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# Tracking Adaptation and Measuring Development (TAMD) in Mozambique

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Quarter 1 Report - Orlando Lara Pineda & Ian  
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# Tracking Adaptation and Measuring Development (TAMD)

## Quarterly Report TAMD Mozambique - SCI April-June 2013

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## ACRONYMS

<b>AAP</b>	African Adaptation Programme
<b>CBO</b>	Community Based Organization
<b>CC</b>	Climate Change
<b>DANIDA</b>	Danish International Development Agency
<b>DRR</b>	Disaster Risk Reduction
<b>ENAMMC</b>	Estrategia Nacional de Adaptacao e Mitigacao das Mudanças Climáticas (Climate Change National Strategy)
<b>FAO</b>	Food and Agriculture Organization
<b>GHG</b>	Green House Gases
<b>GIIMC</b>	Grupo Inter-Institucional para Mudanças Climáticas ( Climate Change Inter-Institucional Group)
<b>GoM</b>	Government of Mozambique
<b>INE</b>	Instituto Nacional de Estatísticas (National Institute of Statistics)
<b>ING</b>	Instituto Nacional de Geologia (National Institute of Geology)
<b>INGC</b>	Instituto Nacional de Gestão de Calamidades (National Institute for Disaster Management)
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>MAE</b>	Ministério de Administração Estatal (Ministry for State Administration)
<b>MDG</b>	Millennium Development Goals
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MICOA</b>	Ministério Para a Coordenação da Acção Ambiental (Ministry for the Coordination of Environment Affairs)
<b>MINAG</b>	Ministério da Agricultura (Ministry of Agriculture)
<b>MMAS</b>	Ministério da Mulher e Acção Social (Ministry for Women and Social Affairs)
<b>MPD</b>	Ministério de Planificação e Desenvolvimento (Ministry for Planning and Development)
<b>NAPA</b>	National Action Plan for Adaptati on
<b>NGO</b>	Non-Governmental Organization
<b>PARP</b>	Plano de Acção para Redução da Pobreza (Poverty Reduction Strategic Paper)
<b>PES</b>	Plano Economico e Social
<b>PDD</b>	Plano de Desenvolvimento Distrital
<b>PEDSA</b>	Plano Estratégico de Desenvolvimento do Sector Agrario (Agrarian Sector Development Strategic Plan)
<b>PQG</b>	Plano Quinquenal do Governo (5 year’s Governmental Plan)
<b>PPCR</b>	Pilot Project on Climate Resilience
<b>REDD</b>	Reduction of Emission from Degradation and Deforestation
<b>SPCR</b>	Strategic Programme for Climate Resilience
<b>UMC</b>	Unidade de Mudanças Climaticas (Climate Change Unit)
<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Programme
<b>UNICEF</b>	United Nations Children’s Fund
<b>WFP</b>	World Food Programme

## 1. INTRODUCTION AND OVERVIEW OF THE TASK

### Mozambique Context

*Summary: Mozambique is the **8th most vulnerable country to climate change** and is one of the poorest countries in the world with a high dependency on foreign aid. The population is **primarily rural and dependent on agriculture**, with 60% living on the coastline. Droughts, flooding and cyclones affect particular regions of the country and these are projected to increase in frequency and severity. The main institution for managing and coordinating climate change responses is the **Ministry for Coordination of Environment Affairs (MICOA)**, the Ministry for Planning and Development also has a key role. New institutions have been proposed under the **National Strategy on Climate Change** but are not yet operational. There have been a **range of national plans and strategies** on climate change and disaster risk reduction, and the National Strategy was approved in 2012. The main programme currently running in Mozambique specifically on climate change adaptation is the PPCR. (Artur, Tellam 2012:8)*

### Mozambique Climate Vulnerability and future project effects (Artur, Tellam 2012:9-)

***Summary: The main risk/hazards in Mozambique are floods, droughts and cyclones with a very high level of current and future vulnerability in terms of exposure to floods and cyclones as more than 60% of the population lives along the coastline below 100 meters of altitude.***

Mozambique is located in the eastern coast of the southern Africa region between the latitudes 10o 27' and 26 o 52' south and longitudes 30 o 12' and 40 o 51'. It borders Tanzania in the North, South Africa and Swaziland in the south, Malawi, Zambia and Zimbabwe in the west and comprises 1,700km of north-south coastline bordering the Indian Ocean to the east. The country covers a surface of 799,380 km<sup>2</sup> and has about 22.5 million inhabitants (INE 2012). (Artur, Tellam 2012:9)

Mozambique is one of the poorest countries in the world. Although economic growth has been impressive over past years with a reduction of the absolute poverty by 15 percent over the period 1997-2003, slowing from 69% to 54% (MPF et al 2004), by 2008 more than half of the population still lived with less than one US\$ per day as poverty reduction has stagnated at 54% (MPD 2010). The Human Development Index ranks Mozambique close to the bottom, just above Burundi, Niger and Democratic Republic of Congo (UNDP 2011, p. 130). In 2008, nearly half of the children under the age of two were under chronically malnourished and more than half of the population in Mozambique had no access to potable water and hospital care (UNDP & GoM 2008, p.12). Due to the prevailing poverty Mozambique has been highly dependent on external aid for more than 25 years: Mozambique is one of Africa's largest aid receivers (about US\$ 65.6 per capita per year) and the world's eight most aid dependent country (Arndt et al., 2006, p.3; Renzio and Hanlon, 2007, p.3).

Climate change has become one of the major factors hampering international and national development efforts. The majority of the population lives in rural areas, obtaining their livelihoods mainly from agriculture and natural resources (about 70% of the national population), which are highly impacted upon by increased climate variability and change. Droughts, floods and cyclones have been on the rise and are expected to increase further during the coming years. (Artur, Tellam 2012:10)

Mozambique is highly vulnerable to the impacts of climate change. It ranks 8th among the world's most vulnerable countries according to the 2011 world risk report (BEH & UNU-EHS 2011, p.28). About 60% of the population live along the coastline, which is vulnerable to increased cyclones and sea level rise as nearly 45% of the country is not greater than 100 meters above sea level. The country is also a lower riparian of nine international rivers and more than 50% of the country's water flows depends on foreign countries upstream. Drought has historically been recorded with particular focus on the southern region in the interior of Gaza and Inhambane provinces while flooding badly affects the Zambezi and Limpopo basins. About one quarter of the

total Mozambican population is at risk from natural hazards (World Bank 2010, p.8). Economic analysis from these hazards suggests that Mozambican GDP growth is cut by an average of 5.5% when a major shock occurs (World Bank *ibid*). The 2000 great flood provides an illustrative case. It led to a decline in national GDP from an expected 10% growth to just 1.6% in 2000 and inflation rose from 2.9% in 1999 to 12.7% in 2000 (MICOA 2011, p.9 , Artur, Tellam 2012:11)

Studies on climate change in Mozambique have noted that temperatures have increased by between 1.1-1.6oC; statistics show a reduction in cold days and winter periods and an increased number of hot days during summer periods; there is also a shift in rain patterns with an evident reduction in rainfall and changes in the commencement and ending of the rain season all over the country (INGC 2009). By 2050, Mozambique is likely to have an average increase in temperature of one to two degrees under any scenario (World Bank 2010, p. xv). This is expected to lead to further increases in the frequency and intensity of flooding, drought, cyclones and sea level rise by 2100, although these are expected to be marked by regional differences (INGC 2009). (Artur, Tellam 2012:11)

Impacts that may be attributed to climate change have already been noticed in the national economy. The 2000 great floods, linked to climate change, claimed about 800 lives, affected about one quarter of the national population (about 5 million people) and produced economic losses estimated at US\$ 600 million (GoM 2000,p.17). Recent economic analysis on the impacts of climate change in Mozambique suggest that, if no adaptation measures are taken, the national GDP could fall between 4-14% by 2040-50 and the country could experience annual losses estimated at about US\$ 400 million while more economically viable adaptation options vary from US\$ 190 million to US\$ 470 million per year depending on the sea level rise scenario (World Bank 2010, p.xix-xx). (Artur, Tellam 2012:12)

### **Key institutions for mainstreaming Climate change**

As part of the process of implementation of TAMD in Mozambique a document was prepared by Luis Artur, UEM and Ian Tellam, Adaptify in the second half of 2012 on current Climate Change scenario, government institutions engaged on CCA and the role of national monitoring and evaluation in Mozambique for development planning and climate change adaptation. This section summarizes key findings of that report.

Over the past five years, three government institutions have emerged as critical players in improving climate risk management: MICOA, INGC and the Ministry of Planning and Development (MPD).

The Ministry for the Coordination of Environmental Affairs (MICOA) is mandated to coordinate environment and climate change related interventions, and in so doing, to develop related strategies and interventions. Various laws, policies, strategies and regulations have so far been developed by MICOA , which include:

- National Environmental Policy (1995);
- Environmental Law (1997);
- Action Plan to Reduce Desertification (2003-2006);
- Strategy for Biodiversity Conservation (2003-2013);
- Environmental Plan and Strategy (2005-2015);
- Environmental Strategy for Sustainable Development (2007-2017). (Artur, Tellam 2012:13)

These strategies directly address environmental protection and indirectly address climate change mitigation and adaptation.

For the coordination of interventions on Disaster Risk Reduction (DRR) the government created **National Institute for Disaster Management (INGC)** in 1999, which replaced the Department for Natural Disaster Prevention and Mitigation (DPCCN) that was established in 1980 and which was perceived to be outdated. INGC is part of the Ministry for State Administration (MAE) and receives recommendations and advice for its interventions from the Disaster Management Coordinating

Council (CCGC), which is composed of ministers whose portfolio's are disaster-sensitive such as Agriculture, Defense, Health, Education, Environment, Industry and Trade. There is also a Technical Council for Disaster Management (CTGC), which provides technical advice to individual ministries and to the CCGC on issues regarding DRR.

**INGC** plays a crucial role in disaster management and was the first national institution to set the framework to improve climate risk management even though not directly related to climate *change*. In 1999, the Government approved the National Policy for Disaster Reduction, which outlined interventions on DRR, the institutional setup for DRR and mandates that all interventions related to DRR, preparedness, response, recovery, and reconstruction should be coordinated by INGC. Under this mandate, INGC is organized to cover all relevant sectors through the Technical Council for Disaster Management (*Conselho Tecnico para Gestao de Calamidades-CTGC*), which is a structure similar to GIIMC (and most of the participants of the CTGC also belong to the GIIMC). The main difference between GIIMC and CTGC is that is GIIMC focused mainly on climate change while CTGC focuses mainly on disasters. CTGC is represented at the national, provincial and district levels. At community level INGC has been fostering local committees for disaster management (*Comites Locais de Gestao de Calamidades-CLGC*). With this setup, it has been possible to mainstream DRR at individual institutions and to better frame and coordinate DRR interventions across different geographical areas. (Artur, Tellam 2012:13-14)

**MPD** was created in 2005, with the mandate to lead and coordinate all development planning in Mozambique. Since its creation, MPD has also addressed climate change issues by creating its own institutional capacity for tackling CC and by leading or co-leading different projects on CC. It claims that climate change, far from being an environmental issue, is a developmental problem requiring correct development planning. MPD, in partnership with MICOA, is facilitating the national Strategic Program for Climate Resilience (SPCR) funded through the World Bank, African Development Bank and IFC.

Because MPD coordinates overall development planning, its awareness and sensitivity to climate change is crucial for CC to become part of the normal planning and budgeting. From 2011, MPD has become very active in recommending that annual sectorial planning should include activities related to climate change adaptation and mitigation. As an example of this, CC was included, for the first time, in the 2013 government plan and budget. For more details on this refer to section 3.1. Also, Annex 3 contains details of large scale interventions on climate adaptation/resilience. (Artur, Tellam 2012:14)

### **Strategic Planning and M&E for Climate Change**

Strategic planning for climate change is a relatively recent process started by the NAPA in 2007. Since this time the Strategy and Action Plan on Gender, Environment and Climate Change (2010) has been approved and more recently the National Strategy for Climate Change (2012). Additionally a National Strategy on Disaster Risk Reduction and Climate Change (ENARC) has been proposed. Many of these (proposed) interventions can be clustered under similar thematic headings. Whilst the current policy framework appears to be taking positive steps, there has been limited implementation so far. Many of the NAPA priorities are still to be addressed although the first funding for interventions was secured last year, and the ENARC is yet to be implemented. The ENMC is also a new policy having only been approved in November 2012. (Artur, Tellam 2012:6)

There is an effort supported by donors to encourage a more systematic and streamlined response to climate change. The most notable recent climate change programme in Mozambique is the Strategic Programme for Climate Resilience (SPCR), part of the Pilot Programme on Climate Resilience (mentioned above). A loan of \$52 million has been approved in conjunction with a grant of \$50 million, and so far 8 projects have been earmarked for funding. Also, the African Adaptation Programme (AAP), which sought to mainstream climate adaptation mechanisms into policy, development and investment frameworks, has recently concluded.

Social and economic planning is overseen by the Ministry of Planning and Development (MPD) and the Ministry of Finance. The M&E for development follows two distinct routes; the first requires each ministry to report on regular intervals and requires input from the provincial and local levels. This first system focuses more on the monitoring side of the equation. The second approach is coordinated centrally by the National Institute of Statistics (INE) using socio-economic data gathered by various household surveys at different intervals. It is primarily this second approach to M&E that MPD employs to assess socio-economic performance. However, given the different timeframes of the household surveys that are utilized, there may be issues surrounding the accuracy and relevance of the data being used. Efforts are currently underway to overcome this issue through annual surveys. There has also been a Performance Assessment Framework set up by donors and the GoM to assess various indicators spanning sectors. (Artur, Tellam 2012:6)

Whilst the national M&E system is slowly migrating towards a system of results based management, instigated in 2011, it is still largely based on progress monitoring and is not forward looking. As of mid 2013, the government has ambitions to integrate climate change into national processes and indicators using a cross-sectoral approach. This will be a challenge due to a lack of harmonization between sectoral plans, often overambitious targets, data reliability and availability. There are also capacity issues. With specific regard to climate change, impact studies have been carried out, but there are still gaps in local data which can result in problems in establishing a baseline for vulnerability. Also, the data that is collected is largely in dissimilar formats and has not been rationalized or collated. Further, little of the M&E process feeds back into future planning and learning.

Climate change adaptation interventions are relatively new in Mozambique and historically there has been an uncoordinated approach to climate change in development planning. This is set to change however with the framing of climate change as a cross cutting issue, and the inclusion by MICOA of climate change in its annual budget. Whilst there have been several climate change related projects in Mozambique there does not seem to have been any consolidated learning on the M&E of these projects in this context.

The M&E within the government for adaptation is very much in the early stages; a framework is envisioned as being in place by the end of next year, but for the moment, adaptation of M&E broadly suffers from many of the same constraints of the national M&E system. Currently, no fully developed climate change M&E frameworks exist at the national level, although these are in development both at the sectoral level and being incorporated into national development indicators. The SPCR includes results frameworks for each component that are in development and previous development partner projects have focused on institutional indicators and capacity. The SPCR also has the explicit aim to generate learning around M&E, although it is not yet clear specifically how this will be achieved.

Adaptation projects supported by development partners do not have a dedicated home in the government, and depending on the nature and scope of the project will instead span a number of ministries. There is also a fragmented approach to M&E as there are requirements under each donor's particular project. Donors and implementing agencies play an important role in supporting climate change projects and M&E, and whilst there are efforts to streamline and coordinate donor efforts through a working group, the M&E of projects may still be hampered through a lack of human capacity, inadequate socio-economic data, as well as gaps in information on increased climate variability and change. (Artur, Tellam 2012:7)



## The National Strategy on Adaptation and Mitigation of Climate Change (the ENAMMC)

On November 2012 Mozambique Government approved a National Strategy for Adaptation and Mitigation of Climate Change (ENAMMC) defining a leading role for the Ministry of Environment (MICOA) and creating a consultative body with participation of key government Ministries, Departments and Agencies (MDAs): the Inter Institutional Group on Climate Change (GIIMC) and an operational body: the CC Unit (UMC) yet to be established.

The ENAMMC proposes the establishment of a Centre of Knowledge on Climate Change (*Centro de Gestão de Conhecimento em Mudanças Climáticas- CGC*) to be hosted at the Ministry of Science and Technology (MCT). This centre, yet to be created, will gather, manage and disseminate scientific knowledge on climate change and feed the policy and intervention planning process. The overall coordination of CC interventions will be carried out by MICOA through a Climate Change Unit (*Unidade para Mudanças Climáticas-UMC*) under the control of MICOA and hosted at the National Council for Sustainable Development (CONDES) secretariat. UMC is also still to be established. CONDES, which has ministerial representation and is chaired by the country's Prime Minister, will provide political support and guidance while its technical council (CONDES technical council- Conselho Técnico do CONDES), which has director level representation and is chaired by MICOA vice Minister will provide technical and political support to the UMC.

UMC is tasked with the overall coordination of climate change interventions and to support inter-institutional linkages. The unit will also prepare annual intervention plans related to the ENMC, and implement and monitor the strategy. It is also tasked to provide technical advice on projects and programs on CC, funded through multilateral sources and donors. UMC will get technical support from the GIIMC from CONDES and its technical unit (Technical Council of the National Council for Sustainable Development-CT-CONDES) and from the Disaster Management council and its technical council (CCGC and CTGC of INGC).

The management of multilateral funds on climate change will be led by the National Environmental Fund (*Fundo Nacional de Ambiente-FUNAB*) at MICOA, which will then allocate the funding to different implementing institutions. (Artur, Tellam 2012:14)

The ENAMMC defines the following three pillars for action:

- a) Climate Risk Adaptation, Management and Reduction (which links to TAMD Track 2)
- b) Mitigation of GHE (Green House Emissions)
- c) Cross cutting issues comprising institutional mainstreaming on CCA (which links to TAMD Track 1):
  - i) Legal framework and CCA structures,
  - ii) Government Coordination in policies and planning for CCA (programs/projects)
  - iii) Research, information, knowledge and tools
  - iv) CC and GHE information gathering development and budget.
  - v) Knowledge transfer through training to generate capacities in CCA: funding, and tools for risk evaluation and Risk reduction

Implementation is envisaged in each of the 3 pillars defining strategic areas with their respective actions as well as a 2 year plan in the form of a logical framework that will provide a first set of indicators.

### TAMD Mozambique

Save the Children International in Mozambique is the TAMD implementing partner in Mozambique as part of its climate change and DRR programme sub-theme, and linking to the related ACCRA and COSACA consortia

TAMD Mozambique is supporting the formulation of a comprehensive system of M&E on CCA for Mozambique government in close coordination with MICOA and a group of donors in the CCA that

have been supporting the government through a CCA “core group” including DANIDA, UNDP, WB and GIZ.

The TAMD Mozambique project has positioned itself to provide methodological support to the government in its process of discussion and critical thinking to define a robust set of indicators. Collaboration is ongoing with personnel from MICOA, the Minister of Planning and Development (MPD) and M&E units of MDAs of the government at national and provincial level. It is expected that this collaborative process to define a first draft of CCA M&E indicators and a general method for data collection will be ready by the end of September 2013.

### **Pilot Interventions**

On 20 November 2013, Mozambique will hold municipal and provincial elections and it is expected that, as a result, engagement of government officials during the last quarter of 2013 will be a challenge. Also, data collection may become difficult within case study areas due to possible political unrest that could threaten the security of staff. To mitigate this risk, pilot testing of TAMD indicators, and data collection will be carried out during October and November 2013 in communities in which NGO interventions in CCA/DRR development are already established and connections with locals already exist.

The pilot exercise will consider the thrmain risk scenarios in Mozambique: droughts, floods and cyclones. Piloting will be implemented in 2 communities per risk scenario. Gathering of information will consider qualitative and quantitative data using household surveys and semi-structured interviews with focal groups and key stakeholders.

SCI has identified the Gaza Province as one potential case study area for drought and flood risks; this will be in an areas where the ACCRA programme has been active (implemented by Save the Children and World Vision). In addition, a pilot on cyclones and coastal flooding risks is planned for the Angoche District where a project has already been implemented by CARE International.

## 2. STAKEHOLDER ANALYSIS/ KEY ENTRY POINTS

### 2.1 Core Partners (Government)

- 2.1.1 Minister of Environment (MICOA), Telma Majane is in charge of the process of implementation of a CCA M&E strategy in coordination with various Government Ministries, Departments and Agencies (MDAs) under the the Inter Institutional Group on Climate Change (GIIMC). MICOA leads the Strategic Program of Climate Resilience (SPCR) which will support the implementation of the CCA M&E strategy based on the ENAMMC approved on 2012.
- 2.1.2 Minister of Planning and Development (MPD). Xavier Chavana, M&E Department, and Julio Filemone, Planning Department, are counterparts in this process. MPD is in charge of the general government development M&E system. The annual government Economic and Social Plan (PES) brings together all relevant project /programs for all MDAs as well as a set of indicators and means of verification.
- 2.1.3 Heads and personnel of M&E Units of key ministers and institutions according to relevant areas of ENAMMC

### 2.2 Relevant/Key partners role and involvement in the project

- 2.2.1 Luis Artur is a CC Researcher from Universidade Eduardo Mondlane (UEM). He participated in the formulation of the CCA M&E review report together with Ian Tellam, Adaptify, during 2012. He has ample knowledge of CC in Mozambique, has closely participated in the process of formulation of TAMD and has provided information and insights on the institutional context. Therefore, TAMD would require his cooperation in the coming process of construction of the CCA M&E system
- 2.2.2 DANIDA is part of a group of donors in the CCA sector meeting regularly in a “core group” including GIZ, WB and UNDP discussing key issues. Malene Wiinblad works with “Programa de Apoio ao Sector do Ambiente” (PASA) funded by DANIDA and supporting MICOA statistics unit. Moreover, currently DANIDA-PASA is formulating operational indicators at output/ outcome level for the MPD Economic and Social Plan (PES) considering each of the strategic areas of the ENAMMC.
- 2.2.3 UNDP is a key partner supporting MICOA and INGC on CCA and DRR programs and projects. UNDP is also part of the CCA “core” group. Clara Landeiro is a UNDP Consultant providing regular technical advice to MICOA and has a strategic overview of the Climate Change initiatives and opportunities to coordinate efforts on the donors side.
- 2.2.4 WB recently approved a budget support program (DPO) defining a national CCA M&E system as a condition for a first track disbursement estimated by the end of 2013. The WB is the process of hiring a Consultant to support MICOA to develop its national M&E strategy and the TAMD team will work with this consultant to ensure a shared strategy.
- 2.2.5 GIZ is currently implementing a project to carry out vulnerability assessments in pilot districts. The districts have been selected field work is planed to start in August 2013. TAMD Mozambique intends to follow this closely and to make use of the outcomes as additional inputs to the TAMD pilot.
- 2.2.6 ACCRA and COSACA consortium members namely: Care International, CONCERN WorldWide, World Vision and Oxfam.

### 2.3 Limitations/Challenges

The TAMD Mozambique has the following specific objectives:

- a. Work closely with international TA that is being provided through the WB for a national M&E system and collaborate with MICOA and MPD;
- b. Encourage a common view and agenda within the CCA “core group” to assure facilitation of information, experiences, current efforts and expertise of UNDP and DANIDA in the process of formulation of a CCA M&E system;

- c. Work as closely as possible with personnel within the M&E units of relevant MDAs to promote a coherent inter-sectoral process for the selection and construction of indicators.
- d. Since Disaster Preparedness (DP) and Disaster Risk Reduction (DRR) ongoing efforts are mainly based at the “Instituto Nacional de Gestao de Calamidades” (INGC) : work as closely as possible with INGC to obtain key information on project/programs documents, logical frames and indicators.
- e. Collect data and feedback from MDAs in workshops and from interviews ; collect field level data through household surveys and semi structured interviews.

Challenges associated with these objectives are linked to institutional rivalry, data availability and data reliability. Municipal elections in November may also limit ability to engage with government staff and may reduce the ability to travel to case study areas, due to security concerns arising from possible political unrest.

### 3. THEORY OF CHANGE

Indicator sets for Track 1 and Track 2 will be collected from a systematic review of key policy documents. Narratives for theories of change will be collected at the same time and an attempt will be made to produce one coherent narrative that will be supported by key stakeholders in relevant MDAs.

The objective is to demonstrate logical links between expected activities in Track 1 and outputs and outcomes in Track 2.

This intention is to provide a method by which a sharper analysis can be obtained in connection with the drivers of adaptive/resilient development in Mozambique, including:

- External shocks associated with more frequent and more intense CC related disasters, especially considering the high level of exposure to floods, cyclones and higher sea levels , with 60% of the population living within 100 meters above sea level. (Artur, Tellam 2012:11)
- External shocks associated with new social and economic interventions by government, donors and the private sector, especially in the context of new investments related to natural resource extraction in Mozambique.

### 4. INDICATOR DEVELOPMENT - TRACK 1 AND TRACK 2 & METHODOLOGICAL APPROACH

The structure of indicators for Track 1 and Track 2 will have a close relation to the structure of the National Strategy for CC (ENAMMC) in Mozambique<sup>1</sup> , particularly pillars 1 and 3. Details on the strategic areas and actions per pillar can be seen in the Annex.

ENAMMC pillars	TAMD tracks
Pillar 1: Adaptation interventions	Track 2
Pillar : Cross sector issues. Institutional mainstreaming of CC: coordination, information, knowledge, tools development and budget.	Track 1

Pillar 1: Adaptation interventions corresponding to TAMD Track 2 are organized in 8 strategic areas:

ENAMMC: Pillar 1: Adaptation – 8 Strategic Areas	
1.	Climate Risk Reduction (DP and Response)
2.	Water Resources Management
3.	Agriculture, Fishing and Food Security and Nutrition (FSN)
4.	Social Protection

<sup>1</sup> Pillar 2: Mitigation of GHE (Green House Emissions) will not be considered.

5.	Health
6.	Biodiversity
7.	Forestry
8.	Infrastructure

Pillar 3: Cross Sector Issues corresponding to TAMD Track 1 are organized in 5 strategic areas:

ENAMMC Pillar 3: Adaptation - 3 Strategic Areas	TRACK 1 Indicators (TAMD 2013:30-36)
	Overall: Indicator 1 (Outcome Level)
1. Legal and Institutional Framework for CCA	Indicator 2: Institutional Coordination Indicator 3: Budgeting and Finance Indicator 7: Participation Indicator 8: Awareness
2. Research and systematic observation	Indicator 5: Use of climate information
3. Training and Technology Transfer	Indicator 4: Institutional Knowledge/capacity Indicator 6: Planning under uncertainty

### Construction of indicators- methodological approach

The process of indicator construction will simultaneously include the following entry points:

- a) output-outcome coherence (ToCs)
- b) project-program scale
- c) sector-inter-sector scale
- d) territory (local-regional-national)
- e) Specific vulnerabilities according to risk scenarios
- f) Measurement considering different criteria:
  - 1 Feasibility
  - 2 Efficacy/effectiveness
  - 3 Efficiency
  - 4 Acceptability/Legitimacy
  - 5 Equity
  - 6 Sustainability

At the same time correlations and interlinkages between indicators on TAMD Track 1 (Pillar 3 ENAMCC) and TAMD Track 2 (Pillar 1 ENAMCC) will be tested for quality, relevance and robustness.

### 5. EMPIRICAL DATA COLLECTION (a) TRACK 1 (b) TRACK 2

#### Methodological approach on gathering and processing of information

In close collaborate with MPD, various MDAs M&E units, and INE (National Institute of Statistics) clearly identified indicators will chosen, including long term indicators currently measured through INE surveys.

Indicators will have quality, relevance and robustness, and the following will be primarily sought:

- a) Baselines already available, or capacities to build baselines rapidly and with relatively low cost;
- b) Available knowledge and capacities of key personnel for the gathering information to assure quality;
- c) Economic capacities to gather information regularly and in a timely and a sustainable manner, financed as far as possible from national funds.

## **6. POTENTIAL CHALLENGES AND LIMITATIONS**

The TAMD Mozambique project is attempting to formulate a coherent and feasible set of indicators for Tracks 1 and 2 that will on the one hand be clearly communicable while on the other hand being sufficiently fluid to allow for iterative construction of indicator sets. In doing so, various entry points must be considered (from local to national, from project to program, from sector to inter sectoral). The objective to create a feasible and practical method to create a national CCA M&E system is challenging considering limitations on government staff capacities and the availability and reliability of data.

## **7. CONCLUSIONS**

TAMD Mozambique has an invaluable opportunity and has been manoeuvred into a position where it can strongly influence and provide technical advice to the process of construction of a national CCA M&E system in Mozambique.

At the same time the project is in a position to test the logic behind proposed climate adaptation interventions in Mozambique through the application of Theory of Change, which will lead to a better understanding of how these interventions can best lead to a sustainable reduction of vulnerability.

## 8. ANNEX

### Structure of National Strategy for Adaptation and Mitigation of Climate Change (ENAMMC) Mozambique

#### Pillar I: Adaptation and Management of Climate Risks corresponding to TAMD TRACK 2

No	Strategic Areas	Actions	MDAs
1	Climate Risk Reduction	1 Reinforce (Capacity Building) EW systems: community radios, weather stations, Infrastructure to share information with public and private sector, fire warnings, use of local languages)	INGC, INAM,
		2 Reinforce (Capacity Building) Disaster Preparedness and response capacities <ul style="list-style-type: none"> <li>▪ Evacuation capacities,</li> <li>▪ INGC coordination,</li> <li>▪ drought vulnerability reduction</li> <li>▪ Better work of Multiple Use Resources Centers (CERUM) supporting local communities in natural resources management and vulnerability mapping</li> <li>▪ Organizing and training Local Committees on Risk Management and Disasters</li> <li>▪ drought vulnerability reduction</li> </ul>	INGC Inter Institutional Group of DRR
2	Water Resources Management	3 Increased capacities for management of Water Resources <ul style="list-style-type: none"> <li>▪ Shared management (other countries) to regulate and catch flood peaks using dams and evaluating diversion (water transfer) between watersheds</li> <li>▪ Improve knowledge on quality and quantity of underground water resources</li> </ul>	MOPH
		4 Increase access and capacities for catchment, storing, treatment and distribution of water. <ul style="list-style-type: none"> <li>▪ Practices to allow aquifers recharge</li> <li>▪ Improve rainwater drainage and rural/urban sanitation</li> <li>▪ Increase water catchment for households and economic sectors</li> <li>▪ Water catchment in excavated reservoirs mainly in the South zone</li> <li>▪ Explore technologies to increase water availability (including desalination)</li> <li>▪ Built small dams and agro-hydraulic infrastructure for irrigation and cattle watering place</li> <li>▪ Warranty no contamination of water during droughts or floods preventing epidemics related with water use.</li> <li>▪ Promote sites of low consumption of water and reduce water waste on urban pipelines</li> </ul>	MINAG, MICOA,
3	Agriculture, Fishing	5 Increase agricultural (agriculture and livestock) resilience	MINAG

	and Food Security and Nutrition (FSN)	<ul style="list-style-type: none"> <li>▪ Diversify introducing varieties resistant to variations on climate parameters</li> <li>▪ Technologies and inputs for CC</li> <li>▪ Control of crop pests and diseases and storage</li> <li>▪ Improve agro-ecological zoning and land use planning</li> <li>▪ Develop program and plan of national action on conservation and nutrition of soils (agriculture conservation)</li> <li>▪ Improve epidemiological surveillance and animal disease control</li> <li>▪ Improve and expand technical assistance for producers by a better quality intervention</li> </ul> <p>South: Reduction of raining and increase of droughts (emphasis in water management) North: Better selection of crops increasing productivity</p>	Agriculture Department
		<p>6 Increase fishery resilience</p> <ul style="list-style-type: none"> <li>▪ Promote aquaculture to reduce fishing</li> <li>▪ Mangrove regeneration, protection of seaweed (algas), corals and other fish reproduction and feeding zones</li> <li>▪ Improve information quality and small scale fishing capacity</li> <li>▪ Improve control and management measures on fishing activity ensuring access to clean technologies for renewal and maintenance of stocks</li> </ul>	MINAG Fishery Department
		<p>7 Warranty adequate levels of food security and nutrition</p> <ul style="list-style-type: none"> <li>▪ Improve mechanisms for transport and commercialization of food products</li> <li>▪ Improve availability, access and use of foods</li> <li>▪ Create community based processing and preserving industries</li> <li>▪ Agro processing for a better use of food products</li> <li>▪ Nutrition Education Programs and mechanisms to manage surplus</li> <li>▪ Research and promote use of nutritious species of foods consumed in communities</li> </ul>	SETSAN (Food Security and Nutrition Secretariat)
4	Social Protection	<p>8 Increase adaptive capacity of vulnerable persons</p> <ul style="list-style-type: none"> <li>▪ Approaches based on communities</li> <li>▪ Reinforce social protection systems for a higher resilience</li> <li>▪ Reinforce capacities, orientation and targeting of social protection programs to improve resilience of the most vulnerable groups</li> <li>▪ Reinforce links between the social protection systems and disasters response systems including links with EW systems</li> </ul>	MSocial Protection
5	Health	<p>9 Reduce vulnerability of persons to diseases transmission vectors related to CC</p> <ul style="list-style-type: none"> <li>▪ Adequate mapping of distribution and spatial mobility</li> <li>▪ Promote use of clean technologies, create leisure forest areas and city buffers zones</li> <li>▪ Research on disease favored by CC and surveillance system of these diseases</li> </ul>	MISAU
6	Biodiversity	10Assure biodiversity protection	MICOA



		<ul style="list-style-type: none"> <li>▪ CC adaptive conservation actions/programs</li> <li>▪ Flora and fauna species protection in risk of extinction</li> <li>▪ Trans boundary Conservation areas to allow wildlife migration</li> <li>▪ Management of adaptive capacities of ecosystems for biodiversity conservation</li> <li>▪ Reclassify and resize conservation areas identifying areas with risks of losing biodiversity</li> </ul>	
7	Forestry	<p>11 Forests - Promote mechanisms for forest plantations for local use</p> <ul style="list-style-type: none"> <li>▪ Planting trees with multiple uses with economic purpose based on needs of local communities, local initiatives and preventing fires</li> <li>▪ Explore agro-forestry-pastoral systems to diversify means of subsistence and incomes</li> <li>▪ Communal programs of management of forest resources</li> </ul>	MINAG? Forestry Institute?
8	Infrastructure	<p>12 Resilience mechanisms of urban areas and other settlements</p> <ul style="list-style-type: none"> <li>▪ Elaborate or update tools for planning and land use (territorial planning) considering CC</li> <li>▪ Mapping vulnerable infrastructure according to hazards (floods, cyclones, increase of sea level)</li> <li>▪ Reformulate construction regulations of transport, telecommunications, energy distribution, buildings, hydraulic infrastructure, wastewater treatment to become resilient to climate changes</li> <li>▪ Enforce that investments, particularly public, in risk areas are climate proof</li> <li>▪ Promote designing and implementation of insurance mechanisms against climate risk on built assets</li> </ul>	MOPH, MINED MISAU (other infrastructure institutions) MITUR
		<p>13 Adequate development of touristic zones and coastal zones to reduce impact of CC (Specific)</p> <ul style="list-style-type: none"> <li>▪ Evaluate climate risks on tourism resources and interest zones</li> <li>▪ Provide technical advice on construction codes (regulations) to tourism operators</li> <li>▪ Conservation and protection of coastal areas</li> <li>▪ Promote designing and implementation of insurance mechanisms against climate risk on tourism infrastructure</li> </ul>	MITUR

**Pillar III: Cross Sectoral - Mainstreaming (Institutional Support) corresponding to TAMD TRACK 1**

No	Strategic Areas	Actions	MDAs	TRACK 1 INDICATORS
1	Legal and Institutional Framework for CCA	1 Suit legal framework aligned with EAMCC <ul style="list-style-type: none"> <li>a. Identify gaps and needs to adjust laws and regulations to include CCA</li> <li>b. Provide sectors with tools (strategies, policies, regulations) to integrate monitoring capacities and answer timely on CC challenges</li> <li>c. Strengthening institutional framework at district level to improve interaction with communities</li> <li>d. Promote integration of CC in local committees (Risk Management) for convergence of different topics</li> </ul>	MICOA-CONDES	Indicator 1: CC Integration on Planning (Outcome)
		2 Adjust institutional framework aligned with EAMMC <ul style="list-style-type: none"> <li>a. Update CONDES legal statute integration other MDAs (MAE, MINEC, MCT, MISAU, MMAS, INE, academia, private sector and Civil Society)</li> <li>b. Setup the CC Unit (UMC) as a operational Secretariat of CONDES</li> <li>c. Define legal statute of the Inter Institutional Group on CC (GIIMC)</li> <li>d. Reinforce capacities of MDAs for monitoring and supervision of laws and regulations on CCA (M&amp;E Units)</li> <li>e. Proactive interaction of MDAs, Civil Society and OBC, academia and media</li> </ul>	MICOA-CONDES All key MDAs involved in CCA	Indicator 2: Institutional Coordination Indicator 7: Participation Indicator 8: Indicator 3: Budgeting and Finance Awareness
2	Research and systematic observation	3 Research on Climate Change (CC) <ul style="list-style-type: none"> <li>a. Create a Knowledge Center on CC</li> <li>b. Create interdisciplinary research teams – CC Networks</li> <li>c. Designing a National System of MRV (measuring, reporting and verification) on CC effects including monitoring of CCA and data of GHE activities and factors.</li> <li>d. Use of studies for designing policies for populations life</li> <li>e. Establish a peer review system on CC research</li> <li>f. Knowledge Exchange system among government, academy, private sector and Civil Society to generate and share knowledge</li> <li>g. Enhance Environment research institutions considering CC</li> <li>h. Promote regional and international exchanges</li> </ul>	MICOA-CONDES All key MDAs involved in CCA	TAMD TRACK 1 Categorical Indicator 5

		<p>4 Strengthening of institution gathering information on GHE inventories and National Communications</p> <ol style="list-style-type: none"> <li>Distribute responsibilities on ad hoc Group and disseminate reports (according to the National System)</li> <li>Expand a network of Weather, Hydrology, Hydrometric and agro meteorology stations warranting maintenance and standards</li> <li>Create and Integrated system of management of climate information integrated by INAM,DNA, IIAM and INAHINA</li> <li>Improve standardization of equipments and data bases</li> </ol>	MICOA INAM, DNA, IIAM INAHINA	
3	Training and Technology Transfer	<p>5 Development and improvement of level of knowledge and capacities to intervene on CC</p> <ol style="list-style-type: none"> <li>Update assessment of training needs and adjust and implement corresponding plan</li> <li>Strengthen the AND (National Designated Authority) for MDL Projects Training and Technology transfer enabling to identify opportunities</li> <li>Develop and insert contents on CC on formal and informal education programs</li> <li>Public awareness and dissemination of information on CC including this strategy (ENAMMC), policies and international agreements</li> <li>Create planning capacities and budget (PESOE,PESOD, PES) integrated including CC adaptation and mitigation</li> <li>Create capacities in FUNAB to guide designing and elaboration of projects and /or programs to access to international funds (e.g. GEF, Adaptation Fund (FCPC), Less Developed Climate Fund (LDCF), Special Climate Change Fund (SCCF), Green Climate Fund (GCF), Fast Start, Climate Investment Fund, among others). (Leverage capacities)</li> <li>Strengthen capacities for management and financial auditing of FUNAB as the Financial Coordination Agency of CC projects</li> <li>Create capacities in UMC for integrated management and monitoring of ENAMMC, projects and/or programs on CC adaptation and mitigation including formulation of reports on projects and programs implemented.</li> </ol>	MICOA-CONDES All key MDAs involved in CCA	<p>Indicator 4: Institutional Knowledge/capacity</p> <p>Indicator 6 Planning under uncertainty</p>
		<p>6 Promote transfer and adoption of clean and CC resilient technologies</p> <ol style="list-style-type: none"> <li>Elaborate and implement Needs Assessment on technologies and respective plan</li> <li>Use MDL and other similar tools to catalyze technology transfer to mitigate CC supplying needs and technological limitations</li> </ol>		

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## Project materials

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