Tackling Climate Change in Agriculture: Approaches to climate change adaptation and climate smart agriculture in SADC

Training Package Reader

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Acknowledgements

Abbreviations

ACCRA	Adaptation to Climate Change in Rural Areas in Southern Africa (regional GIZ programme)
AR5	Assessment Report 5
AR&D	Agricultural Research and Development
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (German Federal Ministry for Economic Cooperation and Development)
CCAA	Climate Change Adaptation in Agriculture
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
CIMMYT	International Maize and Wheat Improvement Center
CSA	Climate-Smart Agriculture
GIZ	Gesellschaft für Internationale Zusammenarbeit
MOSA	Modules on Sustainable Agriculture
IPCC	Intergovernmental Panel on Climate Change
OECD	Organisation for Economic Cooperation and Development
RAP	SADC Regional Agricultural Policy
SADC	Southern African Development Community
SRO	Sub-Regional Organisation

Background

The Southern African Development Community (SADC) is strongly affected by the impacts of climate change. Climate scenarios predict rising temperatures and increasing frequency and intensity of extreme weather events such as droughts and floods. These pose an increasing threat to the population and will particularly impact on the agriculture sector.

In southern Africa, regional and national agricultural policies and strategies are starting to take climate change into account, but have not been translated into concrete programmes and investments yet. A constraint is that SADC member states do not have the capacity to integrate climate change aspects into agricultural programmes and investments. One of the main causes of this is that SADC member states do not have sufficient access to user-friendly knowledge products for climate change adaptation in agriculture (CCAA) and climate smart agriculture (CSA).

The German Government through the Gesellschaft für Internationale Zusammenarbeit (GIZ) and the Southern African Development Community (SADC) have established the 'SADC Adaptation to Climate Change in Rural Areas in Southern Africa' (ACCRA) Programme, funded by the Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ). The programme is implemented by the Centre for Coordination of Agricultural Research & Development for Southern Africa (CCARDESA). ACCRA operates in two action areas: (1) Regional Knowledge Dissemination on Climate-Smart Agriculture, and (2) Climate Proofing of Agricultural Value Chains. The aim of the first action area is for SADC member states to have access to improved knowledge management systems for the dissemination of climate-smart agriculture (CSA). The aim of the second area is for SADC member states to increase their capacities to disseminate and finance climate-smart practices and technologies in agricultural value chains.

Institutional background: CCARDESA

CCARDESA is a subsidiary organisation of SADC that was established by the 15 SADC Member States to coordinate agricultural research and development (AR&D) in the region. CCARDESA was established in 2011 and has been continuously building its capacity to deliver on its mandate. Empowering smallholder farmers to improve their production efficiency and to generate higher incomes through increased market engagement as well as undertaking sustainable agricultural practices in the face of worsening climatic conditions requires better access to appropriate information and harnessing of emerging practices and technologies. Over time, resources have been committed towards developing agricultural practices and technologies which produce higher yields under certain climatic conditions with minimum damage to the environment. However, adoption and use of climate-smart and sustainable practices and technologies is still low in the region. Employment of appropriate systems, communication and information sharing tools as well as appropriate capacities and skills is paramount to improving information and knowledge sharing. Coordination of AR&D among 15 member states entails a great degree of transferring knowledge and developing training materials, knowledge and communications products for different audiences. CCARDESA aims to be a reliable source, broker and facilitator of agricultural knowledge and information in the region.

Introduction to the Training Package

In southern Africa, the understanding of the impacts of climate change on agricultural systems and how these can be addressed in practice remain weak. This is true not only for farmers, but also for extension practitioners, national decision makers and others who work in the agricultural sector.

Together with our regional partner CCARDESA, the ACCRA programme has developed this training package on *Tackling Climate Change in Agriculture: Approaches to climate change adaptation and climate smart agriculture in SADC* and aims to promote its use in the region. It combines a range of different technical/topical modules with the climate proofing tool and its practical application.

This training package has been developed based on existing GIZ tools:

1. GIZ Training Modules on Sustainable Agriculture (MOSA)
2. GIZ Training Tackling Climate Change in Agriculture, including the *Integrating Climate Change Adaptation into Development Co-operation Climate Proofing Tool* initially developed by the Organisation for Economic Cooperation and Development (OECD) and GIZ in 2009.

While this training package draws on these tools, it has been significantly modified and amended:

1. New content has been included in the technical modules, particularly with respect to climate smart agriculture and post-harvest management;
2. Guest speakers with specific expertise have developed selected modules and will be invited to present at subsequent trainings, where feasible;
3. The climate proofing tool has been refined to not only enable learning the methodology, but to place emphasis on applying the tool to a specific (participant defined)agricultural value chain or system as case study of interest and to generate additional knowledge with respect to the case study;
4. The training package has been adapted to fit the regional SADC context.

The training was first implemented as a regional training event in October 2016. The training targeted a group of extension practitioners from across the SADC region, who came together for a 5-day training in Cape Town (South Africa). The regional training served as a basis for this training package, which has since been revised (based on the comments received from the participants) and is being continuously improved upon.

Objectives and target audience

This training packet aims to provide an overview of the challenges climate change poses for agriculture in the SADC region, as well as elaborating on the relevant concepts of adaptation, mitigation, vulnerability, climate smart agriculture and others. It provides technical detail, practical examples and good practices, and equips participants with the hands-on knowledge and expertise of climate proofing agricultural value chains or systems. The interactive training aims to bring together participants from different contexts to facilitate knowledge exchange and learning amongst peers.

The training package is geared towards national and sub-national extension decision makers, multiplicators and practitioners, as well as technical staff in the Ministries of Agriculture or other organisations in the SADC Region. After the training, participants will be familiar with concepts of climate change adaptation, climate smart agriculture and climate proofing, and will be capable to apply such concepts in their individual work contexts.

The training package has been designed as a five-day course, including module presentations, group work and excursions. The modular, training package combines guest speaker presentations with hands-on group work and excursions. A pool of in-house experts (both, at CCARDESA and GIZ), guest speakers and facilitators can be drawn from to support its implementation within southern Africa. The modules have been designed so that they can used independently and flexibly. Thus, the training packet can be adopted, adapted, mixed and matched, and expanded in order to meet the specific training needs at hand. If you are interested in collaborating with CCARDESA and ACCRA on organizing a training in your country, please get in touch (contact details at the document end).

Detailed materials are made publically available on the CCARDESA Information, Communication and Knowledge Management SAAIKS.net. Link: http://saaiks.net/trainings/training-package/

Overview of the technical modules

The training package currently covers 13 technical themes focused around climate change adaptation and climate smart agriculture. With our partners, we are constantly working towards offering additional modules as they become available.

The current modules available in the training package include:

1) Climate Change Elements of the SADC Regional Agricultural Policy (RAP)

This module sets the scene with respect to the regional policy context in the SADC Region. It focuses on the SADC Regional Agricultural Policy and on existing climate change related elements within the SADC policies and strategies.

2) SADC Regional Context – Agriculture and Climate Change

This module provides an overview of the regional SADC context with respect to the agriculture sector, food security, as well as the climate change impacts that are shaping the sector today and into the future. It also positions the ACCRA programme and CCARDESA in this context.

3) Thematic Introduction: Climate (Change), Adaptation and Mitigation

The module provides an overview of current climate change terminology following the Intergovernmental Panel on Climate Change (IPCC) Assessment Report AR5.

4) Climate Change Projections and Impacts in SADC and Importance of Climate Services for Agriculture

The module has been prepared by a guest speaker and explains climate modelling basics, as well as the challenges of downscaling within the regional context.

5) Agriculture: Victim, Culprit and Potentials for Adaptation and Mitigation

The module explains the climate change effects on agriculture specifically, analyses the role agriculture plays in contributing towards greenhouse gas emissions, as well as the sector's importance with respect to adaptation and resilience.

6) Climate-Smart Agriculture: Overview

The module provides an introduction to the approaches and concepts of CSA. It highlights global policy frameworks that inform CSA programming, explains the approach and elaborate examples of CSA practices at different scales.

7) Conservation Agriculture: Farmer Adoption of New Practices and Technologies, Evidence and Lessons learnt

Prepared by a guest speaker, this module positions conservation agriculture within the set of CSA practices and technologies. Drawing from decades of research, it elaborates on benefits and challenges, as well as uptake in the southern African context.

8) Livestock in Smallholder Adaptation and CSA

The module focuses on livestock as a key component of agricultural systems in southern Africa and provides specific examples of livestock-related CSA practices.

9) Water Management and Soil Conservation for a Climate Resilient Agriculture

The module delves into soil and water management as a key component of CSA. It presents selected agricultural practices and technologies and highlights the implications for sustainability.

10) CSA and Gender

The module provides context on gender equity in rural development, discusses gender considerations in CSA and highlights specific examples that highlight the trade-offs and gender implications of specific practices and technologies.

11) Postharvest Management: Importance under Climate Change and Best Practices

The module highlights the importance of postharvest losses within food security. It provides an overview of postharvest losses, implications of climate change and possible responses.

12) Closing the Gap Between Science and Policy for Climate-Smart Agriculture

This guest-speaker module outlines the challenge of prioritising CSA practices and technologies for specific contexts while drawing on a meta-analysis of evidence. It highlights the synergies and trade-offs between adaptation, mitigation and productivity increases in specific contexts.

In addition to the existing modules, we are constantly developing new modules to include into the training package and could offer additional modules upon demand. New modules could include:

- Prioritising CSA practices and technologies: existing evidence of synergies and trade-offs
- Youth and CSA
- Governance and transformations – enabling environments for scaling CSA
- Participatory integrated climate services for agriculture
- Opportunities for mitigation co-benefits in smallholder agriculture
- From research to policy and practice – knowledge translation for CSA
- Financing options for CSA at different scales

Overview of the Climate Proofing Tool for CSA

The climate proofing tool expands the existing OECD/GIZ tool towards a stronger CSA focus, as well as more emphasis on knowledge co-generation with respect to the specific case study at hand.

The tools consists of a series of steps that are being implemented by the training participants in groups, focusing on particular case studies or systems of interest. These steps include:

1. Assessing the current and future climate risks

2. Identifying adaptation options (CSA)
3. Prioritizing and selecting adaptation measures

Participant- (or programme-) defined case studies form the basis of applying the climate proofing tool. The selection of the case studies should be done well in advance by the programme implementing the training or by the participants themselves, or both. Case studies are to be prepared with good details on existing climate conditions, systems characterisation including biophysical, as well as socio-economic aspects.

Excursions

Learning and knowledge sharing greatly benefits from excursions and the visualization of existing experience, good practices and lessons on the ground. We recommend to build at least one excursion into the programme. Learning goals should be formulated and information about the excursion provided in advance.

Have We Sparked Your Interest?

This training package on *Tackling Climate Change in Agriculture: Approaches to climate change adaptation and climate smart agriculture in SADC* is available online for application or adoption in the region. It has been designed in a modular approach, combining different elements. The aim is to adopt the package to the specific requirements at hand.

The ACCRA programme, CCARDESA and GIZ, is keen to support the roll-out of the training package in SADC member states as far as possible, in order to support the strengthening of regional capacities and skills for climate change adaptation in agriculture and climate-smart agriculture. If you are interested in working with us, please get in touch:

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Details about the technical modules and the climate proofing tool are being made publically available on the CCARDESA Information, Communication and Knowledge Management SAAIKS. Link: http://saaiks.net/trainings/training-package/

Suggestions for improvements, additions or changes are also welcome.

We are looking forward to hearing from you!