

SMART Agri



The SmartAgri Journey

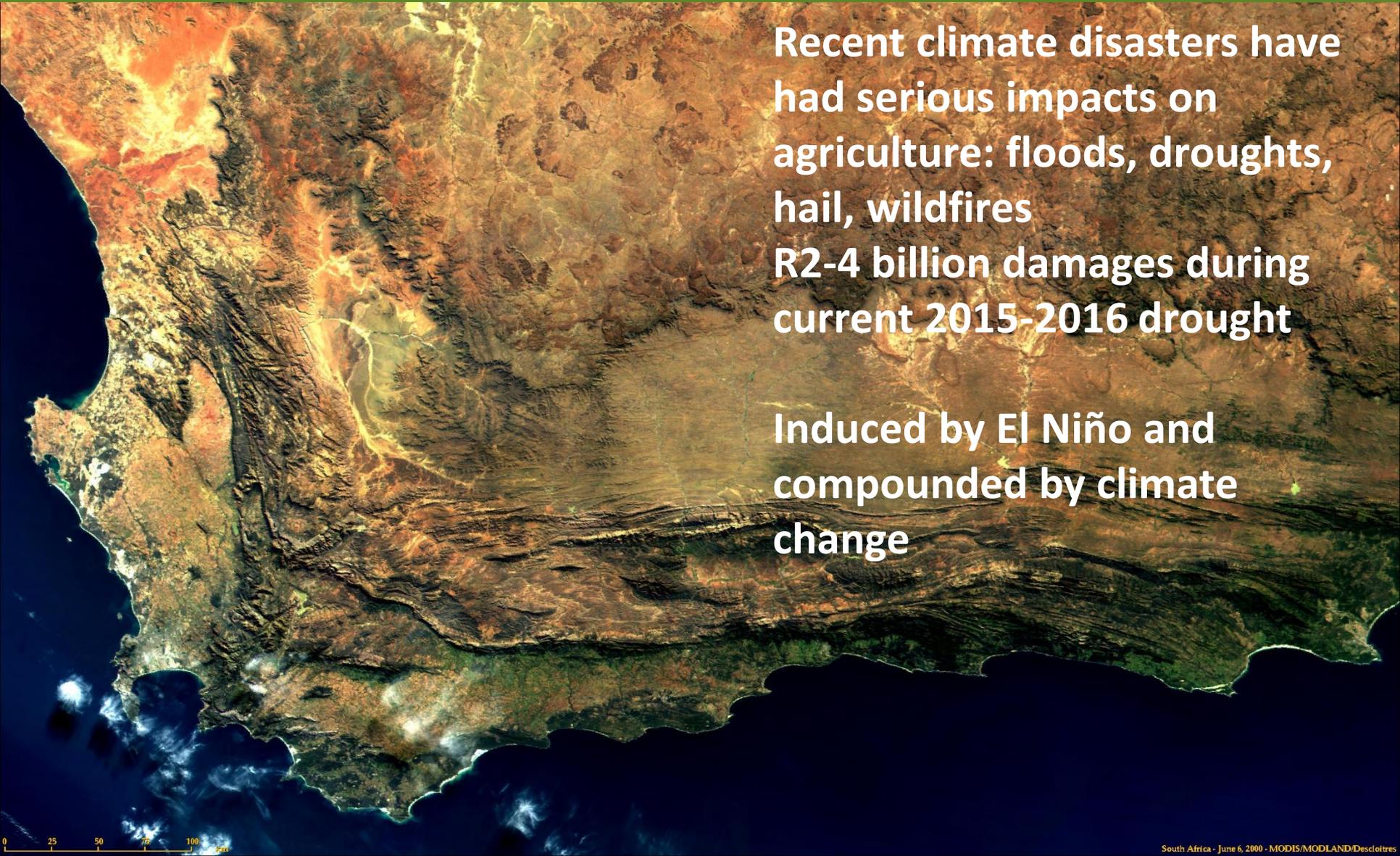
*Launch of the SmartAgri Plan
Cape Town, 17 May 2016*

Western Cape: future for farming?

Recent climate disasters have had serious impacts on agriculture: floods, droughts, hail, wildfires

R2-4 billion damages during current 2015-2016 drought

Induced by El Niño and compounded by climate change



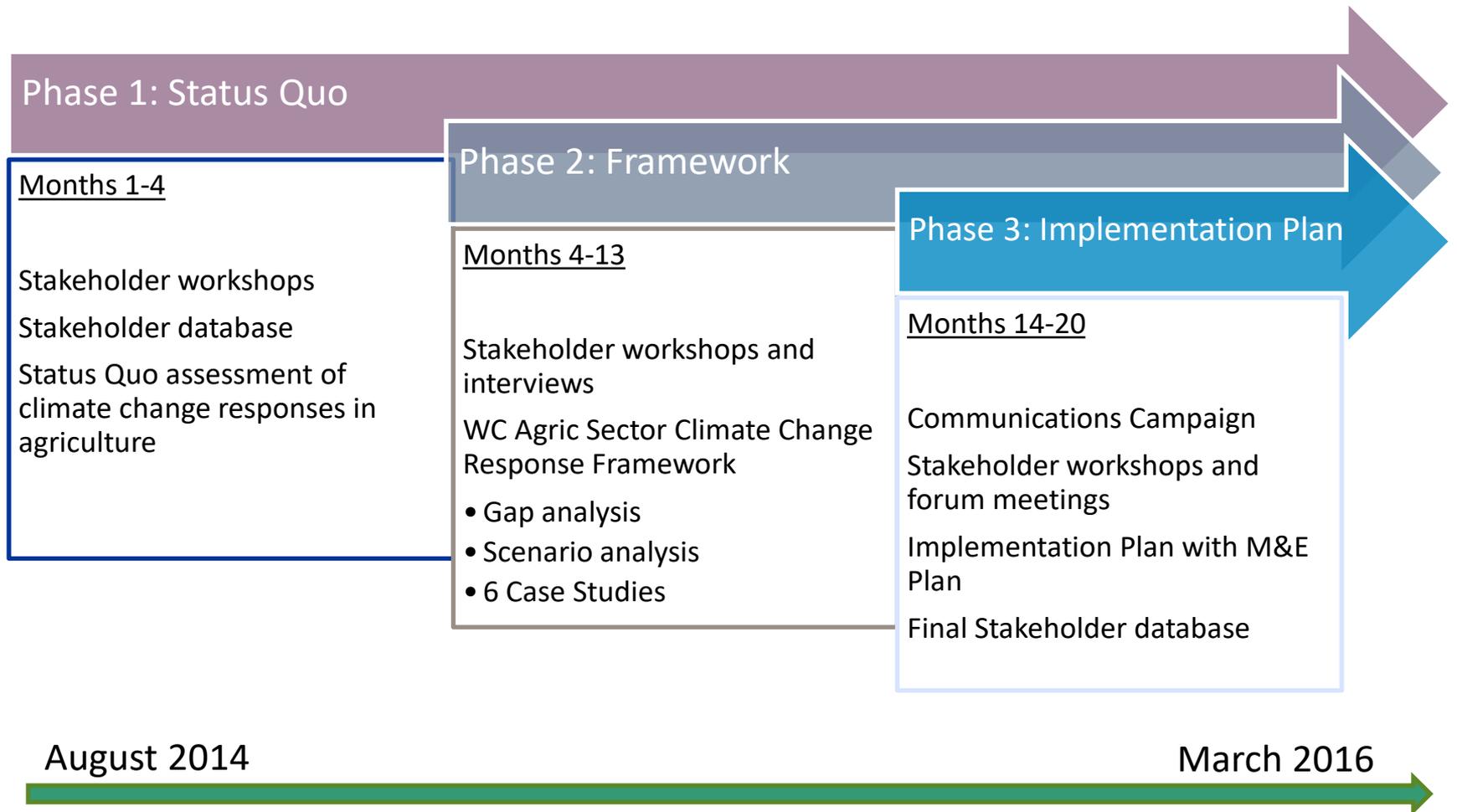
Why SmartAgri?

- Considerable potential of the agricultural sector to drive economic growth, job creation and social development in rural areas
- The agricultural sector is particularly vulnerable to a changing climate as projected for the Western Cape province
- Urgent action needed in guiding and supporting the sector to adapt to the unavoidable impacts of climate change, and reduce its greenhouse gas (GHG) emissions
- A strategic and inclusive approach is required to build long-term resilience to climate change through “climate smart agriculture”, and for placing the sector on a clear path towards the Green Economy
- The SmartAgri Plan builds on the Western Cape Climate Change Response Strategy (WCCCRS 2014) and its Implementation Framework, specifically the focus area of “Food Security” – first sectoral response framework and plan

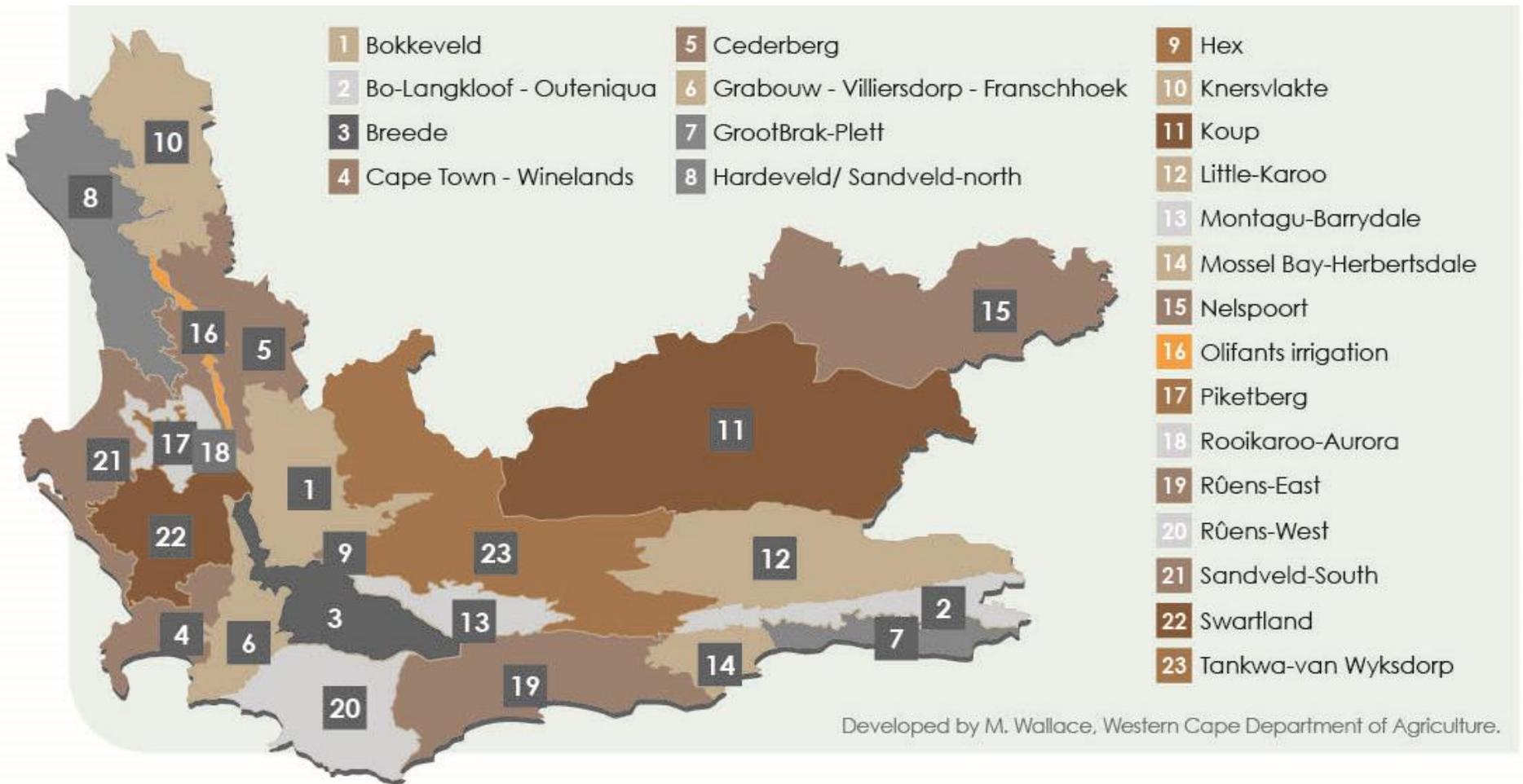
The SmartAgri project

- SmartAgri – a “better together” initiative between DoA and DEADP
- **Goal: Development of the Western Cape Agricultural Sector Climate Change Framework and Implementation Plan**
- Consortium led by ACIDI (UCT)
- 20 Months – delivered 31 March 2016
- Implementation: starting May 2016

Three-phased work plan



SmartAgri agro-climatic zones



Stakeholder engagement



Phase 2: Workshops & Focus Groups



VISION

Leading the Way to a Climate Resilient Agricultural Future
for the Western Cape

GOAL

To Equip Agriculture to Respond to Climate Change Risks and
Opportunities Through Innovation, Leadership and United Strategic Action

STRATEGIC FOCUS AREAS

1

Promote a climate-resilient low-carbon production system that is productive, competitive, equitable and ecologically sustainable across the value chain

2

Strengthen effective climate disaster risk reduction and management for agriculture

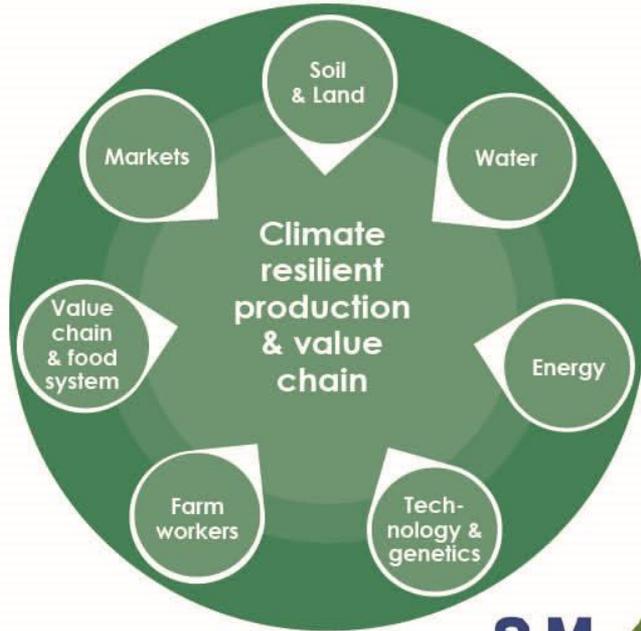
3

Strengthen monitoring and data and knowledge management and sharing, and lead strategic research regarding climate change and agriculture

4

Ensure good co-operative governance and joint planning for effective climate change response implementation for agriculture

SFA 1



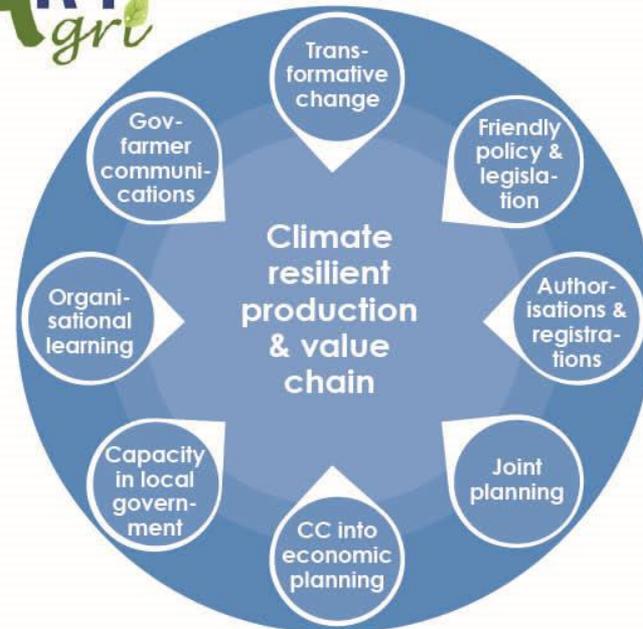
SFA 2



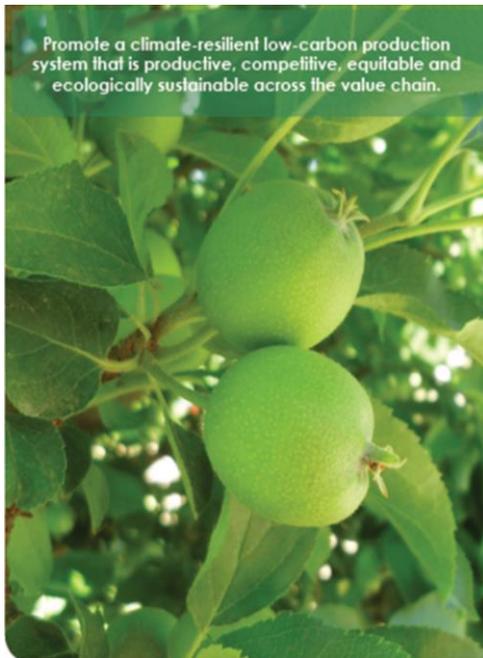
SFA 3



SFA 4



Phase 3: The SmartAgri Plan



Promote a climate-resilient low-carbon production system that is productive, competitive, equitable and ecologically sustainable across the value chain.



Strengthen effective climate disaster risk reduction and management for agriculture



Strengthen monitoring and data and knowledge management and sharing, and lead strategic research regarding climate change and agriculture



Ensure good co-operative governance and joint planning for effective climate change response implementation for agriculture

OBJECTIVE 1.1: Promote climate smart soil and land use management practices
OUTCOME: Soil and land use are managed in accordance with agro-ecological principles that take climate change into account
OUTCOME INDICATOR: Continued long-term productivity of soils and agricultural landscapes

1.1.1 Increase Conservation Agriculture (CA) adoption rate across all commodities and farming systems

Key enablers: Policy environment, Financial incentives, Priority research, Partnerships

Proposed Activities	Time-frame*	Lead & support institution	Link-ages
Develop partnerships between WCG-Agriculture and commodity organisations to drive the further adoption of CA, conduct long-term research and training on CA, and promote financial incentives for uptake of CA	S	Lead: WCG-Agriculture Support: commodity organisations, farmer organisations, CSAG, research institutions, training institutions, WCG-EADP, DEA, DAFI, National Treasury, organised agriculture, banks, insurance companies, WWF-SA, input suppliers, NGOs	1.1.2 1.2 2.5 3.1 3.3 3.4 4.4.3

1.1.2 Scale up promotion of best practice soil fertility management in cultivated lands

Key enablers: Good working relationships between LandCare and farmers skills capacity in LandCare

Activities	Time-frame	Lead & support institution	Link-ages
Support (and uses) with technical advice where water runoff control management plans and/or subsurface drainage plans are needed	S-M	Lead: WCG-Agriculture Support: commodity organisations, farmer organisations	1.1.1 1.2 2.5 3.1
Promote strip cultivation to prevent wind erosion of cultivated fields and orchard crops	S-M	Lead: WCG-Agriculture Support: commodity organisations, farmer organisations, Sustainable Resource Management Committees	

OBJECTIVE 2.1: Integrate climate change into joint disaster planning & strengthen disaster relief mechanisms
OUTCOME: Joint disaster planning and relief mechanisms are strengthened to reduce climate change impacts on agriculture
OUTCOME INDICATOR: Strengthened processes and mechanisms reduce damages suffered from climate disasters and provide support for recovery

2.1.1 Incorporate climate change risks into disaster planning and optimise internal and external co-operation

Key enablers: Sufficient resourcing; champion within WCG-Agriculture

Proposed Activities	Time-frame	Lead & support Institution	Link-ages
Integrate climate change into agricultural disaster management plans (e.g. Drought Plan, Flood Plan), in consultation with organised agriculture and commodity organisations	S-L	Lead: WCG-Agriculture Support: organised agriculture, commodity organisations, DAFI, DWS	4.4.3
Optimise resources and coordination by including other sub-programmes such as LandCare in all aspects of joint planning	S	Lead: WCG-Agriculture Support: DAFI	1.1.2 1.1.3
Strengthen disaster risk reduction through multi-stakeholder and inter-governmental dialogue on roles and responsibilities. Make specific reference to increased flood and fire risk caused by alien invasion and poor riparian management of the farming-livestock interface, through the joint development of River Maintenance Management Plans (RMMPs)	S-M	Lead: WCG-Agriculture Support: WCG-DIMC, DWS, DAFI, DEA, CapeNature, SANParks, WCG-EADP, organised agriculture, commodity organisations	1.1.2 1.1.3 1.2.5 4.4.3
Investigate self-organising collective action initiatives within farming communities which have made positive contributions to DRRM, in order to identify appropriate locally suited implementation models that can be promoted in high-risk or low-resource rural areas	S	Lead: WCG-Agriculture, research institutions Support: WCG-DIMC, organised agriculture, farmer organisations, WWF-SA	4.4.3

OBJECTIVE 3.1: Conduct long-term monitoring of parameters relevant to agriculture and climate change
OUTCOME: Long-term data on trends in climate change impacts and responses in agriculture are captured and managed
OUTCOME INDICATOR: Data exist and are used to track trends

3.1.1 Design and Implement a Monitoring Programme drawing on existing databases and filling key data and analytical needs

Key enablers: Financial, human and IT resourcing

Proposed Activities	Time-frame	Lead & support Institution	Link-ages
Identify relevant existing databases (e.g. agri statistics, modelling, disasters, LandCare and veterinary data) within WCG-Agriculture and WCG-EADP, and render these suitable for climate change impacts and response monitoring for SmartAgri Plan	S	Lead: WCG-Agriculture, WCG-EADP	1.1.1 2.1 2.4.1 3.4.4 1.2.3
Identify key data gaps for M&E indicators	S	Lead: WCG-Agriculture, WCG-EADP	1.1.2 1.1.3
Develop and implement an M&E and documentation model for collaborative LandCare (Western Cape) projects in order to capture long-term outcomes, impacts and costs and benefits, and the building of climate change resilience, which can be replicated to other landscape-level initiatives	S	Lead: WCG-Agriculture Support: CapeNature, SANBI, DAFI, research institutions	
Initiate a dialogue with SARON, DST, DEA, DWS, SANBI, ARC, CSIR, WWF-SA, CapeNature and commodity organisations on collaborative opportunities for long term monitoring and data collection and management for M&E to fill identified gaps	S	Lead: WCG-Agriculture, WCG-EADP Support: SARON, DST, DEA, DWS, SANBI, ARC, CSIR, WWF-SA, CapeNature, commodity organisations, CCC project	

OBJECTIVE 4.1: Enable senior leadership to envision a transformed climate-resilient future agrarian system in the long-term
OUTCOME: Senior leadership has a clear vision of a future climate-resilient agrarian system for the Western Cape
OUTCOME INDICATOR: WCG-Agriculture reports and communications reflect a vision of a future transformed and climate-resilient agrarian system (e.g. website, documents, presentations, staffing)

4.1.1 Lead an open scenario-based discourse on agriculture's role in long-term sustainable and climate-resilient economic development, which may require transformative social and resource-use approaches and to more radical departure from "business-as-usual"

Key enablers: High level champion in government

Proposed Activities	Time-frame	Lead & support institution	Link-ages
Start a Mont Fleur -type round table to begin the visioning for a climate-resilient future agrarian system leading to long-term sustainable socio-economic development and transformation, and resolving of difficult decisions and policy trade-offs	S	Lead: WCG-Agriculture, WCG-Office of the Premier Support: WCG-EADP, WCG-EADP, Provincial Treasury, BAP, organised agriculture, commodity organisations, senior leaders in private sector, DOL, Labour unions, DWS, DRDLR, NGOs such as WWF-SA and others	1.1.1 2.1 2.4.1 3.4.4 1.2.3
Revise existing climate-agriculture system-wide scenario planning started by the SmartAgri project, on a regular basis	S-L	Lead: WCG-Agriculture, WCG-Office of the Premier, WCG-EADP Support: CSAG, CSIR	

4.1.2 Develop the scientific and socio-economic case for more radical transformation needed to ensure a long-term resilient future for agriculture

Key outcomes

- The SmartAgri Plan presents the **“road map”** for the agricultural sector of the WC to travel towards a more productive and sustainable future, **despite the uncertainties** around specific climate projections.
- Agriculture needs new technologies, investment opportunities and jobs in the **green economy**, all of which are requirements for the building of climate resilience.
- The Province needs a **resilient and diversified food system** capable of tackling the issue of food and nutritional insecurity in spite of climatic changes.

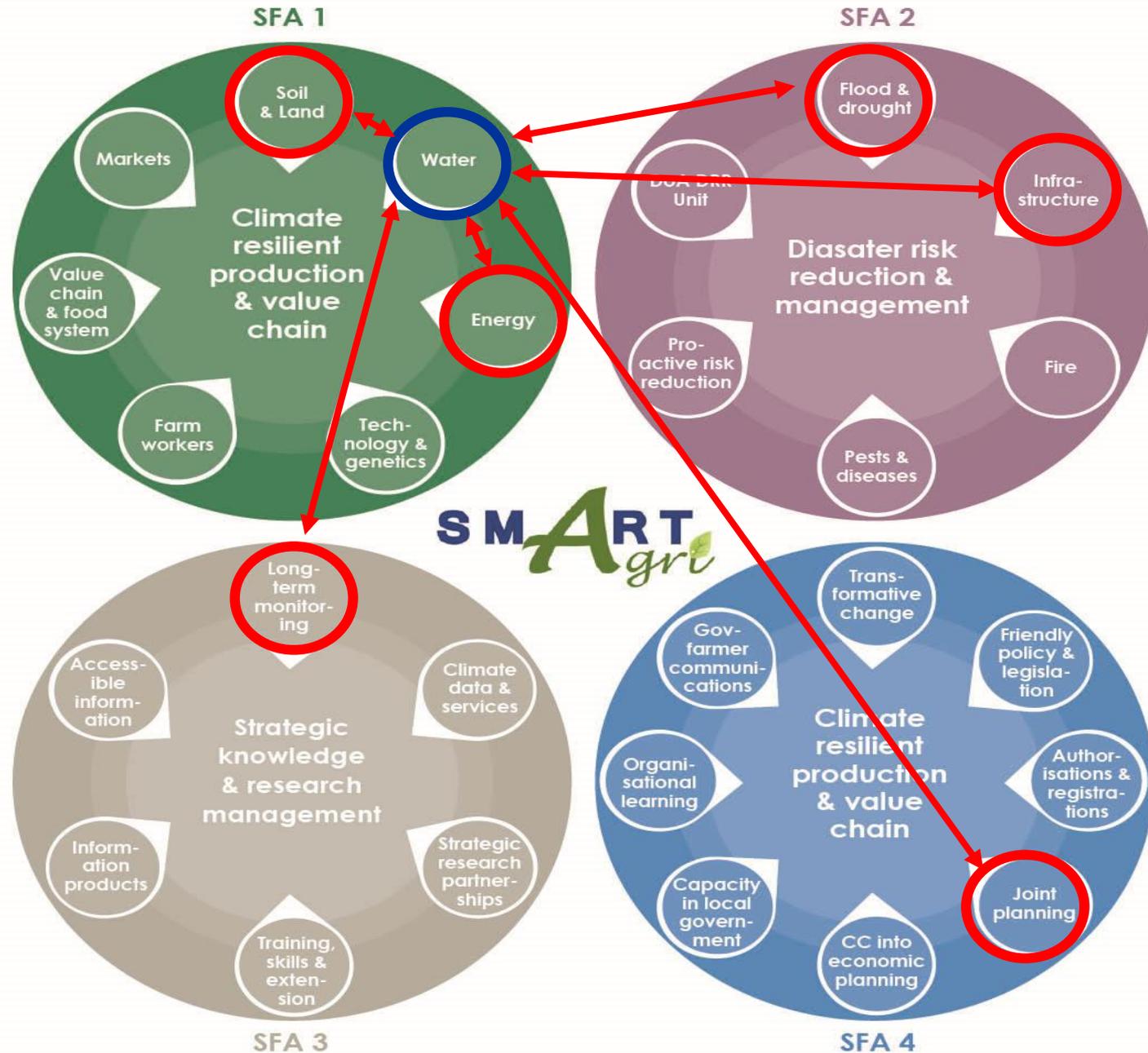


Key outcomes

- Some **difficult policy trade-off decisions** may be required in future, e.g. around the allocation of scarce resources between human settlements, industry, agriculture and ecosystems. Climate change will influence these decision-making processes profoundly.
- An integrated systems view that brings to the fore the **inter-dependencies between food, energy, water, land and biodiversity** is essential in this situation to optimise trade-offs.



Cross-linkages across Strategic Focus Areas



Key outcomes

- The SmartAgri Plan **builds on a foundation** of existing best practices, programmes and projects which contribute to building resilience in the sector. These require further support in the form of greater resource allocation or more efficient use of resources so that they can be scaled up and out across the province.
- ***Ideally, climate change responses should in the longer term not be labelled as climate change projects, but should take the form of mainstreaming into all development, social and economic planning and implementation processes.***



Key outcomes

- Nevertheless, specific **new initiatives** must also be urgently developed and resourced.
- Whether scaling up or innovating, effective implementation will depend on the development of models of **partnership**, with joint planning and multiple sources of investment playing an important role.
- The SmartAgri Plan challenges the public and private sectors, farmers and agri-businesses, civil society and partners to show individual and joint **leadership** – “**Leading the way to a climate resilient agricultural future for the Western Cape**”.



Dept of Economic Development & Tourism (markets)

Dept of Transport & Public Works (built infrastructure)

Disaster Management Center (whole SFA2)

Treasury

Dept of the Premier; Dept of Health (food security); Dept of Human Settlements; Dept Social Development (food gardens); Dept of Transport & Public Works (low-carbon fuels); Dept of Economic Development & Tourism (value chain growth & jobs)

Dept Community Safety (early warning systems)

Dept of the Premier; Dept of Economic Development & Tourism (strategy)

Dept of Economic Development & Tourism (red tape)

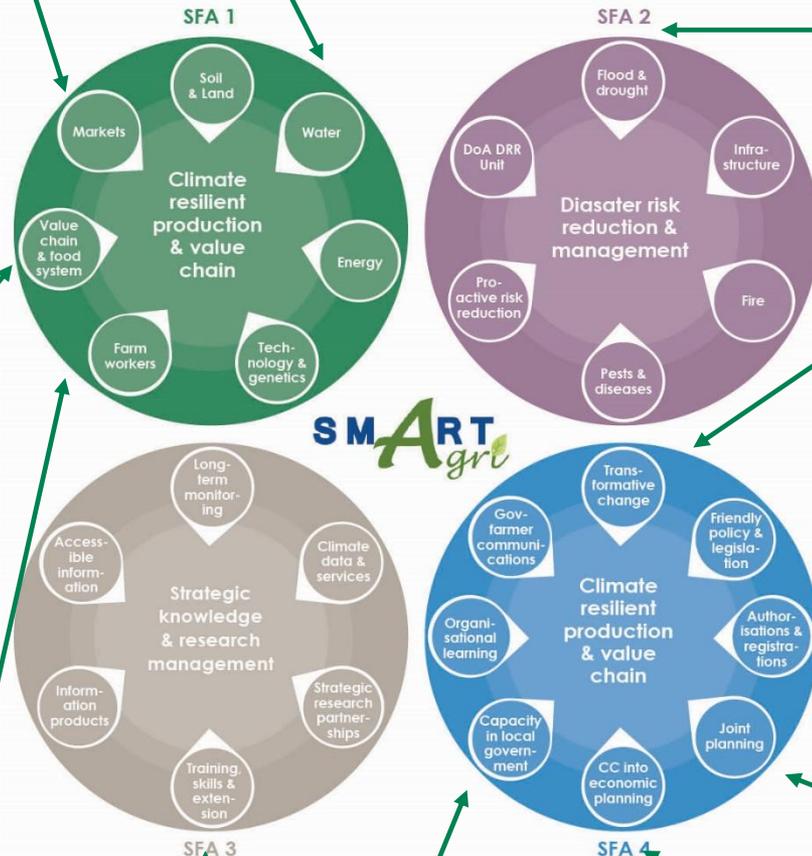
Dept of the Premier; Dept Local Government (joint planning)

Dept of Human Settlements; Dept of Health; Dept of Social Development (agri-worker well-being)

Dept of Local Gov.

Dept of Education (agricultural education)

Dept of Economic Development & Tourism; Dept of Transport & Public Works (econ. dev. planning)



SMART Agri

Priority Projects

The “Priority Projects” have been **prioritised** by a range of stakeholders and are supported by the current scientific understanding of urgent actions needed.

A number of the projects will link with **key provincial strategic projects** over the next five years and can thus benefit from existing high levels of support and resourcing.

Jointly these projects will **accelerate the implementation** of the SmartAgri Plan.

Priority Project 1: Conservation Agriculture for all commodities and farming systems

Purpose: To create conditions that encourage the adoption of CA principles across the province.

[CA is a farming system which helps to restore agricultural soils and increases long-term production potential and resilience]

Climate change adaptation benefits:

- CA decreases wind and water erosion, siltation, soil temperature, and soil water evaporation. CA increases soil water-holding capacity, beneficial soil micro-organisms, soil fertility, and profitability.

Climate change mitigation benefits:

- CA increases the ability of soils to sequester (absorb and fix) carbon, and reduces GHG emissions through a reduction in the use of diesel and fertiliser.



Priority Project 2: Restored ecological infrastructure for increased landscape productivity, socio-ecological resilience and soil carbon sequestration

Purpose: To pilot a comprehensive set of restoration and long-term management measures required to reinstate ecosystem services in degraded landscapes.

Climate change adaptation benefits:

- Improvements in the regulation of water flow, erosion and sedimentation; the resilience of fodder and crop production; and the ability of people living in the landscape to respond to projected increases in significant flood, drought and intense fire events.

Climate change mitigation benefits:

- Increased biomass and soil carbon stocks.



Priority Project 3: Collaborative integrated catchment management for improved water security (quality and quantity) and job creation

Purpose: To establish a collaborative and flexible implementation model for catchment management (clearing of invasive alien plants and other actions) based on current effective initiatives, which will allow for local customisation and locally determined partnerships and governance arrangements.

Climate change adaptation benefits:

- Increases in base flow and the regulation of water flow, allowing agriculture and downstream economies to become more resilient to prolonged dry periods and floods.
- Restoration of ecosystem services that purify the water flowing downstream, where farmers and communities benefit from high quality water.
- Reductions in the frequency and intensity of wildfire.

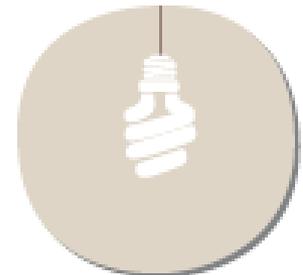
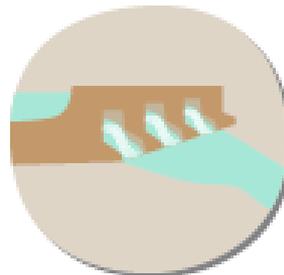
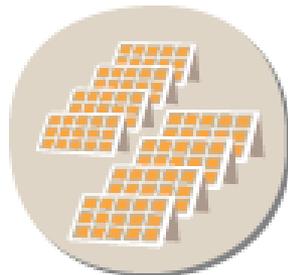
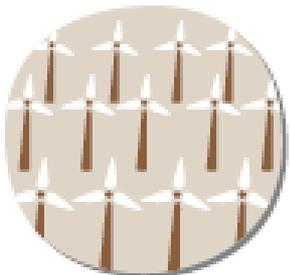


Priority Project 4: Energy efficiency and renewable energy case studies to inspire the transition to low-carbon agriculture

Purpose: Through case studies, to generate and disseminate trustworthy information on approaches, technical and financial designs, and professional service providers for use on farms and in the agricultural value chain.

Climate change mitigation benefits:

Significant reductions in the GHG emissions of agriculture (currently mainly from diesel and coal-based electricity).



Priority Project 5: Climate-proofing the growth of agri-processing in the Western Cape

Purpose: To encourage the channelling of investments into climate-resilient and resource-efficient agri-processing opportunities, through Project Khulisa and the AgriParks programme.

Climate change adaptation benefits:

- Provide a market for the production of climatically suited crops and livestock.
- Processing capacity can absorb blemished produce.
- Water- and energy-efficient processing will grow the sector and create jobs without placing undue additional stress on water and energy supplies.



Climate change mitigation benefits:

- The incorporation of renewable energy infrastructure limits the additional GHG emissions arising from this type of economic development.
- Transport costs and cooling requirements are reduced through local processing, which also reduces GHG emissions.

Priority Project 6: An integrated knowledge system for climate smart agricultural extension

Purpose: To empower the agricultural (and related conservation) extension and advisory system to become the first port of call for farmers requiring relevant information and decision-support on climate smart agricultural practices and technologies.

Climate change adaptation & mitigation benefits:

Effective adaptation and mitigation responses require a trustworthy knowledge system that is science-based, technically and financially sound, and does not have unintended negative consequences. Extension officers can ideally provide access to such climate smart knowledge in a practical and context-specific manner.



SmartAgri deliverables

- Status Quo Review of Climate Change and the Agricultural Sector of the Western Cape Province
- Status Quo Review Executive Summary (English, Afrikaans, Xhosa)
- WESTERN CAPE CLIMATE CHANGE RESPONSE FRAMEWORK AND IMPLEMENTATION PLAN FOR THE AGRICULTURAL SECTOR – 2016
- SmartAgri Case Studies (x6)
- SmartAgri Briefs (x16) – English, Afrikaans, one Xhosa

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Thank you

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