


## The Maldives

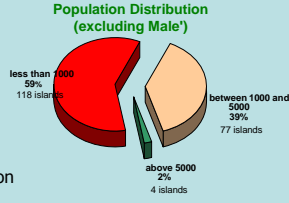



- Population: 298,968
- Total number of islands: 1,192
- Number of inhabited islands: 198
- IMR: 16/1000
- Life expectancy: 72yrs
- MMR: 1/1000
- Net primary enrollment: 95%
- Annual growth rate 19.1%
- Main industries: Tourism and Fisheries

### Vulnerability Indicators

- Highest elevation 1.5m above sea level
- 97% of all inhabited islands reported erosion and 64% of them undergo severe erosion.
- Wide dispersal of population across very small islands
- Remoteness and inaccessibility of islands
- Extremely high economic dependence on tourism
- High import dependence
- High diseconomies of scale,
- High transportation costs

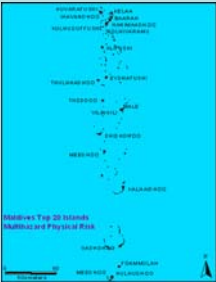
### Population Distribution (excluding Male')

### Progress towards achieving the Hyogo Framework strategic goals and priority areas....Maldives


**Strategic Goals:**

- The Integration of Disaster Risk Reduction into sustainable development policies and planning
- Development and strengthening of institutions, mechanisms and capacities to build resilience to hazards
- The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programs.




### Priority 1. Ensure that Disaster Risk Reduction is a national and local priority with a strong institutional basis for implementation

- **Objective & Initiative:**  
Developing a legal and institutional framework for disaster management
- **Activities:**
  1. Setting up a national institution for disaster management.
  2. Development of a disaster management policy.
  3. DRR incorporated into 7<sup>th</sup> NDP
  4. Adaptation policies and measures - NAPA
  5. Adaptation policies and measures - NEAP3
  6. Risk Reduction in EIA process
  7. DRR measures under 3<sup>rd</sup> Tourism Master Plan
  8. DRR addressed in the Health Master Plan 2006-2015, policy 2 strategy 7
- **Results & achievements made:**  
The National Disaster Management Centre has been instituted as a permanent body mandated to address issues related to disaster preparedness, response and mitigation.  
A Disaster Management Act has been drafted with multi stakeholder input.



### Priority 2. Identify, assess and monitor disaster risks and enhance early warning

- **Objective & Initiative:**  
Enhance Early warning systems.
- **Activities:**
  - Procurement of EWS systems and enhanced capacities for forecasting and prediction.
  - Develop National EWS plan and protocols
- **Results & achievements made:**
  - Equipment for EWS procured and installed and Department of Meteorology trained in use of the new equipments.
  - A national EWS plan developed and color codes for various for stages of alert and warning dissemination protocol developed.
- **Major Challenges & Lessons Learnt**
  - Lack of trained human resources & capacity
  - The national EWS plan has to be implemented through partnerships with all line ministries; information dissemination to the islands is a critical gap that has to be addressed.



### Priority 2. Identify, assess and monitor disaster risks and enhance early warning

- **Objective & Initiative:**  
The Telecom Policy 2006 -2010
- Formulate an emergency telecommunication plan
- Enhance existing telecommunication/ broadcasting networks to carry early warning messages.
- Facilitate priority calling and national roaming in the existing mobile networks to be used in the event of disasters or national emergencies
- Establish satellite based personal communication system to reach all inhabited islands by end 2007.
- Establish electronic public warning systems at island level by end 2009.

**Status:**

- ITU Consultancy mission in 2005 recommended to establish an emergency telecommunications plan
- Technical Committee on Early Warning and Emergency Telecommunications (TCEWET) formed under TAM in January 2006 with the mandate of studying technical solutions and formulating a Plan to implement these objectives

**Activities:**

- A TETRA Radio network covering the whole country
- A backbone transmission network (microwave or WiMax)
- Towers at predefined locations
- Public Sirens and Audio components for early warning dissemination to be located in each island
- Solar Panel System for uninterrupted power
- Project financed by AFD (5 Million Euro)
- Tendering planned in October and Project implementation in 2008
- Project expected to cover 80% of population
- Alternative funding sought to aim at complete coverage



**Challenges:**

- Early Warning Dissemination – lack of end-to-end dissemination mechanisms
- Explore available telecom means to disseminate warnings

**Priority 2. Identify, assess and monitor disaster risks and enhance early warning**

**Objective & Initiative:**

Enhance Early warning systems.

**Activities:**

Health sector has undertaken work in the following areas

**Results & achievements made:**

- Risk/vulnerability assessment for pandemic influenza undertaken
- Disease surveillance system upgrading ongoing and linked to WHO SEARO
- Communication protocol developed, 1 table top exercise conducted
- National IHR focal point identified and in communication with WHO
- Technical information from WHO made available to atoll level
- 1 round of clinical training conducted; 4 central level personnel trained in regional disaster training courses; field epidemiology trainings conducted at regional levels; 1 round of HWs trained in psychological first aid
- Public awareness on pandemic influenza undertaken for all atolls & ongoing using mass media and IEC materials

**Priority 2. Identify, assess and monitor disaster risks and enhance early warning**

**Objective & Initiative:**

Develop disaster risk profile and understand risks.

**Activities:**

- Conduct assessments on disaster risks and use for development planning.

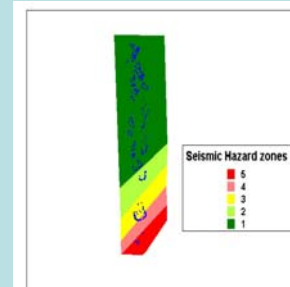
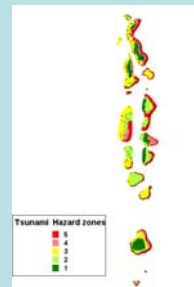
**Results & achievements made:**

- National risk profile with a multi hazard risk index for each island in the country created.
- A detail risk assessment of proposed nine islands selected for population consolidation completed.

**Major Challenges & Lessons Learnt**

- Integrating the risk concerns into development plans of the islands and finding cost effective solutions for improving safety.
- Securing funds for mitigation measures in the islands. Some of the recommendations of the study which are consistent with the fragile environment go against the land use plans developed –appropriate changes have to be made in the development plans.

**Hazard Mapping  
Examples from National Risk Profile**



**Priority 2.**

**Objective & Initiative:**

Assist policy makers in access to resources & inform policy makers on patterns of disaster risks through established disaster information systems

**Activities:**

- Introduce contextualized software for use of Disaster Managers and Policy makers

**Results & achievements made:**

- Software titled "Maldives Disaster Resource Network" developed and staff of NDMC trained in the use of the software.
- Database for developing knowledge on past disaster events and impacts introduced and some progress made in information collection.

**Major Challenges & Lessons Learnt**

- Establishing partnerships with the private sector where maximum resources are available for emergency use
- Training of island and atoll officials in the collecting and uploading data in the software
- Access to past information on disaster events which is currently not available with a single source /ministry.

**Priority 3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels.**

**Objective & Initiative:**

Greater public awareness on disaster risks.

**Activities:**

1. Use of a common approach to disaster risk reduction and community preparedness.
2. Public awareness programs and inclusion of DM in school curriculum

**Results & achievements made:**

A guide to community preparedness plans developed which shares ways to enhance community response and has standard DRR terminology as a reference.

**Major Challenges & Lessons Learnt**

- Training of all volunteers in use of the guide and its adaptation by other agencies
- Strategy for sustained programs for public awareness has to developed, currently it is very limited.
- The process is still at a nascent stage and requires technical and financial support to take it ahead.

- **Develop appropriate policy and guidelines on disaster preparedness and response in schools**
  - A policy framework on Safe School has been formulated.
- **Setup a National School Safety Coordination Committee to spearhead the school safety initiatives**
  - An interim committee has been setup with members from relevant sections of MoE
  - School Health Unit has been mandated to coordinate the Disaster Risk Education Activities
- **Develop minimum safety standards for school infrastructure and establish a School Building Code**
  - Work not yet started, however school construction currently adheres to good building standards
- **Prepare School Safety and Disaster Management Plans (SSDMP)**
  - In collaboration with UNDP a ToT workshop has been conducted in Vaavu and Meemu
  - Detailed Guidelines for SSDMP is being drafted.
  - Further training planned for selected schools in Male and Atoll in collaboration with Care Society, Maldives

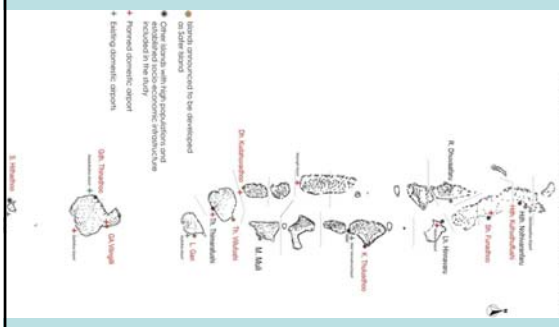
- **Conduct training for identified Emergency Wardens.**
  - Already underway. These are the participants of ToT programs
- **Conduct workshops and training and prepare guidelines on preparation of SSDMP with samples plans for distribution**
  - Work underway
- **Reconvene the "Every Child Swims" program - extend program to all teachers - Conduct swimming instructor courses to teachers**
  - Will be carried out during the course of the next five years
- **Conduct Disaster Safety Awareness Campaign in schools and sensitizations programs for MoE officials**
  - Senior MoE staff has participated in few training programs and also made some observational visits
  - Education in Emergencies workshop conducted by UNICEF for MoE officials
  - The campaign will resume from 2008. Some ad hoc programs already conducted in schools

- **Integrate disaster prevention education in school curriculum and develop teaching and learning materials on disaster preparedness**
  - Some materials being developed Earthquake and Tsunamis – Teaching materials for Primary Classes (VSO assisted)
  - Curriculum Developers being Oriented through various training
  - Integration of Disaster risk education into the curriculum timed to be carried with the major curriculum revision
  - Will be integrated into ES/SS, Science, Languages
- **Demonstrations and Mock Drills on School Safety**
  - Planned as part of SSDMP implementation activity
  - Mock fire drills conducted in almost all Primary Schools in Male
- **Training of Task Forces in Search and Rescue, First Aid, Coordination, Safety Issues**
  - Planned as part of SSDMP implementation activity
- **Identifying vulnerabilities in existing schools and establish standards for retrofitting or replacing new buildings**
  - An ongoing process based on availability of funds
- **Conduct Survival Skills Camps for students and teachers**
  - Planned as part of awareness campaign

#### Priority 4. Reduce underlying risk factors

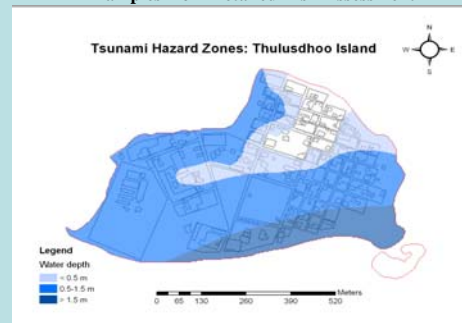
- **Objective & Initiative:**
  - Integrating Disaster Risk Reduction Strategies with Climate Change and developing framework for sustaining ecosystems. Greater public awareness on disaster risks.
- **Activities:**
  - To undertake composite risk assessments that factor in environmental impacts of natural disasters and understand how impacts of climate change trigger high and more extreme disaster events.
- **Results & achievements made:**
  - The risk assessment study was designed to study impact of development/land use plan on the environment. The results on the impact have to be presented to policy makers.
  - A National framework for adaptation to Climate Change was developed to provide options for protection of the natural ecosystems, land beaches and human settlements and water resources and adaptation needs for key economic sectors (fisheries, tourism & agriculture).

#### Coverage for Detailed Risk Assessment



#### Hazard mapping

##### Examples from Detailed Risk Assessment



**Priority 4. Reduce underlying risk factors**

- Health sector emergency preparedness & response (EPR) framework
  - Pandemic Preparedness Plan (PPP)
  - Emergency Medical Services Plan completed
  - Ministry of Tourism & Civil Aviation has developed their Disaster Management Plan. More than 50% of the tourist resorts have contingency plans
  - DRR plans received from 50 resorts
- Health actions covered in national adaptation plan for climate change and health
  - Advocacy for health impact assessments for development projects
  - Communication for behaviour impact tool used to tackle epidemic risk reduction
  - Advocacy for financial risk sharing and social health insurance

- **DRR measures under 3<sup>rd</sup> Tourism Master Plan**
  - Formation of a Tourism Emergency Operation Centre
  - Establish the Tourism Crisis Management Unit
  - Establish Disaster Response Team (DRT) at Resorts
  - Develop DRR plans and conduct regular drills



- **Major Challenges & Lessons Learnt**
  - Recommendations for ensuring that reduced impact on natural environment may not match the development plans, practical issues such as high costs of providing basic services and lack of land area may force Government to take decisions that may prove detrimental to the fragile environment of Maldives.
  - Adaptation measures are expensive and may not get the required budgets for implementation.
- The plan has yet to be implemented at the local levels with hospitals emergency preparedness and simulation exercise at resorts.

**Priority 5: Strengthen disaster preparedness for effective response at all levels**

- **Objective & Initiative:**  
Enhanced capacity at the national and local level for disaster management
- **Activities:**
  1. Training and capacity building activities of staff across all sectors in the Government.
  2. Developing plans for community preparedness
- **Results & achievements made:**
  - More than 200 staff representing ministries in the government has been trained in basic concepts of disaster management and other subjects related to disaster management.
  - Community preparedness plans developed in 30 islands and disaster management tasks forces instituted with training on basic emergency response.
  - Scouts and Guide Volunteers trained in First Aid and use transferred their skills to other scouts.
  - A Disaster Management policy has been drafted with multi stakeholder input.

- **Major Challenges & Lessons Learnt**
  - Availability of the trained person to assist in local trainings and integration of learning into their regular job profiles. Lack of a policy to provide a scope for trained personnel to practice skills.
  - The process in which community preparedness plans are developed is time consuming; a much larger force has to be employed to cover the population of all islands.



Some examples from the recent storm surges waves that hit Maldives

