

# Compilation of National Progress Reports on the implementation of the Hyogo Framework for Action (2009-2011)

## HFA Priority 2, core indicator 2.1:

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

## Know the Risks and Take Action

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Reporting period: 2009-2011  
Country information as of 18 Aug 2011 (for internal use only)

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This report compiles inputs by Hyogo Framework for Action (HFA) priority for action 2.1 from 86 countries' final national HFA progress reports in order to better facilitate analysis and provide examples by priority and region. Inputs are provided in their original reporting language.

Note that these extracts are provided for convenience only and that national HFA progress reports should be considered in their entirety. To view them, visit:

<http://www.preventionweb.net/english/hyogo/framework/progress/>

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An HFA Monitor update published by PreventionWeb

# Africa

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## Algeria (in French)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* Yes: Multi-hazard risk assessment

\* xxx % of schools and hospitals assessed

\* xxx schools not safe from disasters (specify absolute number)

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

En effet, à la suite des nombreuses catastrophes qu'a connues le pays ces dernières décennies (séismes, inondations, feux de forêt, invasions acridiennes, tempêtes et vents violents, ...), beaucoup d'études d'aléa, de vulnérabilité et de risque ont été réalisées par les secteurs et les organismes concernés, et ce, en s'appuyant sur des technologies telles que les SIG et l'outil spatial. Ces études servent de bases fiables pour des actions de réduction de risques par différents secteurs.

Par ailleurs, beaucoup de travaux de recherche (Magister et Doctorat) sont réalisés au niveau de l'université dans le domaine de l'évaluation des aléas et des vulnérabilités.

### Context & Constraints:

Le défi principal réside dans l'insuffisance d'appropriation par la plupart des collectivités locales (Wilayas, mais surtout communes) des outils de réduction des risques de catastrophes. En effet, les études et outils déjà existants demeurent à l'usage de certaines administrations centrales et organismes spécialisés même si, pour certains cas, il y a eu des applications au niveau local.

De plus, en ce qui concerne le volet « évaluation de la vulnérabilité et des risques », des efforts significatifs devront être poursuivis et développés en confiant aux organismes nationaux scientifiques et techniques, des missions d'animation et d'encadrement d'activités de réduction des risques au niveau local.

D'ailleurs, la démultiplication des actions induites par la mise en œuvre des dispositions de la loi 04-20 devrait permettre de surmonter progressivement ce handicap.

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## Botswana (in English)

### Level of Progress achieved:

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

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

Yes

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

A Hazard Vulnerability and Risk Identification study was commissioned by the Government of Botswana in 2008. The study highlights actual and potential disaster threats in the country with a detailed analysis by using GIS.

**Context & Constraints:**

The findings of the study are up to the district or urban level, the study has not incorporated risk data at village and community levels.

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**Burundi** (in French)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 10 % of schools and hospitals assessed
- \* Pas encore évaluées schools not safe from disasters (specify absolute number)
- \* Yes: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

- Evaluation sommaire de la vulnérabilité et des risques dans certaines provinces disposant des Plans de Contingence (action continue);
- Le Burundi a besoin d'actualiser sa cartographie des risques pour pouvoir mieux les évaluer;
- Des standards nationaux d'évaluation multirisques n'ont pas encore établis

**Context & Constraints:**

- Manque de législation en RRC permettant de percer dans tous les secteurs pour l'évaluation des risques partout;
  - Manque d'expertise pour l'évaluation approfondie pouvant dégager des données statistiques
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## Cape Verde (in Spanish)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 6 Escolas; 3 hospitais % of schools and hospitals assessed
- \* 5 schools not safe from disasters (specify absolute number)
- \* Yes: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

Para a avaliação multi-riscos o SNPC tem utilizado a metodologia proposta pela Autoridade Nacional de protecção Civil de Portugal, ou seja, o Guia para a Caracterização de risco no âmbito da Elaboração de Planos de Emergência de Protecção Civil).

Em 2009 foi assinado um protocolo de cooperação entre o Departamento de Ciências e Tecnologias da Universidade de Cabo Verde, ITER - Instituto Tecnológico e de Energias Renováveis, LEC - Laboratório de Engenharia Civil de Cabo Verde, SNPC - Serviço Nacional de Protecção Civil, com vista a redução do risco vulcânico e à criação do Observatório Vulcanológico de Cabo Verde

Para o apoio ao mapeamento das zonas de riscos, foram adquiridos durante este período 5 GPS portáteis para aumentar a precisão para a colheita de dados relativos às zonas de risco.

Elaboração da Cartografia de Risco ligada à questão "Género", em curso.

Estrutura da Plataforma Nacional para RRC , elaborada e em fase de implementação, propondo o

envolvimento de um número considerável de parceiros que têm implicação directa na RRC em Cabo Verde;

Recursos financeiros disponibilizados pela UNISDR no valor de 13 000 USD, com o objectivo de reforçar a plataforma nacional.

Para preparar a população a fim de fazer face ao acidentes graves, têm se feito as seguintes actividades: Exercício de simulação nas escolas seguintes escolas: Cónego Jacinto, Pedro Gomes, Liceu de S. Domingos e de S.º Domingos dos Órgãos;

Está em elaboração o Plano Emergência Interno da Escola Secundaria Olavo Moniz, no Município do Sal.

Realização de exercício de simulação no Hospital Central Agostinho Neto - HAN, e no Hospital Regional Santiago Norte – HRSN.

#### **Context & Constraints:**

A nível nacional existe a necessidade de adoptar critérios uniformes para a avaliação de riscos, e também o estabelecimento de uma norma para a produção cartográfica em Cabo Verde.

O 1.º Workshop Internacional sobre Cartografia e Geodesia será realizado em breve, em parceria com o Ministério de Descentralização, Habitação e Ordenamento do Território (MDHOT), onde será discutido vários temas ligados a produção cartográfica em Cabo Verde e também será discutida a uniformização dos critérios para a produção de mapas de temáticas.

Está em curso a elaboração do projecto de cartografia de risco a nível nacional, em parceria com o Ministério da Descentralização, Habitação e de Ordenamento do Território, que posteriormente será apresentada aos parceiros para busca de financiamento.

Existe a necessidade de massificar a formação na elaboração dos Planos de Emergência Internos em hospitais e escolas

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## **Comoros** (in French)

#### **Level of Progress achieved:**

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

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

No

#### **Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### **Description:**

Une première étude sur les risques naturels et la protection civile a été réalisée en Mars 2002, financée par le PNUD.

Plus récemment, dans le cadre du projet COSEP du PNUD, une Etude des vulnérabilités du pays a été réalisée, ainsi qu' une évaluation de l'état de santé des récifs et des mangroves.

L'UNICEF a appuyé le Ministère de l'Education pour réaliser une étude sur l'éducation en situation d'urgence avec la mise en place d'une base de données des établissements scolaires et des risques qu'ils encourent.

Des études de Vulnérabilité et de Capacité (EVC) ont été menées dans 26 villages en 2009-2010 avec l'appui du Croissant Rouge Comorien.

Enfin, plusieurs études scientifiques ont été menées dans le pays, comme par exemple: le diagnostic de l'état de l'environnement aux Comores réalisé avec l'appui conjoint de l'UNESCO, du PNUD et de l'IUCN (1993), la thèse de H. Nassor intitulée "contribution à l'étude du risque volcanique sur les grands volcans boucliers basaltiques : le Karthala et le Piton de la fournaise" (septembre 2001), la thèse de C. Savin intitulée "circulation hydrothermale au sein du volcan Karthala" (septembre 2001)...

La coopération française avait proposé d'appuyer le pays pour collecter et archiver les études scientifiques menées avec des universitaires comoriens et français.

Ces études restent cependant à approfondir pour couvrir le territoire national, et la centralisation de toutes les informations scientifiques sur les aléas et les risques est considérée comme une priorité (à l'Université, au CNDRS, ou dans une autre structure appropriée).

### **Context & Constraints:**

De nombreuses études scientifiques ont été faites dans le passé et de nouvelles études sont en cours de réalisation mais trop souvent, ces études sont difficiles à retrouver, et des efforts importants doivent être faits pour un meilleur archivage. Il y a un manque de coordination dans ce domaine.

Par ailleurs, les résultats de ces études ne sont pas pris en compte dans les politiques de développement du pays : inexistence d'un Plan d'Occupation des Sols actualisé, ou de tout autre outil de planification/urbanisation.

Le pays fait face à un problème sérieux de répartition du foncier, qui est cause de nombreux conflits entre communes...

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## **Cote d'Ivoire** (in French)

### **Level of Progress achieved:**

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

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

No

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

Il convient de noter que les risques les plus probables en Cote d'ivoire sont le risque d'inondation, d'éboulement de terrain, de feux de brousse et d'érosion côtière, mais il n'existe pas d'évaluation des risques multi-catastrophes en tant que tel. Des études scientifiques ont été réalisées par certains chercheurs mais elles n'intègrent pas généralement les informations sur les vulnérabilités des populations.

**Context & Constraints:**

Les défis rencontrés sont le manque d'un réseau national d'acquisition des données environnementales et l'absence d'une synergie d'action entre les différentes structures.  
Pour y remédier il faut mettre en place une base nationale de données environnementales

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**Ghana** (in English)**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* Yes: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

There is adequate identification of hazards, constant monitoring and assessment by the Technical Advisory

Committees, (key stake holders) . The identified hazards include: Geological, Hydrometeorological, Fires, Pests & Insects Infestations, Diseases & Epidemics, Nuclear & Radiological, Man-Made (Conflicts, vehicular/boat accidents etc). In 2007 Hazards Maps were prepared for four hazard types namely: Hydrometeorological, Fires, Pests and Insects Infestation and Geological . Adequate expertise and equipment exist at the national level.

**Context & Constraints:**

While adequate expertise and equipment for monitoring and early warning exist at the national level, the same cannot be said for the regional, district and community levels. Additionally, capacity to process, analyse and utilise data collected are not very strong at the regional, district and community level. Negative cultural practices, beliefs and attitudes serve as additional constraints.

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## Guinea-Bissau (in French)

**Level of Progress achieved:**

1 - Minor progress with few signs of forward action in plans or policy

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

No

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

Les contraintes sont institutionnelles. il faut une volonté politique pour la mise en place du service nationale de la protection civile et la plate nationale de reduction des risques de catastrophes.

**Context & Constraints:**

Absence de département est le plus grand défi pour les RCC

1. L'institutionnalisation d'une entité dont la tâche principale est de veiller à l'harmonisation des palinificações sectorielles sur la RRC et la coordination des interventions.
2. Renforcement des capacités institutionnelles dans le domaine de la RRC aux niveaux national et la régionalisation

## Kenya (in English)

### Level of Progress achieved:

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

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

No

### Means of Verification:

- \* No: Multi-hazard risk assessment
- \* 70 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

### Description:

National and local risk assessments based on hazard data and vulnerability information are available and include risk assessment for key sectors but these are disaggregated and scattered in different sectors and institutions, these institutions need to be coordinated to share their information with other stakeholders. Currently the government has received an assistance from UNDP, has consulted Kenyatta university to come up with a national risk assessment and vulnerability maps for Kenya.

### Context & Constraints:

The consultancy work is expected to take about 3 months and is expected to be ready by March 2011. Emerging issues have also to be taken into consideration.

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## Lesotho (in English)

### Level of Progress achieved:

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

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

No

### Means of Verification:

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

The only assessments that are undertaken are the National Vulnerability Assessments, the Risk Assessments at the village level and the Community Owned Vulnerability Assessment and Capacity Analysis at the village level. Lack of expertise and financial resources coupled with inadequate human resources pose as constraints for the core indicator.

**Context & Constraints:**

Lack of expertise, financial and Human resources.

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**Madagascar** (in French)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* Yes: Multi-hazard risk assessment

\* 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:**

En ce moment, il n'existe que des études assez disparates et non mises à jour pour les risques. Actuellement, l'Etat, par l'intermédiaire de la CPGU, du BNGRC et du service de la Météorologie malagasy, travaille avec l'appui du GFDRR pour l'élaboration de l'Atlas des risques. Faute de budget suffisant, cet atlas qui aurait dû être établi au niveau national a été limité à quelques régions prioritaires. Sur les 22 régions de Madagascar, 4 sont programmées pour bénéficier de l'étude.

Il est à noter cependant que des efforts sont ressentis au niveau de la mise à jour des baselines. Des cartes et des données monographiques allant jusqu'au plus bas niveau administratif : « fokontany » ont été élaborées par l'institution nationale en charge de la statistique avec l'appui de l'UNFPA.

Des recherches de financement sont en cours actuellement pour finaliser l'étude sur les risques au niveau des autres régions non priorisées.

**Context & Constraints:**

La difficulté réside avant tout dans la faible capacité financière. La volonté de chaque partie prenante dans l'évaluation des risques existe mais il leur est difficile de surmonter cette difficulté financière. De plus les compétences font défaut, et il nous faut des expertises extérieures pour pouvoir mettre en place un système évolutif capable de stocker, de sauvegarder les données ainsi que de les analyser suivant des critères bien définis et qui suit les normes internationales en la matière. Ces analyses devraient être accessibles dans le temps et dans l'espace à partir de technologie adaptée.

Cette situation repose sur le fait qu'en période de crise, il faut des données fiables et à temps pour prendre des décisions justes et efficaces pour atténuer les impacts des aléas.

Les défis qu'il faut surmonter sont (par ordre de priorités) :

- Des renforcements de capacité en matière d'analyse de risques multi-aléas ;
- Des renforcements de capacité en matière de base de données et d'analyse de données, et de la diffusion des résultats d'étude (internet, webmapping, Système d'information géographique, modélisation...)
- Des appuis financiers et matériels notamment dans le recrutement d'experts internationaux pour le renforcement de capacité et dans l'achat d'éventuel serveur.

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## Malawi (in English)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

Malawi is developing a national geo-spatial database. Various actors are currently working towards a system whereby they will be contributing information for hazard and vulnerability analysis and risk assessments.

**Context & Constraints:**

Currently the country does not have a multi-hazard risk assessment tool and capacity. It conducts

vulnerability assessment with regards to food security via a specialised commission (MVAC). There is a lot of data on hazards and vulnerability scattered within different institutions and organizations which is not easily accessible. Metadata and inventory list need to be standardised, harmonized and centralised.

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## **Mauritius** (in English)

### **Level of Progress achieved:**

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

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

-- Nothing reported within this timeframe. --

### **Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

### **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. Under the Clinton initiative for tsunami recovery, equipment have been purchased and distributed, ( tide gauges, loud speakers, sirens, special radios for fishermen, etc) NGO's are participating in tsunami awareness campaign.

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

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## **Morocco** (in French)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

L'absence d'une plateforme multirisque n'a pas empêché le Maroc de prendre des initiatives pour mettre en place des systèmes de surveillance notamment par l'installation des réseaux, dans ce cadre, le Maroc a mis en place de nombreux réseaux et observatoires pour la surveillance des phénomènes susceptibles de générer des catastrophes naturelles :

- le réseau météorologique relevant de la Direction de la Météorologie Nationale et qui a connu un développement exceptionnel notamment par le développement de compétences propres lui permettant d'être au niveau des normes internationales en matières de gestion et en matière de prévision météorologiques et climatiques,
  - Le réseau annonces des crues,
  - le réseau de marégraphe côtier installés au niveau des ports du Royaume pour suivre la variation du niveau de la mer,
  - le réseau sismologique marocain (CEPRIS, Centre mis en place dans le cadre de l'Accord de l'EUR-OPA risques majeurs),
  - l'Observatoire national de la secheresse,
  - le suivi et l'observation des pollution par le Laboratoire National des Etudes et de la Surveillance de la Pollution relevant du département de l'Environnement,
  - le réseau d'annonce d'invasion acridienne,
- le Centre de Télédétection Spatiale qui a connu un développement rapide le positionnant comme acteur incontournable pour toute action stratégique pour la prévention et la gestion des risques,
- La surveillance épidémiologique relevant du Ministère de la Santé qui dispose de mécanismes de surveillance des risques et de cartographie des risques visant la prévention et la lutte contre les maladies contagieuses et épidémique.

**Context & Constraints:**

Certains observatoires mis en place ne sont pas complètement opérationnels et la masse d'information produite par ces observatoires et réseaux existants reste dispersés.

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**Mozambique** (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* Yes: Multi-hazard risk assessment

> Impact of Climate Change in Mozambique (2009) [http://share.maplecroft.com/INGC\\_Report/](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 were 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.

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## **Nigeria** (in English)

### **Level of Progress achieved:**

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

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

Yes

### **Means of Verification:**

\* Yes: Multi-hazard risk assessment

> Vulnerability and Capacity Analysis Document for Nigeria (2009)

[http://www.preventionweb.net/files/14632\\_vcadocumentreviewed.doc](http://www.preventionweb.net/files/14632_vcadocumentreviewed.doc) [DOC ]

\* 0 % of schools and hospitals assessed

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

\* Yes: Gender disaggregated vulnerability and capacity assessments

\* Yes: Agreed national standards for multi hazard risk assessments

**Description:**

A multi-stakeholders Implementation Committee for Vulnerability and Capacity Analysis was established. Data for 7 States have been collected and analysis will be completed before the end of 2010. Baseline studies for six (6) States in Nigeria were also completed.

**Context & Constraints:**

The vulnerability and capacity analysis (VCA) was conducted in only 21 out of the entire 774 Local Government areas in Nigeria. Budget constraints has limited the implementation in all the local governments in Nigeria.

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**Senegal** (in French)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

La plateforme multisectorielle existe par décret n° 2008-211 du 04 mars 2008. Néanmoins sa fonctionnalité n'est pas effective. ce qui rend difficile de renseigner les indicateurs y relatifs.

**Context & Constraints:**

Présentement, la DPC (Direction de la Protection civile) envisage de redynamiser et d'étendre les réseaux de Réduction des Risques de Catastrophes (RRC) qui sont des structures devant permettre de rendre fonctionnelle la plateforme.

Le Sénégal, dans la formulation du Document de Politique Economique et social (DPES 2011-2015) compte inscrire la RRC dans les programmes et projets nationaux.

Le document est encoeurs d'élaboration

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**Sierra Leone** (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

A detailed study of the national and local risk assessments are readily available and include risk assessments for key sectors within the country. The hazard data and vulnerability information covers that of all the communities nationwide. In addition to the National Hazard Profile that ensures decision makers and communities to fully understand their exposure to various hazards and the social, economic, environmental and physical vulnerabilities that they may face; a nationwide vulnerability and capacity assessment on the hazards and risks as per community also makes room to sensitise communities on the vulnerabilities that they may face and the capacities at their disposal to tackle them. The National Hazard Profile also allows communities to take effective action to reduce disaster and environmental risks. The department is in the process of reviewing the national hazard profile to reflect emerging hazards across the country. For this purpose, all twelve District Disaster Management Committees have been tasked to develop district hazard profiles.

**Context & Constraints:**

Context & Constraints:

Some District DM Committees have sent in hazard profiles of their districts, while others are on the process. As such there is a lack of resources. This, thus calls for capacity building for some of our disaster management committees. There is also the need to complete chiefdom hazard profiles.

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**Tanzania, United Rep of** (in English)**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

PMO - DMD in collaboration with the Ministry of Agriculture and Food Security through National Food Security Team has been carrying out biannual Food Security and Nutrition Assessment for food unsecured District in the country. After analysis the report is available for Government and Donors interventions. Decentralization of the assessment is in place. Currently, in June 2010 two regions (Lindi and Mtwara) with their districts have been piloted, trained (on Tanzania Food Security and Nutrition Analysis System - Mfumo wa Uchambuzi wa Uhakika wa Chakula na Lishe – MUCHALI) and have conducted assessment and produced on their own Food Security and Nutrition Report. The process is going on for training in some other regions/districts later this year depending on budget.

For Zanzibar, Disaster Risks and Capacity Needs Assessment was done in 2008 which gives the risk and vulnerability map of Zanzibar on disaster issues. On the other hand the participatory needs and capacity assessment have been done in 85 Shehias while currently (October 2010) the assessment is carried out to other 50 Shehias of Zanzibar.

**Context & Constraints:**

Risk assessment results are not fully utilized for intervention and planning purpose due to inadequate financial resources. Improving coordination and understanding of inter dependencies across Sectors is also a challenge. Others include ability to assess the full range of consequences and vulnerabilities, especially secondary impacts, comparative economic analysis and assessing non monetary costs.

**Zambia** (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 1 % of schools and hospitals assessed
- \* 178 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:**

The country has carried out the Comprehensive Vulnerability Assessment and Analysis (CVAA) in 21 districts which is meant to provide for vulnerability and hazard profiling in those districts. Some partner NGOs have carried out some Participatory Comprehensive Assessments in some districts of Western and Southern Provinces.

**Context & Constraints:**

The CVAA will be the basis for mainstreaming DRR activities in development planning. However, the process has been hampered by inadequate funding to carry out the Comprehensive Vulnerability assessment and Analysis in all the districts.

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# Americas

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## Anguilla (in English)

### Level of Progress achieved:

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

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

No

### Means of Verification:

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

Pilot of HRV assessment approach undertaken and it is anticipated a further two models will be tested before a final decision is taken to roll out an appropriate model in the community. Baseline Assessment Tool has been completed.

### Context & Constraints:

A comprehensive hazard, risk and vulnerability assessment is ongoing and expect to be completed shortly. From previous studies the results identified that base information is old and was developed as a part of larger regional initiatives which was not applicable to a local study.

Present data is also incorrect on a custom spheroid in the GIS and not open to easy editing or extension of the features. Attributes almost non existent. Flood boundaries are "estimates" based on visual only.

Time constraints are present.

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## Antigua and Barbuda (in English)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

- \* Yes: Multi-hazard risk assessment
- \* 100 % of schools and hospitals assessed
- \* 5% 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:**

The lack of finance, and the absence of clearer commitment to the risk reduction process.

**Context & Constraints:**

A comprehensive assessment of all schools, Clinics, and other critical facilities has been completed and reside in a data base. This assessment is an ongoing activity

**Argentina** (in Spanish)

**Level of Progress achieved:**

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

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

-- Nothing reported within this timeframe. --

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

También en éste se necesitaría un punto intermedio entre el 3 y el 4 para aplicar el nivel de progreso real. Argentina tiene constituido un Grupo de Proveedores de Información Primaria (que integran desde la Comisión de Actividades Espaciales, el Instituto Nacional del Agua, el Instituto de Prevención Sísmica, el Instituto de Estadísticas y Censos, etc.) un Grupo de Monitoreo de Alertas (Dirección de Protección Civil, Cuerpo de Bomberos, Fuerzas Armadas, Dirección Nacional de Emergencias Sanitarias, etc.), activos y de reunión y seguimiento continuo.

Estos grupos luego difunden información a los ámbitos provinciales y locales según la necesidad, y

permiten conocer la evolución de los sucesos que pueden convertirse en riesgo de la misma manera que están permitiendo la identificación de vulnerabilidades con la anticipación suficiente como para que luego los responsables puedan actuar apropiadamente.

Este GPIIP ha evolucionado actualmente, constituyendo una Secretaría Ejecutiva que funciona físicamente en el ámbito del Instituto Geográfico Nacional (ex IGM).

A ello se le suma el Grupo de Monitoreo que coordina la Dirección Nacional de Protección Civil, que mantiene nueve reuniones anuales y seguimiento on-line.

A su vez, la Cruz Roja Argentina ha desarrollado el Documento País con amplia consulta en sus Talleres.

### **Context & Constraints:**

Las limitaciones presupuestarias y, en oportunidades, informes de un nivel técnico excesivamente complejo para el entendimiento de comunidades locales con menor nivel científico-tecnológico, han derivado en que los informes no resulten aptos para la resolución de la problemática.

En esta línea los desafíos principales apuntan a armonizar metodologías de investigación y análisis; facilitar el acceso a la información, impulsando proactivamente la diseminación de los materiales incluyendo la interacción entre los niveles nacionales, provinciales y municipales; y su adaptación para facilitar la comprensión por personas y comunidades no especializadas.

Aprovechar los diferentes espacios de coordinación nacional (y federal), incluyendo la Plataforma Nacional de RRD, para relevar y sistematizar estos estudios o informaciones, “atraer” iniciativas no tan conocidas y facilitar un proceso de “armonización” metodológica, capitalizando el fuerte posicionamiento que está teniendo el sector académico en la RRD.

Asimismo, se pueden aprovechar los canales de distribución de información habituales, las redes existentes y las plataformas virtuales en funcionamiento para compilar y difundir estos productos.

Las Organizaciones de la Sociedad Civil (OSC) son actores fundamentales al momento de promover y facilitar el acceso de estos datos, informaciones, estudios, etc entre los niveles comunitarios.

Una vez detectada la vulnerabilidad, la información acorde al nivel y recursos de la autoridad de aplicación será necesaria. A ello se tenderá, gracias al conocimiento de esta situación que se obtuvo a partir de los intercambios en la Plataforma Nacional

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## **Barbados** (in English)

### **Level of Progress achieved:**

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

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

-- Nothing reported within this timeframe. --

### **Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

Vulnerability assessments, hazard maps and risk assessments for critical infrastructure are not generally applied to be able to holistically inform development planning. In the case of the Town and Country Planning Department and the Coastal Zone Management Unit, development regulation on the coast is based on the 100-year storm surge inundation line, and coastal setbacks are measured based on distance from this benchmark.

There are vulnerability assessments, hazard maps developed for the Scotland District area of Barbados, which constitutes 1/7 of the island's land mass that is prone to landslides and soil erosion. There is also the institutional framework of the Soil Conservation Unit within the Ministry of Agriculture, and legislation: the Soil Conservation Act, which is the driving force. DRR initiatives in this area include structural and non-structural mitigation. One such mitigation measure is the re-location of communities in landslide-prone and severe flooding areas.

To tackle the problem of inland and marine flooding, the Drainage Unit under the Ministry of the Environment, Water Resources and Drainage has been mandated to conduct vulnerability assessments, flood hazard maps and risk assessments in a systematic way, as well as mitigation works.

The Government has committed significant resources (US\$30 million) to a comprehensive coastal risk assessment and management programme, that will conduct vulnerability assessment, hazard mapping, and risk assessments for the major coastal hazards identified for Barbados.

Government has put in place a series of incentives to boost DRR actions on the part of individual households and commercial entities. Incentives include retrofitting against wind (hurricane straps and shutters) and water collection systems.

**Context & Constraints:**

Resources are limited to carry out the required assessments and hazard maps for non-coastal hazards. In the built environment, the enactment of the Barbados Building Code would make legislative demands mandatory and the policing mechanism would be provided for in the Barbados Building Authority.

**Recommendations**

- Accelerated enactment of the Barbados Building Code and the enforcement mechanism must be an integral part of any short to medium-term implementation plan for hazard and risk assessments.
- An inventory of vulnerable housing infrastructure must be conducted, so that impact zones may be delineated for wind and flash flood hazard assessments
- Capacity development must be included in any future programmes.

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**Bolivia** (in Spanish)**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* Yes: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

Evaluación del riesgo de múltiples amenazas si con los dos informes preparados por la CEPAL Niño 2007, y Niña 2008. Niño 2009/2010. Informes que no son de conocimiento general.

Evaluaciones sobre las vulnerabilidades y las capacidades desagregadas por género Trabajo realizado por la CEPAL 2008 donde se establecen los danmificados por sexo.

**Context & Constraints:**

Los resultados y recomendaciones de estas evaluaciones no siempre son tomados en cuenta.

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**Brazil** (in English)**Level of Progress achieved:**

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

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

-- Nothing reported within this timeframe. --

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

Mapeamento, em períodos não superiores a 5 anos, ou em razão de demandas específicas, das áreas de risco urbano e rural, coordenado pelos

órgãos municipais de Defesa Civil, envolvendo a comunidade na identificação de riscos e estrutura de resposta, com uso das geotecnologias, e com registros de séries históricas dos danos e da população atingida, para definição de ações preventivas, disponibilizando as informações para os demais órgãos do Sistema Nacional de Defesa Civil - SINDEC.

#### **Context & Constraints:**

A Política Nacional de Defesa Civil aprovada em 1995 apresenta um conjunto de diretrizes e metas visando à redução do impacto imediato dos desastres e dos seus efeitos frente à vulnerabilidade das comunidades. Entretanto devido a fragilidade do Sistema Nacional de Defesa Civil – Sindec, a falta de percepção de risco da sociedade, dentre outras causas, foi realizado em março de 2010 a 1ª Conferência Nacional de Defesa Civil e Assistência Humanitária – CNDC com o objetivo de discutir uma defesa civil mais proativa e eficiente.

Das 100 diretrizes aprovadas na Conferência destacam-se a revisão da legislação de defesa civil com enfoque as ações preventivas, de capacitação e envolvimento da sociedade; a criação da carreira e profissionalização dos agentes de defesa civil com formação operacional, técnica, média e superior; realização de obras preventivas com a realocação de pessoas, a retirada de edificações das áreas vulneráveis, execução de obras de infraestrutura preventiva, recuperação de espaços degradados e reconstrução emergenciais.

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## **British Virgin Islands** (in English)

#### **Level of Progress achieved:**

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

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

Yes

#### **Means of Verification:**

\* Yes: Multi-hazard risk assessment

\* 100 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

#### **Description:**

Disaster and Environmental Risk Management Policies are being integrated into development plans at the national level through the incorporation of the hazard mitigation requirements within the National Planning Act No. 15 2004 Regulations. Regulations are currently being drafted to support the requirements of the Planning Act. The Act requires that certain developments undergo Environmental Impact Assessment (EIA). The methods to undertake a Hazard Vulnerability and Risk Assessment have been incorporated into the requirements for the EIA. Development within designated hazardous areas are required to complete a

Hazard Assessment. The HVA was updated earlier in 2010 to include erosion and drainage concerns. Further efforts will be made to integrate HVAs into the EIA process.

A Multi-Hazard Atlas is being developed in conjunction with the Town and Country Planning Department that will be compatible with the National Physical Development Plan. Data is being added to the National GIS database.

**Context & Constraints:**

Local capacity to conduct hazard assessments are lacking in the private and public sectors. There is a need for the revision of the Building Ordinance and Regulations.

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## Canada (in English)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* N/A % of schools and hospitals assessed
- \* N/A schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

An All-Hazards Risk Assessment Framework and associated tools are under development and will complement future editions of the Government of Canada's Emergency Management Planning Guide. The Emergency Management Act, Federal Policy for Emergency Management and An Emergency Management Framework for Canada requires all federal institutions of the Government of Canada to identify risks and develop appropriate plans to address these risks.

**Context & Constraints:**

Provincial and territorial governments, as well as municipal governments across Canada are responsible for the development and implementation of their own risk assessment processes, including the identification of risks and developing appropriate plans.

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## Cayman Islands (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* Yes: Multi-hazard risk assessment

> PRELIMINARY VULNERABILITY ASSESSMENT OF GRAND CAYMAN (2009) <http://www.caymanprepar.ed.ky/pls/portal/docs/PAGE/NEMHOME/RESOURCES/PUBLICATIONS/PRELIMINARYVULNERABILITYASSESSMENTCAYMANISLANDS19062009.PDF>

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

Preliminary Vulnerability Assessment of Grand Cayman, 1) To identify the various natural and man-made hazards that may affect the Cayman Islands; 2) To determine the level of exposure to natural hazards events of the areas at risk; and 3) To identify the Physical vulnerability to the impact of hazards of the main critical facilities at Grand Cayman.

**Context & Constraints:**

The Assessment excludes Cayman Brac and Little Cayman

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**Chile** (in Spanish)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

\* No: Multi-hazard risk assessment

\* No Evaluado % of schools and hospitals assessed

\* No Evaluado schools not safe from disasters (specify absolute number)

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### **Description:**

Existen diversas iniciativas que tienen por objetivo el análisis de las amenazas, por lo que varios organismos, incluido ONEMI, desarrollan esta tarea.

Los principales centros de monitoreo y alerta de eventos naturales extremos, en coordinación con ONEMI, son:

- El Servicio Sismológico de la Universidad de Chile que estudia las variables asociadas a sismos.
- Servicio Nacional de Geología y Minería que se ocupa de los riesgos asociados a la actividad volcánica.
- Servicio Hidrográfico y Oceanográfico de la Armada de Chile, organismo responsable del sistema nacional de alerta de tsunamis.
- Y la Dirección Meteorológica de Chile, que proporciona pronósticos de tiempo y clima.

(Fuente, Análisis de Riesgos de Chile, VI Plan de Acción Dipecho, 2010)

De acuerdo a los expertos de la ONU, quienes visitaron Chile en Octubre de este año, "hay información científica apropiada sobre las amenazas, en particular geológicas en instituciones técnicas y académicas, tanto a nivel nacional como en regiones". Esta información es de acceso público, sin embargo no está integrada a Sistemas de Información Territorial únicos, ni incluida en reportes unificados que permitan su difusión para el público general y para la investigación del mundo académico. La información en general es de difícil acceso y no está digitalizada.

### **Context & Constraints:**

Durante el año 2010 se reinstauró el Comité Científico Técnico de ONEMI, el que reúne a las instituciones encargadas del monitoreo de amenazas y convoca a especialistas del mundo académico, quienes son los responsables de analizar la información. Este Comité se reunió en cuatro ocasiones durante el año 2010, y su desafío para el futuro deberá ser poner a disposición de la comunidad científica los análisis de riesgos para que el mundo académico y científico pueda desarrollar investigaciones sobre la reducción del riesgo de desastres.

Las lecciones aprendidas del terremoto nos indican que no existen sistemas de monitoreos adecuados. Los sistemas mencionados no cuentan con tecnología de punta y no abarcan en algunos casos todo el territorio nacional. Además no existen protocolos actualizados de comunicación y traspaso de información entre los diferentes organismos. El Gobierno y las administraciones actuales de estas instituciones han señalado la importancia de fortalecer estas relaciones, y se ha avanzado en la coordinación de las actividades para generar información unificada.

El desafío futuro consiste en poner a disposición del público general toda aquella información que permita de manera adecuada tomar las mejores decisiones frente a una amenaza, e incorporar a los sectores académicos y privados en el desarrollo de cuerpos comunes de conocimientos.

Durante el 2011 se han actualizado convenios y protocolos con el SHOA y el Servicio Sismológico Nacional y el proyecto de ley contempla la creación de una Red de Monitoreo Sísmico. Con los otros organismos técnicos también se están revisando protocolos y procedimientos. A través de alianzas estratégicas, como por ejemplo, con el gobierno de U.S.A se logró la adquisición de 10 estaciones de monitoreo sísmico y de la misma forma se están llevando a cabo instancias para mejorar el sistema. Para llegar a la población, se han desarrollado sistemas de alertamiento temprano a través de medios de comunicación masiva. Por ejemplo, se ha actualizado el proceso de traspaso de información con radioaficionados y se ha desarrollado un trabajo con las radios de difusión masiva. Algunos sectores, como por ejemplo Salud, están desarrollando junto a sus representantes regionales, la detección y catastro de posibles amenazas a sus establecimientos de carácter natural y antrópico.

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**Colombia** (in Spanish)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 18% % of schools and hospitals assessed
- \* 25% schools not safe from disasters (specify absolute number)
- \* Yes: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

En Colombia algunas instituciones de carácter técnico a nivel nacional como lo son IDEAM, INGEOMINAS, INVEMAR, han realizado esfuerzos para realizar evaluaciones sobre tipos de amenaza específico, sin que este ejercicio trascienda al paradigma de las evaluaciones de amenazas múltiples, entre las amenazas caracterizadas se pueden encontrar Amenaza Sísmica, Deslizamientos, Volcánica (Solo algunos Volcanes), Inundaciones, Tsumani, evaluación de escenarios de amenaza por Cambio Climático, debido a la escala en que se realizaron estos estudios los departamentos y municipios los toman como referencia.

También es importante mencionar que algunos municipios gracias al trabajo de las CARS han adelantado estudios rigurosos en la identificación y caracterización de escenarios de amenaza, entre este grupo se destacan los de Bogotá y Medellín los cuales pueden ser ejemplo de un análisis multicriterio y multiobjetivo, sin decir que se tenga una metodología estandarizada para la realización de los mismos análisis.

Otras experiencias individuales en la evaluación de los riesgos locales están, el Proyecto Glacio volcánico Cañón del Combeima en la ciudad de Ibagué, Departamento del Tolima, Volcán Nevado del Huila en el Departamento del Huila, Volcán Galeras en el Departamento de Huila, cerro volcán Machín en los Departamentos de Tolima, Quindío y Cundinamarca y Sistemas Comunitarios como el Proyecto Cambio Climático y desastres en la Guajira.

**Context & Constraints:**

Frente al tema de los retos es muy importante comenzar a estructurar y afianzar una sola metodología de evaluación de escenarios de riesgos y vulnerabilidad con aplicación a nivel nacional, con aplicaciones municipales, departamentales y regionales, por parte de las instituciones de investigación que hacen parte del SNPAD, fijando escalas detalladas de cartografía.

Es trascendental generar una política de información para que a través del liderazgo de INGEOMINAS, IDEAM, y el IGAC, entre otras para la generación de mapas de amenaza a diversas escalas, las cuales coadyuven a los procesos de planificación territorial a escala municipal lo anterior debe estar acompañado de una estrategia financiera la cual convierta en viable la implementación de dicha política.

Las CARs deben fijar su estructura ecológica principal y los determinantes ambientales para su jurisdicción como mecanismo para la generación de información técnica de amenazas que contribuyan a nivel municipal y regional.

Es importante comenzar a liderar procesos de capacitación y fortalecimiento técnico en las áreas de amenazas, vulnerabilidad y riesgo.

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## Costa Rica (in Spanish)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* No: Multi-hazard risk assessment

\* 30 % of schools and hospitals assessed

\* 50 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:

Se ha aplicado la evaluación de "hospital seguro" en toda la infraestructura pública hospitalaria. Guía de Proyectos de inversión pública. Manuales para los estudios de impacto ambiental

### Context & Constraints:

Los control de los procesos de construcción del gobierno se han mejorado, pero no así los del sector privado.

Los estudios en las escuelas están referidos a escuelas públicas y se trata de un dato pequeño en comparación al número de escuelas que deben ser valoradas. Además, la valoración solo considera la amenaza sísmica.

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## Cuba (in Spanish)

### Level of Progress achieved:

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

### Is there a national multi-hazard risk assessment available to inform planning and development

**decisions?**

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 100 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* Yes: Gender disaggregated vulnerability and capacity assessments
- \* Yes: Agreed national standards for multi hazard risk assessments

**Description:**

Existen evaluaciones del riesgo de amenazas múltiples y se han evaluado todas las escuelas, hospitales, policlinicas y centros de salud y en aquellas que presentaron alguna vulnerabilidad se trabaja en su solución con la aplicación de medidas dirigidas a preservar la vida humana. Están definidas y establecidas las normas nacionales para la evaluación del riesgo de amenazas multiples, con la participación de todos los sectores claves.

A partir de los estudios de peligros realizados en el país, existen las bases de datos necesarias para efectuar el planeamiento de las nuevas inversiones a fin de disminuir los riesgos de desastres en las comunicacioens. Además el proceso de compatibilización de las nuevas inversiones contribuye a disminuir los riesgos de los territorios donde se desarrollarán nuevas obras.

**Context & Constraints:**

Las condiciones creadas por la Revolución Cubana, desde 1959, garantiza la preservación de valores tales como acceso universal a la cultura; salud pública, educación y seguridad social para todas las cubanas y cubanos. Las limitaciones que se presentan están localizadas en la escasez de financiamiento para el desarrollo integral y sostenible del país

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## **Dominican Republic** (in Spanish)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 30% % of schools and hospitals assessed
- \* 3,000 schools not safe from disasters (specify absolute number)

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

Hemos experimentado un avance significativo en la identificación de las amenazas, p.ej. desarrollo de estudios de las diferentes amenazas, en particular las Geológicas (sísmicas, procesos activos...etc) e hidrometeorológicas.

- Se han realizado evaluaciones de riesgos a nivel local, tanto de amenazas como vulnerabilidades en los diferentes municipios del país

**Context & Constraints:**

- Hacer énfasis en que la información generada, se transmita de manera adecuada y oportuna para que pueda ser utilizada para la planificación del desarrollo, haciendo que su aplicación resulte útil, desde el punto de vista de la Gestión Integral del Riesgo.

- Se requiere completar análisis de amenazas hidrometeorológicas

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**Ecuador** (in Spanish)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* Yes: Multi-hazard risk assessment

\* 30 % of schools and hospitals assessed

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

\* Yes: Gender disaggregated vulnerability and capacity assessments

\* Yes: Agreed national standards for multi hazard risk assessments

**Description:**

Nivel de avance 3

El Ministerio de Educación tiene 8000 escuelas evaluadas corresponde al 40% del total según la Subsecretaría de Educación del Litoral; Se han preparado 2 guías metodológicas para manuales de emergencias: guía comunitaria y guía institucional.

SENPLADES ha preparado la guía metodológica para Planes de Desarrollo y Ordenamiento Territorial

(PDOT) que incluye la variable de riesgo y cambio climático. Esta guía sirve para actualizar los PDOT de los cantones del proyecto.

Se ha preparado el capítulo de señalización de riesgos, que se ha incluido en la 1era revisión del Reglamento Nacional de Señalización Vertical (INEN RTE 4: Reglamento técnico de señalización vial, parte 1: señalización vertical);

**Context & Constraints:**

Desarrollar guías metodológicas para el análisis de riesgo amenaza y vulnerabilidad, así como los lineamientos para la elaboración de planes locales de gestión de riesgos incorporados a los planes de desarrollo local.

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## **El Salvador** (in Spanish)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 13.33% % of schools and hospitals assessed
- \* 837 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

En los últimos años, diferentes organismos gubernamentales y no gubernamentales, así como algunas agencias de cooperación, han realizado estudios de evaluación de riesgos multi-amenazas en municipios y comunidades, mas no se cuenta con una sistematización de toda la información recabada en dichos estudios.

El Ministerio de salud desarrolla evaluaciones de sus establecimientos que permiten determinar amenazas y vulnerabilidades para ejecutar intervenciones que requieren gestionar inversión. Actualmente se han evaluado cuatro hospitales y cuatro Unidades de Salud.

Además, una de las funciones de la Dirección de Adaptación al Cambio Climático y Gestión Estratégica del Riesgo (DACGER) al interior del Ministerio de Obras Públicas, será la de la evaluación del riesgo multiamenaza a la infraestructura pública.

**Context & Constraints:**

Si bien algunos organismos gubernamentales y no gubernamentales han elaborado evaluaciones de riesgo e incorporado propuestas de solución, no todas han sido tomadas en cuenta por los sectores políticos, económicos y sociales.

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## Guatemala (in Spanish)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* No: Multi-hazard risk assessment

\* 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:

Se ha establecido que el riesgo es el producto de la interacción de la sociedad con la naturaleza. Por lo tanto para tener una comprensión del riesgo se hace necesario establecer un proceso de articulación entre personas, territorios y recursos alrededor de los conceptos de amenazas, vulnerabilidad y riesgo. Reconociéndose el riesgo como producto de una combinación compleja de vulnerabilidad y amenaza.

Llegar a desarrollar este nivel de análisis una tarea que Guatemala ha entendido como un proceso que parte de ampliar la valoración de la amenaza a la estimación de los niveles de vulnerabilidad en los que se encuentran las poblaciones asentadas en el territorio, entendiendo que la vulnerabilidad está íntimamente relacionada con los procesos sociales que se desarrollan en los territorios.

De esta cuenta el país aún no desarrolla evaluaciones de riesgo. Sus avances radican en la estimación de susceptibilidad de los territorios ante diferentes amenazas y la valoración de algunos aspectos sociales asociados a los índices de pobreza.

Poder determinar esa compleja combinación de vulnerabilidad y amenaza, que genere evaluaciones nacionales y locales de riesgo, es un tema incipiente.

### Context & Constraints:

Comprender el riesgo implica establecer un proceso de articulación entre personas, territorios y recursos alrededor de los conceptos de amenazas, vulnerabilidad y riesgo, para lo cual se han iniciado una serie de acciones interinstitucionales que en el mediano y largo plazo permitan a Guatemala:

\* Elaborar, revisar, actualizar y difundir permanentemente los escenarios futuros incluyendo la variabilidad climática que sirven de fundamento a programas y proyectos de adaptación

\* Crear el Sistema Nacional de registro y monitoreo de evaluaciones de riesgos de proyectos de inversión no pública, de libre acceso a la ciudadanía

\* Elaborar, revisar y actualizar mapas nacionales, departamentales y municipales de amenazas y vulnerabilidades de acceso libre a autoridades, funcionarios, académicos y ciudadanos

- \* Incluir la variable riesgo en los sistemas de información territorial, ambiental, y poblacional
  - \* Establecer metodologías nacionales para la evaluación de amenazas y vulnerabilidades en ámbitos territoriales y sectoriales
  - \* Modernizar la red nacional de estaciones de observación y medición de eventos hidrometeorológicos y geológicos.
- 

## Honduras (in Spanish)

### Level of Progress achieved:

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

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

No

### Means of Verification:

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

### Description:

En el artículo 4 Inciso No. 2 de la Ley del Sistema Nacional de Gestión de Riesgos se instruye a Toda persona natural y jurídica, en cualquier ámbito de su acción social debe incluir obligatoriamente en sus planes y acciones de cualquier naturaleza una "Evaluación de Riesgos", a fin de prevenir y reducir al máximo la generación de posibles daños asimismo y a terceros, con el propósito de hacer la comunidad más segura y de no incurrir en responsabilidad por negligencia; De Igual Forma en el Artículo No 24, manda a los Oficiales de Prevención a Realizar las Evaluaciones de Riesgo a través del uso de fichas técnicas.

### Context & Constraints:

No se cuenta con suficiente personal capacitado en áreas como Geología, Hidrología, Meteorología, Sismología, entre otros. De igual forma, como la Ley del Sistema Nacional de Gestión de Riesgos SINAGER es de Reciente publicación y puesta en marcha, aun no se cuenta con oficiales en la mayoría de las Instituciones Gubernamentales y de la empresa privada.

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## Jamaica (in English)

### Level of Progress achieved:

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

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

No

### Means of Verification:

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* Yes: Gender disaggregated vulnerability and capacity assessments
- \* Yes: Agreed national standards for multi hazard risk assessments

### Description:

There is a deliberate effort at collecting and making hazard and vulnerability data available. This is usually through damage assessment reports, a national disaster catalogue and annual incident reports and hazard maps prepared by the respective technical agencies. These reports are available to the general public to inform their projects. This information has also guided our intervention in communities and has been used in the preparation of hazard inventory maps and hazard maps. Hazard data has also been used in the development of a methodology to rank vulnerable communities. Academia has also been instrumental in researching some of this data.

So far, no risk assessments have been undertaken for key sectors but efforts are currently underway to achieve this in the agriculture and tourism sectors. The housing sector will be focused on towards the end of the 2008-2011 Planning Cycle.

Caribbean Risk Atlas / National Risk being developed by UWI with ODPEM support.

National Spatial Plan Project 90% complete re. data sourcing.

Discrete hazard maps exist for landslide, earthquake.

School Safety Programme underway (USAID).

PAHO conducting Safe Hospitals Programme.

### Context & Constraints:

- Resources to undertake sectoral risk assessments are limited.
- Priorities for the national disaster office and sectors sometimes differ and so getting the support and buy-in at the time of implementation is sometimes difficult.
- Little ownership of Disaster Management Responsibility at the sector levels.

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## Mexico (in Spanish)

### Level of Progress achieved:

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

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

Yes

### **Means of Verification:**

\* Yes: Multi-hazard risk assessment

\* 12.13% / 5.56% % of schools and hospitals assessed

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

\* Yes: Gender disaggregated vulnerability and capacity assessments

\* Yes: Agreed national standards for multi hazard risk assessments

### **Description:**

El Atlas Nacional de Riesgos (ANR) de México, contiene información actualizada sobre peligro, vulnerabilidad y riesgo e incluye nuevas capas de información generadas por el CENAPRED, dándoles un formato homogéneo con respecto a su referencia espacial y, se generaron sus metadatos, así como los campos descriptivos de las tablas asociadas. Este sistema, está soportado en la plataforma IRIS del Instituto Nacional de Estadística y Geografía (INEGI) para su fácil manejo y amplia distribución a instancias de gobiernos federales, estatales y municipales. Fueron revisados mapas y el proyecto sobre información geoespacial generados por el CENAPRED sobre las declaratorias de emergencia, contingencia y desastre acontecidos en el 2007.

Un logro importante en cuanto a la optimización de los recursos invertidos para la implementación de un sistema de monitoreo, notificación y alertamiento de amenazas, ha sido la inversión de recursos a nivel nacional en los 32 servicios estatales de salud (SESA), con la finalidad de fortalecer su puesta en marcha y en forma paulatina, se han registrado avances importantes en las entidades que han iniciado las acciones de monitoreo de todas las fuentes disponibles de información.

En lo que hace a las evaluaciones educativas, a la fecha se ha realizado el diagnóstico de 27,000 planteles educativos públicos (12.13% de la infraestructura física educativa del país).

De 2009 a 2010, se realizaron seis reuniones extraordinarias con asesores de la Organización Panamericana de la Salud (OPS), a fin de generar la estrategia de fortalecimiento de la capacidad funcional de los hospitales ante el brote de Influenza AH1N1.

En el marco del Programa Hospital Seguro, durante 2009, 355 unidades hospitalarias reportaron avances en la implementación de medidas para fortalecer la capacidad funcional frente a emergencias epidemiológicas.

### **Context & Constraints:**

Continuar la evaluación de la infraestructura escolar y la red hospitalaria, así como mejorar los sistemas de alerta temprana existentes en los estados y principalmente en los municipios que son más vulnerables a los efectos de los desastres de origen natural

La alerta temprana es aún, un mecanismo que no se encuentra estandarizado en todo el país, pero se han realizado progresos y se tiene planeado que se incorpore a las instancias para el adelanto de la mujer en los municipios con mayor vulnerabilidad.

En materia de salud, es necesario establecer un mecanismo de verificación para determinar el avance en

es establecimiento del sistema en cada una de los 32 SEESA y establecer redes regionales de monitoreo y alertamiento.

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## Nicaragua (in Spanish)

### Level of Progress achieved:

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

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

No

### Means of Verification:

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

Existen esfuerzos de coordinación en los estudios de amenaza sísmica desde el nivel nacional y regional usando sistemas georeferenciado.

A través de INETER, se operan y mantienen las estaciones que conforman la Red Hidrométrica Nacional ubicada en las cuencas hidrográficas de mayor importancia, se vigila de manera permanente el Sistema de Pronóstico de Ríos, instalado sobre la cuenca hidrográfica del río Escondido.

Se cuenta con estudios de amenaza por tsunami en la costa del pacífico, diseño e implementación de un SAT en los municipios costeros, destacándose León con las comunidades de Salinas Grande, Las Peñitas y PoneLOYA; los municipio de Corinto y San Rafael del Sur, cuentan con un SAT ante tsunamis completo. A nivel urbano se ha logrado diseñar e implementar SAT por inundaciones y mapas de amenaza de inundación en las ciudades de Matagalpa y Estelí, y mapas de amenaza por inundaciones en la Refinería en el municipio de Nagarote.

Otro logro ha sido la elaboración de mapas de amenaza sísmica, volcánica, inundaciones, deslizamientos, sequias, huracanes, lluvias intensas, erosión entre otros priorizando los territorios que son afectados por este tipo de fenómenos.

Se ha alcanzado ejecutar un diagnóstico integral para 22 municipios con el apoyo del PNUD y se recolectaron datos sobre el nivel de conocimientos y preparación en RRD de poblaciones locales.

Actualmente las Normas Técnicas Obligatorias (NTON), Mínimas de Diseño Arquitectónico, se encuentran dentro del Comité Técnico para el consenso y socialización del mismo, se realiza monitoreo y vigilancia a través del sistema Sitios Centinelas, para evaluar la amenaza por hambruna, apoyándose en datos meteorológicos, consumo de alimentos diarios e indicadores de salud.

### Context & Constraints:

Dentro de las principales limitaciones son la transferencia de conocimientos técnicos científicos hacia los gobiernos locales, la falta de sostenibilidad de los recursos humanos especializados como la no

apropiación de los comunitarios de su entorno más allá de lo local, la visión generalizada es de sobrevivencia o tradicionalista, sin interés hacia nuevas tecnologías.

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## **Panama** (in Spanish)

### **Level of Progress achieved:**

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

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

Yes

### **Means of Verification:**

\* Yes: Multi-hazard risk assessment

\* NO % of schools and hospitals assessed

\* NO 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:**

Existen algunas evaluaciones de riesgos nacionales y locales, entre las cuales se pueden destacar:

“Susceptibilidad por inestabilidad de laderas en le Distrito de Boquete, Provincia de Chiriquí. Tesis: Yarelis Sanchez, Geógrafo Profesional, Universidad de Panamá, Coordinada por Arkin Tapia del Instituto de Geociencias de la Universidad de Panamá, 2009.

Informe de la Sismicidad Histórica de las Tierras Alta de Chiriquí e Informe Historia Eruptiva y de Evaluación de la Amenaza del Volcán Barú ([http://www.igc.up.ac.pa/index.php?option=com\\_content&task=blogcategory&id=3&Itemid=56](http://www.igc.up.ac.pa/index.php?option=com_content&task=blogcategory&id=3&Itemid=56))

Caracterización del Riesgo Geológico en el Sector 4, Calle 4ta, Veracruz, y la Caracterización del Riesgo Geológico en los Sectores 2 y 5 de Villa Grecia, Corregimiento de Las Cumbres, Alcalde Díaz, realizado por el Ing. Eric A. Chichaco R. del Instituto de Geociencias de la Universidad de Panamá en diciembre de 2008 y enero de 2009, respectivamente.

Debido a la problemática de la cuenca del río Chico, Natá, se ha iniciado la evaluación de las amenazas y riesgos en la cuenca, con miras a implementar la gestión de riesgo para trata de dar soluciones integrales a los problemas por las crecidas e inundaciones recurrentes incluso sequías provocadas por el exceso o falta de lluvias, utilizando enfoques de integración de sinergias Inter institucionales desde el inicio de la gestión, alentando la participación de usuarios y responsables de la planificación de forma abierta y transparente con medidas a muy corto plazo en puntos críticos del río que deben iniciar en enero de 2011 y con medidas a largo plazo que están por determinar.

Se cuenta con mapas de amenazas e inundaciones del sector Este de la provincia de Panamá y las Provincias de Darién y Bocas del Toro; estos mapas necesitan ser actualizados, además de completar el

estudio para el resto del país.

Está en desarrollo el estudio sobre “Evaluación de Riesgo Sísmico en la Ciudad de Panamá”, Instituto de Geociencias.

Evaluación de inestabilidad de ladera, erosión costera y sedimentación.

También se han realizado estudios de evaluación de vulnerabilidad en estructuras y líneas vitales:

Universidad de Panamá y Universidad Tecnológica de Panamá.

CATHALAC, con sede en Panamá, cuenta con la infraestructura y herramientas tecnológicas para llevar adelante estudios de evaluación que puedan ayudar en la regionalización de las amenazas.

Se han creado diversas comisiones nacionales que están contribuyendo de alguna forma a mejorar la gestión de riesgo en Panamá, entre ellas están: La Comisión Nacional de Cambio Climático de Panamá (CONACCP), La Comisión Nacional de Lucha Contra la Sequía y Desertificación (CONALSED) y la Comisión Nacional del Programa Hidrológico Internacional (CONAPHI).

#### **Context & Constraints:**

Se necesita de la utilización de la Plataforma Nacional (Comisión Nacional de CEPREDENAC), para la creación de declaraciones que apoyen la determinación de las áreas vulnerables de Panamá.

No se le ha dado el debido seguimiento a las inspecciones técnicas en acciones de prevención y mitigación, para desarrollar cambios en los procesos de desarrollos urbanísticos y de cuencas, que puedan contribuir a reducir el impacto de las inundaciones y así evitar que las personas construyan en áreas vulnerables.

Existe poco recurso económico para afrontar la enorme demanda en la evaluación de diversas regiones expuestas a múltiples amenazas.

#### **RECOMENDACIONES**

Fomentar el nivel de investigación en el tema de riesgo de amenazas hidrometeorológicas.

Realizar los análisis de vulnerabilidad de incendio en edificios altos.

Aplicación efectiva de la ley en caso de agresión al medio ambiente, especialmente en aquellos casos que tenga consecuencia en la vulnerabilidad de una cuenca y en el ordenamiento territorial.

Mejorar y ampliar las herramientas tecnológicas que apoyan el proceso de investigación.

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## **Paraguay** (in Spanish)

#### **Level of Progress achieved:**

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

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

No

#### **Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

La SEN, bajo los conceptos que contemplan la Sostenibilidad del Desarrollo, emprende proyectos de Gestión de Riesgos basados en relevamientos del estado de ciudades, pueblos y comunidades indígenas analizando las capacidades de resiliencia de las mismas ante las amenazas de origen natural como inundaciones y rebordes de ríos y arroyos, sequías, incendios forestales y de campos, y tormentas eléctricas con intensos vientos, principalmente. Estos análisis también consideran las amenazas antropogénicas y las amenazas de enfermedades contagiosas como el dengue y la fiebre amarilla, por citar dos casos recurrentes.

Para un alcance nacional será necesario contar además con herramientas básicas y elementales como:

- plan de ordenamiento territorial,
- planes de manejo de cuencas hidrográficas,
- base de datos sobre catastros urbanos y rurales,

que permitirán un mejor aprovechamiento de la información recogida y procesada de las poblaciones vulnerables y los tipos de eventos que las afectan.

**Context & Constraints:**

La SEN es una Institución del Gobierno Central que se caracteriza por trabajar en forma multisectorial con los gobiernos políticos sub-nacionales como las Gobernaciones Departamentales y los Gobiernos Municipales, en conjunto con las otras instituciones centrales como ministerios y secretarías de estado, coordinando principalmente las acciones de respuesta y atención a las emergencias declaradas. Desde el año 2008, en coincidencia con la asunción del nuevo gobierno, la cosmovisión de la SEN ha evolucionado hacia la Gestión del Riesgo, teniendo como paradigma la Sustentabilidad del Desarrollo, buscando la disminución de riesgos y desastres, trabajando desde la prevención, pasando por la mitigación, la respuesta ante la emergencia, la rehabilitación, la recuperación temprana y la reconstrucción. Para esto se rige de la Ley 2615/2005, que instituye la conformación de comités de emergencia departamentales y municipales, como puntos focales de intervención y trabajo coordinado. A pesar de este respaldo legal, la conformación de estos comités de emergencia aún no ha llegado a la totalidad de los casos.

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**Peru** (in Spanish)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* Yes: Multi-hazard risk assessment

\* 12 % of schools and hospitals assessed

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

\* Yes: Gender disaggregated vulnerability and capacity assessments

\* Yes: Agreed national standards for multi hazard risk assessments

### **Description:**

El ENFEN realiza evaluaciones del peligro de ocurrencia de los eventos de El Niño, que incluye amenazas múltiples en diferentes sectores.

El Programa de Ciudades Sostenible, proporciona mapas de peligros de los territorios de gobiernos regionales y locales; aunque, no se tiene estudios sobre la estimación del riesgo a escala nacional.

Evaluaciones de riesgo en el sector salud incluyen amenazas múltiples y vulnerabilidades que afectan a la salud de las personas, los servicios de salud y el entorno ambiental. La meta de "Evaluación de las condiciones de seguridad en los establecimientos de salud", se ha logrado en un 12% y se espera que al 2011 el 100% de los hospitales hayan sido evaluados mediante índices de seguridad.

Instituciones científicas como INGEMMET, IGP, SENAMHI, entre otros, están realizando estudios de identificación y evaluación de riesgos a nivel regional y nacional, los cuales están en proceso de difusión.

A escala nacional, se cuenta con el mapa de susceptibilidad por movimientos en masa del Perú, recientemente publicado por INGEMMET. A escala regional se tienen análisis de amenazas múltiples de las diferentes regiones del Perú, análisis normado por la PCM y posteriormente por el MINAM en el establecimiento de la ZEE (Zonificación ecológica económica). En el caso del MINAM, la Dirección de Ordenamiento Territorial está desarrollando proyectos a nivel de Gobiernos Regionales, en la que se realizan estudios de vulnerabilidades de la zona, estos estudios se desarrollan en los departamentos que lo solicitan. Adicionalmente se realizan evaluaciones de riesgos ambientales en áreas donde existen niveles de riesgo moderado y alto.

El país cuenta con documentos técnicos como el Manual Básico para la Estimación del Riesgo del Instituto Nacional de Defensa Civil y el Manual de Gestión Comunitaria del Riesgo, elaborado por Ciudades para la Vida, que tiene por finalidad brindar las herramientas conceptuales y metodológicas para que los diversos actores de las comunidades de base estén en condiciones de gestionar los riesgos en sus respectivos ámbitos territoriales, en el marco de los principios del Sistema Nacional de Defensa Civil.

### **Context & Constraints:**

Las grandes diferencias en capacidades profesionales y de equipamiento y acceso a la tecnología de información y comunicación de los aproximadamente 1,800 gobiernos locales, requieren revisar y elaborar metodologías de estimación de riesgos más sencillas y didácticas de empleo comunal y que incorpore el concepto de género; y, otros grupos vulnerables, elaborando una norma de estimación de Riesgos.

Acerca de las bases de datos, existe una base de datos de peligros geológicos y hidrometeorológico actualizada anualmente por el INGEMMET. Cabe mencionar que la metodología de ZEE está aún en construcción y los técnicos no tienen experiencia, aplicando cada uno una metodología diferente en cada región.

Asimismo, los niveles de ZEE (macro, meso y micro) se entienden incorrectamente ocasionando que las decisiones que se puede tomar a cada nivel no concuerden.

Contribuiría a la solución de los problemas que las entidades científicas desarrollen, en forma permanente, modelos numéricos cuantificables frente a terremoto, variaciones en la temperatura, variaciones en las precipitaciones, para contar con datos reales para el cálculo de riesgo y contar con por lo menos 30 personas capacitadas para ser Evaluadores de Hospitales.

Se debe hacer un seguimiento a los trabajos realizados por todas las instituciones que forman el SINADECI ahora SINAGR D y mayor difusión de las publicaciones de todos los resultados que existen a nivel nacional. Todas las instituciones deben contribuir con la Gestión de Riesgos de Desastres a nivel nacional.

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

Multi-hazard Post Hurricane Georges risk assessment for key sectors was undertaken in 2001, and now needs to be updated. All (100%) schools and hospitals were assessed during that 2001 evaluation. Hospitals and other public health facilities were assessed in 2009.

**Context & Constraints:**

There is need to undertake an up to date hazard vulnerability and risk assessment on St. Kitts and Nevis. This will require significant financial resources and supporting expertise. At present, there are significant aspects of planning and development activities with regard to DRR that are not informed by current data.

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**Saint Lucia** (in English)**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* Yes: Multi-hazard risk assessment

> Status of Hazard Maps, Vulnerability Assessments and Digital Maps for Saint Lucia (2003)

[http://www.preventionweb.net/files/13471\\_saintluciahmvadm.pdf](http://www.preventionweb.net/files/13471_saintluciahmvadm.pdf) [PDF ]

> TAOS Statistical Analysis Package (TSAP) Report for Saint Lucia (2005)

[http://www.preventionweb.net/files/13471\\_stluciatsap.pdf](http://www.preventionweb.net/files/13471_stluciatsap.pdf) [PDF ]

> Saint Lucia Risk Register (2006) <http://stlucia.gov.lc/nemp/general/NationalRiskRegister2006.pdf>

> B-Tool Assessment Report (2009) <http://stlucia.gov.lc/nemp/general/BToolReport.pdf>

> Bench Marking Tool (2009) <http://stlucia.gov.lc/nemp/general/BtoolFAQ.pdf>

- \* Unknown % of schools and hospitals assessed
- \* Unknown schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

The importance of the vulnerability assessments and other tools identified in the previous 2007-2009 HFA report are recognized but the responsible agencies are faced with human capacity and other resource constraints which have affected their ability to utilize these.

Some risk assessments have been conducted but not all hazards have been mapped for the country Also the resolution (1:25,000) of some of the available maps may not be appropriate for the required level of decision-making.

Some schools and hospitals have, been assessed for some hazards.

**Context & Constraints:**

The development of multi-hazard risk assessments may be constrained by the unavailability of requisite resources; however, human capacity constraints may be overcome through training.

Further, development planners need to be motivated to utilize developed risk assessments to inform their decision making.

There is also need for the sensitization of policy makers and middle managers to the importance and need for DRR.

## Turks and Caicos Islands (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 80-85 % of schools and hospitals assessed
- \* 25 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

The 2008 Hazard and Vulnerability Assessment (HVA) that was conducted in the TCI did not focus in any

great deal on Schools hence the uncertainty of the exact amount of school that were assessed. Only portions of the HVA have been adopted in the national framework, with specific to the use of rain fall flood maps to inform the Physical Planning Board. The majority of schools are located in flood prone areas, but recent refurbishments works have reduced susceptibility to wind and earthquake hazards.

**Context & Constraints:**

Available data from the HVA is not readily useable in practical applications. Future studying that are to be conducted should take into consideration the user friendliness of the end product.

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## **United States of America** (in English)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

The federal government has made substantial investments in assessments for multiple hazards, including the development of loss-estimation capabilities such as the Hazards US – Multi-Hazard (HAZUS-MH) software package. Developed by FEMA, this software incorporates current understanding of flood, wind, and earthquake hazards with inventories of structures and other data to estimate losses. FEMA also manages several additional risk analysis programs and quality data products, such as Risk MAP, to assess the impact of natural hazards and advance effective strategies for reducing risk. These programs further the U.S. Government’s objective to “strengthen nationwide preparedness and mitigation against natural disasters” by directly supporting community risk assessments and multi-hazard mitigation planning at the local level.

Supported by several federal agencies, geo-spatial data, hazard mapping analysis, and information on environmental change are important tools that the federal government strives to provide local decision-makers in order to inform land use planning and hazard mitigation activities. Furthermore, in order to make the potential impacts of hazards more real to state and local decision-makers and the public, scenarios for specific high-impact natural hazard events have been developed for a number of cities.

**Context & Constraints:**

Considerable investment is required to fully implement risk assessment capabilities across the country.

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## Venezuela, Bolivarian Rep of (in Spanish)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* Yes: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

Existen en Venezuela sectores que han desarrollado una metodología de evaluación de riesgos, que tiene alcance nacional, este es el caso de las instituciones relacionadas con eventos hidrometeorológicos y geológicos.

En el marco de la derogada Comisión Nacional de Gestión de Riesgos se elaboró una metodología para evaluar riesgos hidrometeorológicos, que incluye amenazas y vulnerabilidades físicas, atendiendo a las regiones hidrográficas del país. Existe una base de datos hidrometeorológicos (amenazas) por parte del Servicio de Meteorología de la Aviación y del Instituto Nacional de Meteorología e Hidrología (INAMEH), que se alimenta de la red nacional de estaciones meteorológicas. Dicha información se difunde a las instancias de toma de decisiones y a las comunidades.

El sector salud está ejecutando el “Programa Nacional de Hospitales Seguros frente a Desastres”, se han dictado dos cursos para evaluadores de hospitales seguros y se han evaluado seis hospitales en la región Capital, con una metodología concensuada de alcance nacional.

La DNPCAD ha elaborado y establecido, para uso de las direcciones estatales y municipales de protección civil y administración de desastres, formatos únicos para: evaluaciones de viviendas, presentación de evaluaciones de riesgo y terminología sobre reducción del riesgo de desastres. Aunque se realizan evaluaciones de riesgo para todos los sectores, las mismas no son elaboradas con una metodología de valoración cuantitativa.

El principal reto en esta materia recae sobre las instituciones que proveen datos sobre la vulnerabilidad (de carácter ambiental, físico, social, económica, entre otras) y su articulación con aquellas que recopilan, analizan y difunden información sobre las amenazas. Adicionalmente, las evaluaciones están disponibles

para las instancias decisorias de organizaciones sectoriales y no para las comunidades organizadas, siendo necesaria la socialización de ésta información.

**Context & Constraints:**

- Construcción de una propuesta de evaluación consensuada involucrando a distintos actores.
  - Inexistencia de presupuesto para ejecutar los programas existentes.
  - Capacitación del recurso humano, dado que son sectores técnicos.
  - Descentralización de los procesos (creación de los centros regionales para la realización de pronósticos hidrometeorológicos).
  - Divulgación de los modelos existentes.
  - Mejorar la coordinación interinstitucional.
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# Asia

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## Bangladesh (in English)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* Yes: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* Yes: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

National risk assessment methods and tools for flood and cyclone exists. Updating of the risk assessment guidelines along with 12 guidelines as outlined in revised SOD are being developed. Besides, sector specific disaster risk reduction guidelines are being developed through DMRD's programmes which will address the changing environment, topography, population and demography context. DMRD, MoFDM has developed detailed risk assessment mapping for earthquake and tsunami for three major cities, Dhaka, Chittagong and Sylhet and planned for new eight cities, i.e. Rangpur, Bogra, Mymensingh, Tangail, Rajshai, Coxsbazar and Sirajgonj The local level risk assessment is done in most high-risk areas, by the GoB and various humanitarian actors using participatory tools. River bank erosion prediction model has been developed. Drought prone areas have been identified and adaptation options to droughts have been identified and pilot tested. Cyclone prone areas are identified and much scale afforestation programme is on-going. Action-oriented researches are underway to generate more knowledge on the impact of climate change and climate variability's at local and national levels. Progress has been made in assessing disaster and climate risk in agriculture. Some activities also initiated to assess risk in selected hospital, schools and cyclone shelters by various stakeholders led by government organizations. Awareness on air pollution and sound pollution are being taken care off by concerned agencies.

### Context & Constraints:

Community Risk Assessment (CRA) tools has been standardized by Directorate of Relief and Rehabilitation (DoRR), DMRD and promoted the CRA as risk identification and RRAP development tool. However, some international NGOs led activities used various methodologies in local risk assessment ie VCA, PVCA etc, and encouraged to carry out by various public and private organizations. Still there has been a perceived need to standardize methodology for risk assessment and mapping. Risk assessment of critical sectors such as health, water and sanitation, shelter, agriculture, livestock and food security is urgent priority. A digital elevation model (DEM) needs to be developed with updated contour data for better inundation information with depth during flood and storm surges which has been a planned activity under CDMP phase II of DMRD.

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## Brunei Darussalam (in English)

### Level of Progress achieved:

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

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

No

### Means of Verification:

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

Hazard and risk assessment exercise have been carried out by various agencies such as the Town and Country Planning and the Public Works Department as part of their core business in upgrading the country's infrastructure.

### Context & Constraints:

However, national level multi-hazard risk assessment by single agency to cover all hazards and risks posed by them to the population has not been done.

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## Georgia (in English)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* Yes: Multi-hazard risk assessment

\* 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:**

On 2 September 2010, by the No707 Decree, President of Georgia officially adopted Georgia's Threat Assessment Document for 2010-2013. The National threat register is the fundamental conceptual document, which identifies threats to Georgia's national security, presents possible scenarios of their realization and provides analysis of their probability and impact. The document has been elaborated by the interagency working groups under the coordination of the Office of National Security Council of Georgia.

Georgia's Threat Assessment Document for 2010-2013 is based on the broad understanding of security and besides the military and political threats the document evaluates socio-economic and terrorist threats, as well as natural and man-made disasters. Therefore, the document consists of 5 parts: Military Threats, Foreign Political Threats, Transnational Threats, Socio-Economic Threats and Natural and Industrial Threats and Risks.

Based on competences under the legal framework the NEA carries out: monitoring of hydro meteorological and geodynamic processes, engineer-geo-ecological conditions of geological environment and environment conditions on the territory of Georgia, in river basins, water reservoirs, in territorial waters of the Black Sea, on the continental shelf and anthropogenic influence on the environment; Observing hydro and morpho-dynamic processes in coastline zones, implement permanent mapping activities, define risk-zones and forecast coastline developments, manage coast forming processes with engineer activities; data collection through the meteorological, hydrological, marine, snow- avalanche and other stations; data processing based on historical data; assessment of hazard risk on the community and engineer-industry infrastructure; adoption of palliative and preventive measures.

In the NEA is prepared special zoning maps of the territory of Georgia in accordance with frequency and reiteration of diverse hydro meteorological and hazardous geological processes:

1. Populated area and Urban Territories of Georgia, located in the Geological Hazardous Risk Region;
2. Landslide risk zones in Georgia and damage area;
3. Mudslide risk zones in Georgia and damaged area;
4. Areas at Risk of Flooding in Georgia;
5. Drought Prone Regions in Georgia;
6. Areas with High Wind Speeds in Georgia;
7. Risk of avalanches in Georgia;
8. Areas with intensive hail in Georgia;
9. Engineering Defense Master Plan of black sea coastline (2004); and etc.

Georgian legislation envisages local self governing unites task to collect and process the information concerning protecting people and territories from disasters

With the support of UNDP and SDC are several ongoing projects: Seismic Risk of Tbilisi City; Multi-risk assessment of Telavi Community; Rioni river flood prediction;

In Georgia is functioning Georgian-European Centre; Geodynamical Hazards of High Dams; of the Council of Europe. The Centre prepared the web-page; Risks of Large Dams; for the web-site; Be Safe Net; of Council of Europe, two Early Warning Systems, regional Atlas of natural hazards of South Caucasus, several meetings on DRR.

In the frame of NATO SfP program; Assessment of Seismic Hazard of Caucasus-Northern Turkey

Energy Corridor&#8221; is developed by Institute of Geophysics.

Government of Georgia in 2009 asserted the new seismic hazard map and new building code of the country prepared by Institute of Geophysics, Seismic Monitoring Centre and Institute of Structural Mechanics

**Context & Constraints:**

National disaster identification, determination its features and risk assessment at some level is carried out through the regular hydrometeorological observation and geological field monitoring. To implement the hidrometeorological and geological study programs for effective disaster risk reduction measures it is necessary increase hydrometeorological net, introduction of advanced technical means and research methods.

For the disaster risk reduction it is necessary to have the legal framework, which will be define the competencies between governmental/ nongovernmental, regional, local bodies and communities to ensure effective cooperation for preventive measures. This legislation will prevent duplication of responsibilities.

The local scientific potential is not used properly. The funding of DRR is scarce and nonsystematic. Monitoring systems (seismic, hydrological etc) including space monitoring are still under development. No systematic investigation on the safety of schools and hospitals has been done.

**India** (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

The Disaster Management Act and the National Disaster Policy of India have clearly articulated the need of conducting hazard risk and vulnerability assessment. Several state governments are conducting such assessments .The scope of these assessments include analyzing exposure to various hazards, physical vulnerability, environmental vulnerability and socio-economic vulnerability based on which appropriate mitigation measures are formulated.

Apart from it; the Vulnerability Atlas prepared by BMTPC (Building Material Technology Promotion Council) provides macro scale hazard maps with risk statements of various housing types in different hazard zones, hazard risk information. Further to it; different State governments and organizations like Geological Survey of India (GSI), India Meteorological Department(IMD), Central Water Commission (CWC), National Remote Sensing Agency(NRSA), India Institute of Remote Sensing(IIRS), Indian Space Research Organization (ISRO),National Spatial Data Infrastructure (NSDI),National Agricultural Drought Assessment and Monitoring System (NADAMAS) are also generating database for disasters. Based on these available risks information; Disaster Management Plans are being prepared at state, district and local levels.

The two major Mitigation Projects (Cyclone Risk Mitigation Project and Disaster Management Support Programme of ISRO) undertaken for implementation by Government of India also provide scope to conduct in-depth risk analysis in cyclone and earthquake prone districts in select states across the country.

Geological Survey of India (GSI) has been designated as a nodal agency for conducting landslide risk analysis and state specific studies are already carried out by GSI.

Seismic Microzonation study has also been carried out in select earthquake prone cities with support from Ministry of Earth Sciences.

**Context & Constraints:**

Limited understanding of the disaster and development realm, interdependencies across key sectors and socio-economic vulnerabilities arising out of hazard risks.

Need to enhance the capacity of policy makers and development planners to formulate appropriate mitigation measures based on such assessment.

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## Indonesia (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* Yes: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

Several risk assessment efforts have been initiated at the national as well as local levels in an adequate manner. Several relevant ministries and agencies have also conducted risk mapping and analysis in accordance with their specific tasks and responsibilities, for instance the Agency for Meteorology, Climate and Geophysics (BMKG) for meteorological, climate and geophysical hazards, the Geological Agency (PVMBG/ESDM) for volcanic and land mass movement hazards, the Ministry of Public Works (PU) for flood hazards, and so forth. Unfortunately, some of these hazard analyses have not been enriched with vulnerability and capacity information of the community. Nationally there has only been one comprehensive risk analysis that was conducted by BNPB and the National Planning Board (Bappenas) with a simple methodology that resulted in comparative risk index for district/city level, which was later used in the formulation of the NDMP and NAP-DRR.

Risk analysis at the national level has not been supported with national standards in risk map making. Also, it is difficult for the regions to access the national risk map available at the central level. The existing risk maps need to be detailed and integrated into spatial planning to guide the local development planning with risk reduction considerations.

### **Context & Constraints:**

In general the BNPB and many BPBDs still face limitations in terms of resources. The capacity of the human resources has not been sufficient and there is also budget constraint and gross lack of the required facilities and infrastructures. Disaster Management Study Centers at universities in the regions, which are expected to support the capacity building of BPBDs, have not been well developed. The involvement and participation of the relevant stakeholders in the regions can be considered as not yet significant. In addition to the lack of understanding of disaster risk reduction and disaster management issues, there have yet to be uniformity in the terms and concepts of risks, risk maps, risk analysis, risk map elements, risk analysis parameters and relevant other things. Disaster-related information conveyed to the media and the public is often convoluted since it is not systematic and the language used is often too technical.

It is obvious that capacity development is greatly needed for risk analysis and mapping both for central and local level stakeholders. In addition to that, there needs to be a good socialization strategy and effort to encourage the people, local government and local stakeholders to become more proactive in accessing data and information related to disaster risks and other relevant data.

It is also necessary to build the capacity of the communities in understanding hazard and risk maps, risk analysis, etc. The media needs to be empowered to package and convey information that is valid and systematic and do not cause confusion among the people. In order that the general public can access easily and understand disaster-related information, such information needs to be standardized and made easy. Once socialization has been done, risk assessments need to be integrated into spatial planning to support risk sensitive development planning.

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## **Japan** (in English)

### **Level of Progress achieved:**

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

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

Yes

### **Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* 97.4 % of schools and hospitals assessed
- \* 33% schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

Japan has carried out hazard mapping with regard to tsunamis, tidal waves, flooding, landslides, volcanic eruptions and earthquakes. Progress has also been made in the development of dynamic flood hazard maps which predict how the flooding will spread over time. The scale of these maps varies from 1/2,500 to 1/25,000 according to purpose. Many hazard maps have been drafted by local public bodies: the Cabinet Office, the Ministry of Agriculture, Forestry and Fisheries, the Fisheries Agency, the Ministry of Land, Infrastructure and Transport and Tourism and other agencies have drawn up manuals on the subject. In addition, the 2005 revised version of the Flood Fighting Act, for example, obligates municipalities containing zones expected to be inundated as announced by the MLIT to compile a flooding hazard map and to distribute copies of it to each household. In April 2007, Ministry of Land, Infrastructure and Transport and Tourism launched portal site which allows users to search and view various hazard maps compiled by municipalities on the Internet. About 1,137 of the 1,500 municipalities throughout Japan are the areas which have possibilities of major flood. So far, they have published and distributed their flood hazard maps as of the end of March 2010. In addition, 104 municipalities completed inland water hazard maps as of the end of September 2009. Many of the developed maps have been made available to the general public by the internet and other means.

In addition, based on the study by the Committees for Technical Investigation under the Central Disaster Management Council, the government has published assessment of damages and countermeasures in case of possible large-scale disasters including the Tonankai and Nankai Earthquakes, the Tokyo Inland Earthquakes, the Trench-type Earthquakes in the Vicinity of the Japan and Chishima Trenches, and large-scale flood in the Tokyo metropolitan area. For example, in November 2007, the result of the assessment of damages including infrastructure and human damages by the Inland Earthquake in the Chubu region and the Kinki region were made available to the public. Furthermore, in January 2009, the Committee for Technical Investigation on Large-scale Flood countermeasures, which was established in 2006, summarized and published the estimation of inundation caused by overflow of the Arakawa River or Tonegawa River in Tokyo Metropolitan area, and the assessment of damage by the surge of the Tokyo Bay in case of large-scale flood disaster.

**Context & Constraints:**

N.A.

**Lao People's Democratic Republic** (in English)

**Level of Progress achieved:**

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

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

## decisions?

Yes

### Means of Verification:

\* Yes: Multi-hazard risk assessment

> ADPC/NDMO/UNDP Lao PDR Vulnerability Assessment 2010 (2010)

[http://www.preventionweb.net/files/15958\\_adpcndmoundpvulnerabilityandassessm\[1\].pdf](http://www.preventionweb.net/files/15958_adpcndmoundpvulnerabilityandassessm[1].pdf) [PDF ]

> ADPC/NDMO/UNDP Lao PDR Hazard Assessment 2010 (2010)

[http://www.preventionweb.net/files/15958\\_adpcndmoundpvulnerabilityandassessm.pdf](http://www.preventionweb.net/files/15958_adpcndmoundpvulnerabilityandassessm.pdf) [PDF ]

\* No available assessment % of schools and hospitals assessed

\* No available assessment schools not safe from disasters (specify absolute number)

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

A joint project undertaken by Asia Disaster Preparedness Centre (ADPC) and the NDMO, funded by UNDP in 2010, undertook a comprehensive country level multi-hazard risk assessment using NDMO provided data resulting in hazard and risk mapping and assessments for the entire country. Local level assessments, planning and implementation of DRR initiatives can now be achieved by the NDMC/NDMO and line ministries throughout the provinces through utilisation of the tools developed, although resources available to the NDMO and provincial authorities remains a constraint in this area and until addressed this achievement will not be utilized to its maximum capacity and assessments at the village level will require further commitment using these tools

Shortcomings of Community Based Disaster Risk reduction (CBDRR) are also being addressed by INGOs through such initiatives as the Hazard Vulnerability and Capacity tool currently being utilised locally at the village level by the ADPC, French Red Cross, in partnership with NGO partners such as Lao Red Cross and with cooperation from the NDMO. This practice needs to be implemented as widely as possible.

Similarly Mekong River Commission (MRC) DRR office in Cambodia has conducted several Flood Vulnerability Assessment and Mapping Projects relating to Mekong DRR/DRM in Laos, Cambodia, Thailand and Vietnam. The projects were supported by the funding of several International Governments over the period 2004-2010, included local provincial authorities and populations and are intended to provide flood vulnerability indices to better manage flood and drought impacts in the Lower Mekong Basin and are available on line at <http://www.drrprojects.net/>.

### Context & Constraints:

Constraints:

Resources and funding to the NDMO and line ministries is a priority to ensure that the hazard and risk mapping assessment tools are continuously utilized annually.

The Way Forward:

Inclusion of specific funding, information technology and human capacity for NDMO hazard mapping and risk assessment continuity from National through to District levels, including CBDRR initiatives. Ensure the NDMO hazard mapping and risk assessment tool is available and encourage utilisation by all DRR contributing organisations. The NDMO should now move their efforts from risk analysis to risk treatment in

an effort to implement appropriate response in times of disaster.

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## Lebanon (in English)

### Level of Progress achieved:

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

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

No

### Means of Verification:

\* No: Multi-hazard risk assessment

\* in process % of schools and hospitals assessed

\* in process schools not safe from disasters (specify absolute number)

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

The hazard data for Lebanon currently exists, and the risk data is in the process of being compiled. In addition, Lebanon is currently in the process of establishing a National Risk Assessment Profile. This process will begin in April 2011 with the initial establishment of an e-library, DesInventar, Multi Hazard Maps, and a general assessment of critical infrastructure.

In addition, gender disaggregated vulnerability and capacity assessments are in the process of being compiled.

### Context & Constraints:

The National Risk Assessment Profile is currently in its initial phases and requires the effort and collaboration of different stakeholders in order to be completed.

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## Malaysia (in English)

### Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

### Means of Verification:

- \* Yes: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

A number of programmes have been carried out to assess and mitigate risks of different disasters. The Road Platform Rise Up Study by the Public Works Department identifies and delineates hazard and risk maps for flood prone areas at network and project levels; whilst the Climate Change Risk and Impacts Studies by the Malaysian Meteorological Department and Drainage and Irrigation Department will provide insight on the level of exposure to hydro-meteorological hazards. Through the National Slope Master Plan Study, the Public Works Department establishes an inventory of susceptible areas and different types of landslides hazards and risks. Its Guidelines for Slopes has been widely used by government agencies and the private sector to minimise risks in slope failure disasters. The risk assessment of earthquake and tsunami on Malaysia had been completed and regularly updated to provide input to the response plan. Localised modelling, downscaled from global climate models, has been carried out by the National Hydraulic Research Institute Malaysia and Malaysian Meteorological Department to project future climate conditions. Results of the modelling provided inputs for assessing potential implications to several key resource and economic sectors in the country. The Drainage and Irrigation Department conducted the National Coastal Vulnerability Index Study in 2007 to assess vulnerability of coastal areas to sea level rise. There are also a number of R&D initiatives on risks assessment funded by the Science Fund managed by the Ministry of Science, Technology and Innovation covering issues on flood, landslides and earthquakes. The Department of Town and Country Planning has developed several planning tools that aim to reduce risks of different disasters. These tools include the Land Use Planning Appraisal for Risk (LUPAr) Programme, Highland Planning Guideline and the concept of Environmentally Sensitive Areas for the preparation of national physical, state structure and local plans.

**Context & Constraints:**

The risk assessment needs to be carried out at local level and more specific locations. Such efforts will require more effective dissemination of existing information and resources as well development of different tools in support of such assessments. In particular, it is crucial to take into consideration different, and possibly conflicting, priorities and needs of various stakeholders in a balanced manner under the current situation of limited resources.

During the Tenth Malaysia Plan (2011-2015), the Government will review the value at risk for communities to develop a clear understanding of the cost-benefit trade-offs involved in averting or reducing the impact of such climate-related hazards. Measures to be undertaken include development of a robust risk framework to assess and quantify the climate risk faced by the economy and prioritise measures to address those risks; implementation of policy decision frameworks to ensure that future infrastructure investments are climate resilient; and enhancement of capacity in the field of climate prediction and modelling to develop stronger Malaysia-specific and sector-specific knowledge.

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* Yes: Multi-hazard risk assessment

> Cost-Benefit Study of Risk Mitigation Measures in 3 Islands in the Maldives (2009)

[http://www.preventionweb.net/files/15495\\_cbalayoutweb.pdf](http://www.preventionweb.net/files/15495_cbalayoutweb.pdf) [PDF ]

> Developing a Disaster Risk Profile for Maldives (2006)

[http://www.preventionweb.net/files/15495\\_developingadisasterriskprofileforma.pdf](http://www.preventionweb.net/files/15495_developingadisasterriskprofileforma.pdf) [PDF ]

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

Disaster Risk Profile of Maldives has been published in 2006 which includes a detailed study and hazard mapping. Detailed Island Risk Assessment of ten islands and Cost Benefit Analysis of three islands have been completed with their respective reports published. CBDM plans have been prepared for thirty seven islands which involved preparation of hazard maps and risk analysis. Among the 37 islands, the required Simulation exercises based on the CBDM plan was conducted in only Vaavu Felidhu and Meemu Muli.

**Context & Constraints:**

1st Nationwide Disaster Risk Assessment was presented by "Developing a Disaster Risk Profile for the Maldives" in 2006. "Detailed Island Risk Assessment of the Maldives (DIRAM)" is being finalised to provide detailed disaster risk analysis (physical and socio-economic) of the most vulnerable 10 islands identified in "Developing a Disaster Risk Profile for the Maldives". Furthermore, "Cost Benefit Study of Disaster Risk Mitigation Measures in Three Islands in the Maldives" was prepared in 2009 to provide policy makers with cost-effectiveness of 3 mitigation measures (Safe Island Protection, Selected Safe Island Protection, Limited Protection).

From the viewpoint of climate change adaptation, National Adaptation Plan of Action was developed in 2006 based on 1st national communication to UNFCCC, describing impacts of climate change including extreme events on key economic sectors including fishery, tourism and agriculture.

Challenges lie on institutionalizing risk information into planning and decision-making processes of the ministries. "Project on Integration of Climate Change Risks into Resilient Island Planning in Maldives" and "Climate Risk Management Technical Assistance Support Project" initiated in 2009 and 2010 respectively to address this point. The key outputs of these project will be development of land-use planning guideline to incorporate climate risk and provision of updated risk information for the next Tourism Master Plan and Agriculture and Fishery Master Plan.

## Mongolia (in English)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* Yes: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

The Disaster Research Institute, NEMA has developed some of the assessment tools in multi-hazard situation and the UN country office has also developed some tools under the guidance of UN OCHA.

### Context & Constraints:

Lack of budget and expertise.

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## Nepal (in English)

### Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

### Means of Verification:

\* Yes: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

Institutional commitment for the hazard assessment and vulnerability assessment is well reflected in the Tenth National Plan (2002-08). The tenth plan has identified the main cause of failure of past attempts, among others, as "...the lack of modern technology that provides pre-information and warning about the possible natural disaster, the lack of topographic survey of possible disaster areas, and the lack of awareness in the management of natural disaster." Therefore, the plan has set one of the targets of disaster risk reduction as hazard map preparation. The plan has envisaged one of the strategies as "the seismological measurement center and the natural disaster management center established in the country will be strengthened." The underachievement of the Tenth plan can be underscored from the fact that little has been done to improve the situation of seismological measurement and natural disaster management center in the plan period.

DHM in coordination with MoHA has prepared Early Warning Strategy and going to be approved by government very soon. There are few successful initiatives carried out by some governmental and non-governmental organizations to set-up early warning system such as community based flood early warning system implemented in some places.

The risk assessment is done by the most of the organization but do not cover multi-hazards. At the same time, sector specific risk assessment and analysis are missing which is critical to develop sector specific plans; climate change, food insecurity etc . Absence of common and standard approach for risk assessment and analysis has been the constraining factor.

Participatory vulnerability risk assessment (PVA) is being carried out by some agencies with involvement of communities at risk. PVA has produced localized hazard map and this information is used for disaster risk reduction action planning.

**Context & Constraints:**

Accumulation of data alone is not enough as it needs to be processed into useful information and also equally important is to disseminate the information to communities at risk so that they can make decision for reducing the underlying risk. Although the national plans have emphasized lack of coordination and focus on emergency response as some of the challenges for effective disaster risk reduction, the implementation programs are unable to overcome the challenges. The risk reduction initiatives envisaged in development plans are seldom realized in the field.

Scaling up the few successful examples and continuation of existing success stories are some of the biggest challenges not only in early warning system but also in overall aspect of disaster risk reduction.

Although community level risk mapping is done with the support of municipalities, the process has to be internalized by VDCs and Municipalities. As this is not happening for many reasons, scaling up and sustainability of such initiatives are major concerns.

**Recommendation**

The government ministries in close cooperation/ collaboration with non-government agencies should initiate a national level risk assessment exercise covering major hazards in the country.

Prepare Risk Sensitive Land Use Map for all 5 regional centers in first phase and for all District Headquarters and municipalities in the next phase.

Conduct studies on indigenous knowledge on hazard assessment and risk mitigation measures, document it and disseminate it to wider audience. Such indigenous knowledge should be protected and

institutionalized by mainstreaming it in the formal and informal education.

Strengthen technical capacity of the local authorities to conduct risk assessment and analysis by conducting intensive training in all municipalities.

Establish national Disaster Information Management system database accessible to all stakeholders and to the communities.

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## **Pakistan** (in English)

### **Level of Progress achieved:**

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

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

-- Nothing reported within this timeframe. --

### **Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### **Description:**

Institutional commitment has been attained through identification of National Hazard and Vulnerability Assessment as one of the priority areas in the National Disaster Risk Management Framework (NDRMF). Accordingly, the NDMA has launched the National Composite Risk Assessment and Emergency Response System Project. The major part of the initiative is aimed at carrying out multi-hazard risk assessment and hazard mapping of Pakistan. The National Hazard Map so developed will be integrated with the GIS system for accurate and timely decision making in the field of disaster management. Financial resources to the tune of USD 4 million have already been made available by the World Bank for the Project. A French firm BRGM has been selected to implement the project in collaboration with local partners. The Project has been delayed due to some unavoidable reasons and now expected to be completed by the end 2011.

Apart from the above major initiative taken by the NDMA, local level risk assessment exercises have been done by a number of stakeholders in small cities and districts; e.g. Earthquake Reconstruction and Rehabilitation Authority (ERRA), UNDP, FAO, Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), FOCUS, OXFAM Novib and GTZ.

### **Context & Constraints:**

The foremost challenge is the non availability of local expertise and professionals in the field of risk assessment which is further exacerbated by technological gap. In the given scenario, scarce resources are consumed in procurement of professional services from international market which adversely impacts the

implementation of risk assessment initiative.

Availability of reliable data is another challenge in carrying out accurate assessment of hazard risks. The available data is scattered, most often inaccessible and sometimes suffers from lack of reliability. In such a situation, collection of data and subsequent hazard risk analysis becomes a very intriguing job for the project implementers. Another challenge is consolidation and integration of risk assessment efforts being undertaken by different stakeholders in different areas. The lack of coordination and sharing of information between the stakeholders often leads to duplication of efforts and wastage of resources.

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## Sri Lanka (in English)

### Level of Progress achieved:

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

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

No

### Means of Verification:

\* Yes: Multi-hazard risk assessment

> Framework for a Methodology to Integrate Vulnerability to Develop Natural Hazard Risk Profiles for Sri Lanka (2009) [http://www.preventionweb.net/files/15417\\_frameworkfordevelopmentofriskprofile.doc](http://www.preventionweb.net/files/15417_frameworkfordevelopmentofriskprofile.doc) [DOC ]

\* 15 % 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:

Hazard Maps at 1:10,000 and 1:50,000 scales for landslides were completed for nine vulnerable districts out of ten. Awareness programmes are being conducted for development agencies and Local Authorities in vulnerable districts.

Development of Hazard Maps for cyclone, coastal hazard, and drought is in progress and is scheduled to be completed in March, 2011. The Hazard Maps for floods will be completed in December, 2011.

The DMC has acted towards developing multi-hazard vulnerability and risk maps based on agreed methodologies for the development of Risk Profiles.

Guidelines were developed for the preparation of Hazard Maps at the village level and were made available to village level Disaster Management Committee members.

Community level hazard maps (mostly with identified evacuation routes) have been developed for approximately 100 communities; development of the same is in the progress for other villages.

A total of 40 schools and 10 hospitals in the Eastern Province were assessed for structural safety.

Databases of historical information on climate and oceanographic parameters are available.

A 'Database on Disasters since 1974' is available at [www.desinventar.lk](http://www.desinventar.lk).

National Pandemic/Epidemic Preparedness Plan and the Health Disaster Management Plan are available for health hazards.

**Context & Constraints:**

Non-availability of topographic maps of 1:10000 scale and high resolution Digital Elevation Maps for river basins is affecting the flood modelling to develop inundation areas. Therefore, the Hazard Map for flood is being developed based on experience of past floods.

Non-availability of high resolution digital elevation data of areas downstream of major reservoirs and for the conflict affected coastal belt affects the development of Risk Profiles.

Non-availability of evacuation guidelines for some hazards

Coordination with the non-health sectors for synergistic action

Social mobilisation issues

Access to data from other sectors' fragmented action

Expanded use of information technologies for forecasting/predicting and early response

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## **Syrian Arab Republic** (in English)

**Level of Progress achieved:**

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

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

-- Nothing reported within this timeframe. --

**Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

Work is going on establishing a database and maps for different hazards such as earthquakes, besides collecting, analyzing and evaluating all data related to hazards that occurred for the last thirty years. As for schools and hospitals work has started in evaluating a large number of the main schools and

hospitals, in addition to strengthening and rehabilitating the weak buildings.

As for recently built schools and hospitals, they are subject to the standards of safety and resistant to earthquakes.

**Context & Constraints:**

Due to the large number of schools and hospitals, time for evaluating all these buildings is a challenging issue.

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**Thailand** (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* Yes: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

Risk assessments at national and local level are carried out by competent and experienced national agencies, namely Department of Mineral Resources (DMR) for geo-hazards; Royal Irrigation Department (RID) and Department of Water Resource (DWR) for water related hazards; Thai Meteorological Department (TMD) for weather and earthquake monitoring; National Disaster Warning System (NDWC) for Tsunami monitoring and warning. These data and information are available for other key agencies such as Department of Disaster Prevention and Mitigation to make use of the information for DRR program/project development and communicate with respective offices at regional and provincial level for timely preparation and response.

**Context & Constraints:**

The hazard mappings for disaster are not available for all the regions of Thailand such as for earthquake, floods and landslide. Moreover, the government agencies which prepare the hazard mapping using different scale and parameters; therefore, Thailand does not have standard mapping for risk prone area. As well, the digital mapping is requiring the experts implementing. So, it is difficult for local community to understand. The integration among related agencies has some gaps and lacking of effective operation system for disaster management for all phases of disaster.

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## Yemen (in English)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* Yes: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

Yemen during this period with the efforts of other agencies concerned conducted a partial assessment for some of the risks. This assessment did not circulate to all sectors and all potential risks in the State. The distribution of vulnerability and capacities depending on the type of sex in this part of the evaluation. However, analytical data were available through 2007 – 2009 in particular and were provided with budgets and proposals to help the decision-makers to include them within the development plans to take the necessary decisions.

The EPA carried out appropriate steps with the MPIC for the integration of environmental dimension in the budget of five-year plan for each sector, and identified three areas for action in 15 years to come, including plans to adapt with negotiation in the various national, regional and international levels, and how to achieve the role of the EPA in planning activities, projects and programs implemented legally by the authority. It also prepared plans for the development of human resources commensurate with the needs of the strategic action plan included a unified system .

MAA said that there is a tangible progress in the part of the developing and updating data, information and maps of the areas at risk (e.g. areas prone to earthquakes and volcanoes, areas at risk of sea-level rise).

DMU is being supported by the UNDP said an initial assessment report from this project highlights a list of priority actions and priority intervention locations which are Al-Mahra, Hadramout, Aden, Shabwa, Abyan, Lahj, Taiz, Hodeidah, and Hajja. It also lists the key players that need to be involved in these areas. The project has supported community awareness programs in two pilot areas – Al-Mahra and Socotra Island. To add, and a tsunami risk consultancy for potential tsunami threat, the location of the most vulnerable areas and people exposed.

### Context & Constraints:

financial and coordinating constraints, the absence of evaluative standards that determine risks and develop procedures, lack of skills and training, scarcity of supplies and equipment

The EPA sees that the most important challenges the government or the national authorities faced were to develop the strategic plan which needs specific environmental policy ,urgent thinking, authorization and publishing. They include:-

1 - completing the policy statements regarding:

- The polluter pays principle.
- The data and information of the EPA systems and legislation.
- Incentives for small investors.
- The license for inspection entities.

2 - Searching for serious cooperation among the different sectors to work with the General Authority for the protection of the environment according to a more smoothly mechanism, so as to make its data and results available to the EPA.

3 - Preparing a program for the pricing of environmental resources to reflect the real value to society and estimate the cost of environmental degradation.

4 - The EPA depends on its role by small projects across the international environmental programs and conventions and they are not a sustainable source of funding; so there should be bigger financial obligation than of the government to allow the EPA to implement its role perfectly through the provision of the necessary financial and funding resources to sustain its activities and cover all the local environmental aspects.

In the view of SVOC that the most important constraints is the absence of clear criteria for the organization of earthquake-resistant building since Dhamar earthquake in 1982 .To be informed the seismic information indicate that the province would be exposed to earthquakes in the future

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# Europe

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## Armenia (in English)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* Yes: Multi-hazard risk assessment

\* 32 % 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:

In accordance with the recommendations of HFA the spheres of activity envisage basic indicators of monitoring, review of the progress and difficulties in carrying out the thematic of DRR:

1. The operations concerning the formation of data banks on dangers are completed: land-slide, mud-slide, flood with respective characteristics of conditions of inundation and under flooding; geodynamical condition of the territory of the republic and its zoning according to the degree of mud-slide risk; assessment of the contamination risk of water systems with chemical compounds of industrial wastes; the condition of pressure hydro technical, land reclamation and other engineering institutions.
2. Periodical control is carried out in all the mentioned regional systems and local objects and archive sources reflecting operative situation of key dangers and vulnerability are accumulated.
3. Elaborations on basic threats are partially functioning (land-slides, breaks of hydro institutions) and basically they are carried out for the formation of systems of early warning for informing the personnel of objects and population, which are within the zone of catastrophic influence.
4. National, regional and local assessment of risks envisages regional cooperation in the sphere of risk prevention and reduction.

### Context & Constraints:

Marking certain achievements in performance progress, "the basic indicators", specified above, it is necessary to note the basic difficulties of national structures and the partner organizations concerning their mapping non-uniformly scaled material (M 1:10000: 1:5000: 1:2500: 1:2000: 1:1000), for modeling of conditions, a mark of a possible damage and division into districts of territories on risk degree. Level of progress in the field of initiatives and target programming and planning of problems on risk decrease reached for the accounting period will allow to solve questions of standardization of a technique of quantitative definition of damages on display of numerous processes of natural - technical genesis, to use cartographical and mathematical modeling of natural-technical systems with the forecast of possible extreme display of this or that process, are developed adaptable and preventive protection of territories and the population on the basis of division into districts on risk degree.

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## Bulgaria (in English)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* No: Multi-hazard risk assessment

\* 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:

Manual for risk assessment of the potentially dangerous water objects and objects from the chemical industry and atomic energy is available.

### Context & Constraints:

n.a.

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## Czech Republic (in English)

### Level of Progress achieved:

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

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

No

### Means of Verification:

\* No: Multi-hazard risk assessment

\* unknown % 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:**

Multihazard assessment has been done for some areas or cities but not at the level of the whole state.

**Context & Constraints:**

The main problem is that all measures have been developed for floods - which are far more frequent disaster type. Much less has been done for other types of disasters which are occurring relatively rarely.

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**Finland** (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 100 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

The risk assessments are done at local, regional and national level. Government Resolution and the related document (Strategy for Securing the Functions Vital to Society) define society's vital functions and establish targets and development policies that will guide each administrative branch of the government in dealing with its strategic tasks in all situations. Ministries are also designated responsibilities for co-ordinating these functions. In this Resolution, strategic tasks refer to tasks which are needed to secure the functions vital to society in all situations. They are based on current legislation and the existing division of powers between the different authorities.

All the ministries, sector organizations, Statistics Finland and Association of Finnish Local and Regional Authorities support the municipalities by collating statistics and providing data for risk analyses.

National level authorities are commissioned to perform risk and vulnerability analysis within their area of responsibility and also take care that the risk assessments are done regionally and locally.

Rescue plans are done in each school and hospital. Local level authorities (fire inspectors) control in a yearly fire inspections that these plans are in place and that they are up to date. In addition to this, schools

are required to have a safety and security folder where all the relevant safety and security threats are identified and terms of reference are given for security or safety incidents.

**Context & Constraints:**

At the national level the negative impacts of climate change are being studied for national risks and vulnerabilities. The municipal and regional levels are not yet able to address climate change issues and the potential consequences with the same focus.

National level risk and vulnerability data and knowledge is not easily accessible to local level or they don't have the resources to utilize it.

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## Germany (in English)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

The "Federal Office of Civil Protection and Disaster Assistance" (BBK) published in April 2010 the "Method for Risk Assessment for Civil Protection" (Methode zur „Risikoanalyse im Bevölkerungsschutz). It provides a scenario-based risk assessments based on area of interest, hazard, occurrence probability and damage magnitude. The method requires the cooperation of federal agencies like the Federal Statistical Office or the Statistical Offices of the Laender and others. GIS supported addition is under discussion.

From the federal perspective, the overarching goal is to reduce the impact of extreme incidents on critical infrastructures and to be better prepared to handle anticipated crises. As a result, the "Federal Office of Civil Protection and Disaster Assistance" (BBK: see the link below) has developed a guide, "Critical Infrastructure Protection: Risk and Crisis Management" in cooperation with the private sector, government authorities and a research institute (see the attached PDF). This guide offers methods for implementing risk and crisis management and practical tools in the form of examples and checklists. The guide applies to all sectors and is intended for companies and government authorities as a tool for self-analysis. It is separated in five phases: planning, risk assessment, preventive strategies, crisis management and evaluation. The "Federal Office of Civil Protection and Disaster Assistance" (BBK) has likewise developed

its approach to provide a scientifically sound and practicable method for GIS-aided risk analyses in civil protection that is applicable to all administrative levels. It has also conducted its risk analyses for different hazards and subjects of protection at a national level.

Based on long-term data, the “German Meteorological Service” (DWD: see link) provides risk maps for the excess of certain extreme weather conditions, while the “Center for Disaster Management and Risk Reduction Technology” (CEDIM), in addition to other scientific institutes, develops national and country-specific risk assessments for natural hazards (see the link to the CEDIM Risk Explorer). They are also regularly in contact with institutions like the “German Association of Cities and Towns” or the “German County Association” in order to achieve the advancement of local assessment mechanisms. In particular, the floods of the last decade have sparked improved co-operation between the Federal States (Laender), the German state and other countries in forecasting floods.

The German insurance industry has sophisticated and detailed methods for risk assessment, including the “NATural Hazards Assessment Network” (NATHAN: see link) of the “Munich Re Group”.

Munich Re revised its CD “World of Natural Hazards” which was published 2009 as a DVD “Globe of Natural Hazards”. Beyond distribution of the different natural hazards and their intensities the DVD presents additional information about global change – climate change inclusively. For each point on the planet a local hazard assessment may be conducted based on all available natural hazards.

The German scientific landscape and other actors (such as the GTZ) have also begun implementing these methods with international partners, such as the “German Indonesian Tsunami Early Warning System”, for example (GITEWS: see link).

The German development cooperation supports risk assessments in its partner countries depending on the level at which the cooperation takes place. These assessments include hazard data and vulnerability information to incorporate DRR-measures into the development plans.

The GRC for example conducts Vulnerability & Capacity Assessments (VCA) on site, which are the starting point of genuine DRR programmes at GRC. In this context, the GRC has, for many years, been using a participatory method by which local communities are enabled to recognize their vulnerability to existing natural hazards as well as their current capacity to help themselves. Local knowledge of natural hazards and pre-established structures such as evacuation routes, safe refuges or functioning village committees are taken into account and incorporated into the programme design.

### **Context & Constraints:**

National risk assessments are available, with a focus on risk identification and characterisation, in which critical infrastructure is currently identified as the main problem. However, an exhaustive examination and compilation of all available information (e.g., the meteorological data from the DWD) has not taken place due to a scarcity of resources. Therefore the DWD aims to increase its ability in some areas, such as the forecasting of precipitation to assure the projection of floods before they occur. Additionally, the “Joint Hazard Estimation of the Federal States (Laender) and the Federal Government” therefore aims to compile hazards (natural/technological/man-made) exceeding “day-to-day” hazards/crisis situations of national concern, as well as to identify risk hotspots, required additional/specialised capabilities, means/actions to decrease vulnerability and increase coping capability. This occurs through regular and event-driven updates and a yearly review of results, which is seen as the first step to a national risk map for the entire Federal Republic of Germany.

Since the Federal States (Laender) are responsible for disaster management, these assessments are organized and developed independently of each other, resulting in some challenges for an extensive analysis of both the local and national levels. For example, the institutions responsible for fire prevention

(land/forest owners, forest management services) and fire response (ministries for the interior, fire services at the level of the communities) are aware of the general current wildfire hazard and its potential increase as a consequence of climate change. However, besides the general awareness that specific tree species/forest types bear a high wildfire risk (e.g., pine forests), systematic risk assessment databases and vulnerability information regarding fires are lacking. Since responsibilities for fire management (prevention and suppression responsibilities) are divided between different agencies and land owners, a systematic approach for joint inter-agency methodology and procedures for wildfire risk and vulnerability assessment is required and has been initiated by the DWD and the "Global Fire Monitoring Centre" (GFMC: see link).

As for international co-operation, the technical solutions for early warning systems often ignore the communication lines to those communities most affected by the disasters - warning systems, including dissemination and communication of information, need more attention from donor agencies and political decision makers, as seen from the perspective of German agencies. UNU-EHS is currently preparing a report on vulnerability indicators together with the "Federal Office of Civil Protection and Disaster Assistance" (BBK) and the "German Aerospace Center" (DLR: see link).

The German development cooperation recognizes the integration of climate change risks into risk assessments as one of the largest challenges because data for the local level is lacking, among other examples.

Supporting document:

Protection of Critical Infrastructures (2005)

[http://www.preventionweb.net/files/2967\\_ProtectionofCriticalInfrastructuresBaselineProtectionConcept.pdf](http://www.preventionweb.net/files/2967_ProtectionofCriticalInfrastructuresBaselineProtectionConcept.pdf)  
[PDF 2.14 MB]

Schutz Kritischer Infrastrukturen - Risiko- und Krisenmanagement (2008)

[http://www.preventionweb.net/files/2967\\_LeitfadenSchutzKritis.pdf](http://www.preventionweb.net/files/2967_LeitfadenSchutzKritis.pdf) [PDF 1.22 MB]

Related links:

CEDIM Risk Explorer <http://dc108.gfz-potsdam.de/website/riskexp/viewer.htm>

Deutsches Zentrum fuer Luft- und Raumfahrt (DLR) <http://www.dlr.de/>

Waldbrandgefahrenindex des DWD <http://www.agrowetter.de/Agrarwetter/waldix.htm>

Global Fire Monitoring Center (GFMC) <http://www.fire.uni-freiburg.de/>

NATural Hazards Assessment Network <http://mrnathan.munichre.com/>

GITEWS <http://www.gitews.de/>

CEDIM <http://www.cedim.de/>

Deutscher Wetterdienst (DWD) <http://www.dwd.de/bvbw/appmanager/bvbw/dwdwwwDesktop>

Bundesamt fuer Bevoelkerungsschutz und Katastrophenhilfe (BBK)

[http://www.bbk.bund.de/cIn\\_027/DE/00\\_\\_Home/homepage\\_\\_node.html](http://www.bbk.bund.de/cIn_027/DE/00__Home/homepage__node.html)

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## Italy (in English)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

\* Yes: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* Yes: Gender disaggregated vulnerability and capacity assessments

\* Yes: Agreed national standards for multi hazard risk assessments

**Description:**

Risk assessments concerning all main hazards are performed at local, regional and National level. These activities are carried out according to risk maps updated periodically in order to maintain a thorough knowledge of the distribution, over the whole National territory, of hazards, exposition and vulnerability. The responsibility to ensure that risk maps and risk assessments are up-to-date relies primarily upon the lower level of the system as local and regional authorities have a better knowledge of the territory.

**Context & Constraints:**

The main challenge in this sector is the growing magnitude of disasters occurring countrywide. Climate change is modifying the relation between the communities and their territories. This problem is exacerbated by the presence of human settlements and activities even in remote and/or dangerous areas. In some areas of the Country, small communities often do not have the necessary skills and resources to carry out effective risk assessments. This may cause poor development planning, reflecting a lack of knowledge about risk distribution.

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**Norway** (in English)

**Level of Progress achieved:**

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

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

-- Nothing reported within this timeframe. --

**Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

At national level every year the Norwegian Directorate for civil protection and emergency planning (DSB) is conducting and publicizing a national vulnerability and preparedness analysis. On local level 96% of the municipalities have conducted local risk and vulnerability analysis the latest four years.

Analyses and investigation studies are vital activities to gain an overview of which preventive measures should be given priority. The Protection of society-project (BAS) at the Norwegian Defence Research Establishment and DSB's annual National Vulnerability and Preparedness Report are such examples. The analyses are cross-sectoral and identify vulnerabilities in the society in general and in the different sectors.

Responsible authorities on national level make hazard risk assessment within their field of responsibility on national level, which are followed up by counties and municipalities in their cross-sectorial risk- and vulnerability assessments.

Norwegian authorities are at the moment working on developing a national risk assessment. The aim is to create a cross sector approach to risk assessments enabling national authorities to compare different types of hazards and risks. The methodology is inspired by the Dutch and British approach in which different types of events are measured according to their likelihood and consequences, and finally put into a matrix. A cross sector risk matrix will give Norwegian authorities a better understanding of national risks and vulnerabilities, and hence a better basis for prioritizing preparedness resources. The first national risk assessment will be published early 2011.

#### **Context & Constraints:**

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## **Poland** (in English)

#### **Level of Progress achieved:**

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

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

No

#### **Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* unknown % of schools and hospitals assessed
- \* unknown schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

#### **Description:**

The effectiveness of the Polish protection system can be recognized by forecasting accuracy of time and location as well as intensity of unfavorable or severe natural phenomena with such lead time, that prevention activities eliminating or reducing threat to life and property could be possible. Advanced protection system, which is modern both in methodology and equipment, takes also into consideration the

subjects resulting from international co-operation programmes within the structures and programmes of the World Meteorological Organization at regional and global levels.

Additional improvements on the administration level need to be focused on utilization of already existing data and providing risk assessment mapping to the public.

**Context & Constraints:**

To create multi-hazards risk assessment the Informative System in front of Extreme Hazards will be developed in Poland till 2013. Results of that project conducted by Institute of Meteorology and Water Management allow in future to create the base for multi-hazard risk assessment for local planners.

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## Romania (in English)

**Level of Progress achieved:**

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

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

-- Nothing reported within this timeframe. --

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

The government has funded pilot projects for creating earthquake and landslide hazard maps for most regions and some major cities, programmed to be completed in 2010. Every four years, town halls develop emergency situations plans in case of floods, dangerous hydrological and meteorological events, dam's accidents and accidental pollution. These plans contain all the prevention and response measures and the information flow in case of an emergency situation and are available to the general public on the Prefecture's webpage and in any town hall.

**Context & Constraints:**

Comprehensive local assessment requires a great financial and logistic effort, as well as human resources which are hard to accomplish due to present financial constraints. Moreover, the required analyses for hazard mapping are performed within European Commission funded projects and thus, there are further constraints associated with the possibility to engage in such projects

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## Sweden (in English)

### Level of Progress achieved:

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

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

Yes

### Means of Verification:

- \* Yes: Multi-hazard risk assessment
- \* N/A % of schools and hospitals assessed
- \* N/A schools not safe from disasters (specify absolute number)
- \* Yes: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

### Description:

Schools and hospitals are not assessed individually and, therefore, there is no procent provided under "means of verification" above.

The County Administrative Boards have worked systematically to help municipalities identify risks and vulnerability. Significant progress has been achieved already, although most counties have not yet reached the desired stage in their risk and vulnerability work. Nevertheless, there is a large consensus and a strong commitment within the health care sector regarding the issue. Even experience from past natural disasters are evaluated and taken into account.

The County Administrative Boards include water authorities that have a database that can be used for national and local risk assessments. This data includes physical, chemical, and biological data from observations, inventories of contaminated land as well as inventories of dams, environmentally hazardous activities conducted and regulated by permit, and documentation of experience from crisis events.

The County Administrative Boards perform regional risk and vulnerability analyses that can be used as a basis for their own and other players' prevention, mitigation and emergency preparedness measures. On the local level the risk and vulnerability analysis are required in accordance with law.

Inventory and mapping of various natural disasters, such as landslide, slope failure, flooding is accomplished. Inventories of beach erosion along coasts and rivers are made including a large project to assess stability in the Göta River which runs through Gothenburg. The Geological Survey of Sweden (SGU) maintains a database containing landslides, ravines, steep sandy river banks and active erosion. In addition the Swedish Geotechnical Insitute (SGI and MSB have databases with similar information). SGU coordinates a national groundwater monitoring network.

A national government investigation resulted in a comprehensive report called "Sweden facing climate change – threats and opportunities". This and previous information campaigns, have contributed to an

increased interest in climate change adaptation at the local level. The Swedish national platform coordinates the tasks related to climate adaptation that have been assigned to member agencies by the government. Planning is in progress at the national level for assessing and maintaining good water supplies in a changing climate. These planning efforts are support adaptation at local and regional level.

Sweden has several systems for informing and alerting the public. The two most important ones are the IPA system (Important Public Announcement), and in regions with a nuclear power plant, a system for nuclear alerts. MSB has developed and supports a digital radio communications system used by public policy, public security any public health entities. The MSB is also the focal point for co-ordinating Swedish national information security which includes the preparedness of media contributions to societal safety.

There is a legal requirement for various systematic security measures such as fire safety, medical care, and preparedness.

Vulnerable areas and systems have been identified where specific attention is needed. These include but are not limited to the following: MSB that is coordinating interagency work to develop a national strategy for protection of critical infrastructure. The Swedish Government will strengthen preparedness for future severe winter storms by examining ice storm risk scenarios. An analysis and assessment is in progress to determine the impacts of a flood in Sweden's third largest lake, Mälaren.

**Context & Constraints:**

There is an absence of responsibility and resources for inventorying erosion along coasts and rivers as is done for landslide, slope failure and flood prone areas.

## Switzerland (in English)

**Level of Progress achieved:**

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

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

Yes

**Means of Verification:**

- \* Yes: Multi-hazard risk assessment
- \* N/A % of schools and hospitals assessed
- \* N/A 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:**

Cantons and municipalities are legally obliged to dispose of hazard maps considering floods, avalanches, rock falls and mass movements. As of April 2010, two third of the national territory is covered with hazard

maps with avalanche maps having the highest percentage. Furthermore, comprehensive hazard index maps and a nationwide overview for potential floods are available, which help to determine cumulative risks and relevant damage potentials. Risk analyses for transport infrastructure are underway. Zonation of earthquake-prone areas is also available.

#### **Context & Constraints:**

Specialised companies carry out risk assessments according to national principles and standards. FOEN, the responsible authority at national level, claimed the elaboration of hazard maps for whole Switzerland until the end of 2011; however, major efforts still have to be made to achieve this goal. A further challenge is the application of hazard maps in land use planning.

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## **The former Yugoslav Rep of Macedonia** (in English)

#### **Level of Progress achieved:**

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

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

No

#### **Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

#### **Description:**

The risk areas have been identified in the Spatial plan of the Republic, passed by the Parliament and made available. Within the crisis management system, the Assessment Group(AG) is responsible for the risk assessment. AG forwards its analysis, recommendations and conclusions to the Steering Committee, the Presidents of the Government, the Republic and Parliament.

Achievement has been made in fostering the risk assessment availability by setting networks that deal with specific risks and hazards. That is the case with the National Laboratory Network linking 173 labs nationwide that will address diseases and epidemics related hazards.

The implementation of the Geographic information system (GIS) network is underway that would enable spatial positioning and predicting possible hazard scenarios.

The Ministry of Environment and Physical Planning, in collaboration with Hydrometeorological Service(HMS) established a River Monitoring System and Air Monitoring System(RIMSYS). Also, periodical and ad-hoc inspectoral control of potential polluters and specific, risk-prone industrial capacities and installations, potential sources of industrial accidents. All relevant data is disseminated and shared among

involved NPDRR stakeholders.

HMS through World Meteorological Organization and European Commission has completed the project for Regional Cooperation in SEE for meteorological, hydrological and climate data Management and information exchange to support DRR.

Especially active in terms of earthquake risks are the Institute of Earthquake Engineering and Engineering Seismology, IZIIS, and the Seismological Observatory. IZIIS' completed projects include:

- Physical and Psychological Management of Earthquake Related Emergencies in Schools in Macedonia; UNICEF (Completed 2004)
- Seismic Vulnerability Assessment of Key Health Facility in Macedonia - Pediatric clinic, Clinical center, Skopje; WHO (Completed 2006)

Among IZIIS's ongoing projects, is: Assessment of Seismic Site Amplification and Seismic Building Vulnerability in Republic of Macedonia, Croatia and Slovenia; NATO - Science for Peace Programme; Contract: SfP 980857

### **Context & Constraints:**

Despite achievements, there is still need for sustained commitment and capacities at all levels.

Although assessments for certain hazards are being produced (for instance: seismic activities, water pollution, heath waves etc.) there is still need for a multi-hazard risk assessment for all key sectors.

In order to produce reliable risk assessments, it is necessary to develop three types of methodologies: (1) Risk assessment and risk consequence assessment methodologies; (2) Risk mapping methodology; (3) Risk monitoring methodology. These methodologies are basis for developing the following assessments: (1) Assessment of events implying risk and threat; (2) Communal resilience and vulnerability assessment; (3) Competent institutions' capacity assessment (both actual and required capacity); (4) Damage assessment, as well as additional vulnerability assessment; (5) Assessment of quality of overall respond to occurred accidents and disasters.

The established thematic working groups are still not operational.

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# Oceania

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## Australia (in English)

### Level of Progress achieved:

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

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

No

### Means of Verification:

\* No: Multi-hazard risk assessment

\* - % of schools and hospitals assessed

\* - schools not safe from disasters (specify absolute number)

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### Description:

Risk assessments are conducted at a local, state and national level. Examples at the national level include:

- the extent of climate change risks to coastal ecosystems, infrastructure and settlements;
- the Climate Change Adaptation Program, to better understand and manage risks linked to the carbon pollution already in our atmosphere;
- a national risk assessment of the vulnerability of Australia's infrastructure to climate change (the first infrastructure sector to be assessed is transport);
- studies to determine the vulnerability of Australian communities and various building types to increased wind risk; and
- detailed regional climate change risks assessments, such as assessing the vulnerability of the south east region of the state of Queensland to future climate change impacts.

Risk assessments are supported and informed by information and sound methodology.

Examples include:

- the National Risk Assessment Framework: which delivers on a commitment by governments to develop and implement a five year national programme of systematic and rigorous disaster risk assessments; and
- online resources of risk information, including reports, hazard and exposure data, models and maps to support best-practice risk assessments across Australia through a website ([www.ga.gov.au/hazards](http://www.ga.gov.au/hazards)).

Risk is also considered in other ways. One example is through a national, pre-season bushfire and seasonal briefing conducted by Australian Government agencies with State and Territory emergency

management agency representatives. The aim of the briefing is to facilitate pre-season bushfire and seasonal hazard preparedness and planning dialogue between the Commonwealth and the States.

The resilience of facilities such as schools and hospitals to disasters is the responsibility of the State or Territory government in which the facility is located. This includes the siting, design and standard of construction of buildings, as well as their operation and ability to respond safely to emergencies either on the premises or close by. Building construction standards vary from State and Territory and take into account particular local conditions and potential vulnerabilities, such as fire or cyclone.

### **Context & Constraints:**

As discussed throughout this report, risk assessments based on hazard data and vulnerability information are prepared at national and local levels.

They are prepared by a range of Australian Government agencies as well as agencies of other levels of governments, private sector companies and not-for-profit sector organisations. The purpose of their preparation varies, and there is likely to be some variation in the standard of the assessment, from organisation to organisation.

Australian Government agencies provide assistance through the provision of risk management data and information. Examples include:

- Geoscience Australia: supporting Australian participation as a public sponsor in the Global Earthquake Model: <http://www.globalquakemodel.org/>. The Model will provide an authoritative standard for calculating and communicating earthquake hazard and risk by developing much-needed global datasets, building open-source tools, and engaging scientists and engineers and users around the world; and collaborating with the insurance sector to develop improved natural hazard risk assessment methods and tools.
- the Bureau of Meteorology's Disaster Mitigation Policy Program, the aims of which include:
  - to facilitate greater collaboration between the Bureau's Climate, Hydrological, Weather and Oceanographic Services programs with regard to the Bureau Of Meteorology's disaster mitigation activities;
  - to ensure ongoing and effective interaction with other Commonwealth and State agencies with which the Bureau may have a joint role in the provision of Disaster Mitigation services;
  - to ensure warning services match and support community and agency action plans;
  - to engage in community and agency awareness programs;
  - to continue to investigate the implementation of new services in marine weather, air quality, human health and comfort, and enhanced community safety through a focus on natural disaster mitigation;
  - to ensure the relevance and visibility of the Bureau's disaster mitigation related services to the community; and
  - to support international disaster mitigation activities - in particular those initiated by the World Meteorological Organisation and those supported as part of the International Strategy for Disaster Reduction.

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

Under the leadership of the National Commission for Climate Change, with extensive Red Cross involvement, several vulnerability and capacity assessments have been conducted amongst communities, notably in Pukapuka and Mitiaro. The Cook Islands Red Cross has also offered some capacity building programmes on improving technical capacity to conduct disaster risk and vulnerability assessments.

MOIP is pursuing the development of a technical mainstreaming guideline linked to a Pacific Adaptation to Climate Change (PACC)-funded infrastructure project on Mangaia. This will serve as a model to enable the use of hazard/risk assessments as a prerequisite step in planning development initiatives across sectoral Ministries.

Through a project funded by the World Bank and the ADB, SOPAC working in collaboration with the New Zealand Institute of Geological and Nuclear Sciences (GNS) have undertaken a survey to help develop an exposure database for the Cook Islands. This is a regional initiative and other countries in the Pacific are also benefitting. The exposure database will provide data and information to help inform many facets of disaster risk management and also national development planning.

**Context & Constraints:**

The current situation is quite fragmented with different governmental agencies carrying out their own assessments. At the moment, no particular agency is tasked for the collation of risk assessment information nor to develop a central database that can be used to assess the social, economic and environmental impacts prior or after a disaster.

Little community vulnerability data exists for the Cook Islands, and there is a lack of information on the social, economic and environmental factors that increase vulnerability.

Significant gaps exist, both in historical disaster information and in projecting potential impacts of future hazards. Information is frequently lacking on the situation in the Outer Islands, as transport limitations lead to infrequent visits to these islands and consultations with their residents.

The Frontline Emergency Response Network (FERN) has the potential to strengthen management of DRM data and resolve data coordination and sharing problems currently occurring. FERN also offers the

opportunity to standardize best-practice inclusive assessment methodologies, by establishing standard templates that call for quantitative data disaggregated by age, gender, disability and geographical location, and qualitative data that includes consultations with the most disadvantaged community members. This would ensure that analyses of disaster risks and impacts, as well as impacts of relief and response programs, adequately considered the situation of the most vulnerable.

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## **Fiji** (in English)

### **Level of Progress achieved:**

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

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

No

### **Means of Verification:**

- \* No: Multi-hazard risk assessment
- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

### **Description:**

No multi-hazard risk assessment is undertaken nor is there a standard approach for single hazard assessments. Hazard and risk assessments are only carried out for particular developments and project areas. A rudimentary assessment of Fiji's main hazards is in the 1995 NDMP.

Assessment information in technical and research reports funded by donors is often in formats that are difficult to use. Some investments are made in hazard monitoring systems such as rain and river gauges and seismic stations though more equipment and systems are needed. Earthquake hazard assessment is quite advanced with a national hazard map; national public awareness campaigns; national seismic risk zone maps; and a detailed seismic risk map for Suva. Tsunami Risk assessment is done for Suva with identified high risk areas; evacuation points; and public awareness boards. Flood risk maps for Nadi, Ba and Navua were developed including thresholds for development of flood control measures.

In the key sectors, disaster management plans are founded on hazard risk assessments that led to mitigation measures, eg Finance relocated their archives onto higher grounds; Health relocated a pharmaceutical warehouse.

For the Water & Sewage sector, hazard risk assessments are based on standard procedures and guidelines. There is a draft Water Safety Plan; a Water Act; and water catchments are assessed in terms of hazard risks. Development investment in essential lifeline services as by FEA & Telecom are guided by hazard risk assessment. Similarly government requires risk assessments for its key infrastructure but the practice is yet to be instilled in rural/community level developments.

Some NGO's conduct vulnerability and capacity assessments, assessing some sectors only.

Fiji's EIA legislation is quite comprehensive and mandatory for all new developments. It is being applied but the process needs to improve on how hazard and risks, including climate risk, are considered.

**Context & Constraints:**

A number of agencies conduct CVA at the community level. They target some of the most vulnerable and/or distant and remote communities. Mostly they work in isolation and lately are binding together through initiatives with the PCIDRR in Yasawas, Kadavu and Vanua Levu. The outcomes are good but still very project oriented being undertaken in selected locations mostly based on local knowledge.

Improvement in information sharing is essential to ensure that there is sufficient input from technical agencies with focus on mapping of hazards, vulnerabilities and exposures and the development of common understanding of risk terminology. Gender and human rights issues are often overlooked, and training and awareness raising is needed.

Community input is provisioned in the EIA process but in practice contribution is weak due to limited community level technical expertise. Improving hazard awareness is needed and lead agencies need to recognise their responsibility, eg no risk assessment has been conducted on Evacuation Centres in rural areas to ensure they are in safe locations. A multi-hazard coordinated approach at the community level is desired as to avoid uncoordinated and duplication of efforts when technical agencies on their own create multi-entry points at community level. This would also address weaknesses in implementation and enforcement. A very sensitive area is the monitoring of the Foreshore Development Act. The lack of government personnel compounded with little community expertise and empowerment has led to some developers practically ignoring approvals.

A fundamental deficiency is the absence of specific articulation in DRM policy on the use of DRR cost benefit analysis. This is essential for planning investments at all levels, and leaders need to be sensitized to the usefulness of hazard data in sectoral development planning. A policy framework supporting the development of integrated multi-hazard risk assessments is a requirement.

## **Marshall Islands** (in English)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

### **Description:**

Although not fully coordinated, some progress is being achieved in relation to the development of national and local level risk assessments. Outer Island Profiles are being developed through a partnership between Ministry of Internal Affairs (IA), International Organization for Migration (IOM) and USAid and local organizations such as Marshall Islands Conservation Society (MICS). The Outer Island Profiles collect information on response capacity by stocktaking things such as number of schools (and their ability to serve as an Emergency Shelter), number and condition of water catchments, warehousing, radios, internet access etc. Basic demographic information is also collected (e.g. number of house holds, people and gender breakdown).

Coastal risk assessments and surveys are being undertaken by several organizations, including EPA, MICS, Natural Resource Assessments Surveys (NRAS) Team, Marshall Islands Marine Resources Authority (MIMRA) and assistance from the University of Auckland. While the EPA has plans to develop a database with baseline information, progress on this front is limited. CMAC provides a forum for information exchange and also provides the means to implement cost sharing especially when undertaking work on the outer islands.

### **Context & Constraints:**

The fact that there has not been a major disaster for some time is a challenge in raising the profile of DRR and DRM. If a disaster is not in the living memory of most of the population, it remains a challenge for disaster managers to highlight the importance of DRR/DRM amongst the public and the importance of understanding the procedures for emergency communications and response.

Conducting risk assessments is a time consuming and resource intensive activity, made more difficult by the scattered and isolated nature of the RMI's islands and atolls. Government ministries and civil society organizations overcome part of this challenge by cost sharing where possible, and increasingly, through sharing of information.

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## **New Zealand** (in English)

### **Level of Progress achieved:**

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

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

Yes

### **Means of Verification:**

\* Yes: Multi-hazard risk assessment

> National Hazardscape Report (2007) [http://www.civildefence.govt.nz/memwebsite07.nsf/wpg\\_URL/For-the-CDEM-Sector-Publications-National-Hazardscape-Report?OpenDocument](http://www.civildefence.govt.nz/memwebsite07.nsf/wpg_URL/For-the-CDEM-Sector-Publications-National-Hazardscape-Report?OpenDocument)

\* NA % of schools and hospitals assessed

\* Not aggregated 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:**

The Officials' Committee for Domestic & External Security Coordination has published the National Hazardscape Report (2007) (link below), based on contributions from agencies responsible for addressing hazard risk. The report provides a contemporary summary of the physical nature, impacts, distribution and frequency of occurrence of the seventeen key hazards affecting New Zealand. These include geological, meteorological, biological, technological and infrastructure failure hazards. It also provides general information on the current management of hazards, though focusing on reduction and readiness initiatives.

The National Hazardscape Report assists with identifying and assessing hazards and risks to be addressed through national policies and plans, and the relevant legislative frameworks. More precise risk assessments are carried out as part of these processes.

Additionally, specific hazards (such as seismic and wind loadings) are modelled at a national scale to support national standards for construction.

Local authorities undertake hazard and risk assessment as part of their risk management processes in environmental planning and developing Civil Defence Emergency Management Group plans. It is at this level that research on specific hazards and risks, and management options, generally takes place.

**Context & Constraints:**

Challenges include improving ability to assess the full range of consequences and vulnerabilities, especially in regard to secondary impacts, undertaking comparative economic analyses and assessing non-monetary (social & environmental) costs.

Other challenges concern improving understanding of inter-dependencies across sectors, and overcoming commercial sensitivity that may limit disclosure by private entities in some circumstances.

For means of verification regarding school and hospital assessments (assigned NA above), it is important to note that all New Zealand schools and hospitals are required to meet existing stringent seismic safety codes. Additionally, key facilities such as regional hospitals and emergency operations centres are expected to have critical systems redundancies.

**Samoa** (in English)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

\* No: Multi-hazard risk assessment

- \* 0 % of schools and hospitals assessed
- \* 0 schools not safe from disasters (specify absolute number)
- \* No: Gender disaggregated vulnerability and capacity assessments
- \* No: Agreed national standards for multi hazard risk assessments

**Description:**

The CIM Plans, lead by the Planning and Urban Management Agency (PUMA) and the DMO of the Ministry of Natural Resources and Environment (MNRE), have been developed and provides baseline information on coastline locations formed the basis of hazard mapping for the CIM Plans. The CIM Plans provide a description of the existing environment; identify and assess the resilience of existing infrastructure against coastal hazards and provide potential solutions and ways to reduce susceptibility to coastal hazards.

Disaster risks and climate change issues are also key components of the risk assessment required for any development consent application. Proponents are required to provide all relevant information including development designs, specifications, site plans and environmental impact assessment to facilitate risk assessment in addition to physical site inspection of any development. This process is provided for under the PUM Act 2004. The development consent process is similar to the Comprehensive Hazard and Risk Management (CHARM) process – the regional risk management guideline; however there is no information which indicates that Samoa has attempted to adopt the latter.

National standards for multi-hazard risk assessments include the national building code as regulated under the Ministry of Works Act 2002, the Environmental Impact Assessment (EIA) process through the EIA regulations 2009 and the NDMP 2006-2009 where the New Zealand/Australian Risk Assessment Standards were used, managing pandemic events in the National Pandemic Plan 2008, fire hazard assessments under the Fire Hazard Plan 2009, invasive species hazard assessments, and the climate change national communication 1st and 2nd.

Cost-benefit analyses for disaster management and disaster risk reduction have been undertaken in Samoa which involved an economic assessment of flood management options for the lower Vaisigano catchment, Apia, Samoa (2007). Preliminary assessment of volcanic hazards on both islands was conducted in 2006 with the development of a volcanic eruption implementation plan.

**Context & Constraints:**

Implementation of the CIM Plans is impeded by budgetary constraints and needs to be made a statutory document to ensure compliance. While risk reduction criteria have been incorporated in the regular processes for urban land use and planning and have been introduced through sectoral development policies, they are in its preliminary stages and in most cases needs to be revisited as vulnerability is complex and multifaceted, requiring analysis from social, economic and poverty perspectives, assessment of natural hazards and related vulnerability should be assessed as part of all forms of project appraisal, rather than confined to environmental review alone.

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## **Solomon Islands** (in English)

**Level of Progress achieved:**

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

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

No

**Means of Verification:**

\* No: Multi-hazard risk assessment

\* 0 % of schools and hospitals assessed

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

\* No: Gender disaggregated vulnerability and capacity assessments

\* No: Agreed national standards for multi hazard risk assessments

**Description:**

National risk assessments exist for some specific hazards. Key sectors/infrastructure in urban areas undergoes hazard risk assessments but this is not replicated in rural areas. No national standards for multi-hazard risk assessment exists, however there is commitment to rectify this. Some donor organisations conduct hazard risk assessments as part of their regular programming activities prior to embarking on projects. NGO's conduct vulnerability and capacity assessments in some sectors and vulnerability assessments are an integral part of the NAPA process. Red Cross has conducted DRM capacity assessments for specific hazards.

Gender issues are often overlooked in terms of planning implications based on hazard risks, however 'gender in emergencies' training was conducted by UNDP in 2010 in an effort to raise in-country awareness. The NDMO and NGO's are also making a concerted effort to include women's organizations in their DRM work. Provincial disaster officers are compiling provincial hazard risk profiles. Currently, the PCIDRR project and the Pacific Conference of Churches pilot DRM project are working with communities to identify hazard risks. Some commitment and progress exists in terms of this indicator, but this is still at the early stages and not uniform in terms of all hazards and/or sectors.

**Context & Constraints:**

The Solomon Islands is highly susceptible to a large variety of natural hazards (volcanoes, earthquakes, tsunami, cyclones, flood events, land slides etc) but in-country capacity to monitor and assess them is limited due to financial, technological and human resource constraints. Similarly, in terms of epidemics, the Ministry of Health has established 5 sentinel sites for monitoring and testing specimens however resources would be stretched if an outbreak was to affect several provinces simultaneously. Maintaining trained and skilled staff is a challenge when more lucrative opportunities are available. It was suggested that perhaps the SI government could consider offering incentives to staff to retain their services (e.g. tax exemptions).

Another challenge is a lack of knowledge in terms of the importance and usefulness of hazard data for all sectors in terms of planning. Again, the issue of political will to incorporate DRM into financial and development decision-making is relevant in this context. It was highlighted during the multi-stakeholder workshop that even if hazard assessment data were to be available, budget constraints may limit consideration of the findings if implementation of recommendations based on the information would lead to increased project costs. Promoting cost benefit analysis is necessary in order to counteract this. A policy framework supporting the development of integrated multi-hazard risk assessments is a requirement.

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## Vanuatu (in English)

### Level of Progress achieved:

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

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### Description:

Some progress has been made in the area of hazard mapping and assessments (e.g. volcano hazard assessments in Gaua, Tanna, assistance with population mapping / vulnerability assessments), although more work is still needed in this area. There is also a need to move towards multi-hazard approaches, and to link hazard mapping with land use planning.

There is also some evidence that some government agencies and communities are now using this information to better inform their planning (e.g. Ministry of Infrastructure and Public Utilities is reportedly using weather forecasts to schedule road works and routine maintenance, copra and kava growers are using forecasts to inform planting).

Work has begun to develop a Pacific Catastrophe Risk Financing mechanism, including a regional GIS based Pacific Exposure Database. This initiative is expected to provide better information for vulnerability assessments, strengthen links with development partner financing, and improve risk sharing between public-private entities (with the aim of improving timely access to disaster funding and insurance). This is a World Bank initiative, which is being implemented in collaboration with Global Facility for Disaster Reduction and Recovery (GFDRR), Japan Policy and Human Resources Development Fund (PHRD), Australian Agency for International Development (AusAID), Asian Development Bank (ADB), AIR Worldwide, Secretariat of the Pacific Community Applied Geoscience and Technology Division (SOPAC), GNS New Zealand, Pacific Disaster Centre, and Pacific Islands Forum Secretariat (PIFS)

### Context & Constraints:

There is a need to review the information systems currently used in Vanuatu with a view to identifying critical gaps in information (e.g. high priority hazard assessments) and to joining up / better integrating the information that is available. There is also a need to identify opportunities to better use available information to support forward planning across sectors.

Bringing together the task forces for climate change and DRR-DM may help to strengthen coordination and

the adoption of a multi-hazard approach to reducing vulnerability.

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