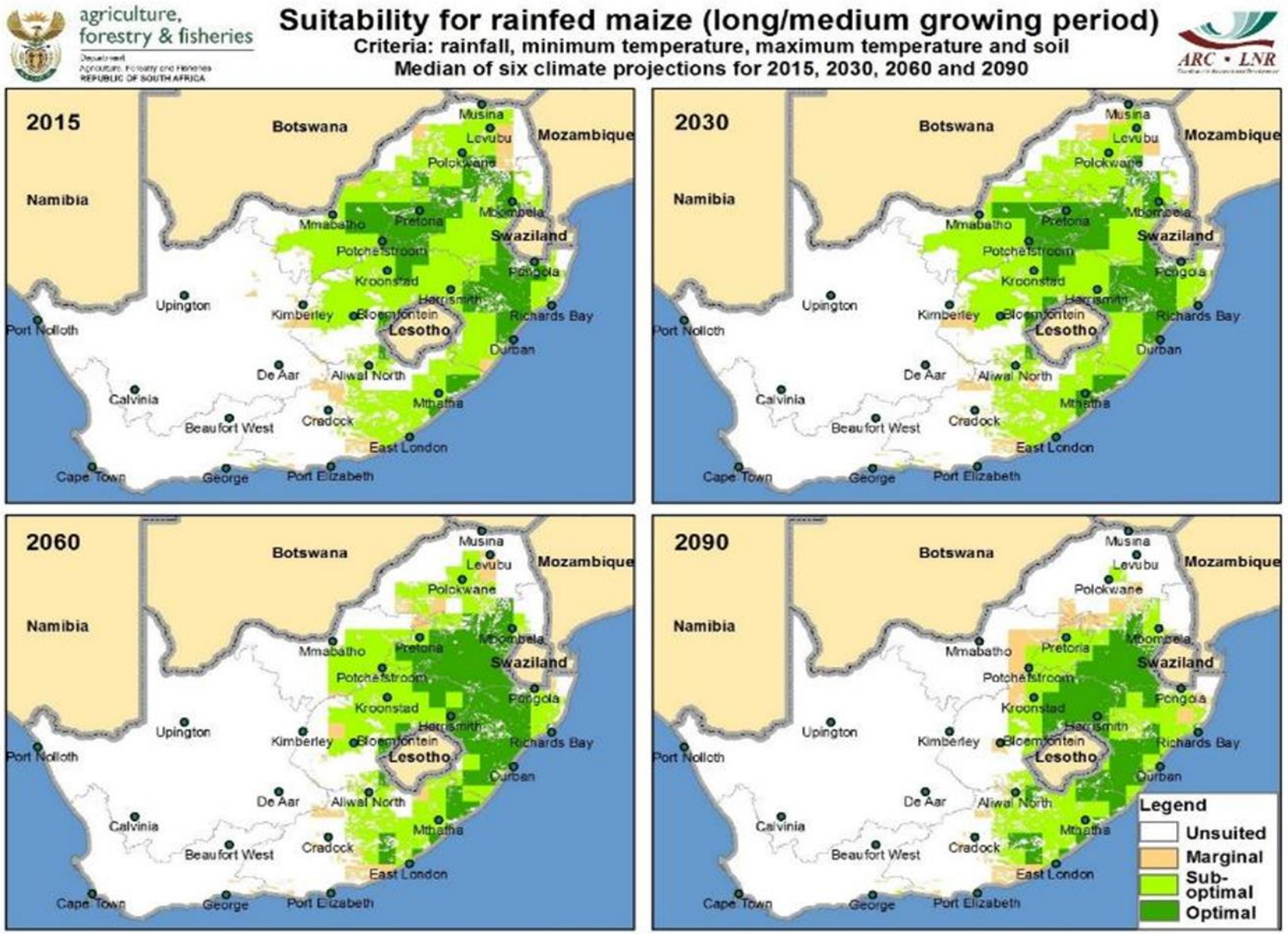
Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

Estimation of possible crop production changes by 2080



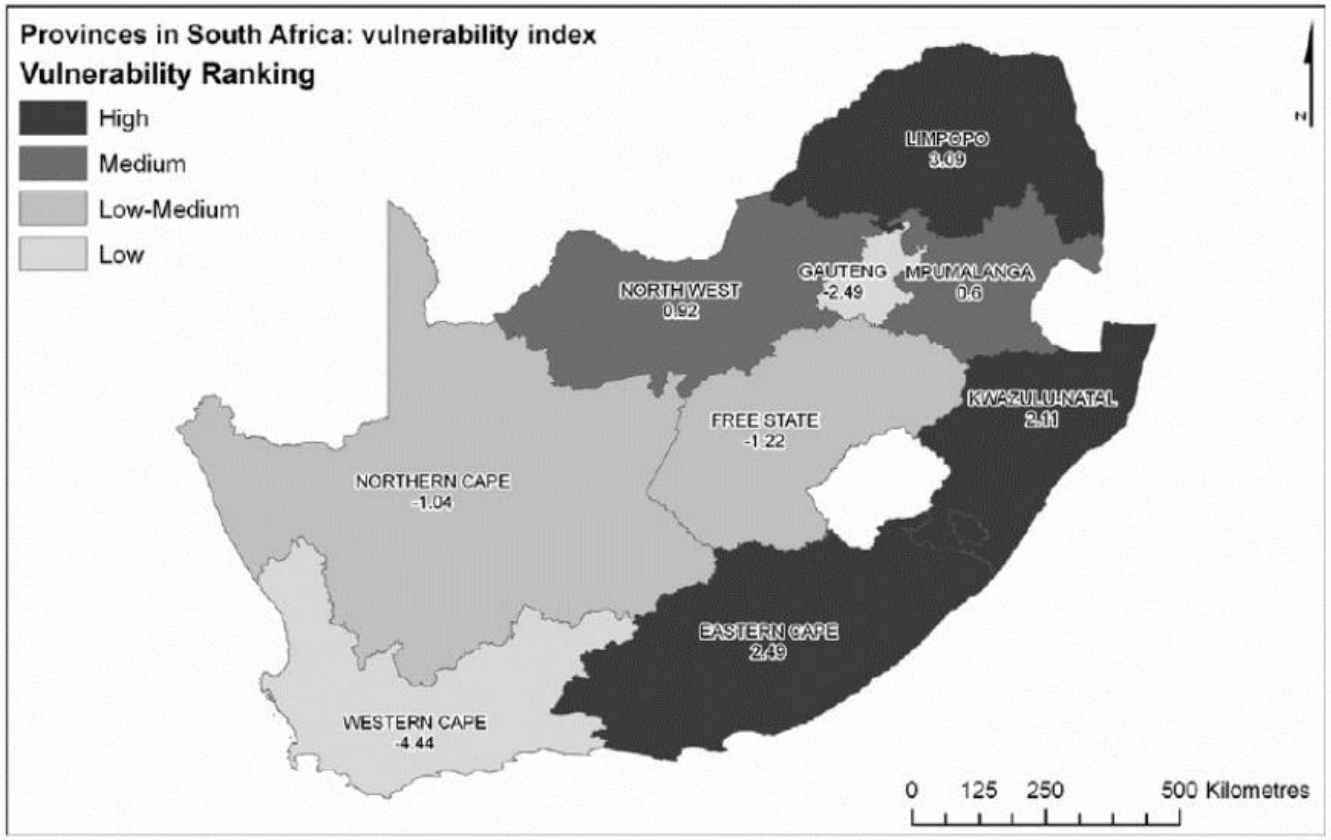
Estimation of possible crop production changes by 2080 (decrease in red, increase in green) due to climate change (from Beddington report).

Sensitivity of Crop Suitability to the Impacts of Climate Change



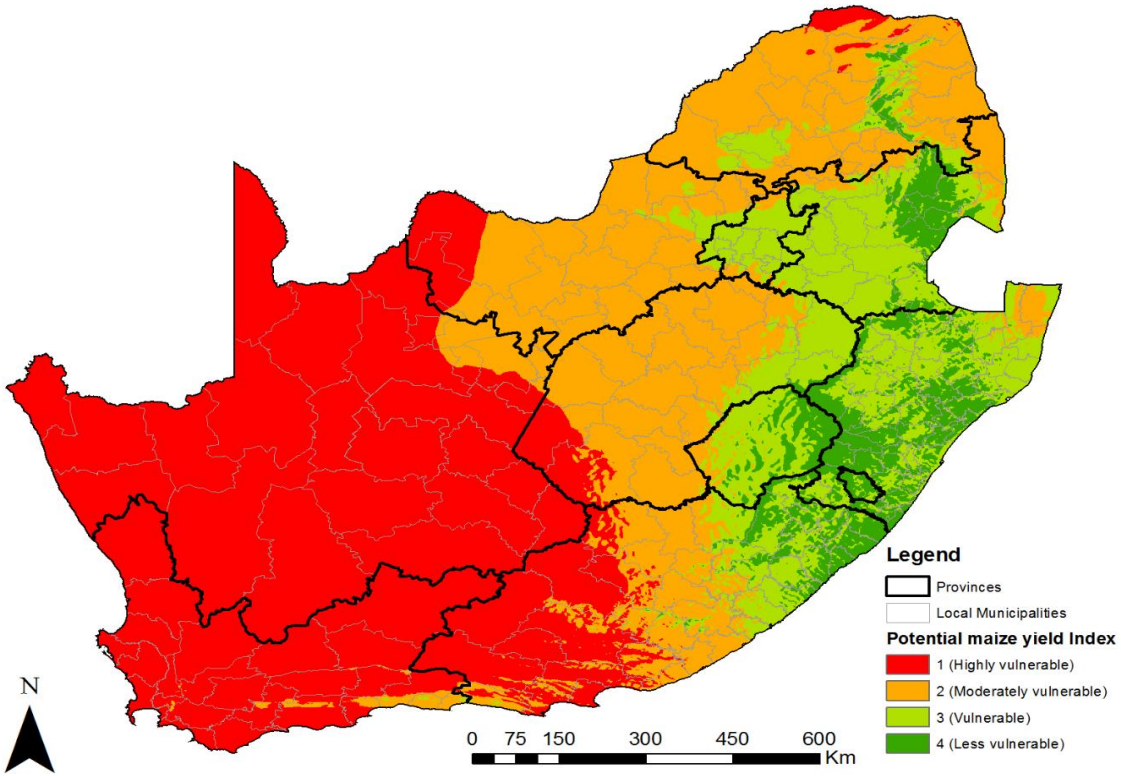
Vulnerability indices across provinces in SA

Map of vulnerability indices across South Africa's provinces. Adapted from Gbetibouo et al (2010)



Maize yield potential in South Africa's provinces

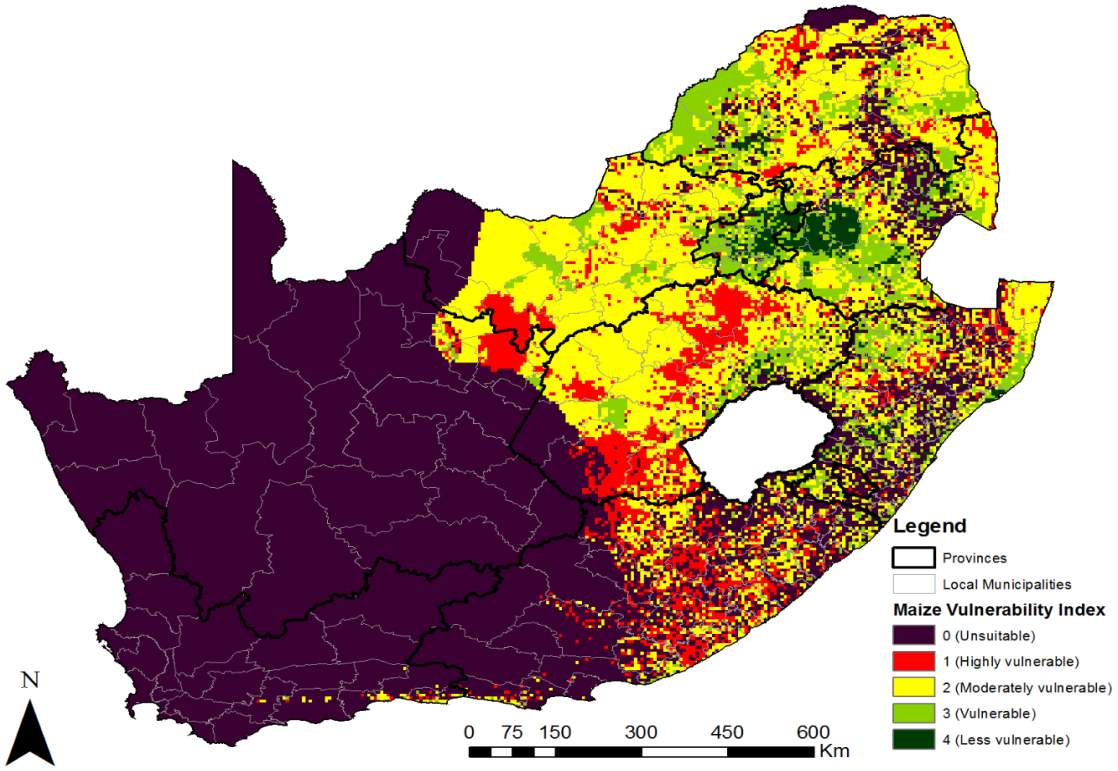
Maize yield potential in South Africa's provinces. Report prepared by Agricultural Research Council - Institute for Soil, Climate and Water and University of Limpopo - Risk and Vulnerability Assessment Centre, University of Limpopo for the Department of Agriculture, Forestry & Fisheries (2017)



Vulnerability of the maize

- The drastic decline in South Africa's maize production due to increasing vulnerability to climate change is likely to affect local people on the ground.

Preliminary maize vulnerability index map for South Africa – Report for DAFF, 2017



Why Climate Smart Agriculture

- Climate Smart Agriculture(CSA) - defined by the FAO of the UN as an approach that **"sustainably increases productivity, adaptation to climate change, reduces/removes greenhouse gasses, and enhances achievement of national food security and poverty reduction"**

CSA offers for farmers:

1. **Food security**: Enhanced food "triple win" security by sustainably increasing the reliability and productivity of agricultural livelihood activities;
2. **Adaptation**: Increased smallholder resilience and adaptation to the likely effects of climate change); and,
3. **Mitigation**: Where appropriate, and in the interest of smallholder farmers, reduced greenhouse gas emissions from agriculture and improved carbon sequestration.

- Generally, SA - well placed to rollout CSA - similar CA principles currently being implemented in the country.

- National network for CSA - critical for the successful rollout.

Aim and Objectives of CSA Framework

Aim

- To create a socially inclusive and sustainable agricultural, forestry, fisheries and natural resource management underpinned by increased productivity for national food security and nutrition

Objectives

- To guide actions for the Agriculture, Forestry and Fisheries sector, all levels of government, investors and development partners on mainstreaming CSA into agriculture, forestry and fisheries plans, programmes and projects.

- Contribute to increasing productivity and growth of agricultural, forestry and fisheries related value chains with nutrition and gender considerations.

Aim and Objectives continue……..

- Enhance resilience to climatic and weather shocks on the social, environmental, and economic aspects of agriculture, forestry and fisheries production and food systems.

- Contribute to low carbon development through efficient use of agricultural, agribusiness, forestry and fisheries resources to reduce national emission intensity in the DAFF production and food systems.

- Strengthen governance and institutional coordination for effective implementation of the Climate Smart Agriculture Framework Programme at the national, provincial and local levels.

KEY OUTPUTS OF THE CSA STRATEGIC FRAMEWORK

Key outputs

Output 1:

An enabling and coordinated policy environment

Output 2: A strong climate smart AFF sectors anchored by coordinated, capacitated institutions and partnerships

Output 3: Increased investment in research and an expanded CSA Knowledge Base

Outcome 4: A resource efficient and resilient value - chain based on technology innovation

KEY OUTPUTS OF CSA STRATEGIC FRAMEWORK

Key outputs conti……

Output 5: A CSA Communication and Awareness Building Strategy that enhances the understanding of CSA, builds consensus on issues, and stimulates stakeholder action

Output 6: A diverse funding base to build a climate resilient investment programme

Output 7: An incentivised and driven CSA system characterised by strong stakeholder commitment

An enabling and coordinated policy environment

- **Main Goal**: Mainstream CSA policies and integrate into development programmes

- Programmes – to reflect the complex reality of smallholder farming
- Dept's approach to CSA programme development – be holistic, aim at addressing vulnerability to climate change

Key policy directions:

- **Reducing vulnerability of the agric sector systems –** identify & address major underlying causes;

- **Reducing and managing risks related to climate variability & change – promote the implementation of specific adaptation options** e.g.
- Promoting pest, disease, and weed management practises,
- Revising codes and standards for infrastructure and facilities (e.g. fishing vessels);
- Introducing new crops, etc

An enabling and coordinated policy environment

- **Reducing and managing risks related to climate variability & change – promote the implementation of specific adaptation options** e.g. promoting pest, disease, and weed management practises, revising codes and standards for infrastructure and facilities, introducing new crops, alleviate major losses, drought relief, etc;

- **Enhancing adaptive capacity**: Introduce new, flexible technologies, management strategies, insurance schemes, incentives

- **Exploring sector-specific opportunities and feasibility of pursuing them:** agro-ecological regions – expanding agric and suitable crops, etc

- **Promoting research, communication, institutional development and extension**: assist in changing management practices e.g. using climate projections.

- **Promulgate and implement farmer-centred policies**

- **Involve stakeholders in policy processes**

A strong climate smart AFF sectors anchored by coordinated, capacitated institutions and partnerships

- **Build and leverage partnerships** – effective CSA mainstreaming entry points and drivers
- **Establish and strengthen platform for private sector and CSO management engagement with govt at all levels**
- **Build capacity of CSA institutions and Partners –** initiatives to develop policies, systems and tools to support capacity development within stakeholder organisations.

Increased investment in research and an expanded CSA Knowledge Base

- **Create and establish a unified and strategic approach and mechanism to CSA research –** to support implementation of high quality CSA policies, strategies, programmes and projects

- **Encourage and enable private as well as public sector R&D efforts – focus on short-term and long-term innovative technologies**

- **Support efforts and programmes – increased funding, increase public expenditure into CSA research**

Through research, development and management interventions:

- Methods or innovative ways must be developed or put in place to mitigate the effects of climate change on livestock production
- Reduce the greenhouse gas production from livestock
- Water management issues

Increased investment in research and an expanded CSA Knowledge Base

Spearhead the identification of CSA research Priority Programme:

- **Site-specific nutrient management and balanced nutrient application (soil fertility and regeneration)** e.g. need for site-specific performance of CA that will assist in climate change
- **Water harvesting and use management**:

• Technologies for efficient and cost-effective rainwater harvesting and storage

- **Soil and water conservation**: highly-efficient micro-irrigation systems, adoption of irrigation technologies on smallholder fields, etc
- **Support research into indigenous systems**: understanding indigenes perceptions on climate change,
- **Enhance capacity of the Extension and Advisory services** – to understand, communicate and implement CSA

A resource efficient and resilient value - chain based on technology innovation

- **Support initiatives that fast track and consolidate CSA initiatives** –
- utilisation of renewable energy sources such as wind and wave power in coastal areas; develop,
- Incentivise and switch to more fuel-efficient capture methods (Low Impact and Fuel Efficient)
- **Support initiatives that increase productivity through the adoption of improved adaptive technologies**
- Introduce diversified and improved crop varieties (high yielding, short duration, disease and pest resistant and nutrient fortified)
- **Increase productivity of livestock enterprises through adoption of improved adaptive practices** – e.g. improved livestock locally adaptive breeds, promote adoption of low emission technologies, encourage the use of medicine that draws from local indigenous knowledge
- **Support efforts and encourage initiatives that increase area under efficient renewable energy powered irrigation** –
- Increase use of renewable energy in irrigation systems, build capacity, participatory methods of dealing with farmers and market extension.

A resource efficient and resilient value - chain based on technology innovation

- **Support efforts and encourage initiatives that increase area under efficient renewable energy powered irrigation** –

- Increase use of renewable energy in irrigation systems, build capacity, participatory methods of dealing with farmers and market extension.

- **Encourage smallholder farmers to adopt climate soil management technologies**

- Incentives for renewable energy/ energy efficiency, promote products that rely on agric practices to reduce sector emissions.

- **Encourage and support the design and up-scaling of existing CSA women and youth focused programmes and projects along the whole sector value chain:**

- Campaign to draw women and youth into CSA-based practices, advocacy campaign projects,

A resource efficient and resilient value - chain based on technology innovation

- **Support programmes that rehabilitate degraded land and coordinate actions with flagship programmes such as Land Care Programme:**

- Sustained awareness prorammes on CSA addressing soil health and land degradtion challenges

- **Strengthening and up-scaling collaboration with existing relevant flagship interdepartmental programmes (DEFF/DALRRD) to integrate CSA practices in conservation and rehabilitation of water catchment areas and continue towards increasing tree cover**:

- Promoting bee-keeping and other non-wood forestry products as forest conservation measure,
- Dévelop business model – ecosystems management – payment ecosystem services, intrgated rangelands mangement, natural resources accounting for ecosystems, agro-forsetry

A resource efficient and resilient value - chain based on technology innovation

- **The latest innovations and strategies on how to adopt more productive, sustainable and resilient agricultural practices**

These may includes:

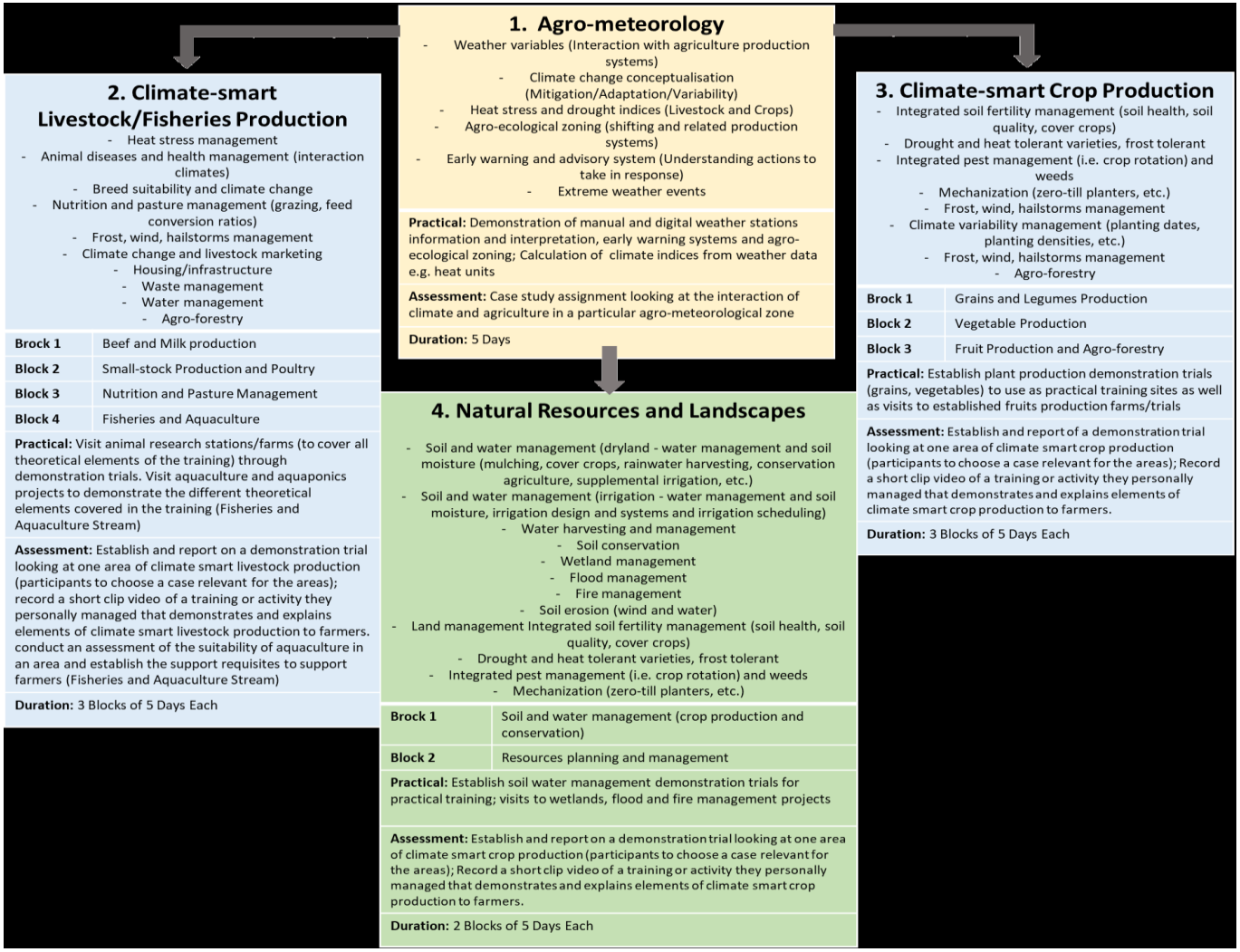
CSA approches: e.g. Conservation Agriculture (CA): Conservation agriculture (CA) is a management system designed to increase soil organic matter (SOM) and therefore optimize farming systems – **improving soil conditions**

- ❑ Soil Organic Carbon (SOC) - Increasing SOC is a key management strategy from farm to national level
- CA improves soil health because it improves soil microbiological activities;
- Improves soil organic carbon as compared to conventional tillage;
- Improves soil fertility due to increased soil organic matter

- ❑ Diversification – crop & livestock e.g. Climate smart livestock production - global warming.

A CSA Communication and Awareness Building Strategy that enhances the understanding of CSA, builds consensus on issues, and stimulates stakeholder action

CSA Training for EP Project (DAFF, DEA, GIZ, ARC)



A CSA Advocacy and Communication Strategy that enhances the understanding of CSA, builds consensus on issues and stimulates stakeholders action

- **CSA mainstreaming** – purposefully changing the way policy-makers, organisations, producers, farming communities view their natural resources assets
- Develop and roll-out a CSA mainstreaming communication strategy – use a variety of awareness approaches e.g.

- Demonstration (pilot) projects;
- Exchange visits;
- Policy briefs;
- Market creation and integration;
- Utilisation of indigenous knowledge;
- Tailored awareness materials, and
- Foras such as conferences.

1) A diverse funding base to build a climate resilient investment programme

2) An incentivised and driven CSA system characterised by strong stakeholder commitment

1)

- ❑ Define funding mechanism
- ❑ Identify approaches of getting broad, sustained support and strong ownership from key stakeholders
- ❑ Strategic use and combination of existing funding sources

2)

- ❑ Support and work for the introduction of policies that formulate financial incentives at the level of the individual farmer
- ❑ Incentives to promote the adoption of CSA:
- Incentives for renewable energy
- Enhanced private investment into climate proofing initiatives
- Taxes and tariffs
- Direct access to loans or other financial products to encourage adoption of CSA practices
- Encourage risks sharing mechanism

IMPLEMENTATION COORDINATING FRAMEWORK

National Steering Committee - CSA

policy guidance and inter/intra-sectoral coordination

Provincial CSA Steering Committees and Coordination Units - to coordinate and implement the CSA programmes at provincial and local level.

The CSA Provincial and CSA District Coordination Units - the implementing CSA activities at the Provincial and District levels (local government)

CSA Technical Working Group -to provide scientific advise to the National Steering Committee

agriculture, land reform & rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

Monitoring & Evaluation

- **Monitoring & Evaluation** – Key driver of CSA mainstreaming
- **M&E Systems** –

- Be results oriented and suitable for internal and external reporting on progress made in CSA integration
- Involve stakeholders in the development of the **M&E System** - with a view to agreeing on a reporting system to be applied by all stakeholders
- Monitoring & Evaluation approach for CSA mainstreaming – agree on quantification or qualification of indicators (**quantitative or qualitative or a mixture of both**)
- Monitoring & Evaluation framework for CSA mainstreaming – establish baseline and target indicators for sustainable CSA mainstreaming.

Conclusion & Way forward

- In general, the CSA Framework emphasis the goal of promoting effective adaptive responses and increasing adaptive capacity to reduce vulnerability and increase overall resilience of agricultural and food systems to the impacts of climate change.
- Tackle climate change by adopting climate-smart practices and approaches that promote sustainable agriculture and assist country to achieve sustainable development and ensure food security.
- CSA mainstreaming is critical to change behaviours and perceptions, and should integrate indigenous knowledge systems and encourage best climate smart practices

Way forward

- The Department will continue to conduct capacity building and awareness on the impacts of climate change
- Implementation of climate change adaptation and mitigation sector plans, strategies, frameworks and programmes
- Increased investment in land rehabilitation and veld management programmes for improved productivity of land and water storage capacity (Natural Resource Management)

THANK YOU !!!!!!!

RE YA LEBOHA