Western Cape Government
Agriculture
BETTER TOGETHER.

ACDI African Climate and Development Initiative

Western Cape Government
Environmental Affairs & Development Planning
BETTER TOGETHER.

SMART Agri

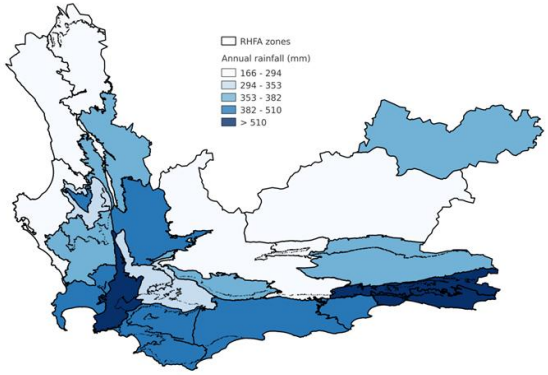
Smart Agriculture for Climate Resilience

Collaborative Development of a Climate Change Response Framework and Implementation Plan for the Agricultural Sector in the Western Cape

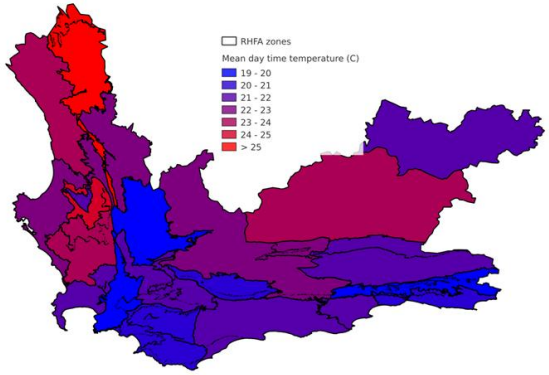
Seminar of Green Agriculture, IAIA, 3 November 2015

Western Cape climate

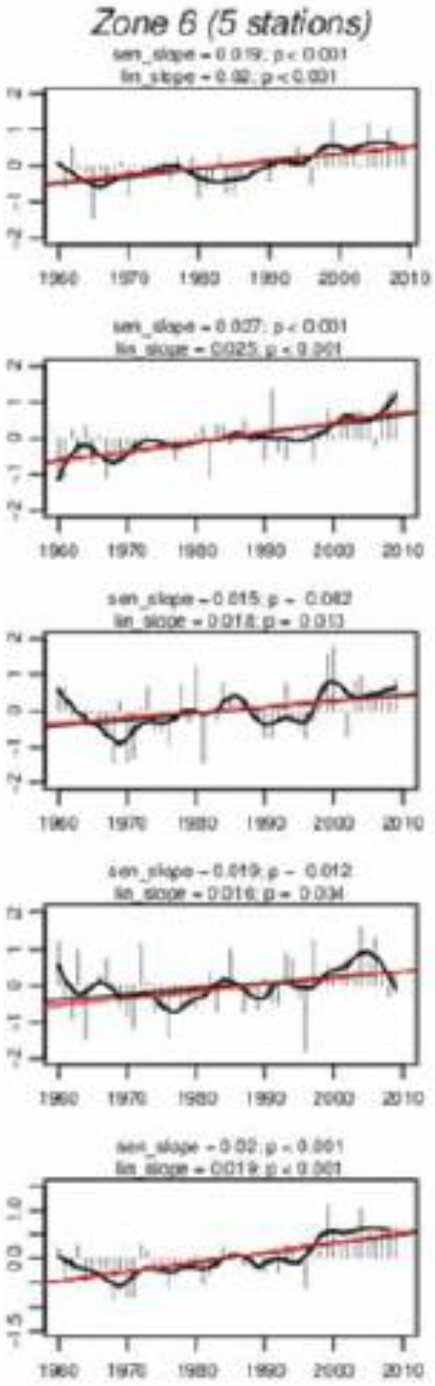
- Core: Winter rainfall
  - Karoo: summer rainfall
  - S.Cape: all-year rainfall



- Mild to hot temperatures
  - Hot: West Coast, Central Karoo
  - Cooler: Bokkeveld, Grabouw



- Diverse range of local climates
- High agricultural diversity: 12 major export products



WC Climate shifts: 1960-2010

- Rising temperatures (1°C warming), higher max/min temperatures, more hot days
- Mean annual rainfall: no overall trends
- Reduction of rainy days, mainly in autumn, especially S.Cape
- Progressively later start and end to rainy season

Recent climate related extreme events

- **Floods - the most common hazard causing most damage and disruption**
- **Since 2003, cut-off low weather systems causing flash floods were linked to direct economic losses in excess of R 5 billion in the WC**
- **Hailstorms (2006, 2013) – large losses in fruit volumes and income, loss of jobs for labour**
- **Droughts – devastating impacts in Karoo and southern Cape (2010)**
- **Fires – increasing frequency and intensity**

WC Climate future: 2050

- More heat stress
- More frequent and longer dry spells
- Increased evaporation from soils and dams
- More heavy rainfall and floods
- Possible changes in hail and strong winds
- Increasing conditions for wildfires

Why is climate change and agriculture important for the Western Cape?

- Agriculture is important:
  - Agriculture is the backbone of the rural economy and employment in the province
  - WC agricultural exports ~55% of national agricultural exports
  - 37% of the sector's output is used for food and beverage production – processing and value chain are strong and provide important employment opportunities
  - Tightly linked to food system and food security
- ***Climate change has serious potential to disrupt and threaten agriculture***
- Planning for the future: Investments in infrastructure, agri-processing, renewable energy etc. need to be 'climate-proofed'
- Emerging gaps and opportunities must be strategically identified and pursued

Risks and Impacts

- Natural resources, energy and human resources provide the means for food production
- Climate change has a strong and direct impact
- An ***integrated systems approach*** is required to understand and deal with climate change risks and impacts and to identify opportunities

Risks and impacts: soil, water, energy, people

- **Soils/land: are limiting, arable land already intensively utilized, invasion by alien plants**
  - **CC will change suitable land uses**
- **Water resources: are stressed, use for irrigation is high, and supply to agriculture not assured, water quality problems**
  - **CC will reduce soil moisture and water flows**
- **Energy supply and reliability: critical for irrigation pumping, packaging, processing, cold storage, transport**
  - **CC will increase energy demand but require reduced carbon footprint**
- **People on farms: heat stress, climate disasters (floods, fires), job losses**

Eden: Vegetable farming in Haarlem

SMALLHOLDERS

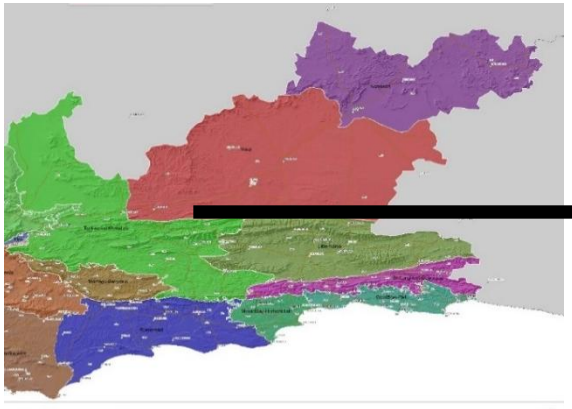
Climate risks:

- Drought & heat
- Flooding
- Hail
- Energy needs

Resilience requires:

- Knowledge & skills
- Technology: cultivars, disease management
- Infrastructure & services
- Alien clearing for water flows

Central Karoo: sheep/goat farming in Laingsburg



ALL SCALES

Climate risks:

- Lack of water (surface and ground)
- Dry spells & droughts
- Heat stress

Resilience requires:

- Water infrastructure and management
- Resilient breeds
- Better grazing management
- Animal health management

Why does a CC response in agriculture need government support?

- Pro-active responses exist but not at sufficient scale
- ***Create an enabling environment to utilize existing capacity to respond and build long-term resilience to climate risks***
- Legislative / regulatory barriers
- Provincial / Local Government together with agri-business provide the ***bridge*** between bottom-up farmers' responses and top-down national economic /political /ecological /social imperatives
- Need models of implementation, finance, skills development
- Ideas around incentives and partnerships that work

CC response: What needs to happen?

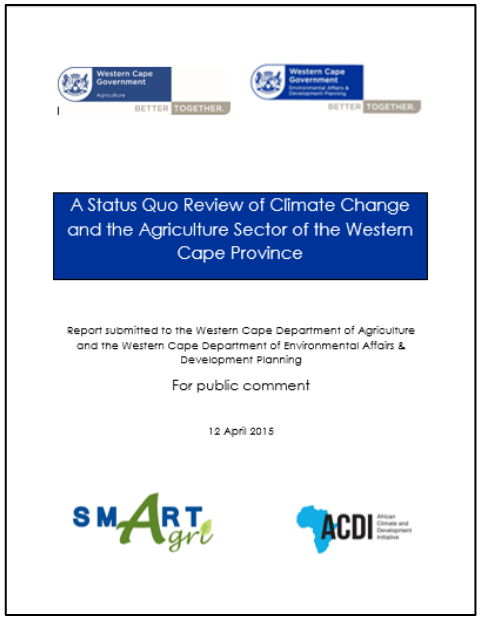
- No 'off-the-shelf' models
- Transition and transformation, organic process, shift in mindset, change management
- Forward-thinking planning for various time scales
- Careful spatial (e.g. land use) planning
- Innovation and technology
- Enabling environment for business to respond
- Follow through into processing, value chain, markets
- Education and skills development

Institutionalise climate change into government at all levels

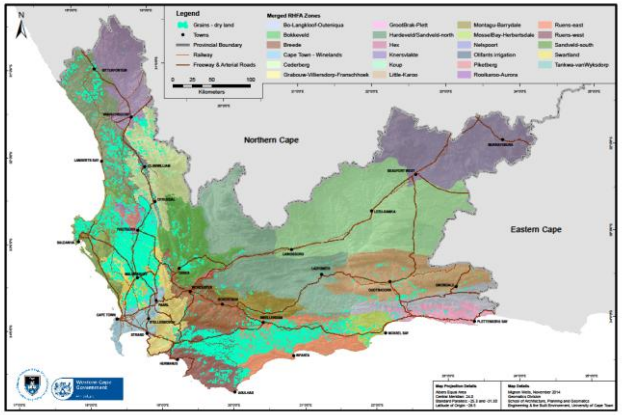
SmartAgri: Practical responses to building climate resilience

- Identify what is already being done to manage current climate risk
- Brainstorm innovative ideas and locally-informed responses to current and future climate risks
- Identify approaches and technologies with best potential to increase climate resilience and grow competitiveness and jobs
- Identify gaps and opportunities
- Mobilise collective action

Two-pronged approach

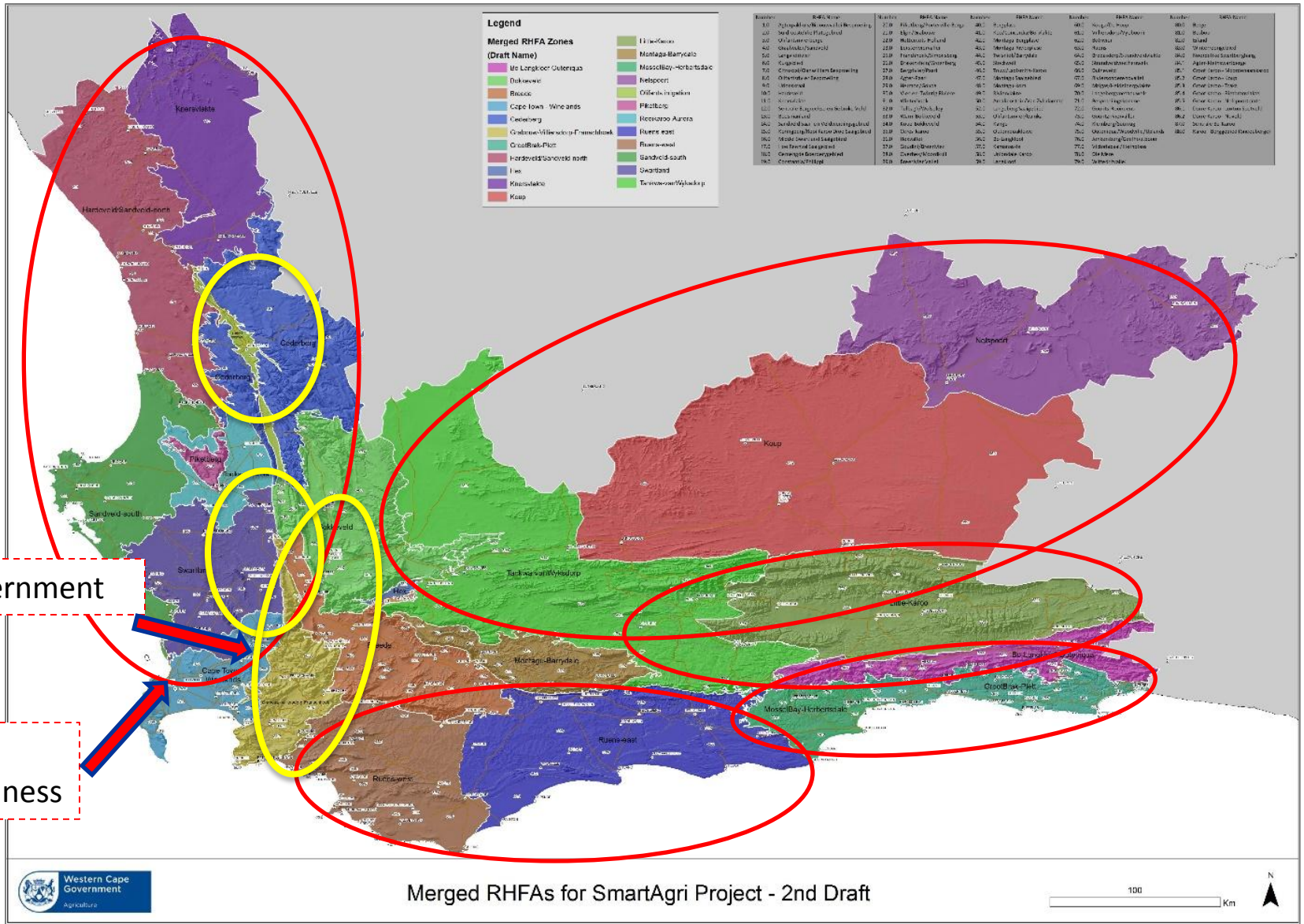


Science, research ⟷ **Stakeholder consultation**



Dry Land Grain Distribution in the Western Cape, South Africa - Winter 2013

Phase 2: Workshop & Focus group locations



Other forms of consultation and communications

Consultation:

Interviews

Communications:

Web page

E-mail list based on developing SH database

Presentations at external meetings

Conferences and sector events

Posters

Flyers

Journal articles

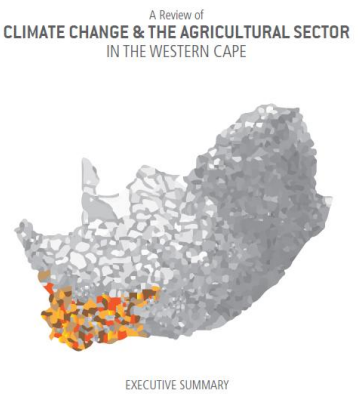
Radio

Summary booklets for workshops

Published Status Quo Executive Summary

Communications: Status Quo Review Products

Summary booklets:
Moorreesburg
Riviersonderend
George
Oudtshoorn
Laingsburg
Swellendam
Riebeek Kasteel
Citrusdal
Honeybush
Etc.



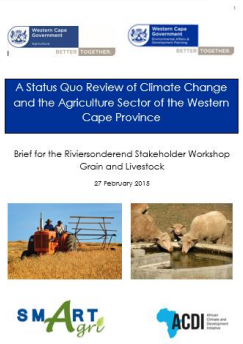
Executive Summary

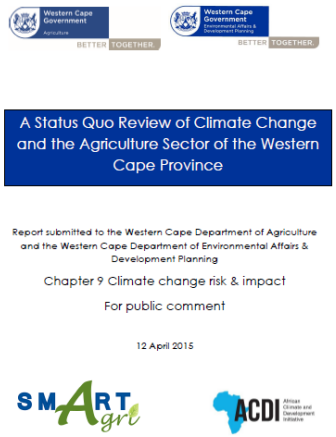
Full SQ Review

Summary booklets for regions / commodities

Chapters

Open for public comment





Phase 2: Communications Campaign

Multi-channel:

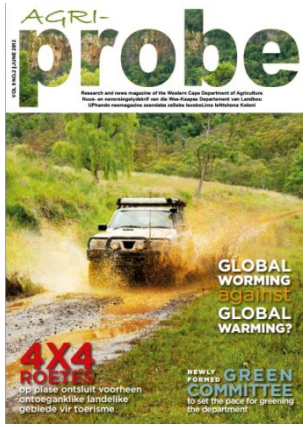
Short films

Radio / TV

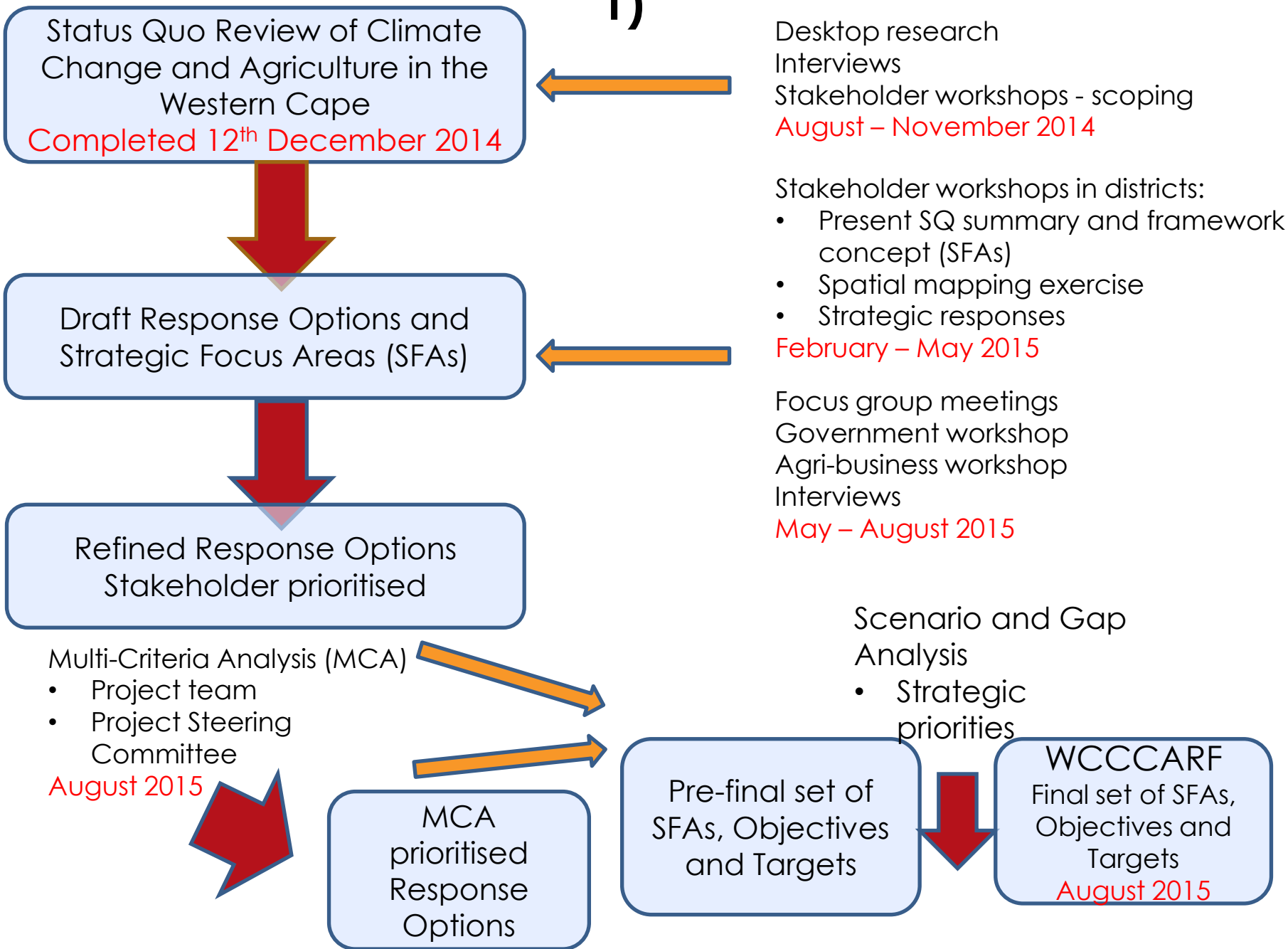
Booklets

Case Studies

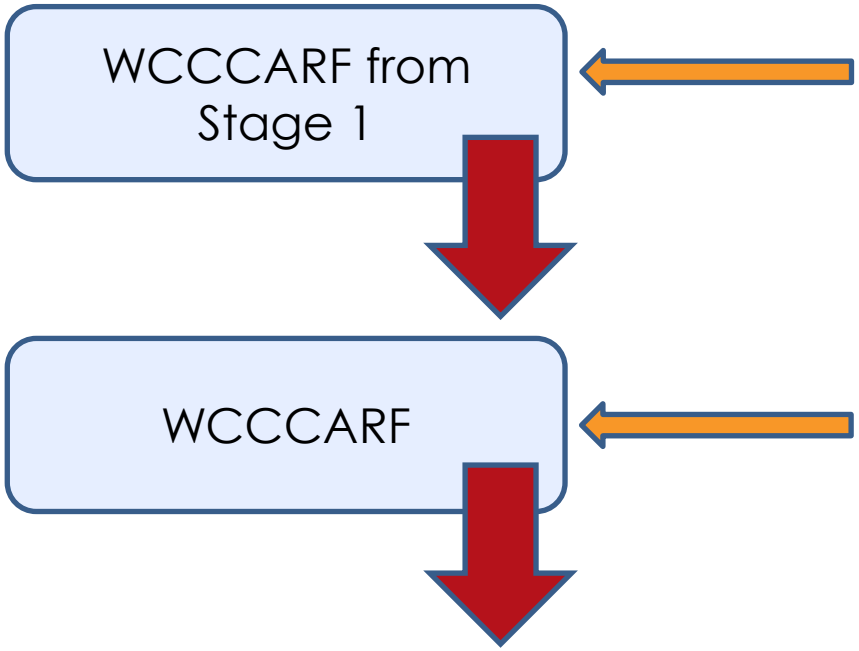
Web info



Process to develop the WCCCARF (stage 1)



Process to develop the WCCCARF (stage 2 – policy alignment)



Align with National Policies and Programmes

Align with Western Cape Provincial Policies:

- OneCape 2040
- Provincial Strategic Goals 2015-2020
- Departmental (Agriculture) Strategic Goals 2015-2020
- Climate Change Response Strategy & Implementation Framework
- Long Term Mitigation Scenarios
- Sustainable Water Management Plan
- Green Economy Strategy Framework

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 and strategic action

Strategic Focus Areas

1. Promote a climate-resilient agricultural sector that is productive, competitive, equitable and ecologically sustainable across the value chain

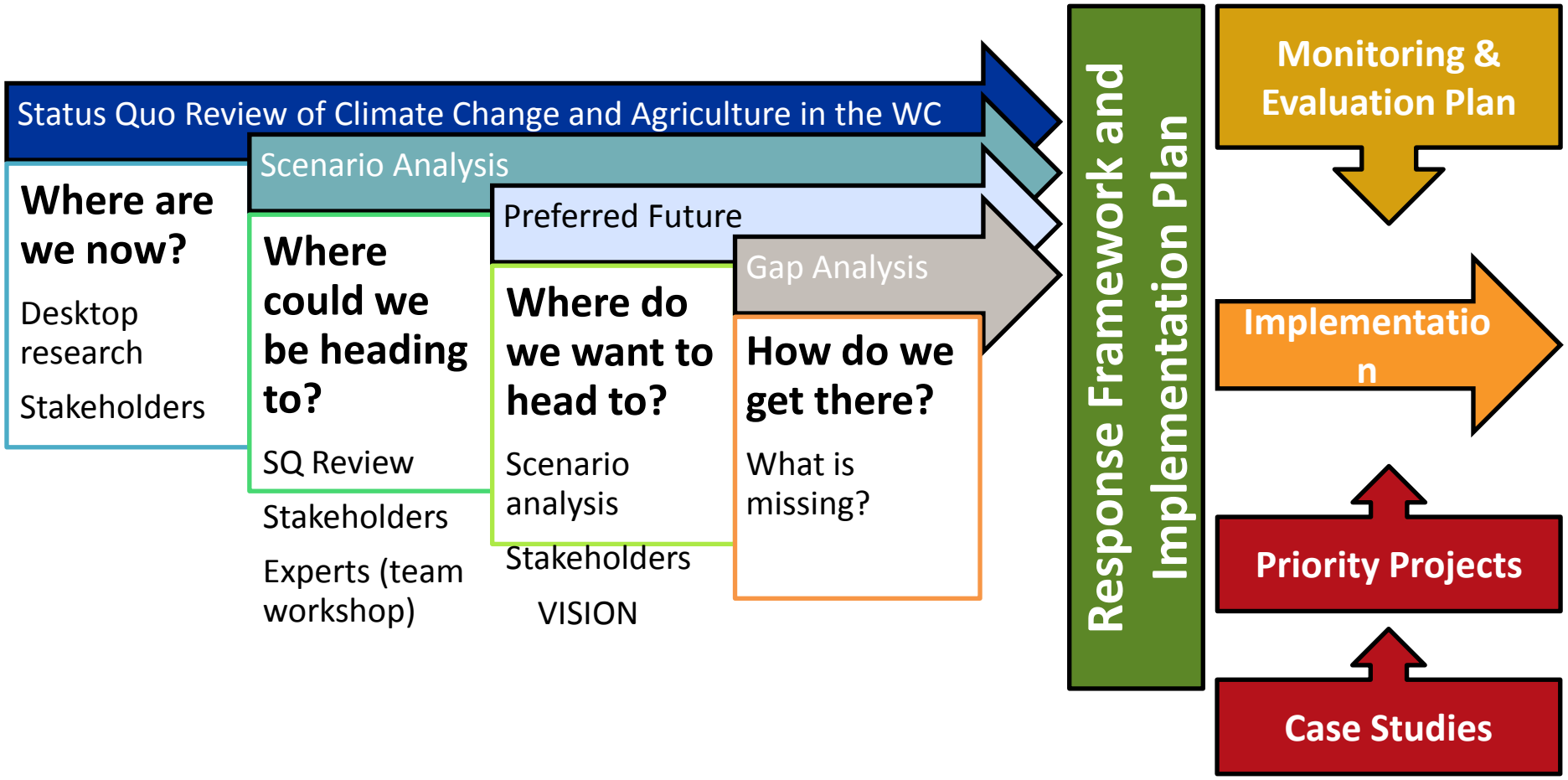
2. Strengthen effective climate disaster risk reduction and management for agriculture

3. Strengthen monitoring, data and knowledge management and sharing, and lead strategic research for climate change and agriculture

4. Ensure good co-operative governance and institutional planning for effective climate change response implementation for agriculture


SMARTA GRI
Climate-resilient production & value chain
Soil & Land
Water
Energy
Techno-logy & genetics
Farm-workers
Value chain & food system
Markets
Disaster risk reduction & manage-ment
Flood & Drought
Infra-structure
Fire
Pests & diseases
Proactive risk reduction
DoA DRR Unit
Strategic knowledge and research manage-ment
Long-term moni-toring
Climate data & services
Strategic research partner-ships
Training/ skills & extension
Informa-tion products
Access-ible informa-tion
Governance & joint planning
Transfor mative change
Friendly policy & regulation
Authori-sations & registra-tions
Joint planning
CC into economic planning
Capacity in Local Govern-ment
Organisa -tional learning
Gov-farmer communi-cations

From now to the future we want



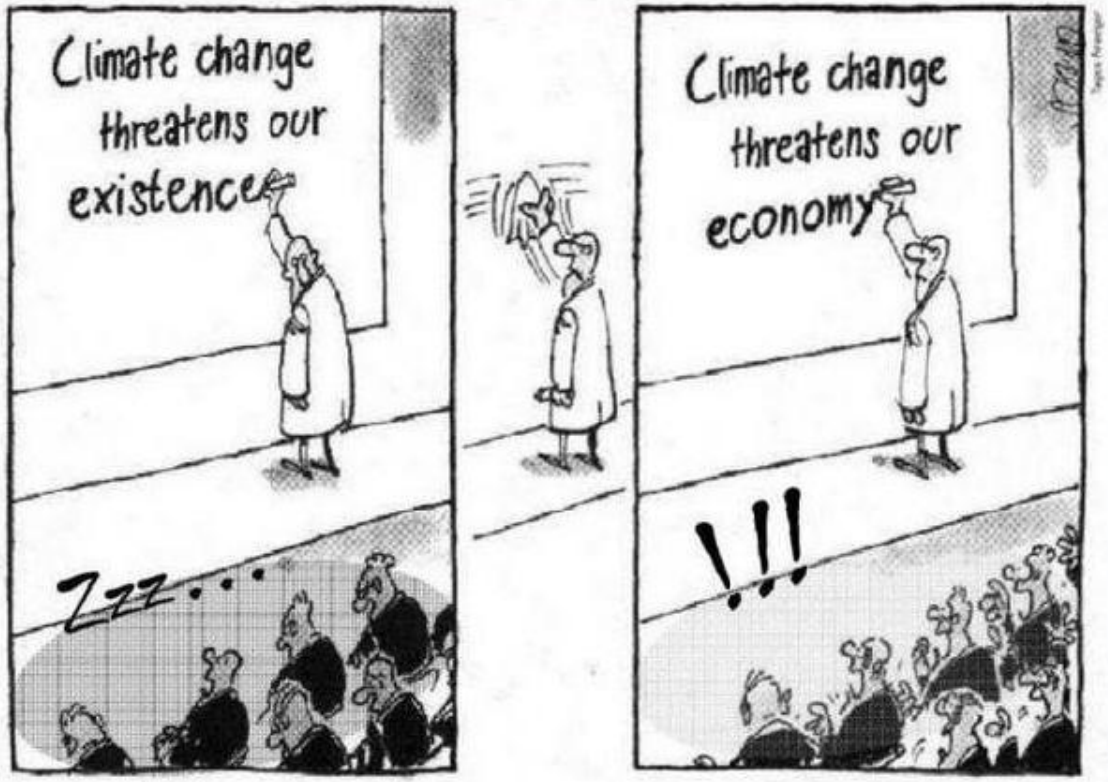
Next steps

- Climate Change Response Framework for Agriculture (August 2015 – currently being finalised)
- Communications Campaign (September 2015 – March 2016)
- Phase 3 Stakeholder Engagement (September – December 2015)
- Climate Change Response Implementation Plan (September 2015 – March 2016)
- Monitoring & Evaluation Plan (September 2015 – March 2016)

And at the end.....

The Western Cape Climate Change and Agriculture Response Framework and Implementation Plan sets out to:

- Provide a time-specific strategic roadmap to a climate-resilient agricultural sector
- Provide spatially explicit, commodity-specific and scale-sensitive implementation pathways for specific climate risks that are practical and effective
- Promote opportunities for the sector through climate change adaptation and mitigation
- Inspire farmers and agri-business to optimise decision making for a resilient and sustainable future in the face of complex and uncertain changes
- Strengthen the enabling environment for autonomous (farmer-led) and planned (government-led) responses
- Facilitate a more integrated, co-ordinated and co-operative response through strong multi-stakeholder partnerships, networks and knowledge sharing
- Mobilise and direct new investments in agriculture in support of adaptation and mitigation



Let's go further:
Look for solutions and opportunities

Thank you

www.acdi.uct.ac.za/research/smartagri-project

smartagriwesterncape@gmail.com