



Food Agriculture, Natural Resources Policy Analysis Network

FANRPAN



**COMPREHENSIVE SCOPING AND ASSESSMENT STUDY OF
CLIMATE SMART AGRICULTURE POLICIES IN
MOZAMBIQUE**

Report

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Executive Summary

The present Comprehensive Scoping and Assessment Study is aimed at evaluating how smallholder farmers are coping with climate changes and how the Government of Mozambique is strategising its policies in order to increase agricultural productivity and strengthen the resilience of vulnerable smallholder farmers to the impact of climate change.

The specific objectives are to:

- Conduct comprehensive reviews of the existing CSA policy context in Mozambique;
- Analyze gaps in the existing policy frameworks;
- Identify relevant policy recommendations;
- Develop and share policy recommendations (briefs) in Mozambique.

The primary data was collected through interviews of 125 people in districts of Maputo, Sofala and Zambézia Provinces including Government and donor representatives, independent consultants and women and men farmers. Interviews were solicited with Ministry of Agriculture (MINAG) staff in Maputo including national directors of the Ministries of Agriculture, Environment, Planning and Development, and Home Affairs. At the Provincial level the research team conducted discussions with Directors and extension workers in two provinces namely Maputo and Zambézia.

The results of the study indicate that Mozambique is vulnerable to climate change (CC), which is expected to increase the frequency and intensity of the extreme weather events. The most vulnerable sectors to CC are identified as (i) agriculture, (ii) energy, (iii) transport infrastructure, notably roads, and (iv) coastal areas.

Deforestation is a significant problem in the country, deriving mainly from fuel wood collection, shifting agriculture, forest fires, timber exports, and lack of plans for land use. Wood consumption for fuel is estimated to account for 250 times that consumed by logging operations.

Government and international non-government organizations in Mozambique are the major stakeholders involved in CSA activities. Most of the farmers' adaptation to new climate changes tend to be spontaneous and does not constitute a conscious response to climatic stimuli. Coping Strategies in Mozambique include expanding cultivation, reducing fallow, switching crops, engaging in wage employment, vegetal charcoal production, timber and brick production, temporary/permanent migration (to gain access to land or markets).

In Mozambique, in the context of CSA it is recommended the improvement of crop and livestock production through the use of appropriate technologies, use of improved crop varieties and livestock breeds that are tolerant to drought, and developing/implementing strategies for drought preparedness. There is a need to increase resilience of food production systems to erratic rains by promoting sustainable agricultural production of maize and vegetables in wetlands and along river valleys/

1. INTRODUCTION

1.1 Background and Motivation

Mozambique is “highly vulnerable” to the impacts of climate change because of factors such as widespread poverty, recurrent droughts, inequitable land distribution, and over-dependence on rain-fed agriculture. Historical data shows that the Mozambique is already undergoing climate change. This has serious implications for water resources, food security, the spread of disease, the productivity of natural resources, drought in the provinces of Maputo, Gaza and Inhambane and 2000 floods in Gaza Province, and recently floods in the provinces of Sofala, Zambézia, Nampula and Cabo Delgado in 2013 and 2014.

The present Comprehensive Scoping and Assessment Study is aimed at evaluating how smallholder farmers are coping with climate changes and how the Government of Mozambique is strategising its policies in order to increase agricultural productivity and strengthen the resilience of vulnerable smallholder farmers to the impact of climate change.

The Food Agriculture and Natural Resources Policy Analysis Network (FANRPAN) is implementing a number of climate smart agriculture (CSA) projects which Mozambique is part of, seeking to:

- Generate CSA research- based evidence and address knowledge gaps;
- Strengthen CSA institutional capacity and support capacity building of young professional on CSA and food security research;
- Support advocacy campaigns for the development and implementation of responsive CSA policies;
- Supporting the uptake of CSA best practices.

1.2 Objectives of the Study

The general objective of this study is to assess policies and strategies in Mozambique which could increase food productivity and enhance food security while preserving the environment and ensuring resilience to a changing climate.

The specific objectives are to:

- Conduct comprehensive reviews of the existing CSA policy context in Mozambique;
- Analyze gaps in the existing policy frameworks;
- Identify relevant policy recommendations;
- Develop and share policy recommendations (briefs) in Mozambique.

1.3 Guiding questions

Six guiding questions were formulated namely:

1. What is known on CSA in Mozambique and what are the gaps in the existing policy framework?
2. Based on the CSA definition provided, what are the current CSA related policies in Mozambique (including environmental policies, water policies, agricultural policies, land policies and development policies)?

3. What are current on-going CSA development and research programme initiatives in Mozambique?
4. What are the national CSA institutional arrangements, and how are different stakeholders involved?
5. How is the performance of current CSA policies, and what are their major gaps?
6. What is needed to ensure that CSA policies are improved in terms of relevance, equity and effectiveness?

These questions guided our team to interview National Directors of the Ministries of Agriculture, Environment, Planning and Development, and Home Affairs. The team organized debates with groups of farmers, women organizations and youth in Namahacha district in the province of Maputo, Chongoene district in the Province of Gaza and Mocuba district in the Province of Zambezia. A semi-structured interview of 125 people was prepared and conducted in the three districts.

2. METHODOLOGY

2.1 Scope of the Study

According to the Terms of Reference, the study included a review of the agricultural policies in Mozambique, the CAADP Compact, the strategic Mozambique policy framework for agriculture PEDSA, the agricultural financing plan PNISA, the five years' government plan, and annual agricultural plans.

It was analyzed the elaboration process of National Agriculture Investment Plan (NAIP), the agricultural technical review process and the business meetings for the PEDSA financing. It was analyzed the number of actors involved in the CSA policy framework, the lines of responsibility and the Mozambique priorities.

2.2 Methods Used

The primary data was collected through interviews of 125 people in districts of Maputo, Sofala and Zambézia Provinces including Government and donor representatives, independent consultants and women and men farmers. Interviews were solicited with Ministry of Agriculture (MINAG) staff in Maputo including national directors of the Ministries of Agriculture, Environment, Planning and Development, and Home Affairs. At the Provincial level the research team conducted discussions with Directors and extension workers in two provinces namely Maputo and Zambézia.

The questionnaire was composed by six major questions:

1. What are the key CSA policies and activities in Mozambique?
2. Who are the stakeholders involved in CSA activities, and how are they involved? Who were the initiators of such activities?
3. In your view, how effective have those activities and policies been? Why or why not?
4. How have they had an impact on gender equity and on social equity more generally?
5. What are the key challenges to implementing CSA in Mozambique?
6. What opportunities remain untapped, and why? How could they be explored?

The process of report preparation included the following steps:

- Desktop study including the review of national, literature on CSA including the extent to which gender issues have been included and or reflected in the national policy process;
- Interviews of 23 key informants and 102 CSA-stakeholders including government Ministries, farmers, farmer organizations, civil society actors, development partners and the private sector;
- Identification of CSA-related policies, programmes and activities in the country;
- Identification of CSA development and research programme initiatives;
- Clearly define the current national institutional arrangements for managing and promoting CSA and the key stakeholders;
- Preparation of report;

2.3 Potential Limitations of the Study

Due to the time frame and having in mind the objective of the study, the data used in this paper was mainly secondary data collected by the Ministry of Agriculture, the National Institute for Statistics and the Database from the Faculty of Agronomy and Forestry Engineering of the Universidade Eduardo Mondlane in Maputo, Mozambique.

3. GAPS OF THE EXISTING POLICY FRAMEWORKS

Agricultural policies and environmental policies are not yet harmonized and synchronized. Currently many studies are for the identification of knowledge gaps, (research needs) based on cause – effect relationships. Inputs for CC policy analysis are limited.

All research needs were linked to respective cause – effect relationships and accordingly grouped in three categories: climate change, Impacts of CC on agriculture, and Impact of CC on coastal zones and processes. In the national budget there is a very little climate change financing effort.

Mozambique has few policies and experiences related to climate change. These include:

- The National Adaptation Program of Action for Climate Change (NAPA), established in 2007;
- At least one project under the Clean Development Mechanism (CDM), in the validation phase;
- Some operational experience from ongoing projects on forest carbon associated with the voluntary carbon market – probably the only area in southern Africa based on payment for performance (as this is an idea from REDD+). In the first project begun in 2002, Envirotrade has made (since 2007) payments to farmers and local communities for services of carbon sequestration through the adoption of agro forestry systems, forest conservation and control of fires. Similar projects are being established in the Quirimbas Archipelago and in Cabo Delgado and Zambézia.

The political process for REDD+ in Mozambique began in 2008 with the development and submission of the Readiness Project Identification Note (R-PIN) to the Scheme for Forest Carbon Partnership Facility (FCPF), managed by the World Bank. From that point, the process for developing the proposed strategy on REDD+, including consultations, was based on a collaboration agreement between a Brazilian institution (Amazonas Sustainable Foundation or Fundação Amazonas Sustentável– FAS) and the Ministry for Coordination of Environmental Affairs (MICOA).

4. KEY FINDINGS AND RECOMMENDATIONS

4.1 Key Findings

The Government of Mozambique (GoM) identifies the major environmental challenges as climatic shocks and seasonal variability, overharvesting of marine and timber resources, and uncontrolled fires. Many of these environmental challenges are inter-dependent and mutually reinforcing. Mozambique is prone to natural disasters, especially human lives and livelihoods, as well as on the economy. The country is vulnerable to climate change (CC), which is expected to increase the frequency and intensity of the extreme weather events. The most vulnerable sectors to CC are identified as (i) agriculture, (ii) energy, (iii) transport infrastructure, notably roads, and (iv) coastal areas.

Deforestation is a significant problem in the country, deriving mainly from fuel wood collection, shifting agriculture, forest fires, timber exports, and lack of plans for land use. Wood consumption for fuel is estimated to account for 250 times that consumed by logging operations. Although current commercial logging is less than 25% of the legally permitted logging capacity, many believe that it is under-reported and not sustainable.

Environmental impacts of deforestation are far reaching and include, among others, land degradation, exacerbated flooding, coastal erosion (mostly from loss of mangroves) and sedimentation. Other impacts of CC include degradation of marine and coastal resources, inadequate management of water resources, water pollution and sanitation, and loss of biodiversity and ecosystem services.

Releases of chemicals and heavy metals derive from industrial and artisanal mining activities and agriculture, mainly commercial. Agricultural chemicals and fertilizers are reported to be widely used in the intensive farms in Incomati, Umbeluzi and Maputo River valleys, particularly in the sugarcane plantations in the Umbeluzi River valley in Swaziland. Rivers are the main pathway through which agrochemicals enter the coastal and marine environments, and water samples collected in Monapo, Pungué, Maputo, and Incomati rivers have tested positive for various pesticide residues, including DDT, lindane, and hexachlorobenzene.

The major findings of the study are:

1. Concerning the first question on “*What are the key CSA policies and activities in Mozambique?*” Table 1 summarizes those policies.

Table 1: Summary of Relevant Policies to CSA

Basic information						
Policy Sector	Name of Policy	Year Approved or In force	Responsible Ministry	Contact Person	Updated or Update Planned	Available online
Land	Land Policy	1997	Ministry of agriculture	National Director	2002	www.portaldogoverno.gov.mz/Legisla/

Village	Village Act	1975	Ministry of Planning and Development	National Director	2002	www.portaldogoverno.gov.mz/Legisla/
Forestry Policy	Forestry Policy	1997	Ministry of Agriculture	National Director	2002	www.portaldogoverno.gov.mz/Legisla/
Agriculture	PDSA	2012	Ministry of Agriculture	National Director	-	http://fsg.afre.msu.edu/Mozambique/caadp/PEDSA_FINAL_10_Out.pdf
Livestock	Livestock Policy/PDSA	2012	Ministry of Agriculture	National Director	-	www.portaldogoverno.gov.mz/Legisla/
REDD+	National REDD+ Strategy	2008	Ministry of Environment	National Director	2012	http://www.iied.org/redd-mozambique

2. *Who are the stakeholders involved in CSA activities, and how are they involved? Who were the initiators of such activities?*

Government and international non-government organizations in Mozambique are the major stakeholders involved in CSA activities. The concept of CSA brings together practices, policies and institutions that are not necessarily new but are used in the context of climatic changes. The study showed us that there are practices and strategies already used by the smallholder farmers to cope with impacts of climate changes. What is new is the fact that the multiple challenges faced by agriculture and food systems are addressed simultaneously and holistically, which helps to avoid counterproductive policies, legislation or financing.

Most of the farmers' adaptation to new climate changes tend to be spontaneous and does not constitute a conscious response to climatic stimuli. Now, the challenge in Mozambique is to bring policy decisions, based on awareness that climate conditions have changed and therefore there is a need to change in agro-technologies to cope with adverse conditions.

3. *Concerning the third question "how effective have those activities and policies been? Why or why not?"*

There is no conclusive answer. 52% of key informants are of opinion that CSA activities are not yet part of strategies used by farmers, nor private enterprises, but 48% are of opinion that the initiatives have been successful.

During the study the team found out that 68.8% of the interviewed people did not know what "Climate Smart Agriculture" was. They thought that CSA was a specific defined agricultural technology. About 22.2% of interviewed people knew that CSA it is not a specific agricultural technology. This group clearly stated that CSA is an approach that requires site-specific assessments to identify suitable agricultural production technologies and practices.

4. *Concerning the question on "How have they had an impact on gender equity and on social equity more generally?"*

The response was almost unanimous that since 80% of smallholder agriculture is practiced by women, CC affected women through low yields, floods and increase of plagues and diseases. 97% of interviewed people

5. Concerning the question “*What are the key challenges to implementing CSA in Mozambique?*”

About 75% of respondents are of opinion that awareness on the impacts of CC is fundamental and 97% of respondents suggested the harmonization of development policies and strategies is crucial. The big challenge is the financing of CSA activities.

In the three debates we had in Zambezia province it clearly was summarized that CSA is an approach which addresses the complex interrelated challenges of food security, development and climate change, and identifies integrated options that create synergies and benefits and reduce trade-offs. The challenge was the recognition that CC requires a holistic approach, regionally specific in terms of agro-ecological zones and by the particular social, economic, and environmental situation.

The other challenge identified relates the interactions between sectors and the needs of different stakeholders involved. Sometimes there is antagonism between agriculture and other development programs. This originates barriers to adoption, especially among farmers and policy makers. The alignment of policies, financial investments and institutional arrangements is crucial for successful CSA implementation.

6. The last question was “*What opportunities remain untapped, and why? How could they be explored?*”

One of the major opportunity remaining in Mozambique is the alignment of the multiple development objectives and then to define priorities need to be set and collective decisions made on different benefits and trade-offs. Why? Because about 54.6% of Mozambique population is under poverty. Therefore, there is a need to strengthening of livelihoods, especially those of smallholders’ farmers who are the most affected, by improving access to services, knowledge, resources (including genetic resources), financial products and markets.

Mozambique should addresses adaptation and builds resilience to shocks, especially those related to climate change, as the magnitude of the impacts of climate change has major implications for agricultural and rural development. The strategies should consider climate change mitigation as a potential secondary co-benefit, especially in low-income groups, agricultural based populations.

4.2 Recommendations

Some recommendations of this study include the need to:

1. Improve vulnerability assessments to provide early warning on food security;
2. Enhance food security and develop community-based seed and food storage systems;
3. Improve crop and livestock production through the use of appropriate technologies, use of improved crop varieties and livestock breeds that are tolerant to drought, and developing/implementing strategies for drought preparedness;
4. Increase resilience of food production systems to erratic rains by promoting sustainable agricultural production of maize and vegetables in wetlands and along river valleys;

5. Develop a framework to ensure that all agriculture projects and programmes undertaken in the sector have had environmental impact;
6. Mainstream gender, HIV and AIDS issues into the CSA framework; and
7. Strengthen the capacity of all stakeholders in issues of mainstreaming environmental management in the agricultural sector.

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