

Climate Change Adaptation Research in Swaziland

A.M. Manyatsi
&
S. Singwane

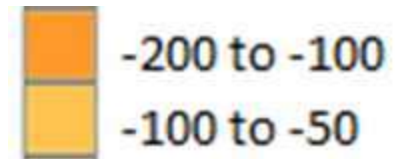
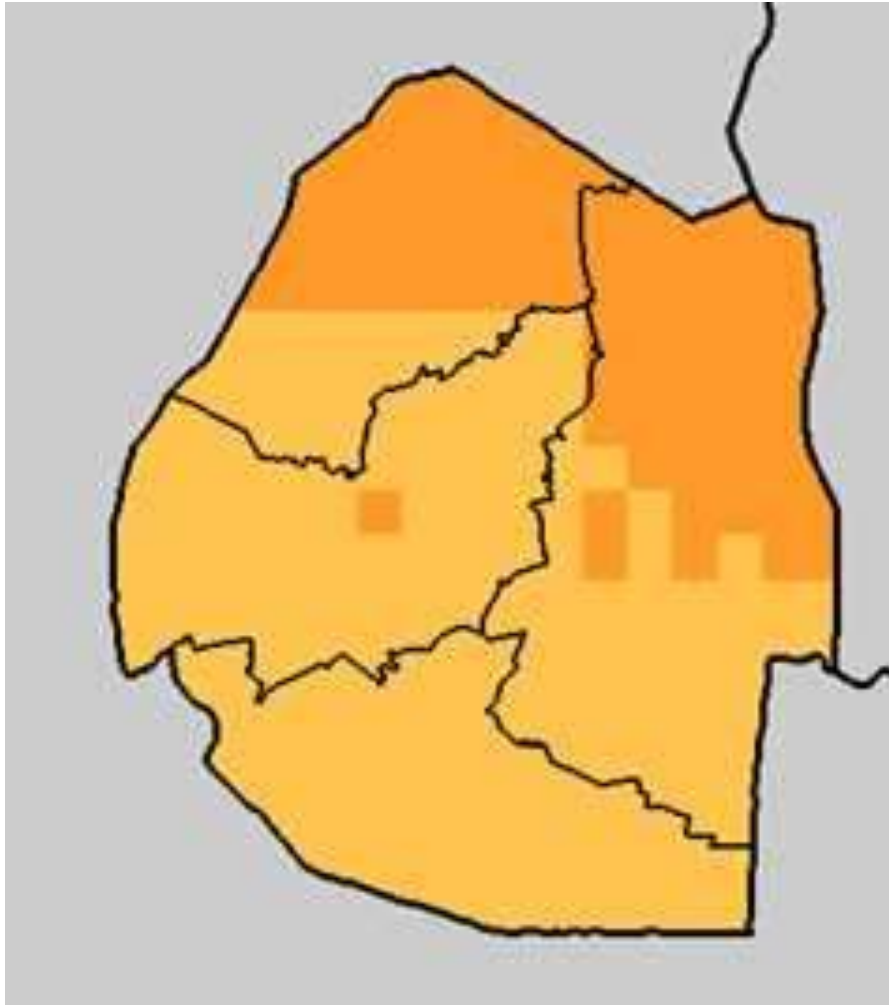
Presented at the SADC Regional Workshop on Climate
Change Adaptation in Agriculture

Lilongwe, Malawi, 6th December 2013

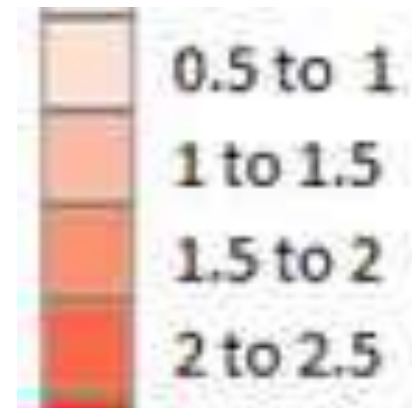
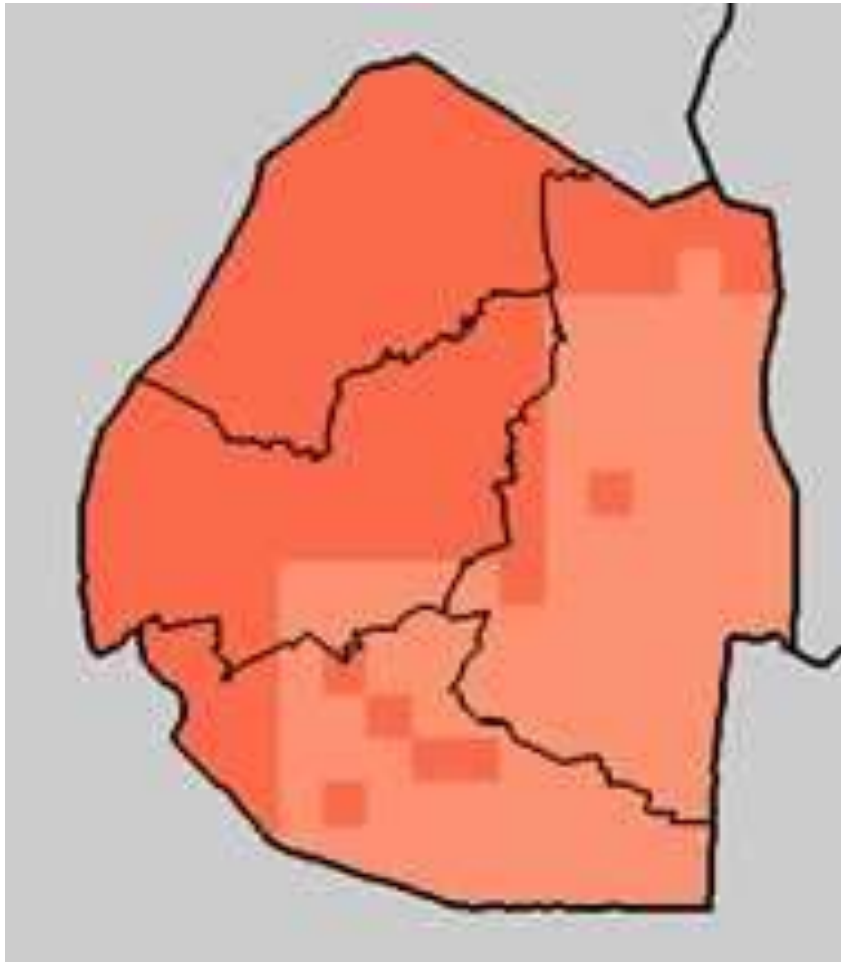
OUTLINE

- Projected changes in rainfall
- Projected changes in temperatures
- Effects of climate change
- Climate change and food security
- Climate change adaptation research
- Knowledge gaps in climate change
- Institutional gaps and capacity
- Proposed adaptation strategies

Projected changes in mean annual rainfall



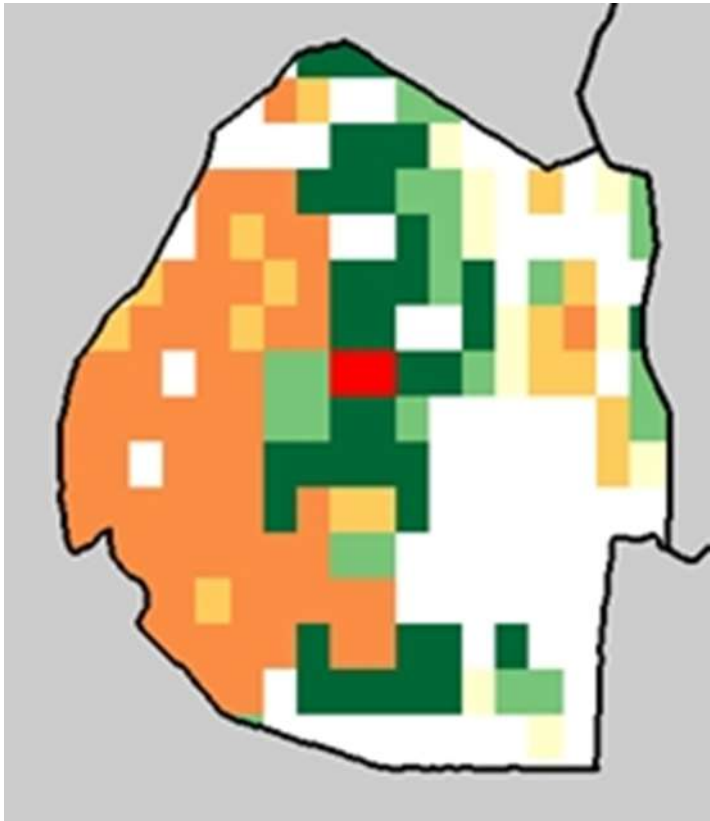
Projected changes in mean temperatures



Effect of climate change

- ❖ More frequent drought and floods
- ❖ Heavy precipitation events: frequency increases over most areas
- ❖ Areas affected by drought will increase
- ❖ Intense tropical cyclone activities increases
- ❖ Water scarcity
- ❖ Increased health challenges such as under-nutrition
- ❖ Deterioration in water quality
- ❖ Change in species composition, organic abundance and productivity in freshwater ecosystem
- ❖ Water erosion and sedimentation increases

Climate change and food security



- ✘ Decline in agricultural productivity
- ✘ Reduced affordability by affecting income
- ✘ New patterns of pests and diseases emerging
- ✘ Reduced food accessibility
- ✘ Increased poverty

Climate Change Adaptation Research

- Fragmented research activities done by different institutions and individuals
- Sugar industry undertaking research on irrigation systems to conserve water
- Ministry of Agriculture doing research on drought tolerant crops that are suitable for different agro-ecological zones
- FANRPAN undertook research on Southern African Agriculture and Climate Change (and published a book)

Climate Change Adaptation Research

- Research on Conservation Agriculture being undertaken at the University of Swaziland
- Research on Cost Benefit Analysis of Climate Change Adaptation measures undertaken in Swaziland
- The use of Household Vulnerability Index (HVI) to identify household vulnerabilities to climate change undertaken
- FANRPAN is conducting a comprehensive review of existing Climate Smart Agriculture (CSA) policies in the region

Knowledge gap in climate change

- Communities have been adapting to climate change and climate variation through different means, including indigenous.
- Such methods are however not documented in most cases
- The indicators of climate change and specific areas affected are not mapped at local level
- Insufficient tested and proven technologies for climate change adaptation at local/national level

Knowledge gap in climate change

- The understanding of climate change at national and community level is lacking (causes, effects and implications, adaptation and mitigation)
- Better observational data access are necessary to improve understanding of ongoing changes.
- Difficulties in measurement of precipitation remains an area of concern in quantifying trends in precipitation

Institutional gaps and capacity

- Absence of Climate Change Strategy and Action Plan
- Absence of climate change policy and legislation
- Lack of agency that has the sole responsibility of climate change issues
- Insufficient well trained people in climate change
- Inadequate climate change data and information collection framework and database management system

Institutional gaps and capacity

- There is no institutional linkage guidelines to ensure proper and timely reporting to all stakeholders on climate change issues
- There is no national institutional framework for information and knowledge management on climate change .
- There is no work program for a national climate change education, training and public awareness.

Proposed adaptation Strategies

- Improve irrigation techniques and agricultural water management
- Promote agricultural diversification to enhance climate resilience
- Promote appropriate indigenous knowledge agricultural practices
- Promote use of drought and or heat tolerant crops, water conserving crop varieties and livestock breeds
- Invest in post harvest and value addition processing and storage technologies

Proposed adaptation Strategies

- Improve agricultural advisory services and information systems
- Strengthen weather forecast information sharing to farmers
- Identify and develop indicators for climate risks
- Enhance application of climate risk management tools, such as crop and livestock weather-based insurance
- Promote adoption of sustainable land management practices
- Develop national knowledge base on climate change impacts and adaptation strategies

Thank you