

Mozambique

National progress report on the implementation of the Hyogo Framework for Action (2009-2011)

Name of focal point : Mr. Casimiro Abreu

Organization : National Institute for Disaster Management (INGC)

Title/Position : General Deputy Director

E-mail address : abreu9172000@yahoo.com.br, gribeiro@ingc.gov.mz, casimirosanbe@yahoo.com.br, csanbe@ingc.gov.mz

Telephone : 258 823013259, (258) 21477211/12

Fax :

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Outcomes for 2007-2009

Area 1

The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.

Outcomes:

DRR has been progressively mainstreamed into strategic and annual development plans at national, sectoral and local levels, in accordance with the cycle of their elaboration and upgrading. In parallel, continued funding has been allocated to insure the implementation of DRR activities at all levels.

- As a cross-cutting issue, DRR has been integrated in the recently approved Five Year Government Plan (2010-2014) as a key component for poverty reduction goals, while vulnerability reduction, particularly of agriculture due to droughts and floods, is the driver of the Third generation of the National PRSP (2011-2014) approved by the Government in April 2011, which aims to ensuring economic growth that is pro-poor by building resilience to agriculture, the major source of employment, food and income for the poor.
- Together with agriculture and forestry, increasing resources are being allocated to the implementation of strategic sectoral plans at central level, with especial attention to sectors responsible for hazards monitoring and early warnings, including food security, and infrastructures (roads and dams).
- At local level, DRR objectives have been integrated in strategic plans at Provincial (10 provinces) and District Levels (128 districts), namely, with emphasis on vulnerability reduction for the locally most pressing hazards. The municipality of Maputo, the Mozambican capital city, has a contingency plan for disaster response during the rainy season, and in Beira, the second Mozambican city, the local municipality is actively investing in coastal erosion mitigation.
- Reduction between 2008 and 2011, by 96% and 87%, the number of people reported affected and killed by disasters, respectively, particularly floods and cyclones, meaning that the goal of reducing the loss of life has been achieved.

Area 2

The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.

Outcomes:

Enhanced capacity at both central and local levels to monitor, prepare and respond to multi-hazards.

- At central level, institutional capacity for real time bush fire monitoring, flood modeling, radar rainfall and cyclone, food insecurity warning, and seismic activity detection has been improved through allocation of more qualified human resources and equipment. Regular food security and nutrition assessments are annually performed to monitor the situation. At local level, more Local Communities for Risk Management were created in all districts prone to floods and cyclones and capacity of local communities has been strengthened through regular training exercises.
- In 2009, by the Decree-Law 3/2009 of April 24, the Government has created the National Service for Public Rescue, with the aim of increasing the national capacity to respond to emergencies through the provision of timely search and rescue of people and assets there should be fires, accidents and other hazards. This service should also foster the creation of Fire Brigades in municipalities and the emergence private companies, volunteers or associations of volunteers in this field.
- Coordination mechanisms among provincial and district stakeholders have been strengthened with the institutionalization of Provincial Emergency Operation Centers (COE) in all provinces (10) and District Committee for Risk Management in all the 128 districts that comprise the Mozambican territory.
- Resilience capacity to cope with droughts has been created in a few arid districts and the successful

experience of providing training to local populations on conservation agriculture techniques, rain water harvesting, promotion and protection of livelihoods of vulnerable populations, small scale irrigation farming and small scale agro-processing industry gained through the Multiple Use Resource Centers (CERUM's) in the southern dry districts is being replicated and expanded to other arid districts in the Mozambique Central and Northern Regions

Area 3

The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Outcomes:

Enhanced the security of human settlements at risk of flooding

- Post-flood relocation programmes are under implementation for 55000 families affected by floods in 2007 and 2008 on the Zambezi and Save Rivers. To guarantee sustainability and continuity of these programmes, specific funding has been annually allocated through the State Budget.
- Six thousand improved houses, around 24% of the 25000 planned houses, have been completed in the resettlement areas on the Zambezi and Save River.
- National policy framework and strategies have been strengthened by linking climate change and disaster risk reduction. In this sense, the country's vulnerability to disasters, particularly those related to meteorological hazards, and the respective aggravating impacts of climate change, especially on agriculture are currently considered one of the nation's greatest challenges to be carefully addressed to safeguard the achievement of sustainable economic growth and rapid poverty reduction.
- A combination of both infrastructural protection and non-structural flood mitigation measures, the clear focus on drought mitigation, the expansion of social protection to vulnerable groups, and the creation of a Disaster Risk Management Fund has been identified as national priority to mobilize adequate funding for vulnerability reduction activities, including emergency preparedness and response and long term social and economic recovery programs.
- Communication has been improved in the CENOE's through the installation of VSAT equipment to facilitate transmission of information and data.

Strategic goals

Area 1

The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.

Strategic Goal Statement 2011-2013:

Mainstreaming of Disaster Risk Reduction is fully consolidated in planning and budgeting processes in the key line ministries, districts and municipalities.

According to the new Five Year Government Plan (2010-2014), two outcomes are expected: avoidance of loss of live and property due to disasters and, the reduction of vulnerability to hunger and water scarcity in dry areas with annual rainfall less than 500 mm.

- Enhance of information delivery on disasters prevention and mitigation focused to local communities, and full mainstreaming of DRR in key line ministries, districts and selected municipalities will receive much attention

Two programmes have been defined for disasters prevention and mitigation:

- Management of floods, cyclones and earthquakes. The objective of this program is to achieve full integration and more investments in the Ministry of Public Works and Housing (water management), the National Institute of Meteorology (weather forecast and cyclone monitoring); the Technical Secretariat for Nutritional and Food Security (vulnerability and food security analysis), and the Ministry of Mineral Resources (seismic activity detection and monitoring). This program aims at continuously enhancing the national capacity for hazards monitoring and detection, and information dissemination to communities at risk.

- Management of droughts to reduce hunger. This program will focus on investments in water storage and supply in arid districts, dissemination of agricultural technologies adapted for arid zones, the definition of suitable strategies for climate change adaptation in arid lands, and promotion of local small investment initiatives for income and employment generation. In this regard, more integration of national DRR targets is required from the Ministries of Agriculture; Public Works and Housing; Coordination of Environmental Affairs; and Planning and Development.

- A simplified matrix is under design by INGC to guide sectors to mainstream key DRR activities in their strategic and annual plans and budgets.

- In the context of the Joint Programme on Climate Change a manual on mainstreaming Climate Change Adaptation issues into district plans was also produced.

Area 2

The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.

Strategic Goal Statement 2011-2013:

Enhanced multi-stakeholders coordination of disaster risk reduction activities

- Permanent multi-stakeholders coordination and dialogue through the Technical Council for Disaster Management (CTGC) and the National Emergency Operation Center (CENOE), and local level DRR coordination forums will be continued

- Training sessions for all CTGC members and Civil Society organization platforms at all levels will be held to insure that national and local capacity is built to monitor and evaluate progress in the implementation of DRR objectives

- Mapping of all stakeholders engaged in DRR activities all over the country, following the 3W approach: Who does What and Where, will be conducted and sharing of information are key priority to ensure that

all DRR concerns are adequately addressed during planning processes, synergies are built up, and duplication and unnecessary spending of available limited resources is avoided.

- Physical establishment of Provincial Emergency Operation Centers (COE's) will be completed and training of District Committees for Risk Management conducted to ensure that DRR coordination mechanisms are functioning at local levels
- Dialogue between INGC and the platforms of Civil Society organizations and municipalities, particularly in cities faced by multi-environmental problems, such as Maputo and Beira, and in cities at high risk of flooding or cyclone hazards will be strengthened through regular consultative meetings.
- Establishment of UNAPROC forum for emergency support and coordination of response, logistical databases in line 3w, including rules and regulations for external aid: norms, sphere standards, etc

Area 3

The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Strategic Goal Statement 2011-2013:

Ensure safer and rapid post-disaster resettlement

Building quicker and better is essential to reduce past vulnerabilities and build resilience to future extreme hazards events, especially flooding and cyclones. Despite this need of urgency, attention will be paid to the implementation of sustainable social, economic and environmental recovery which turns post-disaster reconstruction into an opportunity to improve living standards of the affected communities.

In this sense, to be successful, all post-disaster reconstruction programmes will systematically reduce disaster risk and vulnerability of the affected communities by:

- undertaking multi-hazard mapping in advance to resettlement;
- promoting livelihood diversification initiatives;
- improving local housing conditions and land use planning
- facilitating the provision of basic services such as education, health, water and sanitation facilities,
- Expanding the provision of social protection schemes to benefit more vulnerable people, especially; women, children, elderly and disabled persons, as well as food insecure people with capacity to work (through productive social protection).
- Improve telecommunications between CENOCs and COEs

Therefore, the creation of a national Disaster Risk Management Fund to concentrate financial resources to support all DRM phases and activities has emerged as new challenge for the country. The realization of this goal will enable the country amongst other interventions to finance post-disaster reconstruction of the affected communities without delays due to budget constraints.

Priority for action 1

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 1: Core indicator 1

National policy and legal framework for disaster risk reduction exists with decentralised responsibilities and capacities at all levels.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Is DRR included in development plans and strategies? Yes
- * Yes: National development plan > Five Year Government Plan (2010-2014) (2010)
http://preventionweb.net/files/16411_pqg20102014.pdf [PDF]
- * Yes: Sector strategies and plans > Master Plan for Disaster Prevention and Mitigation (2006)
http://preventionweb.net/files/16411_masterplanfordisasterpreventionandm.pdf [PDF]
- * Yes: Climate change policy and strategy > NAPA (2007)
http://preventionweb.net/files/16411_planonacionalparaadaptaoasmudanascl.pdf [PDF]
- * Yes: Poverty reduction strategy papers
- * Yes: Common Country Assessments (CCA)/ UN Development Assistance Framework (UNDAF)

Description:

Mozambique has made significant progress towards the consolidation of integration of DRR and climate change as a national priority and a central driver for poverty reduction and sustained economic growth. This progress is visible in both Government development plans and strategies and in the international partners' assistance frameworks, specially the UN System and the Programme Aid Partners (PAP's). As a continuation of the national vision stated in the past 2005-2009 Five Year Government Plan and its operational plan, the Action Plan for Absolute Poverty Reduction (PARPA II) 2006-2009:

- The recently approved 2010-2014 Five year Government Plan, and the Action Plan for Poverty Reduction (PARP), place the reduction of vulnerability as a national key priority and challenge for rapid poverty reduction and a sustained economic growth.
- DRR and climate change appear as one of UN intervention areas in the extended UNDAF 2010-2011, focusing on legislation and institutional framework, capacity development at central and local government institutions, local communities and Civil Society organizations on vulnerability reduction to both disaster risks and climate change and linking with environmental protection.
- DRR and climate change have also become the center of the PAP's agenda for both financial and technical aid for Mozambique.
- A Law of Disaster Management is under elaboration
- DRR activities are integrated in all central line ministries, and into strategic provincial (10) and district development or annual plans;
- A matrix is under dissemination at all levels to guide mainstreaming of DRR into sectoral and local plans;

- A proposal for the creation of National Disaster Risk Management Fund was submitted for discussion by the Coordinating Council for Disaster Management.

Context & Constraints:

Despite this progress, the country, including the economic sectors, remain vulnerable to disasters:

- A recent study conducted in 2009 by INGC on climate change impact on Disaster Risk reduction, has shown that
 - o Temperatures rose for 1.2°C to 1.6°C , rainfall patterns and frequency and intensity of disasters have changed over the last 45 years (1960-2005). Temperature is expected to rise by 2.5°C to 3.0°C by 2040-2060, and +5 to +6°C by 2081-2100.
 - o There will be pronounced rainfall variability, increase in floods and cyclone frequency in the Central region, and sea level rise affecting the major coastal cities of Maputo, Beira and Xai-Xai, and called for urgent adaptation measures to address these future adverse impacts.
- A recent joint study conducted by the World Bank et al. (2010) on Economics of Adaptation to Climate Change in Mozambique, showed that without investments in adaptation, by 2040-2050, Mozambique will experience significant economic losses of 0.8-1.6% total GDP, due to revenues decline in agriculture, energy and infrastructures sectors.
- Results of the Third Poverty Assessment (2008/2009) published in September by the National Institute for Statistics showed that 2008 droughts contributed to increase in national poverty rates from 54.1% in 2002/2003 to 54.7%, and in the Provinces of Maputo, Sofala and Tete (see Figure 1.1). National poverty rates, measured by consumption remain high.
- Although Mozambique has a Master Plan for Disaster Prevention and Mitigation (2006-2009), there is a lack of legal framework which can bind sectors and local Governments to allocate adequate resources to meet national DRR goals.
- DRR sectoral goals and targets are still not defined. Consequently, sectors and local governments continue to implement DRR activities according to availability of human and financial resources which are still reduced in all institutions at all levels.
- Lessons learned from simulation exercises and disaster response operations, indicate the need to improve information basis, real time information management, communications systems, and decentralized capacity to collect appropriate information, analyze, and operationalize the needed actions.

Reference document:

- > Figure 1.1 Poverty Levels in Mozambique and selected provinces (2011)
http://preventionweb.net/files/16411_figre1.1povertylevels.xls [XLS]
- > Third National Poverty Assessment (2010)
http://preventionweb.net/files/16411_thirdnationalpovertyassessment.pdf [PDF]
- > PRSP 2006-2009 (2005) http://preventionweb.net/files/16411_parpaii20062009.pdf [PDF]
- > UNDAF Extension (2009) http://preventionweb.net/files/16411_undafextension20102011.doc [DOC]
- > Tourism Development Strategy (2004)
http://preventionweb.net/files/16411_tourismdevelopmentstrategy.pdf [PDF]
- > Agrarian Development Strategy (2010)
http://preventionweb.net/files/16411_agrariandevlopmentstrategy.pdf [PDF]
- > Adjustment of the 2007-2008 Post Disaster Resettlement and Reconstruction plan (2008)
http://preventionweb.net/files/16411_adjustmentofthe20072008postdisaster.doc [DOC]
- > Food production Action Plan (2008) http://preventionweb.net/files/16411_foodproductionactionplan.pdf [PDF]
- > Action Plan for Bush Fire Prevention and Control (2007)
http://preventionweb.net/files/16411_actionplanforbushfirepreventionandc.pdf [PDF]
- > Sustainable Development Environmental Strategy (2007)

Priority for action 1: Core indicator 2

Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Is there a specific allocation of budget for DRR in the national budget?
- * 5.2 % allocated from national budget
- * 317.19 million USD allocated from overseas development assistance fund
- * 538.1 million USD allocated to hazard proofing sectoral development investments (e.g transport, agriculture, infrastructure)
- * 28.19 million USD allocated to stand alone DRR investments (e.g. DRR institutions, risk assessments, early warning systems)
- * 14.77 million USD allocated to disaster proofing post disaster reconstruction

Description:

Mozambique does not have legal specification for budget allocation for any sector or activity. Annual budgets are allocated to sectors in line with the projections of resources made on the Medium Term Fiscal Framework, included the resources allocated to the State Budget by the Programme Aid Partners.

As such, annual sectoral budget may change due to end of existing programmes or emergency of new national priorities or concerns, especially crisis.

Despite these considerations, available data on budget allocation show that there is a strong national and international commitment to investing in reducing disaster risk and climate change impacts in Mozambique. Even with difficulties to track DRR sectoral budget allocations before 2009, data in Figures 1.2 and 1.3 show that:

- USD 592.9 million has been allocated to DRR between 2009 and 2011, around 5.2 % of State Budget;
- International donors have committed more resources (USD 317.19 million), than Government (USD 275.75 million), around 53.49% of total resources allocated to DRR over the period

In categories, data in Figure 1.4 and Table 1.1 show that:

- Increasing resources have been dedicated for strengthening of early warning, monitoring activities and assessments over the three years, from 2.32% in 2009 to 6.48% 2011, of total DRR budget.
- Over 90% of DRR resources have been allocated to development activities, (dams, ponds, irrigation schemes, and conservation agriculture), and 2% to post-disaster reconstruction in the Zambezi valley and Save River.

Context & Constraints:

Despite all the progresses achieved in improving resources allocation to DRR:

- Budget constraints to DRR are still visible and will remain in future, as strong long term investments in the pillar economic and social sectors are still required to accelerate economic growth and reduce the

current high levels of poverty and vulnerability;

- Mozambique remains one of the poorest countries around the world and heavily dependent on international financial aid to finance around 49-52% of the annual State Budget. This fact constrains the allocation of specific budget to all DRR activities;
- DRR costing has not been conducted in Mozambique. Therefore, difficulties remain for the estimation of the resources needed for DRR and the additional financial requirements to integrate climate change impacts into disaster risk reduction.

Reference document:

> Technical comments on DRR budget allocation (2011)

http://preventionweb.net/files/16411_technicalcommentsondrbbudgetallocat.doc [DOC]

> Figure 1.4 and Table 1.1 (2011) http://preventionweb.net/files/16411_figure1.4andtable1.1.xls [XLS]

> Figures 1.2. and 1.3 (2011) http://preventionweb.net/files/16411_figures1.2and1.3.xls [XLS]

Priority for action 1: Core indicator 3

Community Participation and decentralisation is ensured through the delegation of authority and resources to local levels

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Do local governments have legal responsibility and budget allocations for DRR? Yes

* Yes: Legislation > Local State Bodies Law, the Law 8/2003 (2003)

http://preventionweb.net/files/16411_law8200319may.pdf [PDF]

* Yes: Budget allocations for DRR to local government

Description:

Mozambique is moving towards the consolidation of decentralization and local communities' participation in the decision making process through the implementation of the Local State Bodies Law, the Law 8/2003, of May 18. This law not only determines that districts are the basic planning and budgetary units, but also empowers the local governments to lead all the local development processes, including DRR activities and establish the right for the local communities to participate in the decision making process through consultative mechanisms. As a result of the implementation of this law:

- Local Consultative Councils, at the level of district, administrative posts and localities have been created and functioned
- DRR activities are also included in Local Government plans and priorities and are implemented with agreement of Local Council, and periodic progresses are submitted to these councils for appreciation and further recommendations

Additionally, a new law, the Land Use Planning Law was issued in 2007. As part of local strategic development plans, this law delegates competences for local governments to prepare and local land use plans following an ample consultation process.

Although legal budget ceiling specifications do exist:

- All local governments allocate State budget to DRR activities, in line with other priorities agreed with

local communities. But this are often not explicitly mentioned as DRR activities.

- Additional resources have been decentralized to provinces, districts and municipalities to support the implementation of local development projects, including DRR activities.

Data in Figure 1.5 show that USD 193,3 million from the State Budget have been allocated to local Governments (provinces and districts) for DRR activities over the last three 3 years (2009-2011). In average, 32.6% of total DDR resources were allocated to local levels (provinces and districts), as shown in Figure 1.6.

Context & Constraints:

The current decentralization process in Mozambique, including the participatory decision making process is partly limited by financial resources, but greatly, by the lack of local technical capacity to absorb resources decentralized to districts.

- For instance, since 2006, besides the recurrent and capital budget allocated to districts, around USD 300 000 are annually allocated to each of 128 districts specifically to fund local initiatives for food production and employment generation. Projects are funded by local Governments after approval by local Consultative Councils.

- Since 2009, the Ministry of Public Works and Housing has decentralized resources to provinces and districts specifically for maintenance of local roads.

Some initiatives have been launched to enhance local technical capacity:

- Local governments have granted competence to hire skilled persons, especially those with high degree;

- Every year, Government supports finalist university students' internships in the districts as a means to attract skilled labor to districts;

- More human resources have been allocated to districts to enhance the planning capacity of the District Service of Planning and Infrastructures and Planning;

- Training programmes have been conducted by the Ministry of State Administration to local governments and the Consultative Council members.

However, more on-job training and human resources are still needed for the creation of satisfactory technical capacity to insure comprehensive implementation of DRR and environmental aspects at local level.

Reference document:

> Figures 1.5 and 1.6 (2011) http://preventionweb.net/files/16411_figures1.5and1.6.xls [XLS]

Priority for action 1: Core indicator 4

A national multi sectoral platform for disaster risk reduction is functioning.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Are civil society organisations , national planning institutions, key economic and development sector organisations represented in the national platform? Yes

* 22 civil society members (specify absolute number)

* 17 out of 24 sectoral organisations (specify absolute number)

* 0 women's organisations participating in national platform (specify absolute number)

Description:

DRR activities are coordinated through two well established multi-sector platforms: the Technical Council for Disaster Management (CTGC), for coordination of all DRR activities, and the National Emergency Operations Center (CENOE), exclusively for coordination of emergency preparedness and response and for hazard monitoring. Both platforms are chaired by the National Institute for Disaster Management (INGC), the statutory authority for DRR in Mozambique

- All line ministries, namely, economic, social and development sectors, and their technical branches are represented in both platforms;
- As shown in Figure 1.7, during emergency, response activities are coordinated by CENOE through Government leadership, and in partnership with UN System and CSO organizations that gather at CENOE in the emergency preparedness phase and following the declaration of emergency by the Council of Ministers
- In total, 17 sectors out of 24 ministries are represented in both CENOE and CTGC.
- Except universities (UEM and UDM-private), the Mozambican CSO's (more than 400 organizations), including women organizations, participate in the CTGC and CENOE meetings as a platform. They normally are represented by SCO focal points.
- In Government, the Ministry of Women and Social Affairs is in charge of coordinating all gender issues and the protection of vulnerable groups, with support from the UN System provided through UNIFEM.

Context & Constraints:

The participation of CSO in DRR activities, especially of women organization, is determined by the internal dynamics and structural arrangement of CSO platforms and the representativeness of these forums in dialogue platforms with Government.

- Emergency needs assessments should also be improved to provide accurate, evidence based information, in a transparent and consensual basis.
- Multisectoral assessments, including CSO, UN and sectors involvement should be promoted.
- Formally, the G20, a national platform composed by more than 400 organizations is the official CSO representative in all dialogue platforms with Government and all levels.
- G20 has visible participation in economic, social issues, including gender, and environment, but plays limited role in DRR discussions.
- CSO's are more visible during emergency periods they implement emergency relief activities with direct funding from international organizations and for active part of the Humanitarian Country Team (HCT).

Therefore, dialogue should be strengthened to bring DRR into the CSO agenda.

Training for the G20 platform will also be required to enable a stronger and visible SCO participation in the design and monitoring of the implementation of DRR policies, strategies and plans across the country.

Reference document:

> Figure 1.7. Coordination mechanisms (2011)

http://preventionweb.net/files/16411_figure1.7.coordinationmechanisms.doc [DOC]

Priority for action 2

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 2: Core indicator 1

National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

* Is there a national multi-hazard risk assessment available to inform planning and development decisions? Yes

* Yes: Multi-hazard risk assessment > Impact of Climate Change in Mozambique (2009)
http://share.maplecroft.com/INGC_Report/

* 0 % of schools and hospitals assessed

* 0 schools not safe from disasters (specify absolute number)

* No: Gender disaggregated vulnerability and capacity assessments

* Yes: Agreed national standards for multi hazard risk assessments

Description:

Two recent studies mark the current interest on multi- risk assessment on sectors, particularly on economy and human settlements. Floods, cyclones, droughts and sea level rise have been the main focus of these studies:

The 2009 INGC study on Climate change impacts on Disaster Risk shows the probability of future climatic variability both in time and in magnitude (See main Report Attached).

In terms of impacts to sectors, this study highlights that rain excess and deficit will have significant impacts on agriculture production, especially in the southern and central regions. Crop failure due to floods or droughts is expected to increase in these regions. Salt water intrusion is expected to expand inland up to 28 km on the Zambezi. Salt intrusion is also expected on the Limpopo, Incomati, Buzi, Ligonha River basins, with the consequent reduction of fresh water for irrigation and human supply. The Northern region is expected to remain stable.

Additionally, economic activity, especially, on the poor livelihoods of the coast, tourism and human settlements are expected to be affected by intense cyclones activity. Associated with cyclones, sea level rise and storm surges are expected to have adverse impacts on infrastructures, particularly, ports, at the cities of Maputo and Beira. But sea level rise impacts will also affect the city of Xai-Xai, at the mouth of the Limpopo River.

These findings were also confirmed by the World Bank et al.(2010) study on the economics of adaptation for Mozambique. Out of agriculture and human settlements, this study expanded the risk assessment to roads and hydropower and concluded that by 2040, losses in GDP will reach 4.5-9.8% in agriculture, over 1.4% electricity reduction, substantial losses in the transport sector, 916 000 people displaced at

the coastal areas where annual damages are estimated to reach \$103 million.

Mozambique was selected as one of the pilot countries for the implementation of GRIP activities in Africa. Global risk identification activities have started in 2008. To date a Country Situation Analysis report has been produced (See attachment), aimed to identify studies conducted in the field of risk assessment, and key players in the various national institutions. The findings will feed into the multi-hazard National Risk Assessment to be conducted soon.

Under GRIP program, a seismic risk assessment for urban areas has been started for the city of Maputo (the capital). The methodology will be expanded to other cities where seismic risk is greater and will be used as an assessment tool for other risks in major cities.

Context & Constraints:

So far, less interest has been paid to assessing the impacts of disasters and climate change risks on schools and hospitals, so that specific measures are put in place to retrofit or relocate them to safer locations.

Although the number of schools and hospitals is well known, the country has not conducted a specific assessment to identify and quantify the hospitals and school units at risk. As a result, although there is national capacity to undertake this assessment, the number of unsafe schools and hospitals is not currently known.

District risk mapping through innovative community assessment approach integrated with in depth district food security and nutrition vulnerability information has just initiated. These will provide key information, disaggregated for district planning and decision making on priority actions aligned with decentralization process.

Other constraints are those related to the technical aspects associated with the use of Global Circulation Models.

For instance, for the 2009 INGC study:

- Not all the seven global circulation models used, have shown similar results
- The results were highly affected by the modeling uncertainties such as: spatial resolution of the data namely-topographic data (the DEM 1km of spatial resolutions); the physical data like soils characteristics where at 1:1 000 000 scale
- Field data for modeling calibration: the satellite rainfall data used for downscaling of global future rainfall where only available for 10 year (1998-2008) with a low spatial resolution (8km) which means the need of improvements by using field raingauged stations.
- The coverage of raingauged network in Mozambique is poor which makes the models results difficult to calibrate.
- The maps are not validated yet as additional field survey is required.

Reference document:

> SIERA Report (2011) http://preventionweb.net/files/16411_sierarptfinal20jan2011compressed.doc [DOC]

> Analise de Hidrologia e Bacias Hidrograficas (2009)

http://preventionweb.net/files/16411_ingcmainreportportugueses3hydro.pdf [PDF]

Related links:

> Economics of Adaptation to Climate Change-Mozambique <http://www.worldbank.org>

Priority for action 2: Core indicator 2

Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

- * Are disaster losses systematically reported, monitored and analysed? Yes
- * Yes: Disaster loss database
- * Yes: Reports generated and used in planning

Description:

With the support of UNDP, and under the Global Risk Identification Program (GRIP), Mozambique has concluded the collection of information on disaster losses across the country covering the last 30 years. As output, a disaster inventory in the form of a web database has been created and the process to collect day-to-day data on disasters losses will start soon.

Preliminary results of the inventory show that although floods and drought have been the most frequent disasters, epidemics have caused the highest death toll over the last 30 years in Mozambique. This is a typical epidemiological profile of a country with high levels of poverty and weak public sector systems, where access to health facilities, adequate health care and access to drinking water remains low, with large discrepancies between rural, urban and peri-urban households. Additionally, undernutrition remains one of the primary underlying cause of deaths in Mozambique, especially among children below 5 years of age.

Among hazards, although less frequent, cyclones have been the most destructive for houses and have accounted for more than 50% of total sustained damages.

However, before the creation of this web database, Government reports have traditionally been used as the source of information of disaster losses. In the recent times, the 2000, 2001, 2007 and 2008 disasters appear as the best examples. With the exception of the 2008 disaster report, besides the physical damages (human and infrastructures), the three reports included the estimates of the financial impacts.

The 2000 and 2001 disaster reports were used as the source of information for International Appeal and post-disaster reconstruction program. The 2007 and 2008 reports were used by to guide the post-reconstruction program (resettlement program) underway on the Zambezi River (Central region) and Save River (Southern region).

Context & Constraints:

Two facts emerge as constraints to disaster loss data in Mozambique. First, there are limitations associated with the nature of information on the database. For instance, the web database is relatively limited in terms of time scale not allowing one to go back beyond the year 1979. However, for a country like Mozambique who is regularly affected by extreme disaster, more extensive databases are required for accurate disaster impact analyses, also integrating different indicators.

The second fact is associated with the validation of contentious data, particularly those related to deaths due to floods and droughts. Very often, indirect causes (attacks by crocodiles, boat accident or risky crossings) are always attributed to floods when occurring during the rainy season, although these events can also occur during dry season. Similarly, many local leaders tend to related with drought all the deaths of stunted children, or abandoned elderly or disabled that occur in their areas during drought years. But the officially accepted cause of death reported is that reported by the Health Authorities. These kind of disputes were frequent during 2005 when 800 000 were reported affected by droughts across the country, and many community leaders and local authorities claimed deaths associated with hunger, against a vehement denial of Government officials. More accurate, timely, and reliable information at all levels and appropriate information dissemination to clarify how and who should be responsible to provide public information etc. Communication systems should also be improved from field to central level and vice-versa.

Priority for action 2: Core indicator 3

Early warning systems are in place for all major hazards, with outreach to communities.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Do risk prone communities receive timely and understandable warnings of impending hazard events?
Yes

* Yes: Early warnings acted on effectively

* Yes: Local level preparedness

* Yes: Communication systems and protocols

* Yes: Active involvement of media in early warning dissemination

Description:

Four early warnings systems are in place in the country: floods, cyclones, food insecurity and earthquakes. The last system is under expansion and over the last 3 years, more seismological stations and an online and on time data collection systems has been set connecting Maputo (central) and the network stations. The other three systems have been continuously built to insure more territorial coverage, especially, for floods, which now includes more rivers and the city of Beira.

Precise information is given: the type of hazards, the likely areas to be affected, and the time expected for the hazard to strike the given locations, the likely damages. Local governments and local communities are informed about the type of measures, including safe protection, to enhance preparedness for the impending hazards.

Procedures and measures to be undertaken in advance:

- Local governments and communities are active members and direct beneficiaries of the early warning system, as they are the special target of early warnings on impending hazards. Provincial and district Governments and Local Committees for Risk Management are the bodies in place at local level to act when official warnings are released by the National Institute of Disaster Management (INGC).

On the other hand, media play a critical role in disseminating continuous information and press releases from specialized Government agencies (INAM, National Directorate for Waters, INGC, the President of the Republic, the Council of Ministers) on the evolution of the hazards. For intra-government communication, fax and telephone remain critical for rapid warnings.

All means of communication have been employed according to the conditions: television, radio, newspapers and Internet and direct communication. However, due to its territorial coverage and high availability of radio set at community level, radio and direct communication are the ways the most employed to disseminate information to the local communities.

Context & Constraints:

Accurate flood early warning system is heavily dependent on hydrological and meteorological gauge

stations to provide timely data (localized) on river flow levels and rainfall. So far, the limited territorial coverage of meteorological stations is the major challenge for rapid flood risk assessment for small river basins.

In addition, lack of expertise of Regional Administration for Waters (ARA's), and limited financial capacity for the rapid expansion of territorial coverage of hydrological stations over the large river basins.

Food security and nutritional information systems, that includes crop EW monitoring, market and prices and nutrition are mostly undertaken at national level. Provincial and district capacity to monitor and timely report with reliable and accurate food security and nutrition information is a major handicap in the whole system, due to lack knowledge, skills and appropriate tools and methodologies of the existing personnel.

Reference document:

> Sistema de Aviso de Cheias-Uma presentacao na regioa cientica (2007)

http://preventionweb.net/files/16411_sistemadeavisodecheiaapresentacao09.ppt [PPT]

Priority for action 2: Core indicator 4

National and local risk assessments take account of regional / trans boundary risks, with a view to regional cooperation on risk reduction.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

* Does your country participate in regional or sub-regional DRR programmes or projects? Yes

* Yes: Programmes and projects addressing trans-boundary issues > Tripartite Permanent Technical Committee (TPTC) between Mozambique, South Africa and Swaziland (2010)

http://preventionweb.net/files/16411_primaoperatingobjectives.pdf [PDF]

* Yes: Regional and sub-regional strategies and frameworks

* Yes: Regional or sub-regional monitoring and reporting mechanisms

* Yes: Action plans addressing trans-boundary issues > Planning prima operatinal rules (2010)

http://preventionweb.net/files/16411_planningprimaoperatingrulesdss2.pptx [PPTX]

Description:

Due to its location at the downstream end of 13 international river basins which are annually concern of the country, Mozambique is the most interested party in the regional dialogue to ensure equitable management of transboundary water resources and reduce the related risks. In this regard, 6 rivers basins put the major pressures to the country: the Zambezi, Pungue, Save, Limpopo, Incomati and Maputo rivers due to the direct impacts of water scarcity or excess on the local economic activities and human settlements in Mozambique.

Over the last years, through the project named PRIMA, Mozambique, South Africa and Swaziland have enhanced regional cooperation towards the management of water resources of the Incomati-Maputo rivers systems, under the Inco-Maputo Agreement.

In light of this agreement, on behalf of the Tripartite Permanent Technical Committee (TPTC) between those countries, the Mozambican National Directorate for Water has been granted funds from the Government of the Netherlands for the implementation of the Progressive Realization of the IncoMaputo Agreement (PRIMA) Programme. Nine (9) studies, of which, two on risk management at regional perspective are currently ongoing.

On other hand, tripartite meetings have been held between Mozambique, Zambia and Zimbabwe with the aim at improving the inter-government coordination on water management on the Zambezi River, principally during the rainy season. Therefore, as part of a regional strategy for flood risk management, controlled water discharges from the Caribe hydropower between Zambia and Zimbabwe to the Cahora Bassa dam in Mozambique, has helped to reduce the impacts of floods on downstream locations in Mozambique.

To avoid environmental risks associated to fluvial navigation, Mozambique and Malawi technical teams have been working together to find appropriate solutions for navigation of the Shire and Lower Zambezi Rivers systems connecting Malawi and Mozambique to the Indian Ocean.

Context & Constraints:

The main constraints to the implementation of regional projects with regard to PRIMA are:

- The geographical location of the Inco-Maputo rivers system on three countries remains a major challenge to setting up integrated operating objectives
- The existence of several management units and institutional structures in each country
- The difficulties to implement a multi-tiered approach which optimizes the local water resources needs and usages without compromising the river system equilibrium.
- Lack of financial resources to ensure the sustainability of PRIMA secretariat.

Reference document:

> Study for the Implementation of the Permanent Solution in the Lower (2010)

http://preventionweb.net/files/16411_primausuthubreachinceptionreportv02.pdf [PDF]

Priority for action 3

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 3: Core indicator 1

Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems etc)

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

* Is there a national disaster information system publicly available? Yes

* Yes: Web page of national disaster information system > INGC web page (2010)
http://preventionweb.net/files/16411_ingclink.doc [DOC]

* Yes: Established mechanisms for accessing DRR information

Description:

This is an area where less progress has been made over the last three years. Attempts were made for the establishment of a national disaster information system, including information collection from local level, its storage, management and dissemination by the National Institute for Disaster Management to all DRR stakeholders, as shown in Figure 3.1. So far, INGC and CENOE are the national centers of DRR information system in the country.

A web page has been created by the INGC to enable virtual access of official DRR information to the general public. Important documents, such as the Master Plan for Disaster Prevention and Mitigation, the 2009 INGC study on climate change impacts on DRR, and press release documents are available on this website.

However, as internet penetration and access is still very low at local level, particularly in the districts, the use of VHF radios has been defined as the basic element for information collection system, as radios are less affected by network failures. The operation issues of this system have been tested during national, regional and community simulations conducted across the country every year.

Currently, two important initiatives are underway aiming at gathering and disseminating DRR data and information:

- A DRR specialized website is being created by the Ministry of Science and Technology;
- Under the GRIP project, disaster data for the last 30 years has been collected. Additionally, a National Knowledge Center, located at the National Institute of Meteorology (INAM), is being conceived to enable sharing and discussion of all national DRR datasets and studies. This center will be managed jointly by the Eduardo Mondlane University and INAM.

During emergency situations, radio, TV and newspapers remain the main officially and trusted mechanisms to disseminate information to cover a vast public on the impending disasters.

Context & Constraints:

Although there have been efforts to gather key information under one umbrella,

- DRR information is still scattered among several institutions responsible for primary data collection and analysis;
- Weak integration of DRR information, including emergency reports on the INGC web page;
- DRR information system is still weak with regard to regular data collection from local level;
- Lack of guidelines and methodologies to ensure easy implementation of the information system, particularly at local levels following the end of emergencies or simulation exercises;
- Absence of a culture of DRR data storage, management and dissemination in the form of national database.

Reference document:

> Mozambique DRR Information System (2009)

http://preventionweb.net/files/16411_mozambique_drr_information_system.ppt [PPT]

Related links:

> ARA Sul <http://www.ara-sul.co.mz/>

> DNA <http://www.dnaguas.gov.mz/>

> INAM <http://www.inam.gov.mz/>

Priority for action 3: Core indicator 2

School curricula , education material and relevant trainings include disaster risk reduction and recovery concepts and practices.

Level of Progress achieved:

2: Some progress, but without systematic policy and/ or institutional commitment

Means of verification:

* Is DRR included in the national educational curriculum? Yes

* Yes: Primary school curriculum

* Yes: Secondary school curriculum

* Yes: University curriculum

* Yes: Professional DRR education programmes

Description:

INGC and the Ministry of Education are working together to progressively integrate DRR into education curriculums of public and private education at different levels using different approaches. In the public education, floods and droughts hazards are integrated into the Natural Science text book at Primary education. In turn, cyclones, volcanoes and earthquakes are components of Physical Geography text book at Secondary School.

Disasters topics are also integrated into the University curriculum. At the public education, the Department of Physics, of the Eduardo Mondlane University, the main state university, runs two BSc courses, namely, Physics and Meteorology, and Oceanography.

So far, this department has been responsible for training of the majority of human resources of the National Institute of Meteorology, and the staff of the National Institute for Hydrography (INAHINA).

For 2011, two MSc courses will be launched at the Eduardo Mondlane University:

- The MSc Physical Geography and Disaster Management at the Department of Geography
- The MSc Climate Change and Disaster Risk Reduction at the Department of Physics.

At private education, the Mozambique Technical University (UDM), leads the integration of DRR into university education:

- A BSc Environmental and Disaster Management Engineering course has been taught since 2002
- The MSc Disaster Risk Management and Development will be launched in 2011.

Currently, new approaches have been adopted to integrate DRR into schools curriculums. For instance, at primary and secondary level, teachers have been trained to informally include DRR aspects in their subjects. At University level, students have been encouraged to undertake their dissertation on DRR themes.

Finally, after temporary closure, a professional course on Land Use Planning has been resumed with the reopening of the National Institute for Land Use Planning in 2010. People trained in this institute are expected to strengthen the capacity of the District Services of Infrastructures and Planning at district level.

Context & Constraints:

At primary and secondary education, only physical aspects of hazards are presented in the text books. The human, economic and social impacts, and the methods and techniques to prevent or reduce the negative impacts of disasters are still missing.

At university level, there is a limited number of DRR experts. As result, the understanding of the concepts of hazard and disasters and their respective research methods, particularly for hazard analyses and assessments is still weak. Consequently, the vulnerability and risks assessments are often incomplete or misleading.

If not addressed, this fact may undermine all the results of the current efforts to integrate DRR into formal and informal education, particularly at local level where hazards take place, and where disaster risks are expected to be actively and urgently reduced.

Related links:

> Mozambique Technical University <http://www.udm.ac.mz/>

Priority for action 3: Core indicator 3

Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.

Level of Progress achieved:

2: Some progress, but without systematic policy and/ or institutional commitment

Means of verification:

* Is DRR included in the national scientific applied-research agenda/budget? Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

* No: Studies on the economic costs and benefits of DRR

Description:

Low advances have been made in this area. As a whole, Mozambique still devotes little attention to the importance and contribution of the national Scientific Research on fostering development in several areas, including DRR.

Since 2006, the Ministry of Science and Technology has struggled to bring Scientific Research into the national development agenda. The approval in 2006, of the Mozambique Science, Technology and Innovation Strategy, symbolizes this commitment.

This strategy puts emphasis on applied research and the creation of national research capacity by investing in Master and PhD training of Mozambican citizens, and the creation of scientific authority to guide all research activities that should play a critical role in the country's development, particularly, in the fields of natural sciences and technologies. Some results of the implementation of Science and Technology Strategy are:

- Environmental sustainability, including climate change and coastal area management as well as the linkages between environment and poverty and economic development and environmental impacts have been identified as one of priority of the national research agenda
- The establishment of the National Research Scientific Council and the researcher career
- The establishment of the Mozambican Academy of Science
- Allocation of annual research funds to the Ministry of Science and Technology to finance national research projects
- Concession of 50 annual MSc and PhD scholarships to Mozambican citizens to attend to Natural Science and technological courses particularly in Brasil, India, China, and Australia.
- Organization of scientific seminars by the Ministry of Science and Technology for the presentation of research outputs of the projects funded by the ministry research funds.

Context & Constraints:

Over the years, Mozambique has relied on sectoral research, particularly that conducted by international consultants, to make important decisions in all sectors.

For instance, the recent INGC study on Climate Change impacts of DRR in Mozambique was led by international experts (50% of the people involved), with support of national researchers or sectoral officers (the remaining 50%), mainly, for data collection or for results validation. This scenario has resulted in low interest on funding national research activity, as a whole.

Specifically to DRR, the INGC 2011 Synthesis report show that around the country only 66 people are actively involved in DRR activities including research, of which only 3 are DRR experts, and only 50% hold PhD (3) and Master (27) degrees (See figures 3.1 and 3.2).

As such, although these people can deeply understand the physical processes of specific hazards correlated to their fields, they lack deep knowledge to correlate the physical processes with specific hazards research methods, the impact root causes (vulnerabilities) and suitable solutions to address multi-hazards impacts, particularly to economic sectors.

The spirit of DRR multidisciplinary research teams, linking academia, DRR institutions, social and economic sectors does not exist. As a result, the existing individual studies are not comprehensive enough.

Therefore, these individual or sectoral studies are still less relevant to provide solutions to national disaster risk concerns in different areas of interest.

There is also lack of systematic collection, publication and dissemination of existing national DRR studies scattered in a few government departments and research institutions. This fact reduces the interest of the academia and research institutions to be fully engaged in DRR research.

Reference document:

> National DRR Expertise (2011) http://preventionweb.net/files/16411_drrexperts.xls [XLS]

Priority for action 3: Core indicator 4

Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Do public education campaigns on DRR reach risk-prone communities? Yes
- * Yes: Public education campaigns.
- * Yes: Training of local government
- * Yes: Availability of information on DRR practices at the community level

Description:

With the exception of the Master Plan for Disaster Prevention and Management, the Disaster management policy and the annual contingency plans, the country does not have any written strategy for DRR public awareness for both rural and urban communities.

But, the creation of culture of disaster prevention, through information dissemination is a national priority and is one of the DRR objectives of the Five Year Government Plan (2010-2014).

Therefore, institutionalized mechanisms and several sectoral initiatives are in place to build resilience to hazards at rural and urban communities.

These initiatives are currently carried out in the form of:

- Annual national, regional and communities simulation exercises, including municipalities, addressing the specific local most frequent hazards,
- Continuous creation and training of Local Committees for Risk Management across the country, including in municipalities and schools
- Training 188 Local Government members (District Administrators and Permanent Secretaries, Heads of the Administrative Posts, teachers, CSO and university students (see Figure 3.2);
- Dissemination of seasonal weather forecast and Contingency plans to all the levels, using the media and regular meetings with all stakeholders;
- Dissemination of official warnings and statements to the general public, and to specific locations on impending hazards, through the media, local governments, including SCO and Local Committees for Risk Management;
- Regular (weekly) dissemination of meteorological phenomena and concepts in the newspapers, by the

National Institute for Meteorology.

- Regular dissemination of daily weather forecast by the National Institute for Disaster Management, through all the national TV and radio stations and newspapers.
- Permanent engagement of Government members at all levels, Parliamentarians, international development partners, and Civil Society to sensitize local communities to avoid building permanent homes in areas at risk of flooding, and stimulate them to intensify the production of drought resilient crops and other income generation activities out of agriculture.

Context & Constraints:

The lack of a national DRR awareness and communication strategy with defined institutional roles and targets hinders the full assessment of the achievements attained and the identification of future needs, including in areas where local communities have been trained.

In other hand, lack of harmonization of general DRR messages and information to specific local hazards, long term development priorities and local adaptation needs remains a big challenge to the current efforts to build disaster resilience to rural and urban communities.

Findings from the HFA local dialogue held by UNISDR/Civil Society/ INGC in the district of Buzi, central Mozambique, showed that the enhance resilience at local level, the following actions should be taken:

- Maintenance of communication equipments, namely, antens and microfones, to insure accurate information exchange between the local communities and the District Administration
- Identification, recruitment and training of a local technician who can directly deal with DRR at district level.

Reference document:

> DRR Training for Local Governments Members (2010)

http://preventionweb.net/files/16411_ddrtrainingforlocalgovermentsmember.xls [XLS]

Priority for action 4

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 4: Core indicator 1

Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Is there a mechanism in place to protect and restore regulatory ecosystem services? (associated with wet lands, mangroves, forests etc) Yes

* Yes: Protected areas legislation

* Yes: Payment for ecosystem services (PES)

* Yes: Integrated planning (for example coastal zone management)

* Yes: Environmental impacts assessments (EIAs)

* Yes: Climate change adaptation projects and programmes > Africa Adaptation Programme (2009) http://preventionweb.net/files/16411_africaadaptationprogramme.pdf [PDF]

Description:

Efforts have been made to reduce disaster risk by issuing environmental legislation, policies, strategies and plans, aiming at regulating the use of natural resources and protecting ecosystem under growing socio-economic pressure.

- Approved and under implementation the Land Law, the Forest and Wild life Law and the Environment Law;
- Created the Sustainable Development Centers (CDS), for Natural Resources, Coastal Zones, Urban Areas
- Increased the percentage of protected areas from 11% to 16% with the creation of new 6 national parks and reserves, including marine and coastal environments (Quirimbas National Park, Limpopo National Park, Chimanimani National Park, Ponta de Ouro Marine Reserve)
- Creation of 3 new Trans-Frontier Conservation Areas (Libombos, Grande Limpopo and Chimanimani)
- Proposal for the creation of new conservation areas in the Niassa Lake and in the Primeiras and Segundas Islands, and the new Rovuma and Zimoza TFCA's
- Established the Marine and Coastal Environment Research Center in Cabo Delgado Province
- Allocated to local communities, 20% of annual total revenues from forest exploration and tourism activities within the protected areas.
- Launched the international bid for hiring a consultant to carry out the Strategic Assessment of the

Coastal Zone, aiming at guiding future development along the Mozambican coastal areas;

- Submission of all category A socio-economic developments projects, both public and private, to Environmental Impacts Assessments for their establishment.

Mozambique is also actively engaged in the implementation several climate change adaptation programmes and projects. Examples are:

- The revision the National Adaptation Program (NAPA), to incorporate recent climate changes issues, including REDD+ initiative
- Under implementation the Africa Adaptation Programme (AAP), aiming at building national capacity for climate change mainstreaming into national and sectoral development plans and strengthening of coordination mechanisms
- Under implementation the "Coping with Droughts" project under UNPD leadership; the INGC phase II and the PPCR phase I.

Context & Constraints:

The Government of Mozambique is aware and recognizes the impacts of environmental degradation on disaster risk. It also recognizes the linkages between poverty and environment degradation and the role of local communities to reduce their negative impacts. However:

- High poverty levels coupled with high dependency of local communities on natural resources for subsistence increase pressure on natural resources, in one hand, by deforestation induced by bush fires associated to wildlife hunting and agricultural land preparation, and on other hand, by extraction of firewood and construction materials.
- Weak implementation of forest management plans and unplanned coastal land use practices by private sector increase environmental risks associated with soil degradation and coastal erosion. However, there are opportunities to change the present scenario through:
 - Reforestation campaigns launched under the "One Community one Forest" Presidential initiative;
 - Implementation of REED mechanisms with participation of private sector
 - Implementation of the Land Use Planning Law with integration of recommendations provided by the ongoing Strategic Assessment of the Coastal Zone

In this regard, more capable human resources are required to guarantee the correct elaboration, implementation and monitoring of national and local development plans so that new risks are prevented and sensitive ecosystems are fully protected.

Reference document:

- > Strategic Assessment of Coastal Zone bid (2010) http://preventionweb.net/files/16411_strategicassessmentofcoastalzonebid.pdf [PDF]
- > Ministry Diploma on the Conception of 20% of Revenues to local communities (2005) http://preventionweb.net/files/16411_ministrydiploma932005concessionofth.pdf [PDF]
- > Creation of marine and Coastal Environment Research Center (2007) http://preventionweb.net/files/16411_decree162007creationofthmarineandc.pdf [PDF]
- > Regulation on Pollution Prevention and Marine and Coastal Environment Protection (2006) [http://preventionweb.net/files/16411_decree452006regulationonpollutionpre\[1\].pdf](http://preventionweb.net/files/16411_decree452006regulationonpollutionpre[1].pdf) [PDF]
- > Land Law (1997) http://preventionweb.net/files/16411_landlaw.pdf [PDF]
- > Forest and Wild life Law (1999) http://preventionweb.net/files/16411_forestandwildlifelaw.pdf [PDF]
- > Environment Law (1997) http://preventionweb.net/files/16411_environmentlaw.pdf [PDF]

Priority for action 4: Core indicator 2

Social development policies and plans are being implemented to reduce the vulnerability of populations

most at risk.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

- * Do social safety nets exist to increase the resilience of risk prone households and communities? Yes
- * No: Crop and property insurance
- * Yes: Employment guarantee schemes
- * Yes: Conditional cash transfers
- * Yes: DRR aligned poverty reduction, welfare policy and programmes
- * Yes: Microfinance
- * No: Micro insurance

Description:

Several social programs are under implementation as part of national strategy to fight poverty and reduce vulnerability, particularly in the rural areas. These programmes are divided into two groups:

- Social protection programmes targeted to vulnerable groups with and without capacity for work. These programmes are coordinated by the National Institute for Social Action, a branch of the Ministry for Women and Social Action.
- Social development program oriented to promote local production and productivity, and employment generation, financed by the District Development Fund. This program was launched in 2006, and is currently coordinated by the Ministry of State Administration;
- Under implementation several professional training initiatives aiming at enhancing the capacity of local communities to access and use the resources available to spurt local entrepreneurship.
- Under implementation the Micro-finance policy and the implementation strategy, as a component of implementation of Rural Development Strategy.
- Increased water access to 105 000 people and expanded the conservation agriculture in four arid districts (Chigubo, Massangena, Mabote and Funhalouuro) as shown in Tables
- Increased water access to 105, 000 people and expanded the conservation agriculture in four arid districts (Chigubo, Massangena, Mabote and Funhalouuro) as shown in Tables 4.1 and 4.2

Data in Table 4.3 show the results achieved with the implementation of several social protection and development programmes, including job creation, over the last five (5) years.

Context & Constraints:

Following the publication of results of the Third National Poverty Assessment (2008/09), the Government has:

- Firmly recognized the role of agriculture in poverty reduction
- Publicly announced its commitment to duplicate the budget allocation to 10% of national State Budget by 2015 in order to meet the NEPADs Declaration made in 2003 in Maputo.
- approved the Irrigation Strategic Plan, which aims to invest USD 519 million by 2019 to ensure the integral use of all land with potential for irrigated agriculture.

Nevertheless, despite the current commitment with agriculture, and growth in investments in rural areas:

- Micro-finance products are still limited and interest rates are prohibitive. This limits access to credit by farmers and businesses;
- Micro-insurance, including crop insurance does not exist. This fact turns agriculture and other small businesses vulnerable when hazards occur.

Therefore, expansion of micro-finance to all productive areas and the introduction of comprehensive and realistic micro-insurance programmes for business and crop insurance for farmers remains a challenge to ensure quick economic recovery of affected communities. However, technical capacity has to be created in both private, government and producers sectors so that micro-insurance and crop insurance mechanisms and premiums are understandable and acceptable for all interested stakeholders.

Reference document:

- > Tables 4.1, 4.2 and 4.3 (2011) http://preventionweb.net/files/16411_tables4.14.2and4.3.xls [XLS]
- > Eldely Policy (2002) http://preventionweb.net/files/16411_eldelypolicyandimplementationstrate.pdf [PDF]
- > Social Action Plan (2010) http://preventionweb.net/files/16411_socialactionpolicy.pdf [PDF]
- > Gender Policy (2007) http://preventionweb.net/files/16411_genderpolicy.pdf [PDF]

Priority for action 4: Core indicator 3

Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities

Level of Progress achieved:

2: Some progress, but without systematic policy and/ or institutional commitment

Means of verification:

- * Are the costs and benefits of DRR incorporated into the planning of public investment? No
- * Yes: National and sectoral public investment systems incorporating DRR.
- * No: Investments in retrofitting infrastructures including schools and hospitals

Description:

There are pronounced differences in performance on hazards proofing to infrastructures and settlements. There has been remarkable progress on flood proofing to infrastructures such as roads, railways and bridges, and in human settlements at risk of flooding. Examples are:

- Raised roads and railways networks, the construction of culverts and drifts in roads works to increase the water flow capacity has reduced flood damage to roads and railways during low return period events.
- Strategic investments are planned by the Mozambican Ports and railways company (CFM) to upgrade the Maputo harbor defense against storm surges and cyclones
- The INGC phase II and PPCR phase I studies are underway. These studies will define the ports vulnerability to Climate change risks and the suitable adaptation measures to make ports resilient to predicted future climate risks including sea level rise.

- Relocation of families, public institutions and infrastructures, such as hospitals, schools, electricity and water plants at risk of flooding in Middle and Lower Zambezi and Save Rivers following the 2007 and 2008 floods has reduced the risk from future flood hazards along those river basins.

However:

- Relocation programmes and 'build back better' reconstruction programmes are still not comprehensive because they have not covered towns and cities at risk of floods along all the 13 international river basins
- Massive investments, particularly, in agriculture, irrigation schemes rehabilitation and food conservation facilities are being allocated to areas with low protection just suitable for 30-year return period floods.
- In coastal areas, low protection remains to roofs or entire buildings of public institutions, schools and hospitals, electricity plants and its network, and water plants are still vulnerable to cyclone impacts, regardless their magnitude.

Context & Constraints:

Three elements have influenced the relatively low achievements made in this indicator:

- The combination of high predominance of rural population (70%), partly living in areas subject to multi-hazards risks (floods, droughts and earthquakes), and the concentration of population (60%) in coastal areas subject to cyclones, storm surges, floods and erosion;
- The apparent ineffective use of land use planning; and
- Inexistence of building codes and compulsory property insurance that could be used as effective tools for risk reduction particularly, for public investments and infrastructures, such as irrigation schemes, schools and hospitals, electricity plants and networks, and water plants.

To meet these challenges, some actions need to be taken in a near future:

- Upgrading of existing protective infrastructures to withstand to at least 100 years return period floods
- Research and dissemination of cheap but durable building technologies and materials for cyclone and earthquake prone areas are required.
- More dialogue between Government and private sector, particularly building companies to agree and strictly implement building codes when they become available.
- Compulsory and comprehensive multi-hazards insurance for public infrastructures should be brought into multi-stakeholders discussion.

In this regard, at government side, a major role should be played by the Ministries of Science and Technology, and Public Works and Housing for the establishment of comprehensive multi-hazards building codes, carefully oriented to specific geographical locations.

Solutions to ensure food security, poverty reduction and strengthening hazard resilience, needs to be explicitly and actively sought, particularly as climate change looks set to increase the magnitude and frequency of disasters, and economic instability to increase social disparities

Priority for action 4: Core indicator 4

Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

* Is there investment to reduce the risk of vulnerable urban settlements? Yes

- * Yes: Investment in drainage infrastructure in flood prone areas
- * Yes: Slope stabilisation in landslide prone areas
- * No: Training of masons on safe construction technology
- * Yes: Provision of safe land for low income households and communities

Description:

Since the launching of municipalities in 1998, planning and management of the largest urban settlements (33 cities and towns) has been decentralized to local municipalities. In 2009, more 10 towns become municipalities, increasing to 43 total numbers of municipalities. As more than 70% of urban population live in irregular settlements, attempts have been made to improve the living conditions of urban dwellers by providing more urbanized land and upgrading of existing slums. Examples of success are:

- The start of implementation of Maputo Development Plan (PROMAPUTO), which gives particular attention to roads and drainage improvement in the peripheral neighborhoods of Maputo city.

Achievements in Maputo city include:

- o Construction of new road and drainage system connecting Laulane to Costa do Sol neighborhoods;
- o Rehabilitation and upgrading of the drainage system and public transportation at Former Fighters Square (Praça dos Combatentes);
- o Improved road and drainage system at Mafalala and Polana Caniço 'A' neighborhoods, and under way urban upgrading at Maxaquene, some of the most crowded and unplanned neighborhoods in the Mozambican capital city;
- Completion of rehabilitation of the main drainage system in the Municipality of Beira, the second largest Mozambican city with 431,583 people;
- Allocation of plots of land in expansion areas in all cities, of Matola and Nampula cities, the Mozambican most fast growing cities over the last decade;
- Underway the slope stabilization program at Changara town, in Tete Province;
- Expansion of electricity and water supply networks to all suburbs of the 43 municipalities and other towns, and reduction of bills for poor families;
- Allocation of 47 000 plots of urbanized land and promotion of construction of 18000 houses are planned by Government for 2011, an initiative ever seen over the last 35 years.

Context & Constraints:

Access to improved housing and urbanized land in Mozambican cities has been slow when compared to the demand. In reality, formal and social housing market does not exist. As a result:

- More than 70% of urban homes are self-built, often on unplanned and illegal settlements, without basic infrastructures such as roads, electricity, water and sanitation.
- Even when risk awareness is high among urban dwellers, high poverty levels limit their choice to purchase safe but very expensive land or the few existing modern houses.
- Unskilled masons are often hired by interested families to build homes. As general rule, self-built homes are built without any permission by local municipalities.
- Illegal occupations of urban land are often promoted by municipality officials through corruption schemes.

Therefore, more political commitment is needed from municipalities to change the prevalent chaotic situation of Mozambican cities, by:

- Promoting rapid land use planning of urban expansion areas in anticipation to illegal land squatting by current occupants, mainly peri-urban farmers, as part of the implementation of Land Use Planning Law, approved in 2007
- Implementing a comprehensive urban upgrading of exiting degraded slums

- Reinforcement of urban legislation and regulation on housing construction
- Promotion of creation of small building companies, including professional training for respective masons on safe construction technologies and regulations.

For instance, the HFA local dialogue held by UNISDR/Civil Society/ INGC in the district of Buzi recommended the need for the sensitization of local communities not to build houses over drainage systems.

Reference document:

> 2011 Social and Economic Plan (2010)

http://preventionweb.net/files/16411_2011socialandeconomicplan.doc [DOC]

Priority for action 4: Core indicator 5

Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

- * Do post-disaster recovery programmes explicitly incorporate and budget for DRR? Yes
- * 2,94 % of recovery and reconstruction funds assigned to DRR
- * Yes: Measures taken to address gender based issues in recovery

Description:

Despite the absence of specific budget ceilings for post-disaster recovery and reconstruction, it is worth to recognize that since 2007, Government has continually allocated resources of the State budget to finance post-disaster reconstruction activities. Examples of successful post-disaster reconstruction are:

- The completion of reconstruction program in Maputo and Matola cities, following the 2007 explosion of Malhazine depot, at Maputo city, which included:
 - Full replacement of around 260 totally destroyed houses, and reconstruction of 12 thousand partially destroyed houses
 - Establishment of long term pensions for families who lost their income providing members
 - Provision of long term medical treatment and psychological counseling for affected family members
- Under implementation the recovery and reconstruction program for 55000 families affected by floods on the Zambezi and Save Rivers following the 2007 and 2008 floods. So far, 6000 homes were completed.

With respect to gender, among several actions, remarks are made to

- Implementation of several income generation activities out of agriculture benefiting women head of households and vulnerable people with capacity for work;
- Establishment of Police offices in the resettlement areas to provide overall security, and deal with violence against women and children
- Dissemination of messages raising awareness among women and local community members, including their leaderships to report all types of violence against women and children to local Police offices.

In terms of funding, Figures 4.1 and 4.2, show that USD 14.77 million was assigned to post-disaster

reconstruction programmes between 2009-2011, around 2.49% of the total State Budget allocated to DRR over that period.

Context & Constraints:

The period 2005-2010 represents a rupture in post-disaster recovery and reconstruction, when compared with the previous period 2000-2005, in the sense that post disaster recovery has shifted from a donors guided process to a government led one. Explicitly, Government assumed the leadership of a comprehensive post-disaster reconstruction following the 2007 and 2008 disasters, in comparison to the 2000 and 2001, when post-reconstruction was mainly funded and led by the international community.

Despite the current political will to annually allocate resources for post-disaster reconstruction, the country has limited capacity to fund and complete a massive post-disaster reconstruction program, as the current one on the Zambezi Valley, in short term. As consequence, the ongoing resettlement runs slowly, and over three years of implementation (2008-2010), only 24% of 25000 (reassessed in 2010) planned houses were already completed. The lack of a national strategy for resettlement concurs to this situation.

The establishment of a DRM Fund with resources dedicated to all the DRM cycles will help to fill in the current gap on funding post-disaster recovery and reconstruction, including for larger disaster that may occur in future as consequence of climate change impacts.

Reference document:

> Figures 4.1 and 4.2 (2010) http://preventionweb.net/files/16411_figures4.1and4.2.xls [XLS]

> 2007-2008 Post Reconstruction Plan (2008)

[http://preventionweb.net/files/16411_adjustmentofthe20072008postdisaster\[1\].doc](http://preventionweb.net/files/16411_adjustmentofthe20072008postdisaster[1].doc) [DOC]

Priority for action 4: Core indicator 6

Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Are the impacts of major development projects on disaster risk assessed? Yes

* Yes: Assessments of impact of projects such as dams, irrigation schemes, highways, mining, tourist developments etc on disaster risk

* Yes: Impacts of disaster risk taken account in Environment Impact Assessment (EIA)

Description:

The impacts of development projects on disaster risk are carefully integrated into national legislation, and strategies, namely, the Environmental Law, approved in 1997, and the Sustainable Development Strategy approved in 2007.

In order to avoid that development projects are sources of disaster risk

- The National authority for Clean Development Mechanism was created to support Climate Change

Mitigation. This authority is composed by MICOA, the Ministry of Science and Technology and Eduardo Mondlane University experts.

- all development projects classed in category A, such as dams, industrial plans, hotels and resorts, irrigation schemes, are subject to EIA, which are approved by the Ministry for Coordination of Environmental Affairs (MICOA), with scientific and technical support of Eduardo Mondlane University, the main and oldest public university in Mozambique.
- Public consultation and debates have been held with all stakeholders, for the approval of large developments projects. Recent notable examples are:
 - In 2010, the Governemnt has approved the construction of the Mphanda Nkuwa Dam, which will start in 2011. In these context, the EPDA has been undertaken and approved. Currently, the EIA studies are ongoing. Public consultation is planned to be conducted in the second semester of 2011.
 - Several studies were carried out to demonstrate that the Mozambique Aluminum plant-Mozal, the largest industry plant in Mozambique, could be allowed to use bypass for 6 months without causing health problems to surrounding residents.
 - The design of several roads, railway and bridges has been revised to accommodate larger floodwater spillway capacity. Examples are:
 - The newly rehabilitated Macarretane dam, road and railway system on Limpopo River, at Chókwe
 - The N1 National Road along several floodplains-Incomati, Limpopo and Save
 - The Limpopo Corridor-railway and road system connecting the Maputo port to Zimbabwe
 - The newly built Armando Guebuza bridge on the Zambezi River

Context & Constraints:

As a poor country, Mozambique faces enormous challenges to securely promote its development without creating conflicts between Government, environmentalists and developers. However, to achieve sustainable economic growth, Mozambique has no other options than:

- Investing in mechanized and irrigated agriculture, as up today, of total 36 million hectares of land, only 50 000 hectares are covered by irrigation schemes;
- Increase industrialization rate to promote employment: so far, above 70% of Mozambique population is employed in agriculture
- Building more sustainable dams for water storage and supply for irrigated agriculture schemes
- Building more electricity plants, including thermal ones for power supply to economic activities.

However, current weak technical and scientific capacity at Government, environmentalist's organizations and universities emerges as the critical challenge for future development particularly for wise decision-making for the establishment of large development projects and programs.

The most recent case was the construction of M'panda Nkuwa dam on the Zambezi River. Using comments from a South African expert, Mozambican environmentalists claimed that Mozambique should not build any new dam on the Zambezi River as it would trigger earthquakes and environmental problems at both upstream countries (Zimbabwe and Malawi) and downstream communities. However, South Africa and Zimbabwe rely on their 539 and 213 large dams, respectively, to secure water for agriculture production during dry periods. In turn, with only 8 large dams, Mozambique relies on South Africa for food imports.

Therefore, more technical capacity must be built at both sides so that misunderstandings and speculations are eliminated, and a sound debate on EIA atmosphere is created, and real risks are prevented or mitigated in a timely manner.

Reference document:

- > EIA Regulation (2004) http://preventionweb.net/files/16411_eiaregulation.pdf [PDF]
- > National Authority for Clean Development Mechanism (2007)
http://preventionweb.net/files/16411_nationalauthorityforcleandvelopmen.pdf [PDF]
- > Environment Law (1997) [http://preventionweb.net/files/16411_environmentlaw\[1\].pdf](http://preventionweb.net/files/16411_environmentlaw[1].pdf) [PDF]

Priority for action 5

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

Priority for action 5: Core indicator 1

Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place.

Level of Progress achieved:

3: Institutional commitment attained, but achievements are neither comprehensive nor substantial

Means of verification:

* Are there national programmes or policies to make schools and health facilities safe in emergencies?

Yes

* Yes: Policies and programmes for school and hospital safety > Politica de Aguas (2007)

http://preventionweb.net/files/16411_polticadeguasfinalabril20071.pdf [PDF]

* Yes: Training and mock drills in school and hospitals for emergency preparedness

Description:

Slow but consistent progress has been made to create comprehensive disaster preparedness across the country and all sectors.

Integration of climate change scenarios in preparedness planning is still in its infancy and benefits from results of recent assessments on climate change impacts on urban flooding published in 2012. The utilization of these results was achieved in 2012, with integration of climate projections of urban flooding in the Contingency Plan for the rainy season of October 2012-2013

Currently, health and roads sectors are leading sector preparedness planning to disaster and climate risk.

In health sector, assessment of impacts of disaster and climate change risks on health and its policy implications has been conducted in 2012. Reforms aiming at strengthen health sector preparedness, including at district level are planned to be operated from 2013. Reforms will include the integration of climate change considerations in the Health Sector Strategic plan.

At operational level reforms will include the strengthening of surveillance system for early detection of epidemic outbreaks and the creation of preparedness and response capacity in 40 districts at risk of climate diseases outbreaks.

Integration of climate related diseases in the Health Statistics System is also envisaged to allow better territorial targeting and planning of sector resources and investments.

The roads sector has demonstrated strong ability to provide rapid emergency repairs of road network ruptured by floods.

Recent examples include:

a) reopening in 48 hours, of road connection between the Southern Mozambique and the rest of the country, following severe washout of one section of the main national road- the EN1 at 3 de Fevereiro, in

2012;

b) the reopening in less than 72 hours, of traffic in the EN1 Road, following damages at Chicumbane, following catastrophic flooding on the Limpopo, in January 2013

Context & Constraints:

Despite all sectors are frequently and severely affected by climatic extreme events, results of preparedness planning are still limited to a few sectors, such as roads, health, water and sanitation and agriculture. However, its important to note that as of today, preparedness in health sector was mainly based on historical patterns of climate related diseases instead of climate change projections. In water and sanitation and agriculture, preparedness is often based on resources mobilization for emergency response and immediate post-disaster recovery

Lack of preparedness planning in other sector is mainly related to absence of sector risk assessment. For instance, as of today, no risk assessment on health facilities and schools have been conducted with the aim of allowing the setting up of appropriate measures to guarantee or improving safety to schools and health infrastructures.

As result, the existing sector capacity in health is for health care and medication provision during emergencies while at education, existing preparedness actions are only directed to reduce death rates amongst school children and teachers due to disasters.

As a result, although this remain unknown, the number of school and health facilities at risk remains high, and these sectors rank the first in terms of damages regardless the magnitude of disasters.

Therefore, the observed delays in responding to the extensive disaster event affecting Limpopo river basin, the rural areas of Zambezia and Cabo Delgado provinces, and the urban areas of Maputo city and the small town of Jangamo in Inhambane Province, in both search and rescue operations and humanitarian assistance has demonstrated that the country has not developed sufficient preparedness to respond effectively to high magnitude extensive disasters.

Apart from financial resources constraints, preparedness planning, including coordination is still relatively weak to deal with extensive disasters involving urban settings.

Related links:

> GestãO dos Recursos Hidricos <http://http://www.ara-sul.co.mz/subindex.asp?lang=pt&page=floodalert>

Priority for action 5: Core indicator 2

Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programmes.

Level of Progress achieved:

4: Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

Means of verification:

* Are the contingency plans, procedures and resources in place to deal with a major disaster? Yes

* Yes: Contingency plans with gender sensitivities > 2010-2011 Contingency Plan (2010)

http://preventionweb.net/files/16411_contingencyplan20102011.doc [DOC]

* Yes: Operations and communications centre

* Yes: Search and rescue teams

* Yes: Stockpiles of relief supplies

* Yes: Shelters

* Yes: Secure medical facilities

* Yes: Dedicated provision for women in relief, shelter and emergency medical facilities

Description:

The country has consolidated the multisector coordination at national and local for the preparation of contingency planning, taking in account climate change projections. In 2012, and for the first time, the Contingency Plan for the rainy season October 2012- March 2013 has integrated potential disaster impacts in the urban areas of Maputo and Beira, the capital city and the second largest city in the country, respectively.

Every year and following the approval of the Contingency Plan, a nationwide and regional drill exercises were held under the leadership and coordination of the National Emergency Operations Centre (CENOE), with the participation of sector focal points, CTGC members, Civil Protection, NGO's and the UN Agencies.

At local level (provinces and districts), thousands of people participate in the simulation exercises, under the leadership of community leaders, the members of Local Committees for Disaster Risk Management and local government authorities.

As tradition, the simulation exercises mark the beginning of preparedness actions to disasters that may happen during the rainy season. Various scenarios are tested for four disasters: floods, cyclones, droughts and earthquakes.

Basic emergency response procedures are revised, functionality of existing communication and information systems are tested; and operational capacity of different units, such as search and rescue, planning and humanitarian assistance teams is verified. For instance, as part of the simulation an emergency response plan is prepared with detailed actions, including humanitarian assistance that needs to be delivered to help affected communities

Attention to sensitive aspects such as evacuation and humanitarian assistance for disadvantaged groups, including children, disabled and elderly, and sector capacity, particularly health and education to deploy alternative facilities for the continuation of provision of medical services and educations are guaranteed.

Context & Constraints:

Despite the country has gained a lot of experience in contingency planning, gaps are still present in disaster preparedness planning.

1. The country has no basic protocols and procedures to guide each step for emergency response and humanitarian assistance, following the activation of the Orange and Red Alert. The existing guidelines for the functioning of CENOE are too generic and ambiguous.
2. Lack of clarity of mandates of INGC structures and CENOE sectors for emergency response. The existing guidelines, determine that during emergency, all INGC functions are transferred to CENOE who assumes the command and coordination of search and rescue operations and emergency response. In this situation, the CENOE Coordinator and the four CENOE sector leaders, coordinate all activities. Until the end of emergency, INGC structures and staff lose their functions as they are diluted into the four CENOE sectors, to which they have to provide support and account for. Over the last two years, INGC structures have superimposed themselves to the CENOE structures resulting in lack of clarity and inadequate emergency response delivery.
3. Lack of protocols for information delivery to local communities, district and municipal authorities to enhance local preparedness for timely response. As of today, the absence of formal mechanisms and procedures to disseminate appropriate information to communities at risk on impending disasters, has partly contributed to the low preparedness and late response of local communities to disasters that affected the country in 2013.
4. Lack of safety protocols during emergency operations to insure that disaster responders are protected in case of accident, and assets of affected communities are protected from vandalism. During floods on the Limpopo river, extensive robbery of goods in shops and houses, was observed in the municipality of Chokwe due to lack of patrolling by local Police.

Reference document:

> The CENOE guides document (2006)

http://preventionweb.net/files/16411_cenoefinalaprovadopelocm.pdf [PDF]

> Preparacao para a epoca chuvosa 2010-2011 (2010)

http://preventionweb.net/files/16411_apresentaoslides201011f.pptx [PPTX]

Related links:

> METEOROLOGICAL ASPECTS FOR SOUTHERN AFRICA

<http://www.sadc.int/dmc/SARCOF/AboutSarcof.htm>

Priority for action 5: Core indicator 3

Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.

Level of Progress achieved:

-- not complete --

Means of verification:

* Are financial arrangements in place to deal with major disaster? -- not complete --

* No: National contingency funds

* No: Catastrophe insurance facilities

* No: Catastrophe bonds

Description:

-- not complete --

Context & Constraints:

-- not complete --

Reference document:

> PLANO DE CONTIGÊNCIA DO SECTOR DE ÁGUAS (2010)

http://preventionweb.net/files/16411_planocontingenciafinalbc1.doc [DOC]

Related links:

> Direcao Nacional de Aguas <http://www.dnaguas.gov.mz/>

Priority for action 5: Core indicator 4

Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews

Level of Progress achieved:

-- not complete --

Means of verification:

* Has an agreed method and procedure been adopted to assess damage, loss and needs when disasters occur? -- not complete --

* No: Damage and loss assessment methodologies and capacities available

* No: Post disaster need assessment methodologies

* No: Post disaster needs assessment methodologies include guidance on gender aspects

* No: Identified and trained human resources

Description:

-- not complete --

Context & Constraints:

-- not complete --

Reference document:

> Ficha Rapida de recolha de informacao (2010)

http://preventionweb.net/files/16411_avaliacaorapidaseinarfinal.xls [XLS]

> Fichas de Recolha de informacao (2010)

http://preventionweb.net/files/16411_fichasrecolhainformacaocenoe.xls [XLS]

> Modelos utilizados na previsao do Tempo (2010)

http://preventionweb.net/files/16411_modelosusadosnaelaboracaodaprevisao.ppt [PPT]

Related links:

> Administracao Regional do Zambeze <http://www.arazambeze.gov.mz>

Drivers of Progress

a) Multi-hazard integrated approach to disaster risk reduction and development

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Do studies/ reports/ atlases on multi-hazard analyses exist in the country/ for the sub region?:

Yes

If yes, are these being applied to development planning/ informing policy?:

Yes

Description (Please provide evidence of where, how and who):

Important national multi-hazards assessments and studies have been conducted across the country and results have been used for the formulation of national strategies and plans, namely the Master Plan for Disaster Prevention and Mitigation (2006-2016) and NAPA, both under implementation.

- National and local contingency plans are annually prepared and implemented based on existing hazards mapping.
- Results from the recent 2009 INGC study on Climate Change impacts on DRR in Mozambique, and the Third National Poverty Assessment (2008-2009) were used by Government for the formulation of priorities defined in the Five Year 2010-2014 Government Plan, following the elections held on October, 2009, and are currently in use by all stakeholders (Government, Programme Aid Partners and Civil Society Organizations), involved in the formulation of the Third PRSP (2011-2014) document. As part of implementation of the recommendations made by those studies and earlier strategic documents, the New Government formed following the 2009 elections,
 - Approved the Irrigation strategic plan 2010-2019, as an instrument to increasing the use of irrigation and build resilience of agriculture to droughts
 - Prepares massive pilot hazards-proof investments in agriculture, infrastructure, tourism and forestry as part of the country's adaptation to climate change on the Zambezi and Limpopo river basins and in the coastal city of Beira, to be funded by the World Bank Group and the African Development Bank.

A multi-hazards Atlas for the Limpopo River Basin was produced in 2003 by INGC, Eduardo Mondlane University and FEWS NET. This Atlas has been used for emergency preparedness during annual simulations exercises.

The same institutions will finalize two Atlas for the Zambezi and Buzi river basins in 2011 which will provide information for development planning and flood evacuation activities in those floodplains.

b) Gender perspectives on risk reduction and recovery adopted and institutionalized

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

Mozambique enjoys good political and social environment in terms of women empowerment and protection against all types of discrimination. Gender legislation, policies, strategies and plans, and coordination bodies are in place at levels. These bodies serve as the coordination mechanisms for

recovery and risk reduction activities. As examples:

- Multi-sectoral teams lead by the Ministry of Women and Social Action, and its provincial and district representations are deployed to the affected areas to monitor the work of humanitarian aid agencies and insure that women are not discriminated in access of relief supplies (food and shelter), and that access to clean water and sanitation facilities are delivered in the aftermath of a disaster.
- Police units integrating specialized staff have been established in all the accommodation or resettlements centers, and at the district level to assist women who report cases of violence
- Members of Parliament (The Social, Gender and Environmental Affairs Commission) regularly visit the affected areas to monitor the progress on humanitarian aid and recovery activities
- Creation and training of Provincial District Councils for Woman Advancement, on human and women rights, the national legislation on women empowerment and protection against all forms of violence, including domestic violence against women and children.
- Women are active members of all Local Consultative Councils and Local Committees for Risk Management
- Women have been integrated in professional training course on business management, and are especial targets for agriculture extension services, and women heads of family are priority of food for work programmes.

Despite these progress continuous elevation of women's education and the full dissemination of gender legislation and instruments is needed to insure that women's rights are not jeopardized by the customary laws, particularly the access and secure tenure of irrigated land.

c) Capacities for risk reduction and recovery identified and strengthened

Levels of Reliance:

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

Description (Please provide evidence of where, how and who):

The Government of Mozambique is engaged in enhancing the national capacity for the integration of DRR and the impacts of climate change into development plans. In this regards, national, sectoral and local needs have been identified and partly addressed by:

- Continuous strengthening of national early warning and information dissemination system targeted to local communities preparedness and early action has contributed to avoidance of loss of lives and property due to floods
- Continuous capacity development at local level, with the institutionalization of District Council for Disaster Management in all districts, and creation and training of more Local Committees for Risk Management, as a means to enable local communities to respond to disasters and climate change impacts.

As shown in Figures 6.1 and 6.2, over the last 4 years (2007-2010), 558 Local Committees for Risk Management were created. These committees are composed by 7262 members across the country. To undertake their roles, nearly half of committees have been equipped and their members trained. Findings from the HFA local dialogue held by UNISDR/Civil Society/ INGC in the district of Buzi, central Mozambique, show that at local (district) level:

- The criation of the LCRM has greatly contributed to the sentitization of local people to engage in DRR activities, and also to sharing and exchange of information by radio (VHF) between the district population and from this to upper levels.
- The involvemnt of all local stakeholders in DRR has been achieved, particularly, communitiy leaders, religious leaders, youth and women
- Mozambican Red Cross has played a distictive role, as it has lead the humanitarian support at local

level, and particularly, the provision of training to local youngsters.

- Improvement of DRR mainstreaming into sectoral planning. With guidance of the Ministry of Planning and Development, the matrix for DRR, Environment, and others cross-cutting issues is under dissemination across the country to guide the fully integration these into sectoral plans and budgets.

Reference document:

> Local Committees for Risk Management (2010)

http://preventionweb.net/files/16411_localcommitteesforriskmanagement.xls [XLS]

d) Human security and social equity approaches integrated into disaster risk reduction and recovery activities

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

As part of the annual Contingency Plan, State Budget resources are secured to provide equitable and safe, short and long term recovery.

In general, contingency funds are immediately mobilized by INGC and local governments to assist all the affected families following any disaster strike.

- Long term recovery programmes beneficiaries are determined by two periodic multi-sectoral vulnerability and food security assessments, jointly conducted every March and October by SETSAN (multi-stakeholders Nutrition and Food Security Secretariat), WFP, CSO and local Governments.
- Provincial SETSAN representations have been institutionalized and regular reporting and exchange of information on transitory and acute food insecurity and disasters is fully guaranteed through ordinary and extraordinary sessions of the Provincial and District Governments, and SETSAN and CTGC regular meetings.
- Guidelines already exist to target vulnerable groups for long term programs: cash transfers, through Food Subsidy and free food distribution programmes for emergency relief, are targeted people incapacitated for work, while food for work programmes target vulnerable people with capacity for work, with special attention to families headed by women

Over the last two years (2009-2010), Mozambique was not affected by any significant disaster, instead of isolated and localized storms and heavy rains, and droughts (see Table 6.1), which created significant food insecurity as shown in Figure 6.2.

Reference document:

> People Affected by disasters in Mozambique, 2009-2011 (2011)

http://preventionweb.net/files/16411_table6.1andfigure6.2.xls [XLS]

> Gender, Environment and Climate Change strategy (2010)

http://preventionweb.net/files/16411_genderenvironmentandclimatechangest.pdf [PDF]

e) Engagement and partnerships with non-governmental actors; civil society, private sector, amongst others, have been fostered at all levels

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not

achieved from key stakeholders.

Description (Please provide evidence of where, how and who):

There has been an effort to engage all non-governmental organizations, civil society organizations, including universities and private sector DRR activities at all levels. However, the due to divergent interests, the levels of engagement achieved are differentiated. In general, international non-government organizations are fully engaged in all DRR activities, and actively participate in regular technical and consultative and coordination meeting at both central and local level, and have provided funding for DRR activities implemented by local CSO's. However:

- The engagement of Civil Society, particularly at central level is still weak compared to provincial and district level where, with funds provided by international NGO's, local CSO's provide direct support to local communities in the implementation of DRR activities, particularly resilient agriculture and disaster relief.
- At central level, Civil society's engagement is often limited to their participation in the two annual joint meetings between Government, Programme Aid Partners and CSO's platform for approval or review of annual Social and Economic Plan and State budget, or for preparation of PRSP.
- Similarly, private sector engagement is also low. In fact, this is visible during emergencies through donations, and participation in coordination meeting to grab business opportunities, or to insure the incorporation of private sector needs for post-disasters recovery, and also to claim the provision of protection infrastructures for their businesses.
- Engagement of universities in DRR has been strengthened, through the participation of departments of Geography and Physics of the Eduardo Mondlane University, and the Mozambique Technical University in research activities conducted by INGC. In 2011, Master programs on Physical Geography and Disaster Management, and DRR and Climate Change will be introduced by those departments, respectively.

Therefore, more dialogue is needed to foster CSO's and private sector interest and engagement in DRR activities at all levels.

f) Contextual Drivers of Progress

Levels of Reliance:

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

Description (Please provide evidence of where, how and who):

Two factors have determined the results achieved so far, namely, a recognized Government political will and increasing international support.

Government political will:

- Government continued committed in inverting more resources to strengthening early warning systems on flood, cyclone, earthquake and food insecurity detection and information dissemination.
- Regular briefings and reports have presented to the Council of Ministers ordinary sessions, and Members of Council of Ministers delegations have been deployed to the ground to monitor the situation in the areas at risk of impending hazards.
- Resources have been timely disbursed to funds vulnerability and food security assessments, which allowed the adjustment and extension of social protection programs to cover more beneficiaries in a longer term.
- Government has continued to allocate funding to the ongoing resettlement program on the Zambezi and Save Rivers.
- More importantly, Government has brought DRR into international cooperation, particularly, negotiation of international financial and technical support.

International support:

- • Bilateral and multilateral development partners, which include countries members of the Programme Aid Partners (19 countries and organizations), multilateral development banks (World Bank Group, African Development Bank and others) have dedicated more resources to development programmes oriented to building national resilience to hazards.
- Development agencies such as UNDP, DFID, DANIDA, GTZ, and others, have committed more resources to projects and programmes on technical support to Government institutions to mainstream DRR and more recently, climate change adaptation, into national legislation, policy and strategic and operational development plans at all levels.

Future outlook

Area 1

The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.

Overall Challenges:

The approval of a new Disaster Risk Management Bill by the Council of Ministers, shows the national concern with a comprehensive DRM mainstreaming at all levels to insure rapid and gradually reduction of human, economic and ecological damages and losses due to disasters by calling increasing action and dedicated resources to DRR from central authorities, sectors and local governments, including Municipalities. However, the implementation of the law after its approval by Parliament will demand acceleration of creation of appropriate institutional arrangements and provision of adequate funding.

The approval of the new National Climate Change Strategy (NCCS) that recognizes the relationship between DRM and Climate change adaptation help to build up synergies between the two areas and opens a great opportunity for simultaneous and successful implementation of DRM and CCA actions at sector and local levels. However, clear understanding of DRM and CCA overlaps is still needed to avoid institutional competition.

The growing awareness and call across the country for rapid and creation of DRM and CC resilience particularly in sectors most vulnerable to climate risks has increased cross-sector dialogue. The launch and successful completion in 2012 of the first series of three-years institutional and policy DRM and CC reforms in Agriculture, Energy, Disasters, Social protection, Environment and Hydrometeorological sectors under the Development Policy Operations (DPO), the first climate change and DRM reforms in Africa establishes the first concrete steps towards consistent DRM and Climate change mainstreaming into national and sector policies, and opens the ground for scaling up of DRM and CCA into other sectors, as well as sets up the basis for consistent CCA and DRM implementation and monitoring at all levels.

Institutional capacity and availability of financial resources to implement the NCCS, the DRM law, the DPO reforms remains a great challenge for the nation.

Future Outlook Statement:

Rapid DRR, and particularly consistent reduction in death toll, damages to critical infrastructure, assets and communities livelihoods will demand increased commitment in terms of translating the strategic thinking into operational planning instruments which set up clear goals, targets; identify actions to be taken and means needed.

The increase over the period 2011-2013 in death toll and people affected by disasters in the country, with significant incidence in the urban areas, calls for more attention and focus to growing disaster risk in the urban areas.

Therefore, the current reforms under the DPO, the interventions under the USD 91 million Pilot Program for Climate Resilience (PPCR) eight investment projects, the USD 120 million cities and climate change project in 23 municipalities, and DRM and CC adaptations at district level provide lessons on how DRM and CCA should be mainstreamed into sector and local level planning and programming and translated into actions to build resilience at all levels.

Over the next two years, Government will take appropriate steps to translate the DRM law, the NCCS into

implementable actions. These will consist of the following:

1. The conclusion and approval by the Council of Ministers of the revised DRM Master Plan that incorporates and materializes the key provisions of the DRM bill, with focus to prevention, mitigation and DRM funding.
2. The approval by the Council of Ministers of the new Disaster Risk Reduction Strategy which:
 - i. clearly identifies the roles and responsibilities of all stakeholders engaged in DRM, with particular attention to preparedness and emergency planning and response;
 - ii. establishes protocols to enhance coordination and leadership of preparedness and emergency response, particularly at local level,
 - iii. establishes protocols for humanitarian assistance to ensure that all stakeholders perform their roles accordingly and aid to victims is delivered timely within acceptable standards.

Area 2

The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.

Overall Challenges:

The country continues striving to establish and operationalize institutions with capacity to manage and respond to DRR needs at all levels.

This goal has been relatively achieved at central and district levels where coordination mechanisms and leadership for DRM actions including, disaster response are active and performed by the National Emergency Operations Center (CENOE) and the Technical Council for Disasters Management (CTGC) under INGC leadership, and the District Committee for Disasters Risk Management (CDGRC), under the local District Administrator leadership, respectively.

At community level, the number of Local Communities for Disaster Risk Management has increased to....., covering more communities at risk, and engagement of teachers and school children in DRM actions strengthened through capacity building activities undertaken by district authorities, local and international NGOs. Two new Multiple Use and Resources Centers (CERUM's) have been established in the districts of Machanga, in Sofala Province, and Machaze in Manica Province, totaling 6 the number of CERUMs created in arid districts since 2007.

Provincial Operations Centers (COE) have been established in all 11 provinces. However, their operating capacities to coordinate and manage emergencies at local level are still weak.

At municipal level, attempts to create Local Committees for Disaster Risk Management and DRM/CCA units are still in infancy. Only the Municipality of Maputo is equipped with a COE. However, weak leadership associated with unclear governance and mandate overlaps reduce the intervention capacity of the local COE during emergencies. For instance, as seen in January 2013 flash floods in Maputo, central authorities were called to respond to emergency that displaced over 4000 people and killed 6 people. Similar situation was also observed in Nampula municipality.

While capacities exist and coordination mechanisms are fully consolidated and functioning at central and district levels, weaknesses still remain at provincial and municipal levels.

Future Outlook Statement:

The extensive emergencies that affected the country in 2013, have shown provided three important lessons:

1. That new hazards, such as lightning, are increasing its contribution in death toll being the second

most deadly disaster in the country. However, least attention has been devoted to lightning prevention.

2. That disaster risk is increasing in urban settings. However, regardless their location from central authorities, all Mozambican cities still bear very low disaster preparedness and response capacities in comparison to districts.

3. Risk communication with outreach to local communities is still weak for lightning hazards and for urban environment. Therefore, deaths associated to lightning and in urban areas have sharply increased over that the last three years.

To deal with these emerging issues, Government is committed to accelerate actions aiming at:

1. The creation and training of municipal COE and Local Committees for Disaster Risk Management to improve disaster preparedness and response capacities in all municipalities with high risk profile, in line with the provisions of the new DRM law and the DRM Master Plan.

2. Preparation and approval by the Council of Ministers of a National Disaster Risk Communication Strategy, which based on the forecast issued by several agencies (Met Office, Water authorities, Seismic surveillance, etc) provides understandable information to enhance local preparedness and action by communities at risk, particularly in urban areas, in line with the DPO policy reforms aiming at strengthening the hydrometeorological services to provide accurate and weather and hydrological information to end-users in simplified and understandable manner.

3. Establishment of Climate Change Knowledge Management Center to enhance CC and DRM information sharing, exchange of lessons learned through different interventions on ground, and provide DRM and CCA training to several segments of stakeholders, including media, academia, civil society organizations, private and public sectors at all levels.

Area 3

The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Overall Challenges:

The resettlement program undertaken in the Zambezi River basin after the 2007 and 2008 floods and following scaling up in the Save basin, has significantly reduced the flood risk to local communities. As witnessed by local communities in Mutarara, in Tete province, almost no search and rescue operations have been conducted in the last three years despite flood levels have reached similar magnitude as those recorded in the previous years.

However, failure to undertake sustainable resettlement program in other basins, particularly in the Limpopo, has ended in dramatic flooding in 2013, where the entire city of Chókwè with more than 55000 people and other small towns such as Guijá were evacuated, but 30 lives were claimed, this being the worst floods following the historical 2000 floods, considered the worst in the country over the last 150 years.

Therefore, new approaches should be implemented to ensure that flood plains are left empty for production purposes or people who decide to remain there are prepared to evacuate on time with their belongings following flood alerts and are capable to rebuild their lives with less dependency on external aid.

Within the urban areas, failures of municipal Governments to resettle populations at risk, particularly in

Maputo City following the 2000 floods, has brought back the past flood vulnerabilities to both old and recent constructed neighbourhoods which were dramatically flooded in January 2013, calling for comprehensive urban risk assessments, implementation of serious land use zoning and enforcement of land use planning regulations.

Finally, improvement of contingency planning, particularly at city and provincial levels emerges as an important requirement to ensure that local authorities are actively engaged to assume leadership for disasters preparedness and response, calling for increased decentralization or assignment of adequate financial resources to guarantee timely implementation of local contingency plans.

Future Outlook Statement:

Local communities in Angoche town, in Nampula province, for instance are providing good lessons on how improvement of land use planning can help reducing house damages and deaths due to cyclones. By reducing encroachment of houses beneath palm trees and replacing aerial cables by underground network for power distribution the town has reduced the number of houses destroyed by toppling tree or deaths due electrocution. However, electrocution stood as the major cause of death in Maputo and Matola city in 2012, following windstorms that affected the power distribution network in the suburbs of those cities.

In addition, refusal of old dwellers to abandon flood risk areas and unwillingness of municipal governments to interdict occupation of flood prone areas, coupled with poor or lack of operational drainage systems has increasing and brought back risk to urban areas. As of today, 80% of Mozambican urban dwellers still live in unplanned and in some instances, unsafe neighbourhoods.

Based on these findings, over the coming years, the Government is committed to:

1. Initiate a national dialogue involving Government agencies, the civil society, Parliament, academia, specialized agencies and local communities to discuss and find the best options to reduce flood risk along the larger river basins where important towns seem to have been wrongly built
2. Conduct a serious national dialogue with Municipalities to rethink and strengthen the role of municipal governments interventions towards urban risk reduction through implementation of land use zoning and enforcement of land use regulations.
3. Strengthen the planning capacities of local municipalities to mainstream DRR and CC adaptation in urban areas through establishment and training of DRM/CCA units in coastal cities most prone to flooding or erosion.

Stakeholders

Departments/organizations that have contributed to the report

- * National Institute of Meteorology (Gov) - Sergio Buque
- * National Directorate for Waters (DNA) (Gov) - Jose Malanço
- * ARA-Sul (Gov) - Juma Matsinhe
- * Zambeze River Basin Authority (ARA Zambeze) (Gov) - Fenhane Vilanculos
- * ARA-Sul (Gov) - Agostinho Chuquelane Vilankulo
- * UNDP-Mozambique (UN & Intl) - Eunice Mucache
- * Ministry of Planning and Development (Gov) - Xavier Agostinho Chavana
- * INGC (Gov) - Joao Ribeiro, Director General
- * INGC (Gov) - Casimiro dos Santos Abreu, Deputy Director General
- * INGC (Gov) - Dulce Chilundo
- * INGC (Gov) - Rita Almeida
- * INGC (Gov) - Marta Manjate
- * Mozambique Red Cross (Gov) - Jeronimo Zandamela
- * National Directorate for Waters (DNA) (Gov) - Luisa Conceição
- * INGC (Gov) - Bonifacio Antonio
- * MICOA (Gov) - Wetela paulo Jone
- * G20 (Mozambique Civil Society Platform) (NGO) - Nilza Chipa
- * MICOA (Gov) - Jose Muianga
- * National Directorate of Geology (Gov) - Severino Marcos
- * Ministry of Finance (Gov) - Mr. Dimene
- * Ministry of Education (Gov) - Francisco Manhiça
- * INGC (Gov) - Leovegildo Marcos
- * National Authority for Roads (Gov) - Armando Fonseca
- * Ministry of Health (Gov) - Maria Nivalda Lázaro

- * Serviço Nacional de Salvação Publica (MINT) (Gov) - Abdul Alimo Ibrahim Issufo
- * Ministry of Energy (Gov) - Laura Nhancale
- * INGC (Gov) - Elias Massicame
- * WFP-Mozambique (UN & Intl) - Nadia Vaz
- * UNDP-Mozambique (UN & Intl) - Casimiro Sande
- * UN AIDS-Mozambique (UN & Intl) - Casimiro Sande
- * UNISDR Regional Office Africa (UN & Intl) - Edward Turvill
- * Eduardo Mondlane University (Acad & Research) - Antonio Queface