

Mauritius

National progress report on the implementation of the Hyogo Framework for Action

Name of focal point : Mr BOODHOO

Organization : Mauritius Meteorological Service

Designation :

E-mail address : meteo@intnet.mu

Telephone : +230 6965626

Fax :

Additional Focal points/ other comments :

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Strategic goals 1

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:

The Cyclone and other Natural Disasters Scheme describes the national goals and objectives for cyclones and other natural hazards and emergency management. The strategy's vision is to save life and property and to build a resilient Island towards natural hazards.

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:

The Cyclone and Other Natural Disasters Committee, under the Prime Minister's Office, in collaboration with the Meteorological Services and the Education Department of the Ministry of Environment and National Development Unit ensure the education and public awareness, general preparedness and risks reduction programmes from natural hazards at community level. Local cyclone committees at Municipal and District Council level regularly meet prior to the beginning of the cyclone season. The Cyclone and other Natural Disaster Scheme lists all the stakeholders involved.

The strengthening of institutions, the mechanisms and capacities needed is regularly reviewed.

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:

Risk management aiming at risk reduction is being gradually integrated at some level. For example, efforts are being made to map vulnerable areas regarding land slide, or vulnerable sites likely to be affected by high energy waves in the event of a tsunami. Policies measures have still to be promulgated.

Priority for action 1

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

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:

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

Description:

Mauritius has a long experience in dealing with natural hazards, namely cyclones and flash floods and has developed very elaborate disaster risk reduction and mitigation measures. The institutional framework is well established at all levels and is very effective. Various regulations exist at the local level, together with well elaborated standard operating procedures (SOP) in times of an emergency. But there is no legislation at the national level at the moment. Suggestions have been made to promulgate a set of new legislation.

Context & Constraints:

The main constraint is the absence of proper legislation. Since there is no Act to enforce disaster risk reduction or mitigation, risk reduction remains a challenge.

However, in the event of a potential threat, Coast guards do patrol the coastal zone, the Police and the Special Mobile Force (a para-civil defence force) patrol the main town and villages. Building codes have been defined and there are general preparedness actions that are required by the various authorities.

The tsunami alert scheme also gives general directives in the event of a potential tsunami threat.

The Climate Change Action Plan has a programme of adaptation and mitigation and building resilience in the event of adverse events.

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

Description:

The Cyclone and Other Natural Disaster Committee, located under the Prime Minister's Office has a long experience (since 1960s) in disaster risk reduction. The country has a strong institutional framework both at central and local government. Hazard risks are generally taken into consideration in developing critical infrastructures in the Island. Standard cyclone procedures have been developed and implemented at various level in almost all institutions.

Context & Constraints:

The absence of proper legislation is one of the main challenges. For example, often people go outdoor even when there is a cyclone warning in force because there is no law that prohibits them not to do so. At other times people would not build in vulnerable areas (landslide risk areas) because of absence of laws prohibiting them to do so. This situation is especially difficult in villages where people have low level of education.

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

Description:

Local Authorities, Municipal and District Councils are enabled to manage risks in the event of hazards and also to provide certain community and even individual services.

At the beginning of the cyclone season, all Municipal and District Councils meet individually to review the Cyclone and Other Natural Disaster Scheme, to take note of the inadequacies of the previous cyclone season and to revisit and check the preparedness status of all partners concerned. Cleaning of drainage system, miscellaneous repair work and check of overall infrastructure and logistics are completed prior to the start of the cyclone season.

Context & Constraints:

Though standard cyclone procedures exist, there is a need to promulgate appropriate regulations to enforce the same.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The Cyclone and Other Natural Disaster Committee is mainly concerned about disaster management. Systematic disaster risk reduction plans at national level are not there yet. However, there are a number of committees at various institutional level.

Context & Constraints:

Standard procedures mostly concern disaster management. Though risk reduction measures have been identified, risk reduction programmes have still to be implemented at national level. However, the Meteorological Services do have an Early Warning System which is very effective for cyclone warning.

Priority for action 2

Identify, assess and monitor disaster risks and enhance early warning

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

Description:

Impacts, distribution and frequencies of tropical cyclones are well documented and fairly well understood.

Vulnerable areas prone to flash flood have also been identified, though the physical characteristics of land are changing because of change in land use. Areas prone to landslide have also been identified.

Lately, a coastal inundation map has been produced by the Mauritius Oceanographic Institute. The map identifies and states the degree of vulnerability of various coastal areas in the event of a potential tsunami.

The Climate Change Plan of Action lists a series of adaptation and mitigation measures that need to be considered with regard to climate change.

Context & Constraints:

A complete assessment still need to be carried out to have a complete picture of the impacts regarding some hazards like tsunami, or even flood and landslide. Cross-sectoral linkages, namely economic, social and environmental have still to be quantitatively assessed

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

Description:

Data exists mainly on tropical cyclones and to a certain extent on flash flood in terms of rainfall from a network of over 200 stations. Landslide and tsunami are hazards that have been listed only after 2004.

Quantitative data on the extent of damages caused by any hazard have not been systematically archived in a central data bank. However some data, for example in the agricultural sector exist at various institution level.

Context & Constraints:

There is a need to have a central data bank on all hazards likely to affect the country. Data sharing protocols and mechanisms have still to be developed. There is also a lack of geospatial data.

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

Description:

The Mauritius Meteorological Services maintains a 24/7 watch for all hazards likely to affect Mauritius. The Meteorological Services has a well-understood cyclone warning system together with an ongoing outreach (public awareness) and education programme. A torrential rain warning system exists since the mid eighties. Some further fine-tuning may be needed here. A landslide warning system is already operational since last year.

A tsunami alert system has been developed and is in its final stages. This warning system will become operational as from September or beginning October.

Regular talk are organized at school, communities centres, village halls and municipals hall for the students and general public. Talk are also organized on the local radio and television.

Context & Constraints:

The efficacy of early warning systems for tropical cyclones is generally well established. Further outreach and public awareness for torrential rains and landslide warning need to be carried out. Warnings for tsunami will be implemented as from the next month. An outreach programme and public awareness has been planned for the last quarter of this year and thereon afterwards. Continuous education and public awareness on tsunami must be an ongoing feature.

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:

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

Description:

Mauritius is a member of the RA I Tropical Cyclone Committee. The RSMC is Meteo France, Reunion and Mauritius is the sub-regional centre. The Tropical Cyclone Committee meets every year around the month of October and there is good cooperation among member countries in sharing data.

There is also good working link with other WMO member countries, the PTWC and the JMA on tsunami warnings, USGS on earthquake warning.

Context & Constraints:

No significant constraints have been identified.

Priority for action 3

Use knowledge, innovation and education to build a culture of safety and resilience at all levels

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:

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

Description:

Relevant information on tropical cyclone and heavy rainfall is readily available from the Mauritius Meteorological Services.

A study has been conducted on flood prone areas and this is available at the Ministry of environment and National Development Unit. Sea level data is also available at the Meteorological services for the last 20 years. Quantitative disaster data is located at different institutions and with some effort can be put together.

Context & Constraints:

Community involvement is of prime importance in any programme of disaster risk reduction. There is a need of a central data bank and also certain mechanism to record non-meteorological disaster data,

namely in the social, economic and environmental sector.

Core indicator 2

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

Level of Progress achieved:

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

Description:

A whole chapter on tropical cyclone and the warning system in force in Mauritius is taught at primary and secondary level. Some basic knowledge on, volcanoes, and earthquake is also there. More efforts are required regarding landslide, flash flood and tsunami.

Recently some endeavours are being made to introduce climate change at both the primary and secondary level. Research studies are being done at tertiary level.

Context & Constraints:

Further training materials need to be developed for torrential rains, land slide and tsunami.

Efforts are being made at this moment, in collaboration with the Mauritius Institute of Education and the Education department of the Ministry of Environment to develop curricula for tsunami. A climate change booklet for children has been develop at the Meteorological Services.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Mauritius does not have a particular institution who is looking at multi-risk assessment. The university people have just began to think in this direction.

However, some research on tropical cyclone has been done at the Meteorological Services but not much on the community response to the impacts of cyclone or on methods to reduce risks apart from the existing warning system.

Context & Constraints:

Institutional framework has still to be developed. There is a lack of resources, both human and financial. Necessary incentive need to be created to apply science to practice.

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:

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

Description:

The citizens of Mauritius are well aware and well-educated regarding tropical cyclone. Some knowledge and understanding do exist for torrential rain, landslide and tsunami.

Public awareness campaign include brochures, posters in public places and talks in communities centres

Context & Constraints:

Though awareness of hazards is increasing, there is a tendency of the general public to overlook or simply ignore some of the basics of risk reduction.

One of the major challenge in Mauritius in the change in behavior of individuals and even some organizations.

Priority for action 4

Reduce the underlying risk factors

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:

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

Description:

A number of measures already implemented do target disaster risk reduction, though they are not specific environment related policies. Similarly, there are some adaptation measures already in place without specifically mentioning the issue of climate change.

The National Environment Policy (revised version 2007) has a number of measures pertinent to disaster risk reduction. The National Forest Policy has a provision for land use management in the context of climate change.

Context & Constraints:

Though hazard information do exist, it has not yet been translated into integrated policies across planning documents. The issue of climate change and climate variability has not yet been integrated in general sustainable development policies.

Request of developments permits in areas with high hazard exposure is a real concern. An example is the high demand for coastal properties that are at increasing risk from storm surge, coastal erosion, tsunami and the effects of climate change.

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

Description:

A wide range of programmes of central government address different concerns of vulnerable groups who are at risk within the society. These programmes are often integrated within broader strategies aimed at addressing the needs of socially disadvantaged persons and communities in general. They are therefore not always viewed as an emergency management measure.

The Prime Ministers Special Fund has been constituted to help victims of major emergency events and other natural disasters. Ad hoc special funds are also constituted when and as the necessity arises.

Context & Constraints:

Improving the socio-economic conditions of vulnerable groups and communities within society is an ongoing consideration for Mauritius and its Outer Islands

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

Description:

Programmes to reduce the vulnerability of the economic sectors are done on an ad hoc basis. For example, effective measures were taken in 2006 to redress the arrival of tourist by successfully preventing the spread of Chikungunya, a mosquito borne disease.

Context & Constraints:

Integration of disaster risk reduction polices in general sustainable development policies

Core indicator 4

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

Level of Progress achieved:

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

Description:

Generally human settlements do take into consideration disaster risk reduction elements. But, in the absence of proper legislation, there are some human settlements in vulnerable areas, namely in landslide and flood prone areas.

Building codes have not been systematically enforced with the result that a few building in coastal regions are in the beach within the high water marks.

Context & Constraints:

Relevant policies need to be promulgated to encourage disaster risk reduction.

Core indicator 5

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

Level of Progress achieved:

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

Description:

A disaster usually presents an opportunity to apply disaster risk reduction measures in recovery and rehabilitation programmes.

Context & Constraints:

Inadequate financial resources is a major challenge here.

Core indicator 6

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

Level of Progress achieved:

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

Description:

There are general regulations that are taken into consideration, including disaster risk reduction measures in the development of major infrastructures. But no policy at national level exists.

Context & Constraints:

Relevant policies need to be promulgated.

Priority for action 5

Strengthen disaster preparedness for effective response at all levels

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:

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

Description:

The Cyclone and Other Natural Disaster Committee based at the Prime Minister's Office and chaired by the Secretary to the Cabinet oversees all preparedness programmes. Whenever a disaster is likely to strike the island, the Special Mobile Force, the Mauritius Police Force and the Fire Services are mobilized as per their Emergency Operations Plan for tropical cyclone.

In the event of a likely tsunami, a tsunami crisis committee at the Prime Minister's Office become functional immediately, close monitoring and relevant actions when and where necessary will be effective.

Other hazard specific regional and local plans also exist, for example torrential rains or land slide. All plans are exercised and reviewed.

Context & Constraints:

There is a need to promulgate appropriate policies for each hazard. Even in the absence of specific policy, emergency operation procedures are in place at different level in most institution.

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:

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

Description:

Emergency Operations Procedures are in place for tropical cyclone. Tsunami emergency plans have been discussed and will be implemented by the end of September 2008.

Preparedness and contingency plans for landslide exist in local and regional areas.

Cyclone refugee centers are well know in each locality and are well administered. Evacuation plan for tsunami has been agreed upon and one exercise was actually conducted in October 2007.

Context & Constraints:

In case of heavy rainfall, it seems that not every one is aware whether to move to the refugee center of not. More rigid directives has to be implemented here.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Emergency relief assistance is provided only in an ad hoc basis to those individual in need. There is no item voted in advance for an expected disaster. Even the prime Minister's relief fund is replenished after a disaster has already occurred.

However, there is a fund that is budgeted every year to maintain the refugees centers, to maintain clean drainage system and other infrastructure work.

Context & Constraints:

The main constraint is insufficient financial resource. One solution would be to encourage the population to be involved in some sort of insurance

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:

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

Description:

The Meteorological Services has an effective communication system during an hazard. Communication to the general public is also done with the collaboration of the Mauritius Broadcasting Corporation and

the Mauritius Police Force.

Various statistics are gathered, and reports produced during and following each emergency.

Lessons learned are reviewed internally. The experiences of past events are sometimes documented.

Context & Constraints:

Regular economic analyses of events would be beneficial to inform hazard and risk impact modeling, recovery planning, and cost-benefit analysis for risk reduction proposals.

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):

For some hazards, like tropical cyclone there are well documented reports, some very good studies.

Vulnerability map for flood prone areas do exist. Studies have been done to identify landslide zone. Lately vulnerability map for tsunamis have just been worked out.

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):

Mauritius has well established human rights and equal opportunities law. But, gender issues remain a consideration in hazard risk management.

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):

Mauritius disaster and emergency management framework aims to build resilience of the whole nation. As such, analysis and decision-making at all levels in society is encouraged to identify capacity needs and make the most of available resources from all sources.

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):

Socio-economic factors, coupled with an aging population, are important considerations for developing effective risk reduction strategies in Mauritius.

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):

Some enabling activities with NGOs and public/private partnership do exist.

f) Contextual Drivers of Progress

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):

Some efforts are being made.

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:

There is a will on behalf of the Government to build a resilient nation to natural disasters.

Future Outlook Statement:

Effort are being deployed to installed two tide gauges, namely one at Agalega and one at St Brandon to monitor sea level.

Torrential rain warning is being reviewed.

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:

Certain mechanism do exist, but this has to be backed up by regulatory measures

Future Outlook Statement:

Iso-certification of those institutions involved in risk management would be most welcome

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:

This is being done partially, appropriate regulations is needed.

Future Outlook Statement:

Ongoing challenges are in managing already existing risks. Increased adverse weather events resulting from climate change may also require reassessing existing reduction strategies, for example the adequacy of drainage system, regular cleaning of rivers, or building sea wall protection in certain vulnerable coastal areas.