

Compilation of National Progress Reports on the implementation of the Hyogo Framework for Action:

Priority 2:

Identify, assess and monitor disaster risks and enhance early warning.

Know the Risks and Take Action

Reporting period: 2007-2009

This document has been compiled from the national progress reports provided by 76 countries through the HFA Monitor, and includes original reporting in English, French and Spanish.

Note that these extracts are provided for convenience only.
National HFA progress reports should be considered in their entirety and can be found at:

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

An HFA Monitor update published by PreventionWeb

Africa

Algeria (in French)

Core indicator 1

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

Level of Progress achieved:

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

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. Ces études servent d'ores et déjà 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 communautés (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 permettra de surmonter progressivement ce handicap

Core indicator 2

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

Level of Progress achieved:

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

Description:

Le classement qui paraît approprié pour le cas de l'Algérie est intermédiaire entre les niveaux 3 et 4. En effet, pour certains types de risques, il existe des systèmes élaborés pour l'évaluation du risque et l'archivage des données y afférentes, même si la diffusion des informations nécessaires reste insuffisante. A titre d'exemple, on peut citer, pour le risque inondations, l'existence et la gestion d'une banque de données hydro-climatologiques et la diffusion de bulletins et annuaires y afférents.

Par contre, pour d'autres types de risques l'évaluation est encore à des stades peu élaborés, avec un archivage inexistant ou peu consistant, et une absence de vulgarisation .

Context & Constraints:

Le défi principal réside dans la généralisation de l'évaluation, l'archivage et la vulgarisation pour tous les

types de risques de catastrophes qui menacent le pays. Celle-ci ne pourra se concrétiser qu'avec la mise en œuvre des différents volets et mécanismes prévus par la loi 04-20.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Il y a lieu de signaler que des systèmes d'alerte rapide satisfaisants sont en place dans certains secteurs ou domaines comme par exemple :

- Système (national et international) de surveillance et d'alerte des invasions acridiennes.
- Système national d'alerte par radio pour les incendies de forêts
- Système national d'alerte rapide pour les déversements massifs d'hydrocarbures
- Système national d'alerte rapide par radio des déversements ou ruptures de barrages
- Systèmes pilotes de prévision et d'alerte aux crues du bassin versant du Sebaou (Région de Tizi-Ouzou) et du bassin de l'oued El Harrach (Wilaya d'Alger)
- Systèmes d'alerte rapide spécialisés pour les grandes zones industrielles (pétro-chimiques et pétrolières en particulier)
- Système d'alerte météorologique pour les tempêtes et vents violents.
- Systèmes (en cours de formalisation) d'alerte rapide (différenciée en 3 niveaux en fonction de la magnitude et de la vulnérabilité de la région touchée) pour les séismes et d'alerte précoce pour les inondations

Context & Constraints:

Les systèmes ne font pas l'objet de simulations régulières et d'évaluation.

Les principaux défis à relever résident dans la généralisation des systèmes d'alerte au maximum de risques possible, leur vulgarisation systématique au niveau des communautés concernées et l'organisation de simulations périodiques et d'évaluation.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Le domaine où, véritablement, l'évaluation des risques aux niveaux national et local prend en compte les risques trans-nationaux dans le but d'établir une coopération régionale pour la réduction du risque, est celui des invasions acridiennes ; en effet, dans ce cas, non seulement la coopération a été institutionnalisée entre les pays sahéliers concernés (Pays du Maghreb, Sénégal, Mali, Niger et Tchad) pour l'alerte et la lutte contre la manifestation des locustes, mais une carte d'indice de végétation a été établie pour les zones potentielles de reproduction acridienne (Sud algérien et Nord du Niger et du Mali). Par ailleurs, il y'a lieu de signaler des coopérations pour l'alerte et l'évaluation des risques transnationaux dans les domaines suivants :

- Feux de forêts (coopération algero-tunisienne au niveau de la bande frontalière).
- Alea sismique et tsunami (coopération a l'échelle euro-mediterraneeenne)
- Météo (coopération régionale)
- Pollution marine par les hydrocarbures

Context & Constraints:

Les défis à relever résident dans la généralisation de cette coopération aux autres types de risques où cela est possible et souhaitable. La ratification des statuts et le démarrage du futur « Centre arabe des risques sismiques et des autres catastrophes naturelles » (créé par la Ligue Arabe) dont le siège sera à Alger pourra certainement y contribuer de par les opportunités techniques qu'il offrira

Angola (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Existe um plano nacional de preparação e resposta 2007/2008 e planos de emergências sectoriais. Contudo há falta de base de dados como indicadores de avaliação de riscos sectoriais.

Context & Constraints:

Continuamos a trabalhar no mapeamento de riscos a nível nacional.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Atraves dos vários sectores, o Serviço Nacional de Protecção Civil dispõe de um mecanismo de monitoria que permite avaliação o grau de vulnerabilidade no país. As actividades desenvolvidas pelos diversos sectores são relatadas para o SNPC e depois canalizadas para os respectivos órgão de decisão.

Context & Constraints:

A coordenação multi sectorial existe no entanto estão em curso alguns acertos para o seu melhoramento.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Existe um sistema piloto de aviso prévio instalado nas bacias hidrograficas dos rios Cavaco, Catumbela e Cuporolo na província de Benguela, com o objectivo primário de alertar em tempo real as variações dos caudais dos mesmos rios. O sistema serve também como base permitir a monitorização por parte dos membros da Comissão Nacional de Protecção Civil e do escritório regional para Africa da Organização Internacional de Meteorologia. Estão em cursos estudos para montagem do Sistema de Aviso Prévio a nível nacional.

Context & Constraints:

O sistema surge na base de alertar os prejuizos humanos e materiais causados nas povoações ribeirinhas na província de Benguela. Esta experiência piloto permitiu o maior conhecimento da população como lidar com eventuais desastres naturais e correcta leitura dos sinais de perigo, o reassentamento das populações locais para área de maior segurança e organização das comissões municipais da protecção civil das

populações ribeirinhas afectadas, criação de reservas naturais de água e o fomento da criação de gado. Para sua efectividade este sistema deve ser replicado noutras bacias hidrograficas em todo espaço do território nacional.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Existem algumas iniciativas transfronteiriças no sul de Angola e norte da Namíbia no sentido de se fazer um estudo conjunto que leve a criação de mecanismos para diminuição do risco. Este mecanismo inclui o aproveitamento conjunto da Bacia do Rio Cunene, com o fim da gestão dos recursos hídricos.

Context & Constraints:

O nível de coordenação a nível da SADC continua a ser deficiente, no que toca ao comité técnico para a gestão de desastres na região.

Burkina Faso (in French)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Pour un certain nombre de secteurs, les risques sont connus: il s'agit des secteurs de la Santé, de l'Agriculture, des Ressources animales, de l'Environnement, des Ressources en eau (arsenic et autres), de l'Education et des Infrastructures.

Context & Constraints:

- Insuffisance des ressources (humaines, financières et matérielles) nationales allouées aux programmes en cours. Les actions sont financées financés pour l'essentiel sur des ressources extérieures .

Pour les autres risques comme les mouvements de populations ou les inondations, il y a des difficultés objectives d'appréhension du phénomène.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Pour les secteurs de la Santé, de l'Agriculture, des Ressources animales et de l'Environnement (climat, faune, flore et eaux...), les systèmes sont en place et fonctionnels.

Context & Constraints:

- Insuffisances des moyens pour la mise en oeuvre des programmes.

Core indicator 3

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

Level of Progress achieved:

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

Description:

L'engagement politique existe, mais les Systèmes d'alerte précoce existant ne sont pas très opérationnels pour prendre en compte tous les aspects liés aux risques de catastrophes et d'en atténuer les effets sur les communautés.

Context & Constraints:

- Insuffisance organisationnelle;
- Insuffisance de ressources (humaines, financiers et matériels) pour la mise en oeuvre des programmes.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Au Burkina Faso, les efforts sont prioritairement mis sur le niveau national.

Cependant, des stratégies trans-nationales existent notamment dans les secteurs de la Santé humaine et animale, des Ressources en eau et de l'Agriculture (lutte anti acridienne...).

Des stratégies sous-régionales sont développées à travers des organisations sous régionales comme la Communauté Economique des Etats de l'Afrique de l'Ouest (CEDEAO), le Comité Inter Etat de Lutte contre la Sécheresse au Sahel (CILSS) et l'Union Economique et Monétaire Ouest Africaine (UEMOA).

Context & Constraints:

La mise en oeuvre actuelle des stratégies trans-nationales et sous régionales (CEDEAO, CILSS) n'est pas assez développée.

Burundi (in French)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Des informations éparses existent mais ne sont pas centralisées et ne sont pas pris en compte dans la coordination des interventions

Context & Constraints:

Manque de politique claire de gestion de l'information liée aux aléas naturels et à la vulnérabilité

Core indicator 2

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

Level of Progress achieved:

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

Description:

L' Institut Géographique du Burundi (IGEBU) existe et fonctionne depuis un certain temps

Context & Constraints:

Les équipements de l'IGEBU sont vétustes et on est obligé de passer par Nairobi pour avoir les données réelles

Core indicator 3

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

Level of Progress achieved:

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

Description:

Les systèmes d'alerte existent dans certains secteurs clé et sont plus ou moins fonctionnels.

Context & Constraints:

Les canaux de communication de sont pas accessibles à tous les niveaux.

Le Gouvernement doit recourir aux moyens des donateurs pour faire fonctionner les systèmes d'alerte précoce existants.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Des initiatives sont en cours pour établir une coopération régionale sur la RRC à travers le Centre d'Excellence régionale (Golden Spear).

Context & Constraints:

Les exigences liées à la mise en place effective de cette coopération : contributions financières des Etats membres.

Cote d'Ivoire (in French)

Core indicator 1

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

Level of Progress achieved:

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

Description:

L'évaluation des risques aux niveaux national et local basée sur les données concernant les aléas naturels et l'information sur la vulnérabilité existent dans certains secteurs. Il convient de noter que la Côte d'Ivoire est épargnée par les grands cataclysmes naturels (zone de faible sismicité et de cyclones) mais connaît des risques naturels tels les inondations, tempêtes, glissements de versants et incendies de brousse qui provoquent pertes humaines et matérielles. On peut entre autre relever :

-Les glissements de terrain qui sont circonscrits à la zone montagneuse de la région Ouest et à quelques versants abrupts du bassin sédimentaire, en particulier près d'Abidjan où les risques de glissements localisés existent sur le flanc Nord-Est de la presqu'île de Bingerville et sur la rive Est de la baie du Banco -Attécoubé- (MET, 1994).

-Les tempêtes, combinées à l'impact de la houle (accentué par l'élévation du niveau de la mer) et à l'exploitation des matériaux marins (sable et graviers), participent à l'érosion côtière. Cette dernière atteindrait 2 mètres par an à Grand-Lahou (Ouest du littoral) et 1,5 mètres par an à l'Est du canal de Vridi (SORO, 2006).

-Récemment des signes de tremblements de terre ont été signalés à Boundiali (2004) et dans la région de Tingréla et de Dabakala (2006).

-A ceci, s'ajoutent des risques comme les épidémies associées à des pertes humaine, ainsi que les incendies de brousses, les déversements d'hydrocarbures et de déchets toxiques dont les risques sont réels et dont les conséquences sont d'ordre environnemental.

Mais ces différentes informations sur la vulnérabilité ne sont pas très accessibles et n'incluent pas toujours les facteurs de risques sous-jacents.

Context & Constraints:

Le défi à relever dans ce cadre est la synergie d'actions qui devrait permettre de prendre en compte les interactions entre les secteurs et de mieux appréhender la vulnérabilité des populations et de l'environnement. Les programmes et plans d'actions émanant de la plateforme RRC à venir devraient pouvoir y remédier.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Les différentes informations sur les risques et la vulnérabilité, lorsqu'elles existent sont disséminées dans les structures qui les collectent et ne sont pas archivées dans un système national de données environnementales qui permettent de les divulguer à temps voulu.

Context & Constraints:

Un des défis à relever au niveau national est la mise en place d'un véritable système de gestion des données environnementales existantes et à collecter (réseaux de mesures), comprenant les informations sur les risques et la vulnérabilité.

Core indicator 3

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

Level of Progress achieved:

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

Description:

La Côte d'Ivoire dispose de programmes et de campagnes de sensibilisation relativement aux aléas naturels principalement en ce qui concerne les épidémies et les feux de brousses. Un système intégré ou des systèmes sectoriels d'alerte précoce des aléas naturels subis ou susceptibles d'être subis par notre pays est à mettre en place.

Context & Constraints:

Pour rendre les communautés plus résilientes face aux catastrophes naturelles, la mise à leur disposition de l'information et des dispositions à prendre à travers un ou des systèmes d'alerte précoce sont

indispensables. Pour y arriver, ce type d'outil doit être pris en compte dans l'élaboration des stratégies de développement, notamment le DSRP, comme un véritable facteur de réduction de la vulnérabilité et donc de la pauvreté.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Compte tenu du caractère régional de certains risques, l'Etat prend un certain nombre de précautions pour réduire les risques ; on peut relever les cas d'épidémie (méningite), d'épizootie (grippe aviaire), et de maladies de certaines cultures de rente tels que le cacao. A ce niveau, une coopération régionale existe à travers des ateliers régionaux pour trouver les solutions.

Context & Constraints:

A ce niveau aussi, le manque de bases de données suffisamment renseignées ne permet pas toujours d'atteindre les résultats escomptés. Le défi à relever reste encore la mise en place d'une base nationale de données environnementales.

Egypt (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Risk assessment was developed for several disasters, (earthquakes and flash floods for example). National and local risk assessments, based on hazard data and vulnerability information, are partially conducted. However, ongoing efforts started to build the first comprehensive database for areas at risk (hazards maps). Standardized risk assessment methodologies for some disasters (earthquakes, floods, and fires) are being adapted and endorsed by the government and applied by local governments as an integral part of the development planning process.

CMDRS/ IDSC developed a prototype integrated information system that contains an integrated database.

The database includes the following:

> General procedures manual for crisis and disaster management and their risk reduction on the national level.

> A number of models of specific contingency and preparedness plans/scenarios for crisis and disaster management and risk reduction, for instance:

- o Emergency plan to address Nile-related crisis and its risk reduction.
- o Emergency plan to address major fires and their risk reduction.
- o The national plan to manage disasters of flash floods in Egypt and their risk reduction.
- o The national plan to manage disasters of earthquakes in Egypt and their risk reduction.
- o National contingency plan for pandemic influenza.
- o Simulation scenarios in the field of crisis and disaster management and risk reduction.

In addition, Ministry of State for Environment Affairs has prepared the following plans:

- A National Oil Spill Contingency Plan.
- A National Contingency Plan for Environmental Disasters.

Ministry of State for Environment Affairs is also now finalizing the National Integrated Coastal Zones Management Plan.

The government established an information database for each governorate, including socio-economic information, administrative information, resources and physical infrastructure. The database includes information on vulnerable places exposed to hazards and risk. These databases are updated regularly. Presently, the preparation of both local and national risk maps (Geographic Information System "GIS") is progressing. Database is considered for development, focusing upon man-made hazards.

The Government has also established the National Center for Planning State Land Use. Amongst its mandate is to identify hazard prone areas and develop codes of practice and conditions for development. The Developing of Slums and Squatter settlements Fund was established in 2008 in order to survey and develop slums and squatter areas, resettlement plans for these areas, and to provide them with required infrastructure such as: water, sanitation and electricity supplies.

This Fund is responsible for designing required public policies for developing unsafe/ vulnerable areas, planning for resettlement in these areas where no standards for safety and protection are applied, especially those related to fires and building collapses.

Context & Constraints:

Sectoral database and GIS with adequate information exists. The ongoing efforts to build the first comprehensive database on areas at risk (hazards maps) and to build the first vulnerability database relevant to the climate change are to be maintained and developed in a short period. The quality of information and data is to be revised, standardized and updated. Similar efforts are to be provided for the local levels, this will require the establishment of efficient local system with adequate resources. Meantime building the capacity and technical infrastructure is to be a continuous practice covering all levels and sectors.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Systems are being developed at sectoral level, to monitor, archive and disseminate data on key hazards and vulnerabilities (as earthquakes and flash floods). However, archiving and dissemination of data on key hazards at the national level is within the mandate of the NCCMDRR supported by the CMDRS/IDSC and relevant institutions. However, the system needs to be supported to enable timely dissemination of information to allow decision makers and communities to take effective action to reduce risk.

Ongoing efforts are exerted to build the first comprehensive database on areas at risk (hazards maps), but updating of the information is not yet considered. Problems remain with regards to quality and information resolution.

Context & Constraints:

Systems at local levels are to be considered and functioning. This will be subject to resources availability and decentralization. These systems are to be linked to the national system once established. Meanwhile, the existing sectoral system is to be enhanced.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Early warning systems linked to some major hazards (earthquakes, flash floods and air quality) are in

place, with indirect outreach to communities. This warning system is linked mostly to the media and employs a variety of communication processes, with a structure of hierarchical relations through which communication flow.

Currently the CMDRS/IDSC has initiated and developed a system to enhance communication and serve at present as a focal point for national grid of communication, through the following:

- > Establishing a central operational room for crisis management in the IDSC (Focal Point).
- > Supporting ministries and governorates to establish operational rooms and enhance communications with the central operational room.
- > Setting up an emergency and communication system connecting all ministries and governorates with the main operational room.
- > Media broadcasts programs for raising community awareness with regard to disaster impacts and risk reduction, particularly on the following up of world wide disasters and impacts.

Context & Constraints:

Areas of weakness are to be identified prior to the establishment of a national early warning system, especially with regards to monitoring and response capabilities. The National Strategy for Crisis Management and Risk Reduction is to incorporate this urgent issue. The SAB is to continue its efforts and contribute to the identification of gaps and provide the necessary recommendations and plan of action to develop the EWS.

Core indicator 4

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

Level of Progress achieved:

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

Description:

National risk assessments take account of regional/trans-boundary risks, particularly of major natural and environmental risks.

Cooperation at regional and international levels has been initiated to assess and monitor regional and trans-boundary risks. However, the exchange of information and providing early warnings through appropriate arrangements are to be developed. This would imply having standard and accessible information and data on regional disaster risks, impacts and losses.

Egypt is a cornerstone for regional cooperation, considering its geographical location.

Cooperation with Arab Countries:

Egypt has actively participated in the process of developing a Draft Protocol on Arab Cooperation for Prompt Responses in Cases of Natural Disasters, Crisis and Emergency, under the umbrella of the Arab League. Besides, there are bilateral cooperation between Egypt and other Arab countries for cooperation in cases of disasters and crisis. Egypt cooperates with the Arab States overlooking the Red Sea and Gulf of Aden Region through its participation in the Protocol Concerning Cooperation in Combating Pollution by Oil and Other Harmful Substances in Cases of Emergency (1982).

Mediterranean Region:

Egypt cooperates with the Mediterranean countries through the United Nations Environment Programme (UNEP)/Mediterranean Action Plan (MAP), since it participated in the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency (1976).

Euro-Mediterranean Cooperation:

Egypt is participating in the Euro-Med initiative "Supports the Development of a Euro-Mediterranean System of Mitigation, Prevention and Management of Natural and Man-made Disasters, through technical assistance and capacity building".

Context & Constraints:

Although the cooperation for trans-boundary issues at regional bases is developed, vitalization of this cooperation is highly required. Cooperation in issues related to Marine Environmental Disasters has been

materialized in the region through the establishment of the “Mutual Aid Centers”. Similar approaches are to be regarded for major disasters. Exchange of information and providing early warnings through appropriate arrangements are to be developed. This would imply having standard and accessible information and data on regional disaster risks, impacts and losses.

Ghana (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Adequate identification of hazards, constant monitoring and assessment by the Technical Advisory Committees, as well as, linkages with stakeholders allow early warning. The identified hazards include: Geological, Hydrometeorological, Fires, Pests & Insects Infestations, Diseases & Epidemics, Nuclear & Radiological, Man-Made (Conflicts, vehicular/boat accidents). In 2007 Hazards and Vulnerability Maps were prepared for four hazard types namely: Hydrometeorological, Fires, Pests and Insects Infestation and Geological hazards.

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.

Cultural practices and attitudes serve as additional constraints.

Core indicator 2

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

Level of Progress achieved:

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

Description:

There are lead sectors or agencies to monitor, collect, collate and store data or information on relevant risks. Data especially on hydrometeorological and hydrological, etc risks and vulnerabilities are released on request. Available information or data are posted on the NADMO website: www.nadmo.org for both national and international publics.

With UNDP support hazards are being mapped to enhance monitoring and assessment for risk and vulnerability reduction

Context & Constraints:

Data/information are still considered confidential by many institutions and are not often published or even disseminated to other relevant sectors and institutions. Even, on request, much time is wasted due to the long and cumbersome processes involved in the release of data or information.

Record keeping of data or information is not widely practised. Therefore, it is difficult to get records for

years back.

Core indicator 3

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

Level of Progress achieved:

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

Description:

There are some seismographs for the monitoring of earth tremors/quakes. The Agricultural sector also has systems for the monitoring and early warning of army-worm infestations by using pheromone traps. Some major rivers also have hydrological gauges for flooding. The Meteorological Agency also taps into the World Meteorological satellite system and is therefore able to forecast weather conditions countrywide and give early warning through the media. Dam-spillings of local, national and international origin are given prior notification as early warning to vulnerable communities.

Context & Constraints:

The early warning systems are not widespread. For example, rivers in flood prone areas are not gauged. Many people rarely listen to the broadcast of weather warnings, especially in the poor and vulnerable communities.

There are no seismographs in the mining and quarrying communities. Only three (3) analogue seismographs are currently functioning in the entire country.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Ghana is a member of the African Union (AU) and the sub-regional grouping, the Economic Community of West African States (ECOWAS) and abides by the AU and ECOWAS conventions on disaster risk reduction, especially in the area of trans-boundary collaboration.

Ghana shares information with neighbouring countries such as Burkina Faso on hazards such as Cerebro spinal meningitis, Anthrax and flooding. Specifically Ghana receive early warning from the operators of the Bagre Dam in Burkina Faso before spilling. Ghana also exchanges information of Pests and Insects hazards such as African Swine Fever, Locust Invasion, Avian Influenza with Togo and Cote d'Ivoire.

Context & Constraints:

Elaborate policy agreements do not exist between Ghana and the neighbouring countries. Language is a serious problem for collaboration in view of the fact that Ghana, an anglophone country is surrounded by francophone countries. Besides, information for early warning are routed through the Ministry of Foreign Affairs, and thus delays time and early warning. There are no common facilities or equipment for the exchange of weather warnings, locust invasions, etc.

Kenya (in English)

Core indicator 1

National and local risk assessments based on hazard data and vulnerability information are available and

include risk assessments for key sectors.

Level of Progress achieved:

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

Description:

Vulnerability information has been mapped.

Context & Constraints:

It is an exercise that needs experts and funds.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Information dissemination is easy.

Context & Constraints:

But lack of awareness campaign make locals ignorant on key hazards surrounding them.

Core indicator 3

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

The Kenya Metrological Department gives warning to weather related hazards. Kenya Food Security Monitoring System, Geology Department and Nairobi University monitors' earthquake and stress on the ground, floods being monitored by Western Kenya Flood Mitigation Project (WKFMP).

Context & Constraints:

Funds to finance local Radio stations for information dissemination and Earlywarning.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Risks include; competing for pastures and grazing land.

Context & Constraints:

Lack of adequate rainfall and the locals way of life of keeping large herds of cattle.

Madagascar (in French)

Core indicator 1

National and local risk assessments based on hazard data and vulnerability information are available and

include risk assessments for key sectors.

Level of Progress achieved:

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

Description:

L'axe stratégique 3 de la SNGRC stipule la nécessité de la mise en œuvre d'un système d'information exhaustif en GRC au sein du BNGRC. Ce dernier a bénéficié d'appuis de différents partenaires depuis 2000, ce qui a permis de mettre en place le Système d'Information sur les Risques et des Catastrophes (SIRCat). Des analyses et des cartographies sur les aléas naturels (climatiques, hydrologiques et invasions) sont disponibles. Les analyses sont le fruit de collaboration de tous les acteurs clés dans le secteur (météo, ministères clé, intervenants, communautés, ...) réunis en task force par aléa. Des analyses de vulnérabilité existent aussi mais ont besoin d'être mises à jour.

Context & Constraints:

Il y a une difficulté de mise à jour des analyses et des informations sur la vulnérabilité. Parmi tant d'autres, voici quelques éléments de blocage dans la mise à jour de ces analyses et ces cartographies :

- Insuffisance des ressources.
- Insuffisance de données désagrégées au niveau administratif le plus proche de la population : Commune, voire Fokontany (regroupement de hameau et de village)

La réalisation des enquêtes, pour permettre de sortir des analyses, nécessite un gros budget. Elle dépend aussi de la disponibilité et l'accessibilité des données de base. Enfin, lors des enquêtes nationales effectuées par les différentes entités sectorielles, la dimension GRC n'est pas prise en compte.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Un outil d'évaluation initiale des dégâts suite au passage d'une catastrophe a été élaboré, testé et rendu disponible. Les communautés locales ont par ailleurs bénéficié d'un renforcement de compétences dans l'évaluation initiale des dégâts. Cet outil d'évaluation des dégâts se base sur des enquêtes physiques, sociales, économiques. Cette année, le pays, en collaboration avec le GFDRR, la Banque Mondiale et les Nations unies a lancé le processus d'évaluation des dommages et pertes selon la méthodologie DALA. Des outils de communication adaptés aux compétences et capacités locales telles les radios manivelle, le BLU, les drapeaux rouges pour cyclones, ... ont été élaborés, disséminés et renforcés pour permettre aux communautés de recevoir et de diffuser des informations à temps.

Context & Constraints:

Madagascar manque de ressources, vu l'immensité du pays. Certains matériels performants ne sont pas non plus adaptés à la situation de certaines parties de l'île comme les nombreuses communes isolées sans infrastructures électriques et enclavées.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Le Système National d'Alerte Précoce (SNAP) est de plus en plus fonctionnel. Sa structure comprend le niveau central, régional et communal. Le SNAP relate tous les indicateurs de vulnérabilité d'une population donnée (sociaux, économiques, physiques, environnementaux, infrastructures, ...). Afin d'assurer la participation communautaire et pour que la population soit impliquée dans le développement, l'Etat donne un rôle et une responsabilité prépondérants aux fokontany, de ce fait la mise en place de la structure opérationnelle du SNAP à ce niveau est en cours de préparation. L'évaluation, l'analyse et la mise en cohérence avec le NVAC/SADC est aussi en cours. La collaboration et la coordination entre les services techniques pour chaque aléa et le BNGRC ont permis de mettre en place un système d'alerte qui avertisse à temps les communautés sur la survenance probable d'un aléa comme le cyclone, l'inondation, évacuation acridienne,

Les alertes au tsunami avec les centres internationaux sont opérationnelles grâce à l'acquisition des moyens matériels adéquats.

Context & Constraints:

Malgré la validation du document de référence national sur l'Alerte Précoce à Madagascar, le SNAP ne dispose pas d'un cadre institutionnel.

On constate également une disparité des initiatives des acteurs clés, en particulier les bailleurs de fond dans l'appui au gouvernement pour la mise en œuvre effective du SNAP.

Core indicator 4

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

Level of Progress achieved:

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

Description:

L'entrée de Madagascar dans la SADC a en partie accéléré ce processus. Des démarches de partenariat et de mise en cohérence des mécanismes d'évaluations des risques sont en cours. Quoiqu'il en soit, le système mis en place par Madagascar est une bonne base pour répondre aux exigences de cette prise en compte au niveau régional et transrégional.

Context & Constraints:

Le gouvernement malagasy favorise la capitalisation des acquis plus que la mise en œuvre de nouvelles structures parallèles.

Mais l'insuffisance de ressources et de capacités influence énormément les réalisations, étant donné que le BNGRC est sollicité par beaucoup de partenaires en GRC.

Malawi (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

National and local risk assessments have been conducted by different organisations but not in a systematic and coordinated manner and as such no comprehensive hazard profile has been developed for the country. Plans, however, are underway to conduct a national hazard and risk mapping exercise starting with disaster prone areas. The Department of Surveys has developed a project proposal for the hazard and

risk mapping exercise.

Context & Constraints:

1. Lack of financial resources for undertaking the hazard and risk assessment exercise. Expertise is available in the country in the Departments of Surveys, Physical Planning, Meteorological Services and Ministry of Irrigation and Water Development to undertake the exercise. What has been lacking is financial resources. A donor is yet to be identified for the project proposal that has been developed.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Some monitoring system is in place and data is being collected on social economic vulnerabilities of the country e.g the Malawi Vulnerability Assessment Committee(MVAC) within the Ministry of Economic Planning and Development. The DoDMA maintains a disaster profile which records disasters that have occurred, impact of the disaster and action taken to assist those affected. The profile is being improved into a data base and the work will be completed in early May 2009.

Context & Constraints:

1. Commitment of members to activities of MVAC. MVAC is a multi sectoral committee with representation from government, NGOs and UN agencies. For the committee to undertake its activities efficiently, there is need for commitment from members to make themselves available when needed.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Early warning systems for specific hazards exist but there is no comprehensive early warning system for all hazards. The Department of Meteorological Services provides seasonal forecasts and weather bulletins which provide early warning for food security and floods. Ministry of Irrigation and Water Development provides monitors water levels which provide early warning for floods. Dissemination of the EWS to communities is a challenge although it has worked at times. Sometimes, communities do not access the information timely for its utilisation hence they end up being affected by disasters. A recommendation has been made to set up an Early Warning Systems sub committee for all disasters under the National Disaster Preparedness and Relief Committee.

Context & Constraints:

Lack of a comprehensive effective integrated early warning system for all hazards. This is likely to be addressed when the sub committee being proposed is established.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Since national and local risk assessments are yet to be undertaken, transboundary issues have not been taken into account. However, when the assessments will be undertaken, transboundary issues would have to be addressed since some disasters affect both Malawi and its neighbouring countries such as Mozambique and Tanzania. An example is the flooding of Songwe river in Karonga which affects areas in both Malawi and Tanzania.

Context & Constraints:

Lack of resources to undertake national and local risk assessments

Mauritius (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

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

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

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

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

Context & Constraints:

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

Core indicator 2

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

Level of Progress achieved:

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

Description:

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

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

Context & Constraints:

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

Core indicator 3

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

Level of Progress achieved:

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

Description:

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

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

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

Context & Constraints:

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

Core indicator 4

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

Level of Progress achieved:

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

Description:

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

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

Context & Constraints:

No significant constraints have been identified.

Mozambique (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Several studies on risk assessment and vulnerability information were done by INGC in collaboration with FEWSNet and UEM on disaster preparedness and response in the Limpopo Basin where SAHIMS ATLAS was produced. The SAHIMS ATLAS offers easy access to maps, charts and images pinpoints the different types of disaster than can affect the Limpopo river basin. The most frequent disasters are droughts followed by floods and at last the cyclones. The flood Risk Maps developed by Water Administration unit, ARA-South, in the Limpopo and Incomati Basin where aimed in minimizing loss of life and property by warning people of the likelihood and size of a flood to allow timely evacuation, and delivery of property or stock to higher ground. Those flood risk maps where divided into three categories namely:

Flood Level 1 (Minor Flooding): Causing inconveniences such as closing of minor roads and the submergence of low level bridges prompting removal of pumps located in places adjacent to the river.

Flood Level 2 (Moderate Flooding): This causes the inundation of low lying areas requiring the removal of stock and the evacuation of some houses. Main traffic bridges may be closed by floodwaters

Flood Level 3 (Major Flooding): This causes inundation of large areas, isolating towns and cities. Major disruptions occur to road and rail links. Evacuation of many houses and business premises may be required. In rural areas widespread flooding of farmland is likely.

In other hand, comprehensive national food security vulnerability analysis was done by SETSAN in 2005 with WFP support and is available in SETSAN website.

Context & Constraints:

As Mozambique is regularly affected by floods, complete and comprehensive risk analysis has to be done in all 13 river basins out of only two. In other hand, there's a need for a better coverage of risk maps and to ensure that they are properly used as an essential tool for the planning process. In the most cases, when the risk assessments activities are in progress and part of the relevant stockholders are not involved. They are in most cases involved in the implementing stage. As a result, some communities that are focus of the assessments do not accept the mitigation measures recommended by those studies. Lack of community training in using and interpreting of those tools is also deep as the creation and training of Local Committees for Risk management does not cover the whole country yet and simulation exercises are still reduced and limited to small areas.

There's also a need to accompany the country risk assessment by establishment of national information system where historical relevant events data is managed and disseminated.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The National Directorate of Waters of the Ministry of Public Works and Housing is in a good pace to establish a full coverage of the major rivers basin with monitoring systems and in time information dissemination. The implementation of forecasting tools such as Telemetry (which is a system composed by 8 RTUs communicating over a VHF radio frequency to the control system at the ARA-Sul) in the Limpopo and Umbeluzi River Basins, the SADC Hycos in the Zambezi, Save and Maputo River Basins, the integrated Flood forecasting and early warning in the Limpopo River, the establishing of Remote Sensing analysis for rainfall estimation and the improved capacity of cyclone monitoring at the National Institute of Meteorology may all together be used to show great advances in Mozambique in relations to monitoring of Floods, Droughts and Cyclones, therefore contributing for disaster mitigation. The country has seventeen telemetric stations in the Limpopo Basin seven in Umbeluzi Basin 3 Hyco stations in the Zambezi, Maputo

and Save Basins. The country has also about 300 working meteorological stations. The capacity of the National Institute of Meteorology (INAM) is strengthened for cyclone monitoring and information dissemination is properly done by Government and private media, radios and Television and local community radios.

Seismological stations are being upgraded and installed in the most seismic activities locations, such as Changalane (Maputo province), Massangena (Gaza) Manica (Manica Province), Lichinga (Niassa province) and national online receiver was placed in Maputo since 2007.

Context & Constraints:

It is hampered by human and financial resource limitations, especially on implementation of new technologies. Information is also dispersed within several departments making continuity of recording and dissemination very difficult. Not all meteorological stations are in good working conditions and rainfall gauges do not exist in many parts of the country. Lack of historical information record is a deep concern. The creation of a national information system and training of data base management staff must be priority in a short term.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The responsibility for flood forecasting and warning services in Mozambique rests with the National Directorate of Water in collaboration with Regional Water Authorities, National Institute of Meteorology and National Institute of Disaster Management. The effectiveness of the flood warning system depends on the cooperative involvement of the National Television, The national and the community radios and, Local Government working with flood-threatened communities. The responsibility for Cyclone monitoring and warning services in Mozambique rests with the National Institute of Meteorology in collaboration with Regional Center of Meteorology and National Institute of Disaster Management. The National Institute of Disaster Management (INGC) is the Government institution which coordinates the development and operation of early warning services all over the country and has representations in all provinces and 3 regions and some districts.

The community's radios, the local committees of risk management, the National Television in urban areas, the media, the river basin committees altogether, play an important role in dissemination of the information. There are also other tools for disaster warning such as flood risk maps developed by ARA-South in collaboration with FEWSNET, and flood economic zone in the low Limpopo developed by FEWSNet where the main objective is warning community in advance by locating safe and unsafe areas before disaster occur. A flood risk map is presently under development for the regions of the Save, Umbeluzi and Maputo rivers.

Mozambique has implemented a new cyclone early warning system using blue, yellow and red colors. Blue color is forecasting an event within 48 to 24 h, yellow color within 24 hours and red color within 6 hours. The food security early warning system developed by SETSAN, with the objective of analyzing the vulnerability among different communities is a good achievement toward improving early warning systems in Mozambique.

Context & Constraints:

The system is hampered by a lack of community awareness programmes for dissemination of the information and generally inadequate contact between expert staff and the communities. Another problem is the inadequate training of local people in the warning cycle and poor knowledge of roles and responsibilities. Poor coordination within the national institutions, lack of continuity in operations, in most cases the Mozambican Early Warning System is operating only during the rain season.

Lack of flexibility: In Mozambique the process of information exchange is still not flexible. An example is the situations between the National Institute of Meteorology and the National Directory of Water where, The first Institution is responsible by predicting expected rainfall, important to feed the hydrologic model for stream flow forecasting, but in most cases the National Directory of Water does not use information from National Institute of Meteorology preferring other sources, such as of the US Geological Survey. Lack of continuous funding, lack of maintenance and no insurance of equipment and operations is also major hindrance.

Core indicator 4

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

Level of Progress achieved:

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

Description:

There Mozambican national and local risk assessment takes account of the regional/trans- boundary risks but this cooperation is weak because of absence of trans-boundary agreements: One good example on trans-boundary risk assessment are the joint studies undertaken by the governments of the Republic of Mozambique, the Republic of South Africa and the Kingdom of Swaziland collaborating in the exchange of information, through the Tripartite Permanent Technical Committee (TPTC), which was formally established on 17 February 1983. The TPTC is responsible for providing advice to the shared watercourse. It states on equitable utilization and management of the shared waters. It was identified in the Interim IncoMaputo Agreement (IIMA), (August 2002) that a “Comprehensive Agreement” is required in order for the watercourse states to participate more effectively in the utilization, development and protection of the shared waters of the Maputo River Basin. The IIMA provided a timeframe for the development of a Comprehensive Agreement for the equitable utilization and management of the shared waters of the Maputo River. The Comprehensive Agreement was envisaged to be in place by 2010. Another initiative is SADC SARAP (SADC SUB-REGIONAL ACTION PROGRAMME) that is a relevant program dealing with desertification and land degradation control. The Pungue Joint Study undertaken by Zimbabwe and Mozambique on Pungue River Basin in 2005, for integrated water resources management was a good starting point but no progress is sustained so far.

The Southern African Water Vision adopted in March 2000, which promotes “equitable and sustainable utilization of water for social and environmental justice, regional integration and economic benefit for present and future generations”, sees water as a driving force to a better future for the peoples of Southern Africa. The Revised SADC Protocol on Shared Watercourse Systems whose overall objective is “to foster closer cooperation for judicious, sustainable and coordinated management, protection and utilization of shared watercourses and advance the SADC agenda of regional integration and poverty alleviation is a progress.

Context & Constraints:

There is a lack of agreements among all countries regarding to integrated water resource management. Some countries did not ratify the SADC new act on non navigation.

Most of the water resource management decisions such as emergency/disaster management measures in the SADC region are still under endless discussions.

Senegal (in French)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Le Sénégal vient d'élaborer son plan de contingence national avec la participation des Services étatiques en charge de la RRC, de la société civile, du réseau des parlementaires, des Agences humanitaires du Système des Nations Unies (PAM, OCHA, etc.), de la Fédération Internationale de la Croix Rouge et du Croissant Rouge (FICR), de la Croix Rouge Sénégalaise, de OXFAM, etc. Cet exercice a permis d'identifier les risques de catastrophe qui menacent le pays et, en fonction des enjeux, de retenir trois scénarii qui feront l'objet du plan de contingence, à savoir, (1) les inondations, (2) l'invasion acridienne et (3) les épidémies (choléra, méningites, etc.).

Context & Constraints:

Le plan de contingence reste à être finalisé car le délai imparti ne permettait pas de conduire l'exercice avec un objectif didactique et de traiter les deux derniers scénarii retenus. Pour cette raison, le plan de contingence n'est pas encore opérationnel et nécessite quelques travaux d'atelier pour le finaliser.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Beaucoup de structures gèrent une base de données en matière de RRC, mais ne sont pas encore arrivées à mettre en commun leurs moyens dans le cadre d'une plateforme nationale de RRC.

Context & Constraints:

La collaboration entre les différents systèmes pourra être formalisée dans le cadre de la plateforme nationale de RRC.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Une étude a été menée pour mettre en place un système d'alerte précoce (SAP). Les résultats de cette étude feront l'objet d'une vaste diffusion et d'un partage avant l'adoption finale du SAP.

Context & Constraints:

Les ateliers de partage et de validation des résultats de l'étude sur la mise en place du SAP doivent être poursuivies pour arriver à un SAP fonctionnel.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Des mécanismes régionaux de RRC existent dans le cadre de la CEDEAO et de l'Union Africaine. Cependant, les relations avec ces organisations sont encore très timides.

Context & Constraints:

Les démarches déjà menées dans le cadre de la coopération Sud-Sud doivent être poursuivies. La collaboration entre pays transfrontaliers sera encouragée avec l'appui de structures comme l'UNISDR, OCHA, PAM et FICR qui ont une expérience avérée dans le domaine de l'aide humanitaire et de la gestion des risques de catastrophe entre pays voisins.

Sierra Leone (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

LEVEL FOUR. A lot has been achieved in this direction but there are some limitations with regards to capacities and resources of the institutions given this responsibility. 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 make 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 allow communities to take effective action to reduce disaster and environmental risks. The provincial and District Disaster Management Committees are there to ensure that readily available information on impending disaster is timely communicate to the community for necessary actions to save lives and properties. Even though the National Hazard Profile is available and vulnerability assessments are been done, yet there is the strong need to update the information and incorporate new/emerging hazards at least quarterly unlike the bi-annual being done in the country. Undertaking such ventures is expensive and there is not money set-aside for such. As such there is lack of resources. Communities generally cannot afford modern and technological upgraded 'capacities' but can make do with the localised capacities that cannot suffice in all instances of tackling the many hazards that might befall them. Next is the need to conduct regular training to improve on capacity of national authorities and partner agencies to refresh their knowledge

Context & Constraints:

Even though the National Hazard Profile is available and vulnerability assessments are been done, yet there is the strong need to update the information and incorporate new/emerging hazards at least quarterly unlike the bi-annual been done in the country. Undertaking such ventures is expensive and there is not money set-aside for such. As such there is lack of resources. Communities generally cannot afford modern and technological upgraded 'capacities' but can make do with the localised capacities that cannot suffice in all instances of tackling the many hazards that might befall them. Next is the need to conduct regular training to improve on capacity of national authorities and partner agencies to refresh their knowledge.

Core indicator 2

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

Level of Progress achieved:

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

Description:

There has been remarkable progress made in this sector. Hazards and vulnerabilities are monitored and information is sent to the communities to ensure measures are taken to limit the impacts. Hazard profiles are continually being reviewed to include new vulnerabilities based on the changing times and circumstances. This information is shared in the disaster management committees nationwide which in turn disseminate the information to the people for an effective disaster management system.

Context & Constraints:

One of the major constraints is that of accessibility to some remote areas in the country. Even though the information might be readily available, another setback is the absence of trained personnel in the rural areas. Maintaining/retaining trained and qualified volunteers in remote and underprivileged areas can be really tough.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The level is THREE. There is an overwhelming institutional commitment, however, the main provider of early warning for natural disasters, the national meteorological services got vandalized during the war and has yet been replaced. With regards to man-made emergencies, the services of local radio stations are normally requested for since the disaster management department doesn't have a designated channel of its own.

Context & Constraints:

Re-equipping the meteorological station, recruiting and training of more personnel plus an improved communications network/information channel to be provided for the coordinating institution.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The level is 4. National policies have been developed, in collaboration with key partners. Because many of these partners have contributed to the process of developing such policies, ownership and a clear knowledge of institutional /departmental etc roles and responsibilities during disasters has been made possible. Sub-regional meetings are also held on a regular basis to develop sub-regional hazard/vulnerability/risk assessments with sub-regional response plans. These resources, both human and material are designed in such a way that they could be requested for at very short notice by any member country as and when the need arises. For localized disasters/risks that have the propensity to become sub-regional, meetings have also been done at various levels to map out contingency plans to address this. One challenge encountered here though is that not all of Sierra Leone's immediate neighbours have conducted national hazard/risk/vulnerability profiles. Thus writing out contingency plans hasn't always been reflective of the real issues facing those countries. An example could be cited of recent flooding that swept across from Sierra Leone to Liberia. It is flooding in a border town near any of the neighbouring countries. Thus, Sierra Leone is part of the Mano-River and the ECOWAS (sub-regional and regional bodies) that have strong cooperation in terms of risk assessments and reduction activities. Contingency plans are in place to cover inter-regional disasters and funds and stockpiles are readily available to support those plans.

Context & Constraints:

The country's meteorological systems were virtually destroyed during the civil war, leaving a very weak early warning system in place, especially with respect to natural disasters. In addition, there have been no dedicated emergency response funds set aside for use by implementing Government partners such as ministries/departments/agencies. This causes a real challenge in ensuring effective and timely response during emergency periods. In some instances authorities tend to turn a blind eye to certain malpractices forgetting what dire consequences might result in such action. The enforcement of laws governing environmental protection and other policies, which, if not implemented cannot only result in national emergencies but are also inclined to cause trans-national crises. Another problem could be that of accessing funds. Authorities find it difficult to see the benefit of investing in DRR because these are the disasters that did not happen. Sharing the experiences of other countries, which have taken a similar path, could help. The need for some intervention to put in place early warning systems and for emergency funds to be set aside or use when the need arises cannot be overemphasized. Finally, the need to commit funds to support the regular update/review hazard/risk/vulnerability assessments is almost always a challenge, especially in a situation of limited resources competing demands

Swaziland (in English)**Core indicator 1**

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

Level of Progress achieved:

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

Description:

No risk assessment is being undertaken. The only assessment that is being done is the annual vulnerability assessment which focuses mainly on issues of the availability of food and water at the moment

Context & Constraints:

There has been some capacity constraint as the National Disaster management Agency has been operating with a skeleton structure and was mainly focusing on relief efforts.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Establishment of the NDMA as the primary source of information. There will be an information and resource centre under the NDMA office

Context & Constraints:

capacity constraints. An information office will be recruited

Core indicator 3

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

Level of Progress achieved:

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

Description:

There are no proper structures in place.

Context & Constraints:

Lack of both financial and human resources

Core indicator 4

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

Level of Progress achieved:

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

Description:

We have not yet started to carry our risk assessments

Context & Constraints:

Capacity constraints

Tanzania, United Rep of (in English)**Core indicator 1**

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

Level of Progress achieved:

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

Description:

The PMO - DMD has finalized and produced a report on disaster risks and capacity needs assessment for Tanzania Mainland June, 2008. Report based on contributions from Regional and Local Government Authorities as well as agencies addressing disaster risk management.

The report identified available capacity and deficiencies of Disaster Management department and its key stakeholders in disaster risk management; provides a contemporary summary of the physical nature, impacts, distribution of hazards by agro ecological regions and frequency of occurrence of ten key hazards affecting Tanzania. These include technological, meteorological, geological and biological hazards and finally proposed capacity building programme.

The national Disaster Risks and Capacity Needs Assessment report assist with identifying and assessing hazards and risks to be addressed through national policies and plans, and the legislative frameworks. Local government Authorities undertake hazard and risk assessment as part of their risk management processes in environmental planning and while developing District Development Plans as well as District Agriculture Development Plans

The Ministry of Lands, Housing and Human Settlements Development - National Land Use Planning Commission (NLUPC) in July, 2008 has finalized and established a National Land use framework plan of 2008 - 2028. The framework provides for significant investment in research and development into helping land based sectors adapt to climate change. This includes research into modeling and methodologies to enhance the land based sectors evidential basis for disaster risk management with regard to climate change.

PMO - DMD in collaboration with Ministry of Agriculture - National Food Security Team have been carrying out annually Rapid Vulnerability Assessment (RVA) for food unsecured district in the country. After analysis the report is available for government and donors interventions.

Context & Constraints:

Challenges include concern in improving coordination and understanding of inter dependencies across sectors. Others include improving ability to assess the full range of consequences and vulnerabilities, especially secondary impacts, comparative economic analysis and assessing non monetary costs.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Institutional commitment attained, but achievements are neither comprehensive nor substantial. There is no formal centralized system for all hazards and/ or disasters data, but different systems for monitoring the main natural hazards exist. Tanzania Bureau of statistics collects and disseminates data on a more regular basis. Central and local government, Institutions, Agency and NGOs collect data relevant to their responsibilities, for example the Tanzania Meteorological Agency (TMA) provides information on weather and climate as part of early warning and drought risk monitoring. Ministry of agriculture through early warning unit provides information and data on pests, rainfall for crop production, crop status and other externalities that might affect food security. The Ministry of Health and Livestock has surveillance system to monitor human and animal epidemics.

Context & Constraints:

Improve coordination and developing data sharing protocols and mechanism

Core indicator 3

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

Level of Progress achieved:

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

Description:

Effective disaster manageability depends on the level of development of warning systems. The severity of disaster consequences depends on the interplay between the warnings issued and the degree of public response to the warning.

The TMA monitor and provide warnings about severe weather events. Warning messages are communicated to relevant response agencies, and necessary to the public via media. For example, whenever necessary community always receive information on drought, floods, human and animal diseases. Response agencies develop their local systems as an extension of national network. Nevertheless the UN agencies in Tanzania have formed an emergency coordination group which receives and disseminate disaster information. Disaster coordination Group focal point is responsible to communicate with relevant government organs, specifically PMO soon after receiving any information on hazard and disasters

The early warning system in Tanzania include: the Tanzania Meteorological Agency; Seismology unit under the Ministry of energy and Minerals, the Emergence Preparedness and response Unit (EPRU); Plant protection, Food security Department and Famine Early Warning System Network (FEWS NET) under Ministry of Agriculture, food security and cooperatives are mandated with the obligation of early warning. Information on hazards/disasters such as drought, floods, and diseases can be passed on to the community through the system.

Context & Constraints:

TMA which deals with early warning systems for meteorological events is generally well established. Ongoing challenge is establishing a National Emergency Operation Centre for appropriate warning

systems and response arrangements for future disasters. For effective dissemination and use of early warning information public education programs at both the national and local level is necessary.

The efficiency of these units (early warning systems) is inadequate as they lack equipment, personnel and funds. Similarly traditional prediction mechanisms have not been developed to provide reliable information. In general there is no comprehensive warning system in the country. Therefore another challenge includes warning systems for all disasters to be developed and strengthened so as to ensure timely dissemination of information.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Tanzania shares land boundaries with other countries. Hazards and risks assessment reports mainly based on national and local exercises only. Government, regional and local agencies consider cross - jurisdictional boundary issues in their disaster risk management and emergency planning (ref. National avian influenza strategic plan & simulation on Avian Influenza in July 2008) Tanzania cooperates inter - regionally and globally within international fora that undertake risk assessments and set policy and best practice standards, to manage regional and global hazards and risks.

For example, working with CDC under sponsorship of USAID with Schools of Public Health in East and Central Africa. Developing curriculum and training students and workers in field of public health on disaster preparedness and response as well as facilitating districts to prepare disaster response plan.

Virtually no part of the world is immune to disasters. Their nature, characteristics and consequences transcend beyond national boundaries. Since countries have limited capacity to deal with disasters, sustainable solutions could be cost effective if tackled internationally through regional collaboration frameworks. Tanzania is a member of East African Community (EAC), South Africa Community (SADC), African Union (AU) and United Nations (UN). In each of these bodies there is a strong emphasis for member states to put in place workable arrangements for disaster risk management. The United republic of Tanzania take part in different foras majoring in disaster management with workable arrangement activities.

Context & Constraints:

The challenge faced with these regional collaborative bodies is the funding and marginalization of disaster risk management activities. The government to ratify and implement the international conventions on disaster reduction and other conventions of relevance to address transboundary disaster problems. Sensitization, lobbying and advocacy for policy makers to assure budget for transboundary disaster risk reduction

Togo (in French)

Core indicator 1

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

Level of Progress achieved:

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

Description:

aucune action en matière d'évaluation des risques au niveau national et même locale. cependant avec

l'appui du Programme des Nations Unies pour le Développement, des études seront engagées pour le diagnostic des risques au niveau national et local assorties d'une cartographie nationale.

Context & Constraints:

les moyens financier pour l'établissement des cartes régionales plus réalistes

Core indicator 2

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

Level of Progress achieved:

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

Description:

des systèmes ne sont pas encore mis en place pour vérifier cet indicateur. mais le ministère a un mensuel d'information, "journal l'Environnement" qui constitue le canal d'expression du département et particulièrement des données liées à la prévention des catastrophes. ces systèmes seront plus fonctionnels après les études sur l'évaluation des risques

Context & Constraints:

renforcement des capacités du secrétariat technique de la plate forme nationale.

Core indicator 3

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

Level of Progress achieved:

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

Description:

le Togo ne dispose pas encore du système d'alerte précoce malgré l'engagement institutionnel

Context & Constraints:

contraintes financières

Core indicator 4

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

Level of Progress achieved:

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

Description:

aucune action dans ce sens

Context & Constraints:

contraintes financières

Zambia (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

The Comprehensive Vulnerability Assessment and Analysis has not been done. However, the process of conducting a vulnerability profiling to create vulnerability baseline information is underway. The concept paper and instruments for the assessments have already been developed and sector submissions have been received. Sector submissions contain information such as what the sectors have identified as hazards pertaining to their operation, sources of information on the identified hazards, what sector based gaps in information exist and how those gaps can be filled. Some sectors such as health, environment and agriculture have already developed their vulnerability indicators. The CVAA field based activities are scheduled to take place from August to September, 2009.

Context & Constraints:

The CVAA will form the initial impetus for pushing the DRR agenda forward in the country as the outputs of the survey will be the main inputs in the mainstreaming of DRR in development programming process. However, the process is hampered by inadequate funding to carry out the Comprehensive Vulnerability assessment and Analysis (The budget estimate is about US\$ 2 million).

Core indicator 2

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

Level of Progress achieved:

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

Description:

The Government through DMMU has developed the Emergency Operations Center (EOC) which is supposed to house a depository of information related to vulnerability, risks and hazards among other things. The EOC is still being equipped so that it serves as a nerve center for the Early Warning System and monitoring of identified hazards in the country.

Context & Constraints:

The compilation of hazards in the districts has not been done yet as this is tied to the CVAA outputs.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The Early Warning Systems for major hazards are in place in Zambia. DMMU is the body that coordinates all Early Warning activities in the country. The Zambia Metrological Department gives warning with regard to weather related hazards such as droughts and floods. The Ministry of Energy and Water Development also gives hydrological data which aids in the determination of floods and other hazards in the country. The National Early Warning Unit in the Ministry of Agriculture working with institutions such as FEWSNET gives early warning information on Food Security.

DMMU is currently working on an Early Warning Systems Project whose goal is to empower individuals and vulnerable communities threatened by floods and other hazards to act in sufficient time and in an appropriate manner. It is hoped that the move will lead to minimizing of personal injury, loss of life and damage to property and the environment. The Project is funded by the Government of the Republic of Zambia.

Context & Constraints:

There are efforts to try and use local radio stations to disseminate early warning information at the district

and community levels. However, resources for the districts for carrying out this activity are rather limited.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Risks include transboundary diseases for both human and livestock.

Context & Constraints:

The country has had people coming in from other countries fleeing conflict and other vices from their own country and coming with contagious diseases. The country faces the risk of out-breaks of diseases like cholera, avian influenza and various types of plague from its neighbours.

Animal diseases such as Contagious Bovine Pleural Pneumonia (CBPP) mainly come in from North Western border of the country and have been difficult to contain. There are plans to embark on vaccination exercises that involve neighbouring governments doing their own vaccination of these trans-boundary diseases at the same time. Protocols are however yet to be signed.

Americas

Anguilla (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Pilot of HRV assessment approach undertaken in Summer 2008

Context & Constraints:

Comprehensive hazard, risk and vulnerability assessment to be undertaken summer 2009.

Results found that base information is old and was developed as a part of larger regional initiatives and not applicable to a local study.

Data also incorrect on a custom spheriod in the GIS and not open to easy editing or extension of the features.

Attributes almost non existent.

Flood boondaries are "estimates" based on visual only.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Will be improved with H/R/V assessment 2009

Programme in place to share risk information with large developers, implementation maturing;

need for better data for gis and more detatil H/R/V analysis;

need to run a storm surge and wave model for a north west hurricane not only the north east and south east paths.

TAOS in use for storm monitoring for 3rd season, it is maturing.

Context & Constraints:

time, staff and experience

Core indicator 3

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

Level of Progress achieved:

4 - Substantial achievement attained but with recognized limitations in key aspects, such as financial

resources and/ or operational capacities

Description:

Robust backbone system in place, tested and documented.

radio interrupt, text to voice system, internal computer pop-up in place.

Needs public registration component, education, training and outreach for 2009.

Context & Constraints:

Extremely limited staff and no knowledge of such systems outside the director and a radio technician.

Training materials just generated by the RDS provider so training to start soon.

Communications Officer coming online April 2009.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Relationships need to be formed via the tri partide with Dutch Sint Maarten and Saint Martin. Progress is starting on this via an EU funded initiative put together by the OCTs

Context & Constraints:

Travel budgets and need for commitment of resources from other agencies.

Argentina (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

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.

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

Context & Constraints:

El debido archivo y acceso a dicha información, aún incompleto, es un reto que ha sido identificado y que tratará de superarse.

Y, 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.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Por lo mismo expuesto en el anterior ítem, se puede decir que los sistemas están habilitados, aunque el nivel de conocimiento general de la comunidad sobre esos resortes aún es escaso y, en algunos casos, hay desconocimiento sobre las fuentes de datos disponibles entre los mismos actores

Context & Constraints:

Revertir la situación de desconocimiento de la comunidad sobre las fuentes de obtención de datos que se encuentra ya disponible, será un reto.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Los logros alcanzados, a través de los variados actores involucrados tanto en el Grupo de Proveedores de Información Primaria como en el de Monitoreo de Alertas, y algunas bases de datos consolidadas (como la del Instituto Geográfico Nacional y otros) permiten ser optimistas en este capítulo, sin perjuicio de lo cual las limitaciones fundamentalmente presupuestarias constriñen el desarrollo de esta capacidad.

Context & Constraints:

Expandir el conocimiento sobre estas capacidades y mejorar las contribuciones presupuestarias para su desarrollo, será un reto.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Algunas instituciones (Casco Blancos, Sísmicos, Actividades Espaciales, etc.) suelen trabajar con referentes regionales y en tal punto comparten experiencias o realizan capacitaciones tanto a nivel de los países del Mercosur como de Latinoamérica en general, pero son en rigor de las pocas instituciones locales que lo logran.

En estos casos, se han consolidado Redes Regionales a nivel LAC, pero se ha debido a políticas de dichos organismos.

El caso del volcán Chaitén (de Chile) que produjo daños sobre el lado argentino de la cordillera de los Andes, incentivó este tipo de intercambios a otras áreas dedicadas al tema.

La posibilidad de intercambiar experiencias con otras Plataformas Nacionales a nivel regional, seguramente mejorará este aspecto.

Context & Constraints:

Adquirir conciencia sobre que muchos riesgos de desastres pueden activarse más allá de las fronteras (como fue lo del Chaitén) es el reto sobre el que pivotear.

Bolivia (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Existen labores que de forma paralela vienen realizando las instituciones involucradas en la temática, tanto instituciones estatales como no gubernamentales.

El nivel de evaluación alcanzado simplemente se reduce a un mapeo de la incidencia de un fenómeno y no existe una cuantificación de población y áreas afectadas.

Context & Constraints:

Las Instituciones involucradas posiblemente están realizando duplicidad de información.

Falta de socialización, conocimiento y actualización por parte de las instituciones a la normativa existente sobre el tema de desastres ejemplo: Ley 2140 y DS 26739.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Existe un buen nivel en la información y el manejo de base de datos por parte de instituciones como el SENAMHI con 70 Estaciones hidrometeorológicas automáticas satelitales con comunicación en tiempo real, disponibles para diseñar SAT, Hidrografía Naval cuenta con 40 estaciones hidrométricas en tiempo real comunicadas a través de radios. El IGM cuenta con Redes Geodesicas y de Nivelación; el sector salud también realiza controles epidemiológicos. Sin embargo, estos monitoreos no tienen una incidencia directa en las acciones y manejo en lo que es vulnerabilidad y amenazas.

Se puede destacar el papel de las organizaciones no gubernamentales en la difusión y sensibilización sobre amenazas y vulnerabilidades.

Existe avances en relación al Sistema Andino para la Prevención y Atención de Desastres SIAPAD, cuyo nodo nacional en Bolivia se fundamenta en el SINAGER. Este Sistema está en fase de implementación y cuenta con el apoyo del Proyecto PREDECAN.

Se ha elaborado el mapa de vulnerabilidad sobre seguridad alimentaria en Bolivia, y evaluaciones de seguridad alimentaria en emergencias; acciones apoyadas por el PMA

Context & Constraints:

Para todas las redes de monitoreo, la principal limitación es el factor económico. Por este motivo, no se pueden habilitar nuevas estaciones o ampliar la cobertura de control.
Falta de coordinación interinstitucional entre organizaciones gubernamentales y no gubernamentales.
Es necesaria la vinculación del Sistema de Información Educativa en la plataforma del SINAGER (Nodo nacional del SIAPAD)

Core indicator 3

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

Level of Progress achieved:

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

Description:

Hidrografía Naval y SENAMHI realizan el monitoreo hidrológico en los principales cuerpos de agua del país, en los cuales se han definido niveles de alerta. El trabajo se centraliza en el aspecto hídrico relacionado con fenómenos hidrológicos extremos.

Existen proyectos de implementación de sistemas de alerta temprana (SATs) que están llevando a efecto instituciones estatales en coordinación con organizaciones no gubernamentales.

Context & Constraints:

El factor económico es el principal obstáculo para implementar sistemas de alerta temprana efectivos. No existe sostenibilidad de los recursos.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Instituciones gubernamentales están trabajando en algunas cuencas transnacionales tal el caso de la cuenca alta del Río Paraguay, cuenca del Río Pilcomayo (proyecto concluido) y cuenca del Río Bermejo. Se puede mencionar también en el altiplano, la institución binacional ALT que trabaja en la cuenca del Lago Titicaca, Río Desaguadero y Salar de Coipasa. Además existen instituciones no gubernamentales que están llevando a cabo proyectos al respecto como CARE en la cuenca del Río Tahuamanu.

Son acciones aisladas que no tienen repercusión a nivel nacional, ni en los planes ni políticas.

Existen acuerdos transfronterizos: Brasil, Paraguay y Bolivia y frontera Bolivia, Chile y Perú

Context & Constraints:

Cuando los proyectos impulsados por organizaciones no gubernamentales llegan a su conclusión, no existe continuidad por parte del Estado o las instituciones involucradas a nivel nacional, principalmente por el factor económico

British Virgin Islands (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Hazard Identification and Risk Assessment (HIRA) - The Territorial Hazard Identification and Risk Assessment process involves the identification of hazards and the assessment of risks to persons, public and private property, and structures. The data collected at the community/island level provides much of the data the Territory will use to produce its assessment of risk. The information collected during the HIRA will also be used for more detailed damage and loss estimation projections.

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. The regulations are currently being drafted to support the requirements within the Planning Act. The Planning Act requires certain developments to undergo Environmental Impact Assessment (EIA). The methods to undertake a Hazard Vulnerability and Risk Assessment have been incorporated within the requirements for the EIA. In addition, small residential developments and subdivisions are also required to undertake a hazard vulnerability assessment for properties that are located within the designated hazardous areas.

Context & Constraints:

Local resources to support the required assessments and provide technical expertise are lacking among the private and public sector.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Public Information, Awareness and Education programme area is established and seeks to reduce disaster vulnerability, by increasing the public's awareness, understanding and capability to anticipate and cope with the extreme conditions of hazards and their disastrous effects. This is achieved mainly through public education programmes, and the dissemination of information to the public – including both accurate and timely hazard/disaster information, media campaigns on various disasters and ensuring that accurate and timely weather and seismic information is available to the public.

The Mitigation and Planning Programme Area is established and involves the assessment and mapping and modelling of various hazards such as hurricanes, earthquakes, flooding, and landslides, etc., which are likely to affect the Virgin Islands (UK). This information provides the public and private sectors with the ability to develop appropriate hazard mitigation strategies and measures in order to prevent or reduce the occurrence of a disaster in the Territory. Public sector agencies and individuals within the community are responsible for the implementation of hazard mitigation activities in order to protect life and property.

Seismic monitoring is provided through a formal relationship with the Puerto Rico Seismic Network and the Strong Motion Sensor Programme at the University of Puerto Rico, Mayaguez. A network of seismic stations and strong motion sensors are located throughout the Territory.

Context & Constraints:

HVAs will be conducted and integrated further with the IA process. Moreover, these shall be strengthened further into the planning and development process. Capacity building and enhanced tools are envisioned for building code adherence and building authority enforcement.

It is recommended that a systematic application of Strategic Environmental Assessment (SEA) is implemented within the VI (UK) overarching government framework to help decision makers to achieve a number of important gains for achieving environmental protection objectives and advancing sustainable development. SEAs supports and improves development of policies, plans and programmes by providing assessment oriented inputs that highlight the relevant environmental and often also social and economic considerations. Cost benefit analysis of mitigation measures and risk reduction incentive schemes could be an be built in at the policy level through the application of an SEA within the context of development planning for the VI (UK).

Core indicator 3

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

Level of Progress achieved:

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

Description:

Early Warning System consists of state of the art technology managed by technically trained personnel and supported by the media through MOUs. In addition, a National Alert System is also in place that has legislative backing under the Disaster Management Act 2003. The DDM maintains and operates an Emergency Telecommunications Network consisting of some 70 stations located throughout the Territory. The NEOC is equipped with commercial and amateur emergency communication systems plus satellite phones are located on each island in the event that these networks fail. Agreements are also in place with the USVI to assist in this area if necessary. With the absence of a local Metrological Office, the DDM contracts weather monitoring services; and have established data collection capacity with the purchase and installation of a network of automated weather stations. Seismic monitoring is provided through a formal relationship with the Puerto Rico Seismic Network and the Strong Motion Sensor Programme at the University of Puerto Rico, Mayaguez. A network of seismic stations and strong motion sensors are located throughout the Territory.

Six (6) automatic outdoor warning sirens have been installed. Sirens are tested monthly and, at present, all are fully functional.

Four radio stations are set up to receive and transmit emergency broadcasts from the DDM.

36 Handheld radios, 30 Base Radios and their operators comprise the DDM VHF Emergency Network.

Context & Constraints:

BVI Cable TV will allow the use of ONLY three (3) channels (ABC, CBS, NBC) to transmit the “ticker” that would display weather information without disrupting regular programming, or the display of information that would demand immediate attention, preceded by an emergency broadcast bulletin indicator. Delays have occurred with regards to installing this system. To date, four of the six text-scrolling components have been installed, but an electronic linkage is needed. Numerous requests have been made to the Ministry of Communications and Works by DDM to obtain the operating rights to Channel 5 (VITV), which is currently off the air. We have so far not received any word in the affirmative. Thus, no emergency broadcast channel exists. Discussions are ongoing with the Telecommunications Regulatory Commission to address these issues in annual licence renewals.

Five Radio Operators offered to enhanced capacity to operate VHF and HF networks. BVI Amateur Radio League took part in simulation exercise Region Rap and played an important role by relaying information for some countries. BVIARL also took part in summer program for students by introducing participants to Amateur Radio and giving them opportunities to speak to Amateurs on radio. The installation of HF Amateur Communications Rig in DDM Radio Room will enhance the ability to communicate over long

distances during an emergency event via HF radio. There have been instances during disasters where HF is often the only and best means of communications into an area of post impact when all other forms of traditional communications equipment went down.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The VI (UK) CDM Strategy was also developed to be aligned with the CDM Regional Framework and the Hyogo Framework for Action. There is growing consensus among development partners and financial institutions on the need to harmonize and coordinate DRM programming in the Caribbean, and stakeholders have agreed to use the CDM framework as a key tool in this harmonization and coordination process. The CDM Framework effectively acts as the harmonization tool for a regional 'Programme Based Approach' (PBA) for DRM programming in the region. In this context, aligning the VI (UK) CDM Strategy to the Regional CDM Strategy has the dual benefit of being well coordinated with regional programming thrusts and being programmatically linked to critical aspects of the main window through which significant funding for CDM will emerge in the upcoming period. In this context, the VI (UK) CDM Programming Framework was developed to be a PBA for CDM in VI (UK).

Context & Constraints:

No constraints have been identified at this time.

Cayman Islands (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Government has commissioned a hazard vulnerability assessment and the results are expected to be presented shortly.

A national assessment of living conditions has been completed and this is helping to inform decision makers. It is also providing valuable data on vulnerability factors related to economic issues among the lower income population.

Storm surge modeling is complete and includes a comprehensive survey of the coastline, including the seabed and inshore area to a depth of 20 feet.

A Geographical Information System based property valuation system has been produced, which when used in conjunction with the storm surge modeling data will provide loss projection modeling and statistics.

Sea level rise modeling maps have been produced by the Lands and Survey Department.

Context & Constraints:

Hazard Management Cayman Islands has only been established for a year and a half and are in the process of implementing an all hazards approach. As a result the work is still in progress to achieve these results.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Storms. The Cayman Islands National Meteorological Service monitors and documents weather systems such as hurricanes, floods and severe storms affecting the Cayman Islands.

The country is considering acquisition of a Doppler radar device.

The Cayman Islands National Weather Service enjoys a good relationship with experts at the National Hurricane Centre in Miami and when the country is threatened by a tropical cyclone there is regular communication.

Earthquakes. Government has commissioned a seismic monitoring network, consisting of four state of the art seismograph stations. Two in Grand Cayman, one in Little Cayman and another on the Island of Cayman Brac.

Tsunamis. Plans are now in place for the establishment of a Caribbean-wide tsunami warning system and the Cayman Islands expect to play a part in that effort. The Caribbean tsunami warning system should be operational by 2010. A network of seismographs is being established for the Caribbean region and this is part of a global project being run by UNESCO's International Oceanographic Commission.

Pandemics / Epidemics. The Mosquito Research and Control Unit (MRCU) is responsible for monitoring and control of vectors. Neither Malaria, nor Dengue Fever are endemic to the Cayman Islands. MRCU issues regular public releases advising members of the public to clear all standing water around their houses and workplaces and to reduce areas for the mosquitoes to lay their larvae.

A plan under the auspices of the Public Health Department has been developed for Avian Influenza (H5N1) and a committee formed to oversee national contingency arrangements. The plan addresses the health sector response (surveillance, quarantine, treatment). Work still needs to be done on finalizing the national level implications and corresponding requirements in areas such as public awareness, security, containment and immigration.

Ministry of Agriculture is responsible for monitoring and control of pests and animal diseases.

Dissemination to the public is the responsibility of Government Information Services, with each organization being responsible for the technical content. Every Authority must maintain and keep records for a specified period as mandated by the Freedom of Information law and publishing requirements come into effect January 2009.

Context & Constraints:

Further work will be done on disseminating information about the threat to life posed by earthquakes, using the media, distributed printed material and public outreach into schools etc.

Additional public information could reduce the risk of a local pandemic occurring in the future. This might include additional information about the threats and symptoms of mosquito borne illnesses, the threat posed by travel to certain regional locations during outbreaks and strategies for preventing mosquito bites with mosquito nets and insect repellents. Public information about prophylactic drug treatments to reduce

the risk of infection by the malaria parasite could be targeted at those traveling to countries with endemic malaria.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Risk knowledge is very high for hurricanes and HMCI is working to increase the knowledge of the public in terms of other hazards.

National monitoring and weather services include the National Weather Service, Public Health, Department of Agriculture, MRCU, the seismograph network through HMCI.

A number of agencies are involved in disseminating information about hazards and vulnerabilities:

Hazard Management Cayman Islands employs a full time Communications Officer with responsibilities that include public awareness.

Several annual hurricane handbooks are produced and widely distributed.

HMCI establishes information booths at many public events and answers questions and distributes informational material.

The Agency has a regularly updated website, www.caymanprepared.gov.ky, which has useful data on the full range of potential disasters and includes mitigation strategies and ways of preparing for a possible disaster.

Public outreach is part of HMCI's strategy and involves speaking to volunteer organizations, schools, civic groups, churches, business organizations and clubs etc.

Relevant information about threats and disasters is also archived and a concerted effort is underway to make as much information available as possible. Publishing requirements are included in the Freedom of Information Legislation, which has been adopted in the Cayman Islands and which becomes operational January 2009.

Government Information Services (GIS) also plays an active role in disseminating hazard specific information.

During times of an approaching or actual threat from a disaster the Joint Communications Service becomes operational and has responsibility for disseminating information to the public, as well as specific sectors such as visiting tourists, the financial services, airports authority etc.

HMCI and GIS have established relationships with print and electronic media in the Cayman Islands and systems are in place to distribute information broadly and rapidly when the need arises.

Text messaging software is used to send mass messages before, during and after a threat.

Senior staff at HMCI and various representatives from partner agencies make frequent contributions in the form of interviews etc. to local television, radio and newspapers.

Screens in supermarkets also disseminate information on precautions and any threats facing the country.

Context & Constraints:

One of the biggest challenges is to make sure that messages get to virtually the entire population and get to them quickly in times of threat. Government has their own radio station and websites, but the television station and newspapers are privately owned, so it is important to have good ongoing relationships with the media to ensure that messages get broadly disseminated.

Currently there is no established method of instantly placing warnings and crawling text on television channels. The existing mechanism has an approximately 30 minute lag time. It would be useful to establish a rapid public warning system, but the technology does not presently exist at the local television centre. Ongoing negotiations with the television centre may help to establish this useful public service facility.

Hurricanes are by their very nature somewhat unpredictable. When facing a threat HMCI has a responsibility to make the public aware and mobilize the nation to take precautionary measures to protect life and property. Bracing for disaster takes effort and costs families, individuals and businesses money. Sometimes the threat does not materialize (the country and people are spared) and that heightened level of readiness may be viewed as not having been necessary. If this occurs too often the public may be inclined to get complacent, or start to ignore public warnings. There is therefore a constant balance between maintaining the necessary level of readiness whenever impending disaster is possible and guarding against creeping complacency.

A balance also needs to be struck between too much disaster related information and not enough. Making sure the necessary disaster related messages are effectively conveyed to the people is critical, however overwhelming the public with a constant stream of disaster related information could cause fatigue and people may start ignoring crucial messages.

Certain threats carry a fairly low probability of actually occurring, like a damaging earthquake or tsunami, yet they both have potentially devastating consequences if they do occur. Getting the public to 'buy in' to the need to prepare for unlikely, but conceivable threats poses challenges.

Both local and overseas media organizations can occasionally 'over dramatize' a threat so there is sometimes a need to balance information and correct misinformation.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The Cayman Islands are part of the regional seismic monitoring systems for hurricane and earthquakes and expect to part of the Caribbean Tsunami Warning System (TWS) when it becomes operational in 2010.

The Cayman Islands National Weather Service has an established relationship and good lines of communication with the National Hurricane Centre in Miami about hurricanes threatening or impacting the country.

The Cayman Islands are part of the Overseas Territories Network and as an associate member of CARICOM, we expect to join CDERA, (Caribbean Disaster Emergency Response Agency).

The Cayman Islands has established a relationship with the Caribbean Community Climate Change Centre in Belize. The Centre is now putting together a draft strategic plan which will include adaptive measures for the Caribbean and give a clear understanding of the anticipated impacts on critical sectors.

The Cayman Islands uses a standardised format for damage assessment reports (The United Nations Economic Commission for Latin America and the Caribbean ECLAC).

A sophisticated weather and oceanographic monitoring station is being installed off the coast of Little Cayman. The installation is a joint project between the US National Oceanic and Atmospheric Administration and the Central Caribbean Marine Institute. NOAA chose Little Cayman as one of four international locations for the station because its isolation and low population make it an ideal location to continually measure temperature, winds, barometric pressure and ultraviolet and photo-synthetically active radiation in a shallow coral reef environment. The data is expected to give the world a unique insight into how climate change is affecting coral reefs, as well as provide Cayman with better information on storm threats. The information should also provide insight about how changes in the ocean and atmosphere are affecting fish and coral populations and how longer term climate variability may be resulting in real changes in the coral reef structure and community. Once operational, the station will transmit data in real time to NOAA, which will make the information available to the public through its website. The Cayman Islands Department of Environment, which has assisted with the station's installation, also plans on making use of the data, as do other government agencies.

The proposed Cayman Islands Disaster Legislation follows the format commonly used in the English speaking Caribbean.

Hazard Management Cayman Islands will make its documentation available on its website.

Context & Constraints:

Cayman does not currently have the budget capacity or economies of scale to warrant the establishment of its own major scientific research establishments and universities. As a result, Cayman should continue to encourage and cultivate strategic partnerships with regional seismic networks, the Caribbean Community Climate Change Centre in Belize and the US National Oceanic and Atmospheric Administration and the University of the West Indies. Work should be done to ensure that the findings of such research are widely available to other countries in the region so a cooperative information sharing environment can be fostered.

Once the National programme is fully established and operational, the Cayman Islands will work to provide data and information to regional networks such as UWI Mona Campus, CDERA and PAHO etc.

Colombia (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Los organismos técnicos pertenecientes al Sistema realizan las evaluaciones de los riesgos no solamente nacionales sino locales a través de los Sistemas de Alerta Temprana y Mapas de riesgo etc. Lo anterior se da a conocer a las comunidades mediante las comisiones que integran los Comités Locales de Prevención y Atención de Desastres: la comisión educativa con las instituciones educativas han

incorporado el tema en los Planes escolares, de igual manera los organismos de socorro como la Cruz Roja Colombiana promueven proyectos pilotos de Prevención de desastres que involucran los SAT y la evaluación de los riesgos locales Casos específicos que merecen mención, 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 el los Departamentos de Tolima, Quindío y Cundinamarca y sistemas Comunitarios como el proyecto cambio climático y desastres en la Guajira. Todos están disponibles no solamente en las bases de datos y/o paginas web de cada entidad ejecutora, pero también en el Sistema de información de Prevención y atención de desastres [www. sigpad.gov.co](http://www.sigpad.gov.co)

Context & Constraints:

Generalmente se formulan las valoraciones de amenazas, a través de mapas por entidades técnicas del Sistema Nacional de Prevención y Atención de Desastres (INGEOMINAS , IDEAM, IGAC) quienes poseen el conocimiento. Sin embargo no es fácil llegar obtener los mapas de riesgo razón por la cual no permiten la evaluación óptima del riesgo. Esfuerzos que demandan costos, donde los presupuestos de las diferentes entidades no son suficientes para llegar a resultados esperados. Lo anterior hace que se tenga un conocimiento parcial de los problemas de riesgo. Se responde en términos generales bien por lo nacional, mas no por lo local. Problemas en escalas detalladas de cartografía y monitoreo resultan muy onerosos. Se comparte información, pero con ciertos inconvenientes; al momento se evalúan mecanismos para el acceso a la información; p.e universidades y Corporaciones Regionales disponen de cierta información que no es muy conocida. No hay especialistas suficientes en el área de amenazas, vulnerabilidad y riesgo. No existen sobre el particular metodologías unificadas y estandarizadas. Insuficiente personal y recursos dedicados a la generación de mapas a escala local.

Core indicator 2

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

Level of Progress achieved:

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

Description:

En el país existen instituciones que por su carácter misional deben y administran cada una su sistema de información con sus respectivos sesgos misionales, como p.e Instituto Geográfico Agustín Codaxi, INGEOMINAS, IDEAM, OSSO, algunas CARs.

Administración de información: La gestión de Información se encuentra en un proceso de evolución el cual busca estandarizar los parámetros que actualmente se manejan con los internacionales, de igual forma se están optimizando los procesos de captura, procesamiento y difusión de los mismos, dado que en la actualidad son acciones que están incipientes. Es de resaltar que se cuenta con una normatividad para monitorear información espacial, ambiental, etc. que insertan la Gestión de Riesgo, pero aún requiere ajustes y actualización con tecnología de información avanzada, de igual forma es de aclarar que los sistemas de transferencia de datos aun tienen una característica de transmisión a una baja velocidad y capacidad para el intercambio o consulta de información temática. En conclusión no todos los sistemas están habilitados para seguir de cerca, archivar y diseminar datos correlacionados en especial aquellos correlacionados a la identificación de amenazas y vulnerabilidades.

Context & Constraints:

Existen muchas debilidades en la estandarización, generación, procesamiento y análisis de la información a nivel nacional, regional y municipal, lo anterior como consecuencia de una muy baja apropiación de recursos financieros, técnicos y tecnológicos. Aunado a lo anterior, se presentan dificultades en algunos Comités Departamentales y Comités municipales (CREPAD` s y Clopad` s) para la utilización de las herramientas de generación, consulta y transferencia de datos temáticos que fortalezcan los sistemas de información a todo nivel.

Core indicator 3

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

Level of Progress achieved:

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

Description:

El país cuenta con avances en Sistemas de Alerta Temprana SAT, especialmente para amenazas de tsunamis, erupciones volcánicas, e inundaciones entre otros. Los cuales están coordinados con las diferentes entidades encargadas de liderar la respuesta, que con un trabajo mancomunado con las comunidades son las encargadas de difundir las mismas y estar preparados ante cualquier tipo de contingencia. Un ejemplo son los mecanismos que se utilizan en tiempo real en la zona de influencia del Volcán Galeras. SAT (científico - comunitario); a nivel comunitario, lenguaje científico con entendimiento en el lenguaje local (p.e Bogotá, SAT con mecanismos “a la mano” de la comunidad, megáfonos, etc.), ingentes esfuerzos se realizan para que llegue a todas las comunidades. Se toma en cuenta el conocimiento y experiencia de la comunidad, para su evaluación e inclusión a los SAT. En este orden de ideas es de destacar que el país ha implementado grandes avances en la instalación de redes hidrometeorológicas con comunicación satelital y de forma complementaria se han instalado y puesto en operación redes hidrometeorológicas a nivel local operadas por la comunidad, así mismo se ha actualizado la red sísmica localizándola en puntos estratégicos del país. Es de destacar que algunas redes de varias ciudades como Bogotá, Medellín, Manizales, Ibagué y a nivel regional por algunas Corporaciones Regionales, monitorean además aspectos como la calidad del aire y del agua.

Context & Constraints:

En la actualidad el país en cabeza de las instituciones responsables como lo son el IDEAM e INGEOMINAS, esta implementado una estrategia de cubrimiento y actualización tecnológica para potencializar el sistema de alerta temprana, sin embargo los costos de adquisición y administración de los equipos ha hecho que esta se vea retrasada, complementado lo anterior, dichas entidades de forma mancomunada con la DPAD y las entidades operativas están estructurando y actualizando los protocolos para la difusión de dichas alertas y a su vez la respuesta a las mismas por parte de las instituciones como también de la comunidad.

Se están formulando programas y proyectos unificados a nivel nacional para llegar a los sectores comunitarios con enfoques y herramientas que orienten un verdadero proyecto de sistema de alerta temprana comunitario medibles ante las ocurrencias de los desastres y con posibilidades de diseminación para todas las regiones. La percepción positiva de la utilidad de SAT por las autoridades a nivel municipal aun es incipiente, sin embargo en los últimos años se pueden mostrar avances exitosos en el tema.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Las evaluaciones de los riesgos nacionales y locales si toman en cuenta las evaluaciones de los riesgos regionales y transfronterizos para la reducción del riesgo mediante avances en amenazas climatológicas redes a nivel Internacional: niño/niña - ciclones, etc. Riesgos y evaluación de vulnerabilidad, Planes de Ordenamiento Territorial POT, cuencas binacionales, hay coordinación Internacional por ejemplo Rio Arauca con Venezuela, existen acuerdos entre los países y convenios firmados para el manejo. Nuestro Instituto Geográfico Agustín Codaxi IGAC, muestra también avances en Mapa de Riesgos Internacionales. Muchos adelantos se pueden mostrar en el marco del Comité de Huracanes del mar Caribe entre todos los países del Area. Algún intercambio operativo de alertas de ríos binacionales existe. Participación del país en redes sismológicas regionales como la del Caribe y Pacífico de Suramérica, para alerta temprana

de Tsunami. INGEOMINAS comparte señales sísmicas en tiempo real con Ecuador, Panamá y Venezuela. Hay una gestión inter-institucional para compartir señales de vigilancia volcánica de los volcanes Chiles y Cerro Negro en el borde Colombia -Ecuador

Context & Constraints:

Compartir información de vigilancia y alertas bajo criterios estandarizados y convenidos ha sido una de las preocupaciones del País. Los convenios internacionales su aprobación, seguimiento y protocolos establecidos la mayoría de las veces facilitan la acción. Estos instrumentos logrados mediante acuerdos binacionales y de grupos económicos logran muy buenos resultados, casos específicos CAPRADE. Asociación de Estados del Caribe AEC, y otros arreglos regionales a los que pertenece el país y que facilitan la labor en reducción de riesgo

Costa Rica (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

“Las evaluaciones de los riesgos nacionales y locales, basadas en información sobre las amenazas y las vulnerabilidades, están disponibles e incluyen valoraciones del riesgo para cada sector clave.”

Nivel alcanzado: 4

Diversas instancias de investigación del país, especialmente institutos de las universidades públicas, realizan investigación y junto con la CNE realizan valoraciones de riesgo a desastres. Existen una serie de convenios y procedimientos de trabajo, entre las que se incluye la articulación de los comités asesores técnicos, que permiten la transferencia y divulgación de la información. La CNE y algunos de los institutos de investigación cuentan con sistema de información (SIG) que permiten concentrar y sistematizar la información sobre amenazas y la elaboración de mapas de amenaza y de riesgo a desastres. Además, los eventos de emergencias y desastres se documentan y se mantiene un registro histórico de los mismos. El país cuenta con un atlas nacional de amenaza llevado al nivel municipal, así como un amplio historial de datos sobre desastres. Se realizan esfuerzos de divulgación especialmente hacia el nivel municipal. Los desarrolladores urbanos están empezando a usar la información, pues son datos que forman parte de los requisitos para la autorización por parte de las autoridades ambientales y los municipios para el desarrollo de obras.

Context & Constraints:

Hace falta sostenibilidad de los compromisos de transferencia de información, especialmente para asegurar la actualización de la información. Es necesario generar capacidad en los gobiernos locales (municipalidades) para el uso efectivo de la información. Falta articular variables sociales al análisis del riesgo. En la actualidad se avanza en la delimitación de indicadores de riesgo a desastres, destinados a la valoración de los proyectos de inversión pública y a regular la inversión pública. Además, se está iniciando la elaboración de instrumentos de estimación de pérdidas y determinación de costos de inversión por desastres.

Core indicator 2

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

Level of Progress achieved:

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

Description:

“Los sistemas están habilitados para seguir de cerca, archivar y diseminar datos sobre las principales amenazas y vulnerabilidades.”

Nivel alcanzado: 4

Existen institutos de investigación que se han especializado en el seguimiento de amenazas y eventos específicos, manteniéndose un registro histórico y continuo de los mismos, especialmente en el ámbito de las ciencias geológicas, ambientales y atmosféricas. Todos estos órganos cuentan con procedimientos para divulgar y diseminar información.

En el nivel local la tendencia es al trabajo por cuenca hidrográfica y especialmente para los eventos hidrometeorológicos, pero también se hace seguimiento a deslizamientos y volcanes. Se cuenta con 320 puestos de radio. 14 cuencas monitoreadas, 30 deslizamientos (grandes, moderados y pequeños), 5 volcanes.

Existe una práctica continua e institucionalizada de aplicación y uso de alertas que se ejecuta de manera eficiente, admitida y reconocida por la población.

Context & Constraints:

El seguimiento de amenazas que históricamente han desarrollado los institutos de investigación no se ha asumido bajo el concepto de alerta temprana y en muchos casos se adopta como un “monitoreo” del comportamiento de la amenaza.

Falta coordinación entre los institutos para la diseminación de información, pero principalmente para mantener la actualidad de la información que recibe la población afectable. En tal sentido, hay necesidad de fortalecer o mejorar la aplicación y el conocimiento de aspectos de comunicación pública, por parte de los organismos científicos.

Core indicator 3

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

Level of Progress achieved:

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

Description:

“Los sistemas de alerta temprana están habilitados y disponibles para todas las amenazas principales, con un elemento de alcance comunitario.”

Nivel alcanzado: 4

Los sistemas de alerta con que cuenta el país tienen un énfasis en la vigilancia de las cuencas ante problemas de inundación causados por desbordamiento de ríos, aunque se monitorean otras amenazas como los volcanes y los deslizamientos activos, con una buena base de información y documentación sobre los mismos.

Los sistemas de alerta que se trabajan con perspectiva de cuenca, para inundaciones y deslizamientos, integran el trabajo comunitario, bajo el concepto de “redes comunitarias”.

Context & Constraints:

La alerta temprana en este país está específicamente referida al monitoreo de amenaza y en los casos en

que generan eventos de manera recurrente o continua, integran el componente de comunicación y organización de la población a nivel de comunidad. Sin embargo, dada las características del país es prácticamente imposible admitir que “todas” las amenazas están siendo monitoreadas, pues algunas no lo son, pero si las más peligrosas o activas.

Core indicator 4

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

Level of Progress achieved:

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

Description:

“Las evaluaciones de los riesgos nacionales y locales toman en cuenta riesgos regionales y transfronterizos, con una perspectiva de cooperación regional para la reducción del riesgo”

Nivel alcanzado: 4

Costa Rica es miembro del "Centro de Coordinación para la Prevención de los Desastres Naturales en America Central" (CEPREDENAC). Mediante proyectos que lidera CEPREDENAC el país participa de proyectos destinados a aspectos como los siguientes: La generación de sistemas de información territorial sobre riesgos en toda la región, la elaboración de indicadores de vulnerabilidad, la vigilancia de eventos que tienen cobertura regional tales como los ciclones tropicales y los tsunamis. Existen además iniciativas binacionales con Panamá y con Nicaragua para el manejo de emergencias en zonas fronterizas, que involucran también el estudio y la vigilancia de las cuencas (Del Río Sixaola en la frontera con Panamá y del Río San Juan con Nicaragua). Suma a lo anterior la existencia de una serie de procedimientos y convenios para la asistencia humanitaria ante desastres, acordados entre los países de la región. El país cuenta además con un “Manual de Cancillería” que define el accionar del cuerpo diplomático ante necesidades del país en caso de un llamamiento de ayuda internacional. Funciona en el país el Comité Asesor Técnico de Ayuda Internacional, coordinado por la CNE, integrado por representantes de las instituciones afines al tema, que lidera la definición de los procedimientos y las medidas para orientar y agilizar los trámites de donación, compra, ingreso y salida de la cooperación internacional.

Context & Constraints:

Algunos de los proyectos regionales tienen una definición deficiente o son propuestas que repiten esfuerzos ya hechos, sin generación de productos concretos, en especial lo que se refieren a la generación de sistemas de información. En los proyectos transfronterizos aparecen algunas limitaciones institucionales y jurídicas, en especial para asignar recursos que deben ser ejecutados en zonas externas al territorio nacional.

Dominican Republic (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Hay informaciones disponibles de las evaluaciones del sistema nacional de prevención, mitigación y respuesta. También mapas de amenazas y vulnerabilidades de algunas áreas del país. Falta hacer estudios sistemáticos a nivel nacional y compartir toda la información disponible.

Los usuarios no tienen de costumbres usar estas informaciones. En la mayoría de las veces pasan por desapercibida

Context & Constraints:

Es necesario promover el fortalecimiento de un Sistema Integrado de Información a nivel nacional (tal y como lo establece la Ley 147-02 en su artículo 19), así como lograr un apoyo político para el mismo.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Los sistemas de información están identificados a nivel nacional. Hay acuerdos entre instituciones para el uso de nuevas herramientas de información e iniciativa con algunas compañías para la instalación de sistemas de alerta mediante redes telefónicas

Context & Constraints:

Se necesita fortalecer las relaciones interinstitucionales en el manejo dinámico del riesgo

Se necesita una visión de conjunto.

Hacer uso eficiente de estas informaciones entre instituciones técnicas y científicas y las comunidades

Core indicator 3

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

Level of Progress achieved:

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

Description:

Existe un comité técnico de alerta temprana. Hay elaborado un proyecto para la instalación del sistema de alerta temprana hidrometeorológico.

Context & Constraints:

Hace falta una inversión considerable del punto de vista tecnológico (para la producción de información), científico (para la interpretación) y gerencial (para la capacitación al uso y mantenimiento del sistema)

Core indicator 4

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

Level of Progress achieved:

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

Description:

Hay muchas limitantes para la cooperación con Haití por su situación política, de seguridad y la barrera del idioma.

Se han desarrollado algunos programas transfronterizo con organismos internacionales y algunos talleres de entrenamientos con instituciones locales

Context & Constraints:

Ecuador (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

•AVANCE

La política 5. Todas las instituciones, organismos colegiados, grupos técnico-científicos, centros de educación superior, etc., deberán iniciar acciones sostenidas de investigación y generación de información de la temática de gestión de riesgos con su línea de trabajo: 5.3 Desarrollar e implementar sistemas de alerta temprana en las zonas de más alto riesgo en el país.

Context & Constraints:

Recomendación:

- Difusión de los avances en Sistema de Alerta Temprana.
- Involucramiento de técnicos expertos en estudio de las diferentes amenazas
- Priorizar eventos donde se podían implementar SAT y hacer un listado en función de impactos de los eventos.
- Involucrar de una manera mas directa a la comunidad.

Core indicator 2

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

Level of Progress achieved:

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

Description:

•AVANCE

Política 6. Contar con un Sistema Nacional de Información para la Gestión del Riesgo

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Context & Constraints:

Recomendación:

- Fortalecimiento institucional a entidades técnico científicas.
- Seguimiento de las publicaciones de todos los resultados que existen a nivel nacional.
- Todas las instituciones, contribuyan al Sistema Nacional de información de Gestión de Riesgos. Implementar la política 6 de la Estrategia y sus líneas de trabajo,

Core indicator 3

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

Level of Progress achieved:

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

Description:

• AVANCE

POLÀTICA 6. Contar con un Sistema Nacional de Información para la Gestión del Riesgo. Se trabaja en

su diseño.

Context & Constraints:

Recomendación:

- Difusión de los avances en Sistema de Alerta Temprana.
- Involucramiento de técnicos expertos en estudio de las diferentes amenazas
- Priorizar eventos donde se podían implementar SAT y hacer un listado en función de impactos de los eventos.
- Involucrar de una manera mas directa a la comunidad

Limitación:

Recursos para el Fortalecimiento de capacidades en todos los niveles.

Core indicator 4

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

Level of Progress achieved:

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

Description:

AVANCE

POLITICA2. La gestión de riesgos deberá ser incorporada en los programas de educación y capacitación en todos los niveles

Context & Constraints:

Recomendación:

- Asignar Recursos para implementar el proyecto Ciudades Sostenibles en los municipios.
- Diseminar la información.
- Considerar perspectivas como el manejo integral de cuencas hidrográficas que van más allá de los límites políticos establecidos.

El Salvador (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

En El Salvador, se ha trabajado muy poco el tema de estudios de riesgo (amenaza y vulnerabilidad). Con mayor frecuencia encontramos estudios de amenaza, careciendo del componente de vulnerabilidad; sin embargo, estos estudios se realizan cuando los eventos ya han impactado en zonas específicas y dejan a flote la fragilidad del territorio. Es importante resaltar que estos buenos esfuerzos carecen de una política que estandarice metodologías y sistematice los mismos; más bien lo que existe son esfuerzos buenos pero dispersos.

La difusión de los estudios existentes aún es pobre, sobre todo en el nivel local.

Context & Constraints:

Coordinar esfuerzos encaminados a la estandarización de metodologías de valoración de riesgo y difusión de los mismos.

Realizar estudios de riesgo en los diferentes sectores.

Fortalecer las capacidades a todo nivel para valorar el riesgo y no confundir términos tan básicos e importantes.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Los medios de comunicación han sido un soporte a este nivel de difusión.

Se cuenta a través del SNET con un monitoreo permanente de los 5 principales ríos del país y de los volcanes activos de El Salvador, así como de la actividad sísmica del mismo.

Adicionalmente, contamos con un sistema de protección civil que se activa, opera y difunde información a la población sobre las principales amenazas y vulnerabilidades, el cual ha venido mejorando significativamente durante los últimos años. Se difunde una advertencia general a las poblaciones más vulnerables. Hay que mencionar que aunque hay logros significativos en cuanto a la difusión del riesgo, no se conoce, el nivel de comprensión del público en cuanto a la misma.

Context & Constraints:

Es necesario focalizar amenazas y difusión de estudios los cuales deben estar enlazados con el elemento educativo.

Retroalimentar al sistema desde el nivel local, para mejorar el nivel de información. (Hay algunos esfuerzos en este sentido que se hace necesario ampliar)

Es necesario mejorar la información de vulnerabilidad y bajarla nivel local.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Se ha trabajado más en SAT para inundaciones, volcanes y sequías; SAT para Se ha trabajado más en SAT para inundaciones, volcanes y sequías; SAT para deslizamientos existen esfuerzos muy localizados a nivel municipal.

La mayoría de SAT tienen un alcance nacional, con un aviso general (departamental y municipal). Es necesario trabajar más en llevarlos o conectarlos al nivel comunitario.

Muchos esfuerzos en el país, dicen llamarse SAT pero solo consisten de una red de radios comunitarios. Falta trabajar en la sistematización y seguimiento para los SAT.

Context & Constraints:

Es necesario estandarizar el concepto de SAT, con sus cuatro componentes.

Promover una estrategia para institucionalizar la aplicabilidad de los SAT.

Fortalecer capacidades locales que ayude la organización de las personas para el conocimiento, transmisión de información, así como para tomar medidas en caso de evento extremo, que resguarde sus bienes y vidas.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Ejemplos: Proyecto RECLAIMN, Intercambios de información Sísmica, Intercambio de información Volcánica, Foros climáticos regionales, (TODOS ESTOS SON ESFUERZOS INSTITUCIONALES), Proyecto en el golfo de Fonseca para trabajar Tsunamis (PTWC, BGR).

Existe un marco regional soportado por CEPREDENAC.

A nivel de Universidades también hay esfuerzos transfronterizos: SUCA. Esfuerzo inter-universitario: USAC, UNAN y UES.

Proyecto TRIFINIO marca un hito, en el sentido que es un esfuerzo que viene desde la presidencia hasta el nivel local.

Todos los ejemplos antes mencionados, hacen evaluaciones de amenaza. Nuevamente el tema de vulnerabilidad es muy poco estudiado por lo que la ecuación del riesgo queda debilitada.

Context & Constraints:

Todos los esfuerzos internacionales deberían elevarse a un nivel político, que garantice el seguimiento y la sostenibilidad de estos proyectos.

Todos los compromisos regionales sean difundidos a las diferentes instancias y se garantice su sostenibilidad.

Es importante incorporar el componente de la vulnerabilidad en la mayoría de estos esfuerzos.

Complementar esfuerzos y recursos (humanos y técnicos) entre organismos internacionales.

Jamaica (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

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.

Context & Constraints:

Challenges

- 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.

Recommendations

- The current strategic plan will focus on the agriculture and tourism sectors. Work in those areas have already commenced and are at the initial stages. The entire project is expected to include risk assessments and mitigation plans. The housing sector will be focused on later in the planning period.
- For the tourism sector, project funding is being recommended to overcome the funding challenge
- Line Ministries to make provisions for Disaster in Annual Budget and Strategic Plan

Core indicator 2

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

Level of Progress achieved:

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

Description:

Data is collected at the national disaster office by way of damage assessment reports in post disaster events and incident logs. The damage assessment data includes data from other sectors and specialized agencies that monitor flood gauges, flood data and landslide data and inventories.

Pre impact data is also available through hazard maps prepared by water resources authority, Mines and geology, and the earthquake unit. Some of this work has been achieved through project funding.

GIS is being used more extensively for the before, during and after impact to generate pre-impact scenarios, archive and monitor data on impacts from hazards. Hazard data is also shared with other agencies using GIS.

Data on hazards and vulnerability are also disseminated from a documentation centre operated from a national level coupled with communication strategies, which are used to disseminate information on hazard vulnerability in an effort to place risk reduction issues on the national agenda.

Context & Constraints:

Challenges

- The GIS is used to store several pieces of information. However, data is not stored in a database format which allows for easier access and analysis.
- The reports are sometimes not as comprehensive as they ought to be because of the failure of some entities to submit detailed damage assessment information.
- The documentation centre needs to function as a complete repository of hazard vulnerability data but is affected by space constraints and financial incapacity to improve current technologies.
- Limited pre-impact baseline data exists

Recommendations

- Greater focus on improving technology and digitizing data as part of enhancing the capacity of the documentation centre.
- Expansion of database capability of GIS to allow for easier access and analysis as well as greater sharing of data and GIS expertise among agencies.
- Lobbying for the necessary resources from central government to build capacity at the National Disaster Office
- Undertake the development of pre-impact databases by sector.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Extensive work has been accomplished in the establishment of Flood Early Warning Systems. Agency identified with dedicated responsibility in terms of data collection through rain, river and stream gauges complemented by community -based flood early warning systems. Community -based Flood Early warning teams have been established along major river basins and waterways and have been given the capacity to communicate within a network to relay information both at the local and national level.

Strides have been made in terms of Early Warning Systems in place for Hurricanes & Floods. Doppler Radar Technology is utilized and complimented by satellite imagery. Telemetric Flood Warning Systems and Community Flood Gauges are also in place to enhance the early warning capabilities for floods. Three communities were also trained to interpret radar data via internet as a means of enhance early warning.

For Earthquakes, a National Seismograph Network is in place to generate data following an earthquake to quickly inform decision makers in taking the necessary steps to curtail infrastructural damage to affected communities and provide the necessary alerting mechanism for the probability of aftershocks. The country is now a signatory to a Regional Tsunami Warning System established with mechanisms established to expedite functions under this responsibility.

Data available in terms of earthquake and landslide susceptibility maps and research is continually being undertaken in tandem with universities, local continuing through country - based academia with partnerships with local and external universities and government agencies.

Context & Constraints:**Challenges**

- Earthquake susceptibility maps available for one geographic region. Greater progress made with landslide susceptibility maps which are also available at the local level. However these projects are largely implemented with international donor funding. As such there is the absence of an overarching programme with progress achieved annually.
- Several manual gauges need to be upgraded to telemetric and more data gathering sensors need to be implemented.
- The national documentation centre needs to function as a complete repository of hazard vulnerability data but is affected by space constraints and financial incapacity to improve current technologies.

Recommendations

- Expansion of community-based early warning systems utilizing current technologies such as sirens and alarm systems to complement manual use of flood gauges.
- Earthquake susceptibility maps need more comprehensive focus rather than concentration on an urban centre.
- Improvement of the telemetric system that is in place for major river basins and monitoring and surveillance network established with trigger mechanisms in place.
- Lobbying for resources to increase the level and accuracy of output of the Earthquake Unit

Core indicator 4

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

Level of Progress achieved:

4 - Substantial achievement attained but with recognized limitations in key aspects, such as financial

resources and/ or operational capacities

Description:

Jamaica is one of sixteen participating states that form the Caribbean Disaster and Emergency Response Agency (CDERA) which was established by the Caribbean Community (CARICOM) initiative. Regional cooperation has been achieved through CDERA initiatives such as the Comprehensive Disaster Management (CDM) Strategy. Jamaica's function as a regional focal point for neighbouring states has also led to the sharing of data with a view to measuring transboundary risks especially for the Turks and Caicos Islands, the Bahamas and Belize.

Regional Tsunami Warning system established with Jamaica as a signatory.

The country is also part of the UN System led regional focal grouping to expedite more effective emergency response for the northern section of the Caribbean. This had led to further information sharing and has led to greater regional cooperation in responding to emergencies.

The National Disaster Office has forged a relationship with the General Council of Martinique where mutual areas of good practice have been identified and strategies and approaches identified for the transfer of the skills and knowledge.

Context & Constraints:

Challenges

- Absence of Caribbean economic integration which would serve as a catalyst for greater work in Disaster Risk Reduction at the regional level.
- Lack of commitment by nation leaders to finalize issues such as the revamping of a uniform building code that can be made applicable across the Caribbean.
- Improvements in mechanisms to enable Caribbean countries to communicate speedily and share data effectively.

Recommendations

- Sharing best practices among the region and entering into the dialogue placing DRR on the agenda as a pre-cursor for integration.
- Making CDERA more relevant and adaptable to the changes taking place in DRR internationally.
- Improvement to the system and concepts of governance which is critical to mainstreaming DRR in the region.

Panama (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Existen las evaluaciones de los riesgos nacionales y locales con base real y están disponibles.

Ejemplo: Se han realizado Inspecciones Técnicas en acciones de prevención y mitigación, desarrollando cambios en los procesos de viviendas para el control de la erosión en desarrollos urbanísticos y de cuencas, contribuyendo a reducir el impacto de las inundaciones sobre las más vulnerables y así evitar que las personas construyan en áreas de riesgos

Se cuenta con Mapas de Amenazas a Inundaciones del Sector Este del Distrito de Panamá; Tocumén; 8 comunidades de la Provincia de Darién y 10 distritos del Corregimientos de Changuinola en Bocas del Toro, como herramienta para la toma de decisión y manejo de desastres de áreas vulnerables.

Se han incrementado las inspecciones técnicas especializadas, evaluaciones de riesgos en zonas vulnerables e impactadas por el colapso de estructuras, inundaciones y deslizamientos. (Ejemplos: Casco Antiguo; Provincias de Chiriquí; Panamá Centro, Este y Oeste; el Distrito de San Miguelito).

Igualmente se incrementó la evaluación de Estudios de Impacto Ambiental, en lo referente al criterio técnico de prevención de desastres.

Este material esta disponible a la consulta.

En el caso de la CSS, a través de los comités locales de riesgos, ya se han identificado las amenazas potenciales de las Unidades Ejecutoras, aunque aún falta mucho trabajo por desarrollar, e investigar de forma que les conduzca a un verdadera identificación y validación de los resultados de riesgos de las instalaciones sanitarias.

Context & Constraints:

Este es uno de los puntos más importantes y que no mantenemos mucho avance propiamente; por lo cual es necesario que se destaque más acciones en este renglón.

Limitantes:

Se requiere:

- Utilizar la Plataforma Nacional para la creación de declaraciones que ayuden en la determinación de las áreas vulnerables del país.
- Falta recurso económico para la realización de estas iniciativas evaluaciones de riesgo.
- Faltan Modelos Conceptuales de fenómenos adversos.
- Efectuar evaluaciones sobre amenazas naturales del país.
- Evaluación de la vulnerabilidad de estructuras y líneas vitales.
- Realizar estudios de microzonificación sísmica y riesgo sísmico estructural en las principales ciudades de panamá.
- Estudios de vulnerabilidad de incendios en edificios altos.
- Tenemos un crecimiento urbanístico bastante acelerado por lo cual es primordial que este desarrollo vaya de la mano de la seguridad y de evitar la destrucción de recursos naturales. Hay que tomar acciones para evitar que se incumpla la ley.
- Fortalecer la investigación en los temas de sismología, cambio climático y ordenamiento territorial.
- Falta de tecnologías y medios informáticos para la delimitación matemática y científica de las amenazas y estimación probabilística de la gestión de riesgos.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Existen en el país sistemas habilitados para cumplir con este indicador como por ejemplo: en CATHALAC, el proceso de Divulgación de Información de diversas herramientas para la distribución y visualización de resultados de estudios, monitoreo continuo y pronóstico.

Actualmente carecemos de una base de datos, y métodos definidos para la captación de datos unificados en las instituciones que conforman la plataforma de nacional gestión de riesgos; mucho menos en las

instituciones técnicas científicas de forma que el proceso sea simple y uniforme.

Cabe destacar que la información existente de amenazas es diseminada con la intención de que se tomen acciones oportunas para reducir el riesgo.

Ejemplos:

- Se han realizado giras técnicas para el levantamiento de la información que servirá de insumo para la elaboración de los mapas de riesgo de 10 comunidades de Bocas del Toro. De esto se entregó un informe de gira y está en proceso la elaboración de la programación para la entrega de los mapas, que servirán de respaldo para las tomas de decisiones futuras.
- Se han realizado un promedio de 25 informes mensuales de prevención hasta momento.

Existe la plataforma de trabajo y el seguimiento a las evaluaciones técnicas de prevención y mitigación de desastres; así como dar respuesta a la solicitud de criterio de impacto ambiental en un tiempo no mayor de 30 días.

Las instituciones mantienen sistemas de información temprana, en los cuales alertan a la comunidad sobre peligros potenciales en cuanto a la ocurrencia de eventos.

Se elaboró y se distribuyó un panfleto en donde se explica los niveles de Alerta a través de colores calibrados con las reglas milimétricas de ETESA.

Se cuenta con una biblioteca especializada, mapoteca y centro de documentación con fondos de revistas especializadas y libros en ciencias de la tierra y desastres.

Campañas educativas conjuntas con el Ministerio de Salud acerca de los efectos de la Radiación Ultravioleta en los seres humanos, con miras a reducir la incidencia en los cánceres de piel y cataratas.

Las instituciones en su mayoría cuentan con páginas de Internet donde mantienen informes, estudios y datos de relevancia para efecto de vulnerabilidades y de la realidad del país.

Ejemplo: Documentos disponibles en la página Web del Ministerio de Economía y Finanzas, para el acceso de cualquier persona:

- Situación Nutricional, Patrón de Consumo y Acceso a los Alimentos (diciembre de 2006).
- Percepciones de la Comunidad (agosto de 2006).
- Pobreza y Desigualdad en Panamá - La Equidad un Reto Impostergable (marzo de 2006).
- Mapas de la Pobreza (junio de 2005).
- Informe según niveles de Satisfacción de Necesidades Básicas (diciembre de 2004).
- Encuesta de Niveles de Vida 2003.
- Percepciones Colectivas de la Comunidad - junio 2000.
- Aspectos Más Sobresalientes de las ONG en Panamá - año 2000.
- Estado Nutricional de la Niñez Panameña Menor de 5 Años de Edad (septiembre de 2000).
- Distribución del Ingreso en Panamá (marzo de 2000).

Context & Constraints:

Existen datos que están disponibles para que las instancias decisorias y el público comprendan la exposición del país a varias amenazas y de esta forma reconozcan la realidad del país, al igual que sus vulnerabilidades sociales, económicas, ambientales y físicas.

La diseminación de la información es nuestra principal debilidad, la información esta disponible en el caso de ser buscada por el interesado. La información esta disponible lo que limita es la divulgación de la existencia de esa información.

Algunas Limitantes:

- Se requiere integrar y uniformar la forma de recolectar datos y es importante que la información sea posteriormente aterrizada al lenguaje común.
- Es necesaria la existencia de recursos económicos, de infraestructura y recurso humano, con lo cual se fortalezcan las iniciativas existentes.
- Es evidente la necesidad de dar mayor divulgación a las herramientas, procesos, proyectos e iniciativas existentes para que la optimización de su uso, y que el mismo sea mayor.
- Falta la sistematización de mecanismos de análisis de riesgos (amenazas y vulnerabilidad: probabilidades) como proceso dinámico).
- No todas las instituciones gubernamentales tienen acceso al Internet como una herramienta de intercambio o búsqueda de información; carecen del equipo y de la facilidad. Esto disminuye las probabilidades de que acceden a los datos existentes en la red.
- Faltan matrices, formatos o un criterio establecido para la obtención de datos, es necesaria hay una base de datos practica que sirva como referencia a la comunidad o a las personas que quisieran obtener información del tema.

Core indicator 3

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

Level of Progress achieved:

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

Description:

El País mantiene Sistemas de Alerta Temprana, con los cuales se realiza el trabajo de monitoreo y seguimiento de posibles amenazas identificadas. Este es un trabajo conjunto el cual busca una mayor comunicación; prever las posibles acciones a tomar y sobre todo compartir la información para que sea divulgada en caso de ser requerido y así reducir los daños en la comunidad.

Ejemplos:

- Se instaló el Sistema de Alerta Temprana a Inundaciones en el río Changuinola;
- Fortalecimiento del Comité de Gestión Local de riesgos de Santa Rosa, Guayabalito (aguas debajo de la represa del Maddem).
- Sistema de Alerta Temprana en la cuenca del río Cabra (100% avance) (ETESA)
- Se mantiene información del Balance Hídrico Superficial (100%).
- Instalación de sensores de tormentas eléctricas atmosféricas (85% avance).
- Automatización de la Red de estaciones hidrometeorológicas - Fase 1 (80%).
- Modernización para la elaboración de los pronósticos (programa para seguimiento a los vientos, programas para procesar los datos crudos del radar de la ACP, programa para análisis integral de datos, capacitación y equipamiento).
- Se identificaron zonas propensas a inundaciones y deslizamientos de tierra identificados en el Distrito de San Miguelito: Villa Grecia; 8 comunidades de la Provincia de Darién; 10 comunidades de la Provincia de Bocas del Toro.
- Se Implementó el Sistema de Alerta Temprana a Inundaciones en el Río Mamoní y Cabra, para el monitoreo de las inundaciones.
- Evaluación y adecuación de herramientas de monitoreo de los ríos Cabra, Tocumén y Tataré.
- Se brindo el mejoramiento de la Coordinación Técnica con el Ministerio de Vivienda.

- Recolectar imágenes de diferentes parámetros y fuentes sobre las condiciones meteorológicas locales, regionales y globales.
- Recolectar datos de diferentes parámetros y fuentes
- Elaborar Pronósticos diarios y de 5 días (ETESA)
- Elaborar avisos de condiciones meteorológicas peligrosas y mantener una coordinación efectiva con SINAPROC para mantenerlo informado de la evolución de estas condiciones.
- Monitoreo y seguimiento de amenazas sísmicas, geológicas y volcánicas.
- Pronóstico diario de los índices UV, información desplegada en el Sitio Web (www.igc.up.ac.pa/labfisat/lab220.htm) y medios televisivos locales.

El Ministerio de Desarrollo Agropecuario (MIDA) mantiene como herramienta de toma de decisiones el análisis de la evolución de las temperaturas de la corriente ecuatorial del pacífico, el ENOS, con relación a la ocurrencia cíclica de fenómenos como El Niño o La Niña, acompañado con análisis del uso y abastecimiento de granos básicos, en cada uno de los Países, esto aplicado al Sector Agropecuario principalmente.

Otra iniciativa desarrollada en el MIDA se estructuró y manejo conjuntamente con el MINSA un sistema SIG, (Sistema de Información Georeferenciado) de VULNERABILIDAD, dirigido principalmente a problemas de Seguridad Alimentaria Nutricional, en la que se toma en consideración elementos agropecuarios de establecimiento de cultivos entre otros, en la que se destacan indicadores sociales y que en la actualidad fue traspasado a la SENAPAN, adscrita al Despacho de la Primera Dama.

Context & Constraints:

Es necesario realizar algunas de las siguientes acciones con el fin de mejorar lo existente:

- Evaluación de la efectividad de los Sistemas de Alerta Temprana ante inundaciones
- Se requiere un Sistema de Alerta Temprana ante deslizamiento en zonas vulnerables.
- Investigación sobre modelos conceptuales sobre eventos adversos.
- Formación de investigadores en sismología, paleo-sismología y geomorfología tectónica, riesgos geológicos (movimientos de masas, erosión costera, etc.), riesgos hidrometeorológicos y SIG en temas de desastres.
- Fortalecimiento de las redes de monitoreo sísmico, geodésico y de laderas inestables.
- Establecer programas de docencia en temas de desastres.
- Se ha propuesto el establecimiento de una Maestría par capacitar a profesionales de diferentes áreas del conocimiento a través de enseñanzas teóricas y prácticas para la prevención y reducción de los desastres: gestión del riesgo.

Core indicator 4

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

Level of Progress achieved:

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

Description:

En esta temática se está iniciando el trabajo de instaurar un marco de acción apropiado, dado que existen riesgos conjuntos que se están estudiando y en el cual nos estamos preparando en conjunto para el caso de respuesta. Ya que en años anteriores se han generado situaciones diplomáticas en las que no se realizó la coordinación previa inicial como se establece.

Ejemplo:

Actualmente existen estudios y trabajos conjuntos en cuencas bilaterales. Ejemplo: Panama- Costa Rica (a través de la cuenca del río Sixaola).

Adicional a esto Panamá cuenta con un Manual de Cancillería (Ministerio de Relaciones Exteriores) para el Servicio Exterior que entre otras cosas indica los procesos de canalización de donaciones internacionales, en este momento el documento ya ha sido presentado a las instituciones para su validación, se espera su publicación en mayo del 2008.

Se elaboró la propuesta del documento para el proyecto de Microzonificación para la Ciudad de Panamá y Colón donde se han contemplado los objetivos, la contribución al desarrollo del área de ejecución, procedimiento de ejecución, enfoque de desarrollo, complementariedad y sinergias con la Política Española de Cooperación y con las políticas públicas locales y resumen del proyecto.

Un ejemplo del trabajo como región es el PREVDA: Programa Regional que tiene como objetivo mejorar la calidad de vida de las personas que viven en las cuencas hidrográficas y; reduciendo la vulnerabilidad a desastres naturales, mejorando y protegiendo el ambiente y en especial las fuentes de aguas. Este proyecto se esta desarrollando en diferentes países centroamericanos y en el caso de Panamá es importante destacar que en la Cuenca de Pacora se proyecta a futuro un alto potencial para el desarrollo urbanístico y es una zona con antecedentes históricos de situaciones de desastres en el área.

Context & Constraints:

Los procesos de coordinación y preparación no son simples, requieren del gasto y de la atención por parte de las instituciones y a su vez el personal esta desempeñando sus funciones regulares.

Adicional se requiere mayor contribución transfronteriza para la evaluación de riesgos y para el estudio de amenazas, puede que en estos momentos falte mayor voluntad política ante estos aspectos pero a nivel de instituciones educativas y científicas se pueden realizar avances importantes.

- Hay que promover más acciones a nivel internacional en el que se vean reflejados beneficios para ambas partes y que estos en su mayoría al momento de una situación se conviertan en reducción de costos y de perdida de vidas.

Limitaciones:

- Recursos Económicos para implementar programas y proyectos transfronterizos.
- Las comunidades no quieren separarse de lo que consideran su propiedad, aunque estén viviendo en riesgo.

Peru (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Nivel Progreso 3:

En el Perú como en el resto de países que conforman la Estrategia Andina PÀD, se ha concertado la elaboración de un inventario histórico de desastres ocurridos en los últimos treinta años, y se tiene implementado un centro de documentación virtual para la gestión de riesgos y la prevención de desastres. Existen Lineamientos de Política de Ordenamiento Territorial, el cual incluye la Evaluación de Riesgos (EVAR); estando pendiente su incorporación en los Planes de Desarrollo Concertados de algunos

Gobiernos Regionales y Locales.

Esta articulado el Sistema de Información Nacional PAD con todos los organismos del SINADECI.

Además, existe un compromiso institucional y labor permanente del ente rector, e instituciones técnicas científicas; y algunos sectores, más no en los gobiernos locales. Esta última situación, incluso podría hacer que el nivel de progreso descienda a nivel 2.

Context & Constraints:

LIMITACIONES

- Débil cultura de prevención por parte de las poblaciones involucradas
- Insuficiente decisión política (GGRR y GLL) en la implementación de la normatividad establecida y sostenibilidad de las políticas vigentes.
- Insuficientes recursos humanos y financieros para la vigilancia y documentación y difusión de los fenómenos naturales peligrosos
- Insuficiente articulación interinstitucional, dificulta el acceso a información técnica especializada
- Limitado compromiso institucional a nivel de los gobiernos regionales y locales
- Existe vigilancia y documentación parcial sobre determinados fenómenos naturales peligrosos
- Los gobiernos locales tienen condiciones socioeconómicas bajas que limitan el desarrollo de evaluaciones de riesgo
- Algunos estudios y evaluaciones tienen limitaciones respecto a su alcance y difusión.

RECOMENDACIONES

- Implementar programas de difusión a nivel nacional con énfasis en la zona altoandina para el desarrollo de una cultura de prevención, en las lenguas oficiales
- Promover la fiscalización y la acción firme del órgano contralor para garantizar el uso efectivo de los fondos destinados para el fomento de la cultura de la prevención

Core indicator 2

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

Level of Progress achieved:

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

Description:

Nivel de Progreso 3:

Se genera información en forma sistemática por parte de entidades técnico científicas y otras que aportan a la PAD.

- Se cuenta con un Comité sobre el Fenómeno del Niño, activo.
- Se cuenta con el Consejo Nacional de Ciencia y Tecnología el cual está sistematizando información científica de 16 entidades nacionales
- Existen sistemas de información (a nivel de instituciones y otros), los cuales están en proceso de integración.
- Se ha fortalecido el SINPAD (Sistema de Información Nacional de Prevención y Atención de Desastres), incorporando el componente SIG
- Existe un Atlas de peligros naturales publicado, resultado de la articulación de la información proporcionada por las instituciones comprometidas.

Context & Constraints:

LIMITACIONES:

- Existe un compromiso parcial por parte de los gobiernos regionales y locales en la identificación de los peligros y análisis de las vulnerabilidades.
- Limitada disponibilidad de recursos humanos de la localidad que cuenten con capacitación y

permanencia en la institución para asegurar la sostenibilidad de las acciones de prevención, preparación (gobiernos regionales y locales).

RECOMENDACIONES:

- Propiciar la formación de recursos humanos calificados de la localidad y su continuidad en la prestación de su servicio a fin de garantizar la sostenibilidad de las políticas.

Core indicator 3

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

Level of Progress achieved:

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

Description:

- Existe de parte del INDECI, el compromiso de fortalecimiento de capacidades para potenciar la Alerta Temprana
- La Ley del SINADECI faculta la implementación de Sistemas de Alerta Temprana (SAT); esta Ley está en proceso de actualización.
- Existen SAT implementado (en Piura ha tenido mejoras o avances; en San Martín e Ica implementados recientemente)
- En relación a identificación de peligros y análisis de vulnerabilidades, se tiene avances en la identificación de peligros naturales y esta en proceso de creación una Comisión Multisectorial para el manejo del riesgo asociado al uso de materiales peligrosos.
- Existen esfuerzos institucionales aislados.
- Limitado acceso a la tecnología apropiada para la sostenibilidad de los sistemas de alerta temprana.
- Insuficiente compromiso de los gobiernos regionales y locales para la implementación sistemas de alertas tempranas

Context & Constraints:

LIMITACIONES:

Limitada decisión política regional y local en la implementación de la normatividad establecida y sostenibilidad de las políticas vigentes.

Ausencia de políticas que permitan la labor integrada de las instituciones para la emisión, seguimiento y calificación de la efectividad de las alertas

Se requiere fortalecer la capacidad operativa de las instituciones científico tecnológicas

Limitado interés y conocimiento de las autoridades sobre los Sistemas de Alerta Temprana.

RECOMENDACIONES:

Fortalecer los mecanismos para el acceso a las tecnologías adecuadas a fin que la información sobre las alertas sea confiable, oportuna y efectiva (tiempo real).

Promover la participación del sector público y privado, especialmente de los medios de comunicación hablada y escrita.

Sensibilizar a las autoridades y los líderes de las comunidades sobre el conocimiento y la operatividad de Sistemas de Alerta Temprana.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Nivel de Progreso 4:

El INDECI, en representación del Perú en el marco de APEC, (del cual el Perú es Presidente en esta oportunidad) organizó y condujo el CEO Seminar y posteriormente participó en el Task Force for Emergency Preparedness, que se realizó del 12 al 15 de Agosto y que concluyó con la Aprobación de la Estrategia para la Reducción del Riesgo de Desastres, preparación y respuesta a Emergencias del al Región Asia Pacífico: 2009-2015.

Avances en el Programa Binacional de Ciudades Sostenibles: Perú – Ecuador, incluye elementos metodológicos en relación a Programas y Proyectos, además de Planes de Ordenamiento Territorial (Premio a las Buenas Prácticas Gubernamentales – 2006, en la categoría Sistema de Gestión Interna, con el Programa de Ciudades Sostenible).

Existe interés por realizar proyectos de ordenamiento territorial con gestión de riesgos.

Se conformó en octubre de 2008, la Red Humanitaria Nacional, espacio de coordinación de la Cooperación Internacional y el Gobierno del Perú a través del Instituto Nacional de Defensa Civil, con la finalidad de fortalecer al Sistema Nacional de Defensa Civil, en la labor de preparación y respuesta frente a desastres.

Se ha elaborado un Protocolo de Actuación Básico por Desastre Sísmico en Lima y Callao, el escenario de mayor gravedad que se pudiera presentar en el Perú por sus repercusiones sociales, económicas y políticas; que se ha puesto a prueba en un Ejercicio de Simulación con participación, con participación de ONG nacionales e internacionales, organismos de cooperación técnica bilateral, agencias de Naciones Unidas, INDECI, sectores estatales, representantes regionales y locales.

La Red Humanitaria Nacional viene desarrollando un proceso de Planificación Operativa, a fin de contar con instrumentos de consenso que mejore la coordinación para la respuesta a desastres, considerando las Lecciones Aprendidas del Sismo del Sur, las recomendaciones de la Misión UNDAC de Preparación para la Respuesta a Desastres en el Perú, entre otros insumos.

Se cuenta con un documento preliminar de Procedimiento de Coordinación entre la Cancillería e INDECI en casos de Desastres de gran magnitud.

El Perú aportó sugerencias a la Guía de Operación para Asistencia Mutua frente a Desastres en los países andinos, aprobado por el CAPRADE.

Context & Constraints:

LIMITACIONES:

- Limitados recursos económicos que garanticen la sostenibilidad de los programas transfronterizos
- Limitada disponibilidad de recursos humanos calificados.

RECOMENDACIONES:

- Promover programas de gestión de riesgo bilaterales que fortalezcan la formación de recursos humanos locales en el ámbito de influencia de los programas.
-

Saint Lucia (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Vulnerability Assessments, Hazard Maps and Risk Assessments for critical facilities have been conducted for flooding due to storm/wind surge, winds, drought and debris flow. These were apparently developed or conducted under different projects and not in a coordinated systematic manner. However, these products are not being generally used to support decision making.

Context & Constraints:

There is a need to develop more of these products in a more systematic manner and to provide for their timely update. Further the relevant agencies need to be trained and sensitized in using them to support their decision making. Policy decisions need to be adopted to cause agencies such as the insurance firms to consider the use of DRR strategies as a basis for offering lower premiums to their clients. This policy can be further enhanced by way of legislation.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Systems are in place for monitoring Weather Systems. The Saint Lucia Met Service provides 24 hour weather forecasting service and is a member of the Caribbean Met. Organization. The US National Hurricane Center provides longer term Hurricane forecasting support to the region. The Seismic Monitoring Unit based at the University of the West Indies in Trinidad monitors seismic activity (Earthquake & Volcanoes) in Saint Lucia. There are 7 seismic monitoring sensors on the island. Mechanisms for establishing a Tsunami Early Warning System are currently being addressed on a regional level. Currently there exists a number of wave monitoring sensors within Saint Lucian territorial waters some of which are owned by foreign Governments. Information from these sensors all feed into the Global Tsunami Monitoring Network. National Focal Points have been identified and efforts are ongoing for establishing community level warning mechanisms, which should be completed soon.

Context & Constraints:

Mechanisms for the systemic research, recording and analysis of the hazards which have impacted Saint Lucia and the impacts of these hazards need to be established.

Effort should be made to encourage Saint Lucian graduate and under-graduate students to undertake research focused on disaster mitigation, response and preparedness.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Systems are in place for early warning down to the community level for weather systems and volcanoes; however early warning for other hazards is lacking or inadequate, although efforts are afoot to establish an early warning system for tsunamis on a national scale and for floods due to rain on a community level. These are both being pursued under regionally promoted projects.

Context & Constraints:

A lack of financial and human resources to implement and maintain a comprehensive Early Warning System.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Regional co-operation exists in disaster risk reduction, as Saint Lucia is a member of the Caribbean Disaster Emergency Response Agency (CDERA) a regional disaster management organization. A security agreement 'the Regional Security System (RSS)' also provides security and other support in disaster response. An MOU with Martinique caters for the provision of air-lift for medical evacuations from Saint Lucia to Martinique and other such air services by the Martinique military.

Seismic activity in Saint Lucia and the other CDERA Participating States is being monitored by the Seismic Monitoring Unit in Trinidad.

Avian Influenza monitoring and testing is being conducted on a regional basis by the Pan-American Health Organization (PAHO); thus the confirmation of the initial suspicion of any outbreak is done by this regional agency.

Regional and international institutions such as the Organization of Eastern Caribbean States (OECS), the Caribbean Development Bank (CDB), the United Nations Development Program (UNDP), the Canadian International Development Agency (CIDA), etc. have undertaken regional programs and projects with DRR themes encouraging collaboration and shared learning.

Context & Constraints:

It is sometimes a challenge to get the required National Agencies to implement projects and execute activities required to fulfill regional commitments on a timely basis.

United States of America (in English)**Core indicator 1**

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

Level of Progress achieved:

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

Description:

The United States has invested in the development of loss-estimation capabilities such as the Hazards US - Multi-Hazard (HAZUS-MH) software package developed by the Federal Emergency Management Agency. This software incorporates the current understanding of hazard with inventories of structures and other data to estimate losses. The Federal government has made substantial investments in assessments

for multiple hazards. In order to make hazards more real to decisionmakers and the public, scenarios for specific high-impact natural hazard events have been developed for a number of cities. Considerable investment is required to fully implement risk assessment capabilities on a national basis.

Context & Constraints:

See above.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Under the Stafford Act and other legislative mandates, responsibility for monitoring and issuing alerts for individual hazards is delegated to specific federal agencies. Significant capabilities exist for monitoring networks, data archiving and rapid dissemination to provide situational awareness for emergency responders and the public at large. Additional investments have been identified in the Grand Challenges for Disaster Reduction implementation plans developed by the National Science and Technology Council's interagency Subcommittee on Disaster Reduction. These plans are available at <http://www.sdr.gov>.

Context & Constraints:

See above.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The United States has deployed early warning systems for a number of hazards, including extreme weather events, floods, and tsunamis. A prototype debris-flow warning system has been deployed for wildfire impacted areas of southern California. Early-warning capabilities exist for some well-monitored volcanoes, and plans have been made to implement a National Volcano Early Warning System. The US does not currently have an early warning system for earthquakes; such a capability has been identified as aThe United States has had trans-boundary interactions on hazard and risk assessment for specific hazards and cases. On a related front, there are extensive efforts to share data with neighboring countries and global partners. The United States maintains a number of global space-based and in situ observation capabilities that generate data that are fully accessible to all Nations. In turn, the United States relies on data generated by the observation capabilities of other Nations as part of the Global Earth Observation System of Systems.n outcome of full implementation of the partially deployed Advanced National Seismic System.

Context & Constraints:

See above.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The United States has had trans-boundary interactions on hazard and risk assessment for specific hazards and cases. On a related front, there are extensive efforts to share data with neighboring countries and global partners. The United States maintains a number of global space-based and in situ observation capabilities that generate data that are fully accessible to all Nations. In turn, the United States relies on data generated by the observation capabilities of other Nations as part of the Global Earth Observation System of Systems.

Context & Constraints:

See above.

Venezuela, Bolivarian Rep of (in Spanish)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Instituciones como el Centro Nacional de Pronósticos Hidrometeorológicos, la Fundación Venezolana de Investigaciones Sismológicas (FUNVISIS) y el Ministerio del Poder Popular para el Ambiente poseen la tecnología para la detección, seguimiento y evaluación de amenazas hidrometeorológicas, sísmicas, amenazas en cuencas hidrográficas a nivel local y nacional, sin embargo los resultados no se difunden ampliamente entre las instituciones.

En los principales centros de salud se han realizado estudios de vulnerabilidad, sin emprender aun soluciones para reducir las condiciones de riesgo. La mayoría de los centros no cuentan con ningún tipo de evaluación de riesgo.

El Ministerio del Poder Popular para la Planificación y Desarrollo, ha desarrollado un proceso de recopilación de datos sobre las amenazas y factores de vulnerabilidad a escala micro, incorporando la dimensión del riesgo de desastres progresivamente en los planes de desarrollo, en sus distintos niveles de actuación: local, regional y nacional.

Por otro lado, en el ámbito de la Defensa, a través del Servicio de Meteorología de la Aviación Nacional Bolivariana posee un banco de datos climatológicos, que es procesado en un sistema computarizado.

Asímismo, las Direcciones de Protección Civil y Administración de Desastres, a nivel nacional, estatal y municipal, realizan evaluaciones de riesgos en todos los sectores, principalmente en las zonas de viviendas informales; sin embargo, éstas no son realizadas con una metodología de valoración cuantitativa. Actualmente se está efectuando la caracterización de los riesgos a nivel nacional y se están elaborando formatos de evaluaciones únicos.

Context & Constraints:

Fortalecer el recurso humano capacitado y aumentar los recursos materiales y financieros destinados a la evaluación de los riesgos nacionales, basados en los datos sobre las amenazas y vulnerabilidades.

Sensibilizar a las instancias decisorias para fomentar la evaluación de los riesgos, en base a datos de amenazas y vulnerabilidades, en todos los ámbitos nacionales.

Informar e incorporar a las comunidades en acciones para la reducción de riesgos, por lo que la difusión de la información existente, de manera adecuada y eficaz, es relevante para que esté al alcance de todos los sectores.

Integrar y complementar todos los estudios realizados por las distintas instituciones (sector privado, público, universitario, científico, comunitario, entre otros) encargadas de la evaluación de las amenazas, vulnerabilidades o riesgos.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Existen instituciones en el ámbito científico y académico que evalúan la información de amenazas, vulnerabilidades o riesgo. Sin embargo los resultados de dichas evaluaciones no son conocidos por todos los actores sociales (tomadores de decisión, instituciones y público en general) ya que no existen mecanismos sistematizados para su difusión.

En el sector salud existen metodologías para la recopilación de data de características estructurales y funcionales, mapas de vulnerabilidad y riesgo de todos y cada uno de los centros asistenciales en el país. Aun cuando existen deficiencias, se esta trabajando en resolver y asignar pasos específicos y responsabilidades para el análisis y resultados de dicha información. Sin embargo, no se ha establecido el proceso de sistematización de la información.

La Dirección Nacional de Protección Civil, avanza a través de la activación del proyecto CENAPRAD que será el Centro Nacional de Prevención y Atención de Desastres, I permitirá la recolección de toda la información relacionadas con amenazas y vulnerabilidades, a través de una plataforma tecnológica que articulará a todos los componentes del Sistema Nacional de Protección Civil y Administración de Desastres previsto como un marco nacional. El CENAPRAD contará con una gran base de datos para visualizar las zonas de riesgo a nivel nacional y disponible a todos los actores claves con las orientaciones necesarias para la RRD.

Actualmente el CENAPRAD ha avanzado en la creación de la Red de Biblioteca Virtuales para la Prevención y Atención de Desastres (Red BiVaPaD), el Sistema de Inventarios de Desastres (DesInventar) y el Sistema de Información Geográfica (SIG) que se encuentran disponibles a través de la página web de la institución.

El Ministerio para el Poder Popular para el Ambiente, esta diseñando una plataforma SIG donde se plasmará todo el plan de ordenación territorial, los planes de ordenamiento y reglamentos de uso de las Áreas Bajo Régimen de Administración Especial (ABRAE), y las principales actividades humanas asociadas al desarrollo que representan amenaza para las presentes y futuras generaciones, con el fin de registrar los posibles cambios o tendencias en el ambiente y los recursos naturales.

Context & Constraints:

Poner a la disposición de las instancias decisorias y demás actores sociales (instituciones públicas y privadas y público en general) toda la información recopilada por los sistemas habilitados sobre las principales amenazas y vulnerabilidades, a través de una plataforma tecnológica y de manera oportuna y eficaz.

Implementar mecanismos para la recopilación, seguimiento y evaluación de información referente a las principales amenazas y vulnerabilidades.

Sintetizar y procurar la diseminación de información en materia de RRD de manera sencilla y de fácil entendimiento, para hacerla permeable ante las instancias decisorias y el público en general.

Mejorar los procesos administrativos, en la etapa de transmisión de información a las instancias de alto nivel, en materia de amenazas y vulnerabilidades en todo el territorio nacional.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Existen experiencias en comunidades puntuales, en el Distrito Capital, Mérida, Sucre y Vargas, donde han ocurrido eventos hidrometeorológicos con efecto adversos sobre las comunidades. Particularmente, Venezuela implementó un sistema de alerta a través de los Programas de Prevención de Desastres y Reconstrucción Social "PREDERES en el estado Vargas, con el objetivo general de contribuir al mejoramiento del nivel y condiciones de vida de la población de la Parroquia Catia La Mar".

Existen indicios de progreso en algunas regiones del país donde la alerta ante riesgos a la salud es del manejo y conocimiento de todos los integrantes de la comunidad, como es el caso de la Costa Oriental del Lago de Maracaibo, en las comunidades de Tía Juana y en las regiones indígenas del país.

La UNESCO ha promovido la implementación de un Sistema de Alerta Temprana contra tsunamis y otras amenazas costeras en el Caribe y regiones adyacentes, en el cual Venezuela esta participando activamente a través de FUNVISIS y la Dirección Nacional de Protección Civil y Administración de Desastres.

Context & Constraints:

Concienciar a las altas autoridades responsables de la RRD sobre la importancia del establecimiento de las alertas tempranas en las zonas de mayor vulnerabilidad social.

Implementar sistemas de alerta temprana, con participación activa y protagónica de las comunidades, para que tomen acciones con suficiente tiempo y de forma apropiada, para reducir las afectaciones a la vida y sus bienes materiales.

Core indicator 4

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

Level of Progress achieved:

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

Description:

El Estado venezolano, a través de sus instituciones nacionales responsables de estudios sobre amenazas sísmicas e hidrometeorológicas, toma en cuenta los riesgos regionales. Una de las tareas a acometerse tiene que ver con la amenaza sísmica en la frontera colombo-venezolana, que involucra la amenaza ante fenómenos de origen sísmico entre Colombia y Venezuela. Hasta el presente FUNVISIS, ha trabajado en algunos aspectos de la misma, caso de la sismicidad histórica, pero no se ha alcanzado un nivel de coordinación óptimo entre los países.

El Ministerio del Poder Popular para la Salud ha coordinado con los estados y regiones fronterizas ante cualquier alerta o aparición de enfermedades y mantiene información constante sobre el tema, actualizaciones, y trabajos conjuntos en la solución del problema. Así mismo, a través del MERCOSUR se han realizado reuniones importantes que contribuyen al fortalecimiento institucional en la materia, como el caso especial del tráfico ilícito de materiales radiactivos en las fronteras y en el sector salud, a través de la Comisión Intergubernamental de Gestión de Riesgo y Reducción de Vulnerabilidad (CIGRRV). .

Context & Constraints:

Implementar un sistema de intercambio de información y comunicación sobre amenazas transfronterizas entre los países vecinos.

Ampliar y fortalecer los estudios nacionales considerando los riesgos regionales y transfronterizos, haciendo énfasis en la microzonificación de los riesgos.

Consolidar la existencia de esquemas regionales existentes, como el ALBA, MERCOSUR, UNASUR, AEC y CAN, para propiciar y fortalecer el trabajo coordinado entre los países de la región.

Asia

Bahrain (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

- Risk Assessments have been carried out using both National resources and also International Consultants.
- However, an up to date formal National Multi-Agency Risk Assessment will take place in October 2008 under guidance of the UK Emergency Planning College. This Course will do much to overcome barriers between agencies.
- Following this, a full Hazard Profile will be produced with coordination and prioritisation supervised by the NCDM.
- Bahrain is a small Nation and therefore Community involvement is limited in terms of responsibilities, but their concerns are heard and actioned if justified.

Context & Constraints:

- Due to insufficient legislative support, and lack of focal points within various organisations, the results of risk assessments and risk matrix are currently not centrally coordinated or implemented fully.
- Nor has any prioritisation between risks been carried out - however see above.
- There is still some resistance to data sharing, however with enactment of the draft law, it is expected that such resistance will be overcome.
- Communities are encouraged to report and if feasible take local action to reduce risks which they identify. However, what data is available to them in certain areas, remains to be identified.

Core indicator 2

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

Level of Progress achieved:

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

Description:

- Individual Ministries and organisations do collect and maintain data on risks. However, follow up action is not properly coordinated or passed on to all as required.
- The new legislation will ensure that such data is shared and used in the National interest.
- Again NCDM will be responsible for coordination and ensuring success in this area.

Context & Constraints:

- Currently sharing of information is not systematic and the primary challenge is to ensure that all this disparate data is brought together and prioritised for further action.
- Once this is achieved National Policies and Programmes will follow.

Core indicator 3

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

Level of Progress achieved:

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

Description:

- Industries using hazardous materials do have detection and early warning systems.
- The Environmental Commission has put in place air quality analysers monitored by the Environmental Department.
- The Environmental Commission has proposed and put forward for Parliamentary approval an update of Environmental Law No.21 of 1996.
- A decision to acquire radiation, detection and warning systems has been made. However, a decision on which agency will become the focal point is awaited.
- The Metrological Department has comprehensive equipment and stations to monitor atmospheric and sea conditions.
- The emplacement of a National Platform and Plan coordinated through the NCDM will do much to improve the situation and ensure closer liaison and coordination between all sectors - especially Private and Government.
- This will ensure coordination of the significant resources that are already in place.

Context & Constraints:

- Lack of central monitoring stations for various hazards.
- Insufficient procedures for dissemination of warning of impending hazards to the general population.

Core indicator 4

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

Level of Progress achieved:

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

Description:

- The GCC Organisation and its Secretariat sponsors regular meetings of Directors General of Civil Defence.
- The member countries jointly produce codes and regulations on buildings, chemicals and other potential hazards (eg Radiation hazardous materials etc).
- Joint training exercises between member States for combating these hazards are conducted.
- Institutional mechanisms exist to pool the substantial resources of member States.
- In addition to this, Bahrain works closely with UN (ISDR) and also takes advice from other International Agencies, such as IAEA to which Bahrain has recently become a signatory and has been a member of ICDO.
- Many challenges will be overcome once Bahrain identifies the International dimension of the National Platform and which other Nations and International Organisations should be involved as a part of the platform.
- The NCDM will take this forward through the reactivated Civil Defence Council, and ensure the subject of DRR is given appropriate priority at GCC Ministers of Interior Meetings.

Context & Constraints:

- Despite the GCC cooperation above, there is still lack of access to and sharing of data bases with member countries.
- Lack of a system to interlink the member countries' warning systems to give sufficient early warning of an impending hazard.

Bangladesh (in English)**Core indicator 1**

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

Level of Progress achieved:

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

Description:

National risk assessment for flood and cyclone exist, but they require updating in the context of changes in environment, topography and population and demography. MoFDM has initiated detailed risk assessment for earthquake and tsunami.

The local risk assessment is done in most high risk areas, by the GoB and various humanitarian actors using array of participatory tools. The same is true regarding river bank erosion and prediction model has been developed. Drought prone areas are identified and adaptation processes are being developed in the same period.

Action-oriented researches are underway to generate more knowledge on the impact of climate change at local and international levels. Progress has been made in assessing risk in agriculture. Some activities also initiated to assesses risk in selected hospital, schools and cyclone shelters by various stakeholders.

Context & Constraints:

Country promoted diversity in testing various methodologies in local risk assessment, led by various public and private organizations. But 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, education 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

Core indicator 2

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

Level of Progress achieved:

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

Description:

Systems have progressively evolved to monitor, archive and disseminate key hazard information. At the same time, limited progress is made in designing indicator, data collection and analysis of vulnerability, though specific aspect exists such as food related vulnerability and poverty monitoring, including location, specification on base line poverty for better understanding the coping capacity. An ongoing project led by BBS/World Bank/WFP is updating poverty maps, which would be used as one input for risk assessment at pre-crisis situation. By the reporting period, significant amount of research-based information generated on vulnerability of number of high risk districts by GoB and NGOs, which can be a basis for a systematic monitoring vulnerability. Early warning dissemination has considerably been improved and further attention is required for wider dissemination at community level.

Context & Constraints:

Vulnerability as an important element in disaster management is increasingly been recognised for practice in recent time in Bangladesh. A national system remains underdeveloped to monitor vulnerability to different hazards. However, much of the information needed for monitoring exist with different agencies often on different websites.

There is a current effort by DMB to create a portal website through the DMIC to centralize this information, focused on hazard and disasters. DMB/DMIC not yet achieved in delivering information. Whilst it should be easily accessible through the internet, there must also be a system for the local level planners (DMCs) to access that information base who do not have internet facilities.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Country has well developed early warning and dissemination system for cyclone and flooding. However, based on recent experience, the cyclone early warning system is revised in early 2008. Stakeholder consultation is ongoing to define a rollout the system. Number of studies initiated during the reporting period by FFWC to pilot people centered dissemination of flood warning and forecasting. Country has piloted 10 days predication of flood, which has created a significant opportunity for country to strengthen it multi-hazard warning. A river erosion perdition modelling has also been developed as a pilot. Tsunami early warning centre has been established at Bangladesh Metrological department (BMD) in collaboration with Intergovernmental Oceanographic Commission (IOC). In addition to existing one, new three seismic observatories have been established at Dhaka, Sylhet and Rangpur.

Context & Constraints:

Bangladesh is located in a delta of a three major river system, overflow of which is one of the reasons for flooding. Space based technologies are being explored. SAARC framework has created an opportunity in regional cooperation. Bangladesh Flood cannot be mitigated without establishment of regional data sharing and cooperation, considering flooding (and other hazards) as common hazard in the Ganges, Bharmaputra and Meghna basins. Simple earning warning dissemination of outreach to local communities is also being tested. Tornado forecasting model need to be more enhanced and coordination is needed between BMD and SPARRSO as tornado generates in the land and provided minimum time for early warning and forecasting.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Institutional arrangements exist between FFWC and neighbouring countries (India central water commission) upstream to limited exchange of hydro meteorological data. Arrangements are in place to facilitate information sharing regarding AVIAN influenza out breaks near borders.

Context & Constraints:

Information exchange regarding AVIAN influenza needs to be strengthened. Application of research and findings on hazards is limited. Establishment of SAARC Disaster Management Centre and adoption of SAARC Comprehensive Framework on Disaster Management created opportunity for more regional cooperation in risk assessment at regional scale and exchange of information.

Cambodia (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

There is some statistical information of the national and local risk, multi-hazard data, vulnerability information, but the information and data is not periodically and regularly developed, updated, and

disseminated widely to decision-makers, general public and communities. In generally, the hazard data and vulnerability information and data is developed, updated, and disseminated separately by individual national authorities and partner agencies to serve for their purposes respectively, for instance, the disaster risk reduction partner agencies, who is responsible to implement the disaster risk reduction measures at local levels, they usually conduct hazard, vulnerability and capacity assessment (HVCA) to collect information of hazards, vulnerabilities and capacities for formulating local disaster preparedness, mitigation and prevention plan, while local authorities are engaged in the process of assessment. In addition to this, most development agencies usually conduct the surveys or assessment to collect the relevant information or other references to design and implement the development plan, but the significant challenges and constrains is that it does not have mechanism to maintain, update, utilize and disseminate the data or information properly.

Context & Constraints:

In general, there have been some critical constrains and challenges encountering by the country, national authorities and partner agencies on development, update, and dissemination of national and local disaster risk assessment in Cambodia, including:

- Mechanisms and systems to collect, maintain, update and utilize the data and information of hazards, vulnerabilities and other relevant information are recognized the limitation
- Limited human resources and equipments for maintaining and updating, and dissemination of data and information.
- Limited capacities and knowledge on disaster risk reduction concept while the national and local authorities consider that emergency relief is more important than risk reduction, preparedness, prevention and mitigation.

Recommendation to Overcome:

To ensure the regular and periodic development, update, collection and improved dissemination of statistical information of hazards and vulnerabilities to decision-makers, general public and communities, recommended suggestions should be considered to address by national and sub-national levels as following:

- Appropriate mechanisms to develop, update, collect, maintain and dissemination of statistical information of hazards, vulnerabilities and disaster risk should consider as one of the top priorities of national and sub-national levels
- Human resources and equipments at all levels to effectively serve for development, updating, record, analysis, maintaining and disseminating data and information of hazards, vulnerabilities and disaster risk should be implemented in the national context and needs.

Core indicator 2

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

Level of Progress achieved:

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

Description:

There is some political commitment to collect and archive the national and local risk, multi-hazard data, vulnerability information, but there has not been a standardized system to collect, maintain, update and utilize the hazard, vulnerability data and information properly. In generally, the hazard data and vulnerability information is collected individually by national authorities and partner agencies to serve for their purposes respectively, for instance, the disaster risk reduction partner agencies, who is responsible to implement the disaster risk reduction measures at local levels, they usually conduct hazard, vulnerability and capacity assessment (HVCA) to collect information of hazards, vulnerabilities and capacities for formulating local

disaster preparedness, mitigation and prevention plan, while local authorities are engaged in the process of assessment. In addition to this, most development agencies usually conduct the surveys or assessment to collect the relevant information or other references to design and implement the development plan, but the significant challenges and constraints it does not have mechanism to maintain, update, utilize and disseminate the data or information properly.

Context & Constraints:

In general, there has been some critical constraints and challenges encountering by the country, national authorities and partner agencies in Cambodia, including:

- Inappropriate mechanisms to collect, maintain, update and utilize the data and information of hazards, vulnerabilities and other relevant information
- Inadequate human resources and equipments for maintaining and updating data and information, due to the issues have not been considered as the top priorities
- Limited capacity and knowledge on disaster risk reduction while the national and local authorities consider that emergency relief is more important than risk reduction, preparedness, prevention and mitigation.

Recommendation to Overcome:

To ensure the regular and periodic development, update, collection and improved dissemination of statistical information of hazards and vulnerabilities to decision-makers, general public and communities, recommended suggestions will be considered to address by national and sub-national levels:

- Appropriate mechanisms to develop, update, collect, maintain and dissemination of statistical information of hazards, vulnerabilities and disaster risk should consider as one of the top priorities of national and sub-national levels
- Human resources and equipments to effectively serve for development, updating, record, analysis, maintaining and disseminating data and information of hazards, vulnerabilities and disaster risk should be implemented in the national context and needs.

Core indicator 3

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

Level of Progress achieved:

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

Description:

There are establishments of early warning system and dissemination of forecast and early warning information with outreach to communities at all levels, including at national level, Ministry of Water Resource and Meteorology (MoWRAM) through its Department of Hydrology and River Work (DHRW) and Department of Meteorology, established, reviews, maintains and disseminate flood forecast, early warning system, information and weather forecast. The both flood and weather forecast and early warning information is disseminated to line ministries, partner agencies including humanitarian agencies, UN agencies, funding agencies, NGOs, and Provincial Department of Water Resource and Water Work through facsimile. In addition, the information is disseminated to the end users at communities through national and private TV channels, Radios and existing networks of partner agencies. At local levels, the flood and weather early warning, forecast system are established, reviewed, and disseminated by concerned partner agencies in collaborating with Ministry of Water Resource and Meteorology through Department of Hydrology and River Work (DHRW) and Department of Meteorology, for example, the Mekong River Commission partnered with the Cambodian Red Cross, Action Against Hunger (AAH) and Asian Disaster Preparedness Centre (ADPC) to implement the Community Based Flood Early Warning System in only 58 villages in four flood prone provinces in the Mekong Lower Basin (Steung Treng, Kratie,

Kampong Cham, Kandal and Prey Veng provinces), In addition to this, Oxfam GB in collaborating with Department of Hydrology and River Work (DHRW) established the same system in flood prone districts in Takeo province. However, some systems are still effectively operating while others are not well functioning due to financially and technically phased out and systems have not properly integrated into local development processes and the existing networks have not built into local authority systems.

Context & Constraints:

However, the achievements are neither comprehensive and nor substantial due to national and local authorities and partner agencies are encountering some following challenges and constrain, including:

- Out of 58 villages in four flood prone province have not established the early warning system to effectively, timely and accurately disseminate forecast and early warning information to communities, and decision-makers in those specific areas
- Dissemination mechanism of forecast and early warning to the end-users at community levels has not been well established and functioned. The forecast and early warning information from the national level usually outreach to existing networks at province, but do not to community levels, because of insufficient mechanisms and communication system and equipments.
- Existing systems and tools are not well regularly maintained and reviewed while technically and financially supports phased out, due failed of dedication of resource from the government to keep the momentum of implementation.

Recommendation to Overcome:

To ensure of early warning and forecast information would be effectively, timely and accurately outreached the communities and responsible agencies, the following recommendations should be addressed:

- The system should be made in place in other disaster prone areas out of the 58 villages. The existing systems are in only mainstreams could not much effectively, timely and accurately serve to the remote areas from long distance stations
- The mechanism to maintain the existing system and to review and disseminate information is considered as the priority consideration to take account
- The government should develop and review strategy and action plan, and allocate resources to extend the systems to other areas and maintain and the existing systems by including in development framework.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The initiatives and activities have been initiating and implementing under framework of the Mekong River Commission's programmes, namely "Flood Management and Mitigation Programme (FMMP)" in collaborating with the members states of the Mekong River Commission, in which the Royal Government of Cambodia is one of the member states, is implementing the programme through its national line ministries and local authorities. There are five key components under MRC's FMMP programme, including:

Component 1 (C1): Establishment of Regional Flood Management and Mitigation Centre (RFMMC), under this component, four outputs are planned:

- An operational regional FMM centre under MRC to operate the regional flood forecast and dissemination early warning information in the riparian countries
- Improved monitoring, operational forecasting, warning and dissemination services
- Medium and long term forecast
- Risk assessment tools and flood risk analysis

Component 2 (C2): Structural Measures and Flood Proofing. There are two key outputs are implementing under this component.

- Guidelines for best practice design of the structural and flood proofing measures. It is primarily focusing on development of national guideline on practical of the structural and flood proofing
- FMMP implementation plan. It is focus on how to implement the of FMM plan

Component 3 (C3): Enhancing Cooperation in Trans-boundary Flood Issues

- Information generation
- Capacity & skills building
- Toolbox development

Component 4 (C4): Flood Emergency Management Strengthening

- Preparation and implementation of flood preparedness programmes
- Developed national capacities, regional knowledge sharing
- Facilitated trans-boundary emergency between provinces

Component 5 (C5): Land Management

- More reliable flood probability information
- Capacity of relevant line agencies in the area of land management
- Regional sharing of knowledge on improved land management

Context & Constraints:

- There are existing and regular cooperation and collaboration agenda on socio economic, trades, and security between neighbouring countries, local authorities, but the cooperation on risk assessment and disaster risk reduction has not been initiated and established well and joint planning on disaster risk assessment and risk reduction between neighbouring countries and local authorities have not be developed and implemented.
- There are less efforts of local, international and regional organizations to provide technical and financial support to strengthen cooperation, collaboration, and mechanisms of regional cooperation on risk assessment and risk reduction

Recommendation to Overcome:

- Assessment on country framework to identify the gaps, needs and priorities for developing joint plan and mechanism to implement the plan and to develop procedures of cooperation on risk assessment and risk reduction
- Neighbouring countries and local authorities should include disaster risk assessment and risk reduction into regular and permanent agenda of cooperation and collaboration through joint plan and implementation.
- Increasing engagement and involvement of local, international and regional organizations to provide technical and financial support for strengthen regional cooperation on disaster risk assessment and risk reduction.

India (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

The first Vulnerability Atlas of India was prepared in 1997 which got further revised in 2006. The Atlas provides information on natural hazard risks and level of vulnerability of the housing types at state and district level along with macro hazard maps. It covers key hazards like earthquakes, floods, cyclones, landslides and provides district level housing risk analysis statements by combining local hazard intensity and vulnerability of the existing housing types. Individual state disaster management authorities like Gujarat State Disaster Management Authority (GSDMA), Orissa State Disaster Mitigation Authority (OSDMA), and Department of Relief and Rehabilitation, Government of Maharashtra have also carried out hazard risk and vulnerability assessment studies. Some of these studies apart from assessing the vulnerability of the critical infrastructures also included socio-economic vulnerability analysis and have attempted to estimate the loss including the non-monetary costs (social and environmental). Many of the Disaster Management Plans prepared by different state governments and district administrations include detailed hazard risk assessment.

Context & Constraints:

In India due to the federal structure of the government, disaster management is essentially a subject dealt by the state governments. The individual state governments while preparing their state level disaster management plans need to carry out a detailed hazard risk and vulnerability assessment which will guide them in designing adequate mitigation and preventive measures to reduce disaster risks. Such assessments at state and level below are largely driven by the political commitment existing at the state, resources available for carrying out such studies, records of devastating disasters which have hit the economy of the state badly in the past and the capacity of the existing government institutions, academic and research organizations to conduct such studies. Lack of local level micro hazard maps as well as data on socio-economic parameters which are essential for carrying out hazard risk and vulnerability analysis also pose a challenge. There is a sincere need to prepare local level micro hazard maps and dedicated resources should be made available for it. Other existing challenges are strengthening capacities of research and academic institutions to conduct risk and vulnerability assessment of key sectors, improving the understanding of the interdependencies across sectors and assessing socio-economic loss.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Technical organizations have been identified by the Government of India to monitor, archive and disseminate data on key hazards and other related information. India Meteorological Department (IMD) is responsible for monitoring and disseminating cyclone-related information and early warning from the Area Cyclone Warning Centres located across the country. IMD also monitors and archives the database of significant earthquakes. The National Seismological Data Centre has been established at IMD to access real-time wave form data from the field stations and systematically archive it. Geological Survey of India (GSI) has

been bestowed the responsibility to provide all informations relating to landslide hazards. An inventory of about 1500 landslides has been generated by GSI and landslide hazard zonation on macro scale (1:25000/50,000) has been done to classify the landslide prone hilly terrain into different zones according to their degree of susceptibility. GSI also provides seismo-tectonic informations and has prepared the Seismo-Tectonic Atlas for India which provides detailed geological and tectonic data. Central Water Commission (CWC) is responsible for providing flood forecast on all major flood prone rivers and inflow forecasts for selected important reservoirs. The commission has prepared an Integrated Hydrological Data Book which provides information on the salient features of the major river basins in India, number of hydrological observations sites at different basins, sitewise annual, monsoon, and non monsoon flow of water in each basin etc. The National Flood Atlas has also been prepared by the commission. Survey of India (Department of Science & Technology) has set up the National Spatial Data Infrastructure (NSDI) to collect, compile, analyze and prepare value-added maps for use by various agencies in the field of disaster management, natural resource management and industrial applications. One of the objectives of NSDI is to work towards interoperability of data and information-sharing protocols, which will facilitate effective policy analyses and informed decision making. Department of Space, Government of India is implementing the Disaster Management Support Programme which aims at creating digital database at appropriate scales for hazard zonation, damage assessment and strengthening the communication networks for addressing realtime information transfer needs. Under this programme a Decision Support Centre (DSC) has been opened up at National Remote Sensing Agency in Hyderabad which operates INFRAS (Indian Forest Fire Response and Assessment System) to carry out active forest fire monitoring and assessment of burnt area and ecological damage. Ministry of Agriculture has set up the National Agricultural Drought Assessment and Monitoring System (NADAMS) to provide agricultural drought informations at state district and sub district level. Recently Indian Space Research Organization (ISRO) has launched the first all weather spy satellite. The Polar Satellite Launch Vehicle (PLSV C12) comprises of Radar Imaging Satellite (RISAT 2) and Educational Satellite Anusat and has all-weather capability to take images of the Earth beneficial in mapping and managing natural disasters, such as floods and landslides.

Context & Constraints:

Although the database on key natural hazards is available there is limited capacity in loss modeling and analyzing the vulnerabilities including the socio-economic parameters. Significant investment in research is required to develop appropriate methodologies for risk, vulnerability, damage and loss assessment. There is also a need to strengthen the data sharing protocols and mechanisms at national and sub national level to enhance the accessibility and dissemination of key hazard data.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Government of India has identified key departments/ organizations to provide early warnings on different natural hazards. Cyclone warnings are provided by India Meteorological Department (IMD) from the Area Cyclone Warning Centres (ACWCs) and Cyclone Bulletins are shared with television and radio stations for inclusion in the national broadcast/telecast. Flood Forecasting is done by Central Water Commission (CWC) on all major flood prone rivers and inflow forecasts for selected important reservoirs. Flood Bulletins are issued and circulated to concerned ministries and agencies. For early warning on tsunami and storm surge Indian National Centre for Ocean Information Services (INCOIS) has been established. As a part of the early warning system for Tsunami Real Time Seismic Monitoring Network (RTSMN) has been established at IMD. The network has been designed to monitor and report, in the least possible time, the occurrence of earthquakes capable of generating Tsunamis from the two probable Tsunamigenic sources, viz. the Andaman-Nicobar-Sumatra Island arc region and the Makran coast in the north Arabian Sea area.

The data from the 17 broadband seismic field stations is received simultaneously in real time through V-SAT communication facilities at the Central Receiving Stations (CRSs) located at IMD, New Delhi and INCOIS, Hyderabad for processing and interpretation. At the national level a 24/7 Integrated Emergency Operation Centre exists and connected with the State and District Emergency Operation Centers/Control Rooms. The Indian Space Research Organization (ISRO) has set up a communication hub on V-Sat terminal with audio, video and data communication facilities at the national capital and it is connected to client nodes positioned at different states and national nodes like Prime Minister's Office, Cabinet Secretariat, Ministry Of Home Affairs, National Institute of Disaster Management, Central Water Commission (CWC) and National Disaster Management Authority. Under the DM Act, state governments have been made responsible for establishing adequate warning systems with outreach to the vulnerable communities. Several Non governmental agencies have supported the grassroots community to develop their local systems for early warning as an extension of the national and state network. Government of India along with UNDP is also implementing a community based Disaster Risk Management Programme in selected states across the country under which community have been trained on early warning communications.

Context & Constraints:

The institutional mechanism required for early warning of hydro meteorological events is in place. The major challenge faced is to reach out to the vulnerable communities in a timely manner and to build their capacity to respond to the warnings. There is a strong need to strengthen the existing information sharing protocols and procedures to provide public warning both horizontally between different agencies at national, subnational and district level as well vertically from the state and district agencies to the vulnerable communities. The major broadcasters in the country need to be adequately trained on early warning dissemination and a Memoranda of Understanding supported by procedures at different levels need to be put in place with them to provide public warnings. The community based programmes though exist need to be further strengthened to build in the capacity of local community on early warning dissemination and response management.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The country hosts the SAARC Disaster Management Centre (SDMC) which aims to put in place a regional disaster management system to reduce disaster risks, improve level of preparedness for effective response at the regional level and implement regional programmes on disaster preparedness and response (early warning). The SAARC Centre for Disaster Management (New Delhi), SAARC Coastal Zone Management Centre (Male) and SAARC Meteorological Research Centre (Dhaka) will implement the SAARC Disaster Management Framework. SDMC is mandated to disseminate knowledge, experiences and network with various research and training organizations in the region. For regional cooperation on dissemination of early warnings India Meteorological Department has been identified as one of the six Regional Specialised Meteorological Centre by World Meteorological Organization and is mandated to provide advisories and bulletins with up-to-date first level basic meteorological information on all tropical cyclones, hurricanes, typhoons in the South Asia region.

Context & Constraints:

No significant contextual challenge is identified.

Indonesia (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

In formulating disaster risk reduction programs, data and information related to the existing hazards and vulnerabilities are needed. At the national level hazard data have been produced by the different sectoral ministries. DIBI (by National Agency for Disaster Management/BNPB), PIRBA (by Ministry of Research and Technology/Menristek), and SIMBA (by National Agency for Space and Aeronautic/LAPAN), are among the instances. The Ministry of Home Affairs, through the Minister of Home Affairs Regulation (Permendagri) No. 46 Year 2008, has ordered or recommended that district/city governments collect and report hazard related data in their areas. Several regions have met these requirements, although it has not been optimal.

Presidential Regulation No. 8 Year 2008 stipulates the set-up of disaster management bodies (Badan Disaster Management Daerah/BPBD) in the regions and one of the functions of BPBD is to prepare hazard maps of their regions. Several regions have already had meta data that could be used as a basis for risk assessment.. Capacity building is needed for local governments and local universities or disaster research centers will need to be engaged to support local BPBDs in conducting hazard and risk mapping.

Several risk assessment initiatives have been developed, particularly in areas that have experienced major disasters. The method used in this risk assessment, however, is different from one area to the other. Without standardization in the risk assessment method used, the risk assessment will yield different results that will be confusing for the end users. Data and information related to vulnerability are also still very limited. To address this issue, the government through the BNPB is in the process of preparing a standard guideline in risk assessment that could easily be implemented at the local level.

Context & Constraints:

Hazard maps and hazard information are basically sectoral, so that the same information is often produced by different agencies, although with different methodologies and non-standardized techniques. As a result, the information produced is confusing, does not meet established criteria and difficult to be overlaid with the other maps to make a more comprehensive risk assessment. Thus, there is a need for a risk assessment product that meets scientific requirements as well as can serve as a reference for the national and local levels.

In general, regions affected by disasters have more initiatives in conducting risk assessment. The bigger the disaster suffered by a region, the more initiatives related to risk assessment conducted in the region by the local government or other interested stakeholders. Still, local governments need support from external parties in developing risk assessment and vulnerability analysis. Data and information related to vulnerability and risk assessment has mostly not been integrated optimally into local spatial plans.

To address the above challenges, cooperation needs to be built among agencies developing risk maps to synergize the existing maps into integrated and comprehensive maps. The National Agency for Disaster Management needs to have standardized maps developed by sectoral agencies or ministries. Thus, parties in need of data and information related to hazards, vulnerability and risk assessment can access standardized maps that have been endorsed by BNPB. Besides, the maps produced should also be integrated to the existing database system, so that the accessibility and utilization of the maps could be optimized.

In order that agencies/organizations that develop data and information related to hazards, vulnerability and risk assessment can produce reliable products, there is a need for a policy guideline on the formulation of

standardized maps, which currently is still being prepared under the coordination by BNPB.

It is also necessary to have standardized maps and consistent information that is accountable to the public as means to increase the institutional capacity of NADM and LADM through transfer of knowledge process from donor/international agencies as well as from other areas,

Core indicator 2

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

Level of Progress achieved:

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

Description:

At the national level, disaster monitoring system has already in place and being used by the sectoral agencies/ministries. The standard data format has also been agreed by 12 relevant ministries and agencies.

The archive system and dissemination of hazard data for flood, volcano, landslide, earthquake and other hazards are done by the individual responsible sectoral agencies/ministries. However, although the hazard data have been available, its use and utilization at the local level has not been optimal, because the information dissemination system has not been sufficiently developed. For example, the Badan Meteorologi, Klimatologi dan Geofisika (BMKG or Agency for Meteorology, Climatology and Geophysics) issues a warning of possible rainfall with high intensity and long duration for a certain area that is indicated as prone to landslide. If the warning reaches the intended government, which does not have functional warning system dissemination yet, there is no way to disseminate the information to the communities at risk. Moreover, since the collection, archive and dissemination of hazard data has often been done also by each individual sectoral office, when the coordination between these sectoral offices is weak, it is most likely that the hazard data cannot be utilized optimally by parties in need of these data.

Vulnerability data such as social, economic, environmental and physical vulnerabilities are still insubstantial, in terms of the collection, archive and dissemination.

Context & Constraints:

The geographical condition of Indonesia which consists of islands that are scattered in a vast area, poses quite a challenge for an accurate system to monitor disaster. Moreover, the limited number of instruments available to conduct the monitoring will further hinder this effort.

When hazard data is available and it needs to be disseminated to the communities at risk, often there will be other problems such as the wide distribution of the population, the limited infrastructure and the limited communication/telecommunication networks available. To address these challenges, coordination is needed to strengthen the instrument systems, standardize the data format and develop networks for sharing data and information to increase the usefulness of the data. Also, to prevent overlapping of information, the monitoring management needs to be enhanced and hazard data and information need to be centralized and managed by BNPB.

Considering the many data and information held at the different agencies/organizations, the BNPB has developed a national disaster database called the DIBI (Data dan Informasi Bencana Indonesia or Indonesian Disaster Data and Information). It is expected that a standardized and user-friendly database could be established and accessed by the public.

When disaster risk reduction has already been mainstreamed into development plans, regions facing limitations in terms of telecommunication network could give priority to the development of infrastructure to optimize hazard monitoring and disseminate the information to communities at risk. Involvement of the

media, including TV/Radio, needs to be enhanced to help in information dissemination.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Early warning systems in national level for several types of hazard, such as earthquakes, tsunami, volcanic eruption, and floods are available and functioning, which have been disseminated to the community level of the communities at risk. Evaluation on the early warning system for several types of disasters in the community level has been done professionally. This is supported by experts from research institutions/universities/disaster studies, adapting the early warning system to the development of the local situation and condition, by taking the existing indigenous knowledge and culture into account. The example is the early warning system developed by the community of Forum Merapi. However, in many other regions, due to the limited capacity of human resources, the response to the early warning system being advocated is not optimal.

The commitment of the relevant institutions on each disaster to provide and disseminate the early warning systems has been realized. However, the outcome is still unsatisfactory due to limited capacity, in terms of financial, human resources and physical capacity.

Context & Constraints:

The geographical landscape of Indonesian archipelago is very extensive. The development of infrastructure does not reach the remote areas, leading to information gap in the level of society. In addition, the limited capacity in the local level, both in the local government and relevant communities, in understanding the information of early warning systems and emergency preparedness to respond to the early warnings has become the major obstacle.

To overcome such challenges, an appropriate development system to promote the information dissemination of the early warning system must be developed. Education and training on the various types of hazards and vulnerabilities must be increased among the relevant community groups so that they can understand and respond to the information on the early warning. Sometimes the incorporation of indigenous and local knowledge is more acceptable than that of the scientific knowledge-based in early warning system. The capacity of the local government and the community must be improved through advocacy, training and drill conducted periodically so that the early warning system developed can reduce the vulnerabilities faced by the communities at risk.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Agreement and commitment have been established between regions which have or face similar risks, for example the four regencies vulnerable to Merapi eruption in Yogyakarta and Central Java provinces. The four regencies located in two different provinces have signed a cooperation agreement in disseminating early warning information, evacuation process and the management of trans-boundary refugees (across administrative boundary in regency and provincial levels). In terms of regional or international risks; agreement, cooperation and commitment in the Tsunami early warning system have been established. For example, under the coordination of Intergovernmental Oceanographic Commission UNESCO

(IOC-UNESCO), mandated by the international community, has established the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS).

In addition, Memorandum of Understanding to consider trans-boundary risks has been developed among the ASEAN country members to build resilient nations to deal with disasters and to realize the safer community by the establishment of ASEAN Regional Programme on Disaster Management (ARPDM) which focuses on the ASEAN regional strategies for disaster management, including the field and priority activities for disaster risk reduction.

Context & Constraints:

The unavailability of regulations and policies on data and information exchange pertaining to disaster risks has become one of the reasons why the existing data and information exchange has not been satisfactory.

Agreement and commitment to cooperate in the risks assessment in intergovernmental levels has been established, but the technical implementation does not function properly due to political considerations, different capacities of each country or region, and the geographical conditions and situations affecting the accessibility.

To overcome such challenges, policies and regulations must be endorsed to facilitate the disaster risk data and information exchange. Besides, agreement and commitment efforts on interregional risk reduction must be focused on human issues to minimize the political consideration issues and problems on interregional level without ignoring the sovereignty and security of respective countries.

Iran, Islamic Rep of (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

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

i: National and Local risk assessments

Ssesimic hazard analysis and mapping is being implimented for the urban area throught out the country in scale of 1:25000.

Active faultl study and Preparing related hazaed Map for some faults.

Detailed Seismic and Active Fault Maps prepared for Tehran city.

Estimation of Human Casualty and Building Damage

- Development of relevant city geo-databases and generating 2D & 3D Risk Maps for a district of Tehran
- Structural and Vulnerability Functions and Structural Fragility Curve developed for Tehran.

- Development of the guidelines and standards for strengthening and retrofitting of existing buildings.
- Supporting national and local governments for implementation of the necessary activities for risk reduction

Context & Constraints:

Insufficient information dissemination results in lack of awareness among in the community for observing standards for construction of safe buildings against disasters and lack of risk transfer schemes that burdens additional responsibility on the government for compensating disaster damages. The roll of media is not satisfactory in provision of attractive programs for the audience. There is a need for capacity building and coordination among members of the stakeholders at national, prevention and local level for making easements of disaster risk in the frame work of teamwork.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Over the last few decades, the importance of effective management of information has been recognized in the disaster management sector. The Islamic Republic of Iran is establishing disaster management information system for effective management of disaster. Applications of these systems range from emergency response planning in short range early warning to long range mitigation and prevention planning.

It is evident that accurate and relevant information could significantly reduce the loss of life and financial costs of the disaster risks. Effective disaster risk management depends upon a series of related actions and the means to engage the informed participation of all stakeholders. The exchange of information and communication practices plays a key role in the realization of these activities. Data availability is crucial for ongoing research, to monitor hazards and for assessing risks. Information describes working conditions, provides reference material and allows access to resources. Rapid and widespread developments in modern communications record and disseminate the value of experience, convey professional knowledge, and contribute to decision-making processes. Integrating new developments in information management with established and more traditional methods help to create a much better understanding about hazards and risk at all levels of responsibility through public awareness programmes. Effective information management and communication about disaster risk reduction is conveyed through:

- An awareness of current issues of information management;
- An appreciation of initiatives around the world;
- Selected national information programmes;
- Technical information, experience about different hazards;

- Using cyberspace to discuss disaster risk reduction.

Critical analysis and assessment of the implications of the occurrence of natural or man-made hazards need information comprising both spatial and non-spatial related to factors influencing the hazards. If such information is available, it would be immensely useful in:

1. Identification of the processes responsible for the hazards and the natural resources and socio-economic parameters associated with the process;
2. Planning appropriate preventive measures/preparedness
3. Assessing damage caused by hazards and planning appropriate mitigation measures.

With the advent of Satellite Remote Sensing and GIS technology, the information generation related to earth surface has become easier in terms of database generation, storage, retrieval and data analysis. Further, creation of computerized database with Net-working facilities has added a new dimension to the dissemination of information, free flow of data and information exchange for speedy implementation of action plans and their monitoring.

The computerized data constitutes a comprehensive digital database. The database contains information about various resources fields such as land, water, vegetation and socio-economic situation, which can be potentially tapped as per needs to create information system such as Land Information System (LIS), Water Information System (WIS), Forest Information System (FIS) and Disaster Management Information System (DMIS)... Thus a digital base generated under GIS environment can find applications in various fields related to natural resources viz. land, water, vegetation / forest, minerals, urban and rural development and specific area necessitating management of natural / anthropogenic hazards, development and management of facilities, transport, etc.

This database under the GIS environment has the following advantages with reference to hazards/calamities:

1. Assessment of the situation through integrated analysis;
2. Implication of hazards in terms of risks and planning;
3. Spatial modeling, querying and map creation for efficient and effective implementation of Response Action System (RAS);
4. Simulation of models and visualization of varying scenarios of hazards.

Disaster Management Information System (DMIS)

Having a digital database under GIS environment is oriented towards providing information for decision makers and encompasses information on natural resources. The integration of these data sets would aid in decision making process for systematic planning and management of resources as well as disaster situations.

A wide variety of maps are required in the study of hazards. The maps generated would furnish information on political boundaries, transport network, settlements and natural resources set up on which the spatial aspects of hazards can be represented. These maps furnish basic location information concerning hazards with thematic support maps such as tectonic features, geological features, landforms, drainage,

land use / land cover and soils. The information provided by the thematic maps are as follows:

1. Geological maps help to identify the earth materials, geological hazards (e.g. seismic landslides,.) and river courses;
2. Geomorphology maps are helpful in creating an integrated picture of the natural land surfaces and its hazards (erosion, floods, landslides, subsidence and so on). Those maps form a part of a wider Endeavour to understand the sensitiveness of geomorphologic processes to human interferences and the risks associated with development and settlements of hazardous sites.
3. Soil maps depict the variation and changes in soil characteristics. Specialized pedagogical maps with collateral data enable area specific prediction such as landslides and mass washing, epidemic surveillance of soil borne diseases etc. They also help in providing information on drainage, water logging and erosion susceptibility.
4. Land use / land cover maps depict the land use pattern such as animal, forest, scrub land, etc. These maps can be used for assessing the extent of damage as a consequence of hazards / disasters and valuation and also identifies the areas prone to hazards like floods, forest and fires.
5. In addition to the above, many other types of thematic maps that have direct or indirect bearing to hazards would also form a part of the RIS.

The socio-economic and infrastructure data that reside in the database would be useful in the analyses of growth trends, demographic situations, the consequences of hazards depending on the demographic pattern, economic profiles, infrastructure status, communication networks, and linkages and so on. Recognizing the utility of Remote Sensing and Geographic Information System (GIS) in data collection, formatting storage, manipulation, transmission, updating analysis and query development and network/communication linkages, in the Islamic Republic of Iran, IRIMO, developed a comprehensive Disaster Management Information System (DMIS) to meet the following objectives:

1. To create digital database comprising of both spatial and non-spatial data for identifying disaster prone areas;
2. To assess disaster situation through integrated analysis;
3. To organize response emergency operation through better information flow;
4. To utilize the GIS data base for designing and implementing the mitigation and preparedness measure;
5. To derive additional benefits of utilizing the resources data base for developing planning at the district/region and state level.

The primary objective is to carry out integrated analysis of spatial and non-spatial data and generation of hazard maps relevant to the districts in Iran such as drought, floods epidemics, earthquakes, accidents, industrial hazards, fire, and cyclones. The created data base will be immensely useful in the development of Vulnerability Analysis System (VAS) and Response / Action Plan System (RAS). Disaster information user needs very greatly. The number of interested people, educational institutions, organizations and local community users are growing, as are relevant websites, networks, and multidisciplinary and professional exchanges. Some users require highly processed data, while for others raw data is more useful. In any case, the importance of adequate training, and an appreciation of the quality of the data, for any user of disaster information is clear. This information is disseminated in two methods; such as; public and special. Main users of this information are the Ministry of Power, Ministry of Agriculture and the Meteorological Organization. A particularly valuable role of private organizations is the dissemination of disaster

information, especially the delivery of such information to the general public to minimize losses.

Context & Constraints:

1. To create digital database comprising of both spatial and non-spatial data for identifying disaster prone areas;
2. To assess disaster situation through integrated analysis;
3. To organize response emergency operation through better information flow;
4. To utilize the GIS data base for designing and implementing the mitigation and preparedness measure;
5. To derive additional benefits of utilizing the resources data base for developing planning at the district/region and state level

Core indicator 3

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

Level of Progress achieved:

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

Description:

There are early warning systems for some disaster such as droughts, floods and frost.

At the beginning of the twenty-first century, disasters are increasingly affecting societies worldwide, draining resources that could be better used for development and poverty reduction initiatives. There is an urgent need for the implementation of effective early warning systems.

The importance of early warning is recognized in Agenda 21 and the current follow-up processes. In addition, a particular focus is given by the international community to early warning in the structure and programs of the international strategy for Disaster Reduction (ISDR). The 1998 Potsdam international conference on early warning systems for Reduction of Natural Disasters (EWC'98) confirmed early warning as a core component of national and international prevention strategies for the 21st century.

In the country the National Disaster Early Warning system (NDEWS) has been designed and is operated by IRIMO in cooperation of CRI., the following chart shows the general features of the NDEWS.

The NDEWS has been applied mostly for drought and flood disasters, and this system covers all parts of the country.

In the regards of lessons-learnt from the use of NDEWS, the early warring systems successfully do help to public for disaster risk reduction.

Also, in the case of some natural disasters such as dust storms and heavy rainfall, IRIMO has carried out some researches to forecast and timely early warning. Recently the natural disaster research institute of Iran has developed a system of instrumentally prediction of earthquakes which has proved to be effective in providing necessary information to the authorities for preparedness purposes'. This system is installed in more than seventeen process of the country.

Context & Constraints:

When the warnings are issued the people must be provided with necessary training how to react for protecting the lives and properties. And the people must also be familiar with the implication that the warnings present they must easy manner and by using easy understanding sigh's and tools.

Core indicator 4

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

Level of Progress achieved:

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

Description:

In line with this the government has taken significant measures in hosting the Asian Seismic Risk Reduction Centre with the following objectives, expected results and functions,

- 1- Enhancing capacities in the field of seismic risk reduction and vulnerability assessment
 - 2- Reducing human losses and economic damages caused by seismic risks and disasters
 - 3- Facilitating exchange of information, knowledge and expertise on seismic risk reduction among governments and institutions and enhancing public awareness
 - 4- Promoting regional and inter-regional networking and partnerships on disaster risk reduction
 - 5 - Assisting governments in implementation of the Hyogo Framework for Action.
- 1- Building a culture of safety and resilience and enhancement of public awareness and knowledge on seismic risks
 - 2- Training and research at academic level on seismic risk reduction
 - 3 - Training and enhancing awareness of authorities, managers and experts dealing with disasters in countries of the region and seeking the attention and support of policy-makers
 - 4- Assessment and analysis of seismic risk reduction
 - 5- Mainstreaming disaster risk reduction in the countries' development programs.
 - 6- Facilitating access to necessary information and data by specialists working on disaster in the countries of the region.
- 1- To develop existing methods or establish appropriate ones for exchange of information, knowledge and expertise on seismic risk reduction and support related scientific programs and public awareness raising activities in the region
 - 2- To mobilize and coordinate adequate resources and make necessary arrangements to conduct and support policy oriented research on seismic risk reduction
 - 3- To hold specialized trainings courses, workshops and seminars on seismic risk reduction
 - 4-To contribute towards implementation of the Hyogo Framework for Action, including support for the establishment of national platforms on risk reduction and mainstreaming disaster risk reduction into developmental programs as well as providing technical assistance

Context & Constraints:

Since this centre has started its activities just recently, naturally there are some challenges to be faced in the phase of operation. There are some challenges that must be tackled at national, regional and international level.

Japan (in English)

Core indicator 1

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

Level of Progress achieved:

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

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 of Japan, the Fisheries Agency, the Ministry of Land, Infrastructure and Transport 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. A total of 493 municipalities throughout Japan have so far published and distributed their hazard maps in print or other means as of July 2007. Many of the developed maps have been made available to the general public on the internet and elsewhere. In April 2007, Ministry of Land, Infrastructure and Transport launched portal site which allows users to search and view various hazard maps compiled by municipalities on the Internet.

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, recently 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. Further, the Committee for Technical Investigation on Large-scale Flood countermeasures, which was established in 2006, published the estimation of inundation caused by overflow of the Arakawa River System in October 2007, and the assessment of damage by the surge of the Tokyo Bay in case of the occurrence of a large-scale flood disaster in March 2008.

Context & Constraints:

Some of the maps are not open to the general public. Further, promotion of proper understanding of public on importance of hazard maps and risk information shown on the maps are required.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The observation, analysis and dissemination systems are in place for data on climate-related hazard, earthquake and tsunami, volcanic eruption, and river-related hazard covering for all of Japan's national territory. They help to grasp the situation of the disaster early on and promote information sharing among relevant organizations, thereby enabling quick and appropriate decision-making for emergency response operations.

Further, the national government has been currently developing Disaster Information Sharing Platform, a common information sharing system with a standardized information format, where various disaster information provided by ministries and agencies, local governments, relevant organizations and residents, can be posted and freely accessed by all.

Context & Constraints:

Intensive use of urban space such as enhancement of underground space and increase of living areas below sea level, and high-rise buildings, brought us unprecedented vulnerabilities and risks. The aspects should be further understood by the public to take effective action.

Core indicator 3

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

Level of Progress achieved:

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

Description:

All of Japan's national territory is covered by early warning systems for storms, torrential rains, heavy snow, sediment disasters, tsunamis, tidal waves, high surf, inundation and floods, the Ministry of Land, Infrastructure and Transport, the Japan Meteorological Agency and local government bodies being the main institutions involved. The organizations use 24-hour systems to carefully monitor various natural phenomena and weather conditions. Areas deemed to be at particularly high risk of earthquake or volcanic eruption are also covered by specific countermeasures.

The development of a quick and accurate communications system is essential for the effective use of early warning information. Online system linking disaster management organizations of the national and local governments and media organizations has been developed for the purpose. Radio communications networks exclusively for disasters have also set up for connecting national organizations, firefighting organizations, local governments, residents, and designated public corporations. Furthermore, as a backup, a satellite communications system has been constructed. Simultaneous wireless communications systems using outdoor loudspeakers and indoor radio receivers are used to disseminate disaster information to residents. Tsunami and severe weather warnings are widely provided to citizens via TV and radio broadcasts.

Further, Since 1 October 2007, the Earthquake Early Warning service has been started for provision through a number of media outlets such as TV and radio. The Earthquake Early Warning system was developed to provide advance announcement of the estimated seismic intensities and expected arrival time of principal motion based on prompt analysis of the focus and magnitude of the earthquake using wave form data observed by seismographs near the epicenter. The system allow countermeasures such as promptly slowing down trains, controlling elevators to avoid danger and enabling people to quickly protect themselves in various environments such as factories, offices, houses and near cliffs.

Context & Constraints:

Adverse affect of an overflow of information as highly-advanced information society could lead to excessive social anxiety. Delivering information in an easily comprehensible manner should be further considered as well as the system to disseminate precise information promptly.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Taking into account the lessons learned from bitter experience of the 1960 Chile tsunami formed by seismic activity far from Japan, the government has been making collaborative efforts with other relevant countries to establish an early warning system against tsunamis in the Pacific Ocean. Japan Meteorological Agency acts in coordination with the Pacific Tsunami Warning Center (PTWC) in Hawaii and issues a long-propagating tsunami warning. JMA operates the Northwest Pacific Tsunami Advisory Center, which provides more tailored tsunami information for countries in the Northwest Pacific region in cooperation with PTWC.

Context & Constraints:

Global warming alert average weather conditions on a global scale, bringing negative impacts including growing potential risks of natural disasters resulting from the frequent occurrence of fierce natural events. To reduce risks from natural disasters by climate and environmental change due to development activities, fostering further efforts for taking mitigation measures in collaboration with all sectors of international

society is required.

Further, globalization and rapid spreading out of the economic activities by corporations tend to trigger a regional or global chain reaction of economic damages caused by a disaster in a place. Risk assessment taking into consideration of the chain reaction of the adverse impact should be further considered.

Kazakhstan (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

For these purposes the Catalogue of Natural and Man-made Risks has been developed in Kazakhstan. This provides to estimate a risk degree, possible sequences for preparedness for rescue troops, engineering services during ES.

To improve an emergency assessment a revising of Safety Passports of Regions, Astana and Almaty for ES has been carried out.

The Conception for the system of independent risk assessment in a fire safety which supposes a partly substitution of national control has been also developed and approved by the Governmental Decree No 857, 18 September 2008. This Conception is directed on a total exclusion of planning fire control of private sector by national bodies.

Context & Constraints:

n/a

Core indicator 2

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

Level of Progress achieved:

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

Description:

The work over National Atlas and Integrated Data Base on ES risk assessment and direction by data base using geoinformation technology. The Institute of Geography has been developed an atlas concept, its structure and content, a vector basis of subject maps, authoring maps and information are also collected (91 maps totally).

The Institute of Seismology of the Ministry of Education and Science has been developed several programs as on fundamental and applied research of regularities of modern geodynamic and seismic processes, developing of an automatic system for operative seismic notice for population, developing of seismic zoning maps of cities or other large communities, establishment of modern seismic stations in dangerous areas.

The Passports have been formed for areas of landslide, mudflow and avalanche with its population, possible negative sequences. There is a permanent air and land monitoring for these areas.

At present in cooperation with regional Akimats, Astana and Almaty the work on a passport formation is finalizing.

Context & Constraints:

n/a

Core indicator 3

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

Level of Progress achieved:

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

Description:

To enhance the information, communication and system for NSES the integrated corporative information-communication system (ICS) for population and national bodies is developing in Kazakhstan. An implementation of automated systems of safety control for technological risky processes is also carrying out.

The concept of ICS is included into Strategic Plan of the Ministry for Emergency Situations for 2009-2011. In 2009 the first step of ISC implementation as design works is planned to perform within a budget program for 2009 fiscal year.

Measures to introduce an integrated telephone rescue number "112" are also performing and Ministry has developed the Concept and Technical Order for the Integrated Dispatcher Service in Kazakhstan.

There are 127 permanent stations for monitoring in mountain area. Control data are processed by 34 dispatcher posts including the Head Post in Almaty. Information of ES is transmitted following an approved scheme to Ministry, regional Departments, local bodies.

A technical improvement of the Republican Crisis Center provides by supplying of additional communication channels as through SW, USW, satellite, GSP and video.

Context & Constraints:

The existing system of population warning is based on a technology of 60s-70s years which requires its immediate modernization.

More than 62% of radio communication systems are outdated. Territorial bodies of MES are equipped by modern systems only by 30-40%. There are no automatic interception of 40% radio and TV channels and 65% of alarm systems.

The most dangerous areas are not completely supplied by monitoring and early warning systems.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Regional cooperation in term of risk assessment is in the beginning of a process. Central Asian Bodies responsible for ES are preparing to sign the Agreement for the Central Asian Coordination Center with location in Almaty. One of the main point of this Agreement regards to problems of regional cooperation in risk assessment.

Context & Constraints:

n/a

Korea, Rep of (in English)

Core indicator 1

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

Level of Progress achieved:

4 - Substantial achievement attained but with recognized limitations in key aspects, such as financial

resources and/ or operational capacities

Description:

Disaster-prone areas and risky small creeks are checked and assessed regularly to minimize disaster potential and several early warning systems have been adopted against typhoon, heavy rainfall, earthquake, and tsunami using information technology.

Since Aug. 2005, disaster-prone areas are systematically managed categorizing them with types and seriousness. Six categories are adopted as inundation area, washed-away zone, isolation area, collapse area, vulnerable facilities, and storm surge area.

Based on the nationwide survey in 2006, 352 areas are designated as new disaster-prone areas.

Context & Constraints:

Since the designation of disaster-prone areas can affect the real-estate price in the areas and vicinity, the designation processes including vulnerability assessment are sometimes pressurized by political reason.

Public education and persuasion are needed.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Using IT and communication infrastructures, it is possible to disseminate disaster information to the people rapidly and efficiently.

Since May 2005, with the support from the private telecommunication companies, real-time disaster information can be disseminated to more than 30 million citizens, if necessary, by so-called Cell Broadcasting Service.

Also, since August 2007, DMB has been recognized as a new media that can be utilized to deliver disaster information.

To monitor flash flood in mountainous area and give early warning in downstream, automated rainfall warning systems are established in national parks and other attractive gorges.

Context & Constraints:

The Korean government is investing more money to utilize information technology for disaster monitoring and information dissemination.

More integrated system using IT will be necessary to cope with emerging risks in the future.

Core indicator 3

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

Level of Progress achieved:

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

Description:

In 2005 capacity assessment system regarding early warning has been adopted in 250 local governments. The assessment system covers items on disasters response organization, mitigation activities, response capacity, recovery processes, etc.

Real-time disaster information dissemination system is in operation against tsunami, flood, typhoons, and other common disaster types in Korea.

Context & Constraints:

There are some cases of delayed warning dissemination. On March 3, 2005 a small tsunami generated by an earthquake near Fukuoka, Japan reached southern and eastern coasts of the Korea peninsula and the warning information was delayed.

What went wrong were identified and the system is being improved with more advanced IT and budget support.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Regional Safety Diagnosis System is in operation considering local and regional disaster characteristics. The system includes indices such as population and economic power of the region and diagnosis program and database are also developed.

Context & Constraints:

As indicated in Priority for Action 2, Core Indicator 1, since the result of safety diagnosis can affect the real-estate price in the areas and region, the diagnosis processes are sometimes pressurized by political reason.

Kyrgyzstan (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Disaster risk assessment in the Kyrgyz Republic is very important. Thus almost for all most disaster-prone area there have been designed the risk maps: seismic map, maps of landslides, mudflows, erosion, avalanches, etc. Highly qualified specialists took part in the development of these maps. Now these maps require general update to be implemented with the help of GIS equipment. Partial update of these maps was conducted in the relevant subdivisions of MoES of the Kyrgyz Republic. These maps were scanned, digitalized, and are now available in the GIS format. They can further be successfully used for disaster threat and risk assessment.

Nowadays disaster risk and vulnerability assessment is very important as the results of such assessments are of great economic value for planning of construction of the important economic objects, urban

construction, preparation of the state development strategy, risk reduction strategy, disaster preparedness and response plans.

Unfortunately, not much attention was paid to disaster vulnerability and risk assessment during previous time, thus the existing risk and vulnerability maps have not been designed. Even nowadays the state institutions responsible for monitoring of disaster processes do not have the fundamental methodology of such assessments. In some cases there are only the qualitative characteristics of such assessments. The main activity on the monitoring of the natural processes is implemented by the Department on Emergencies Monitoring and Forecasting, MoES of the Kyrgyz Republic.

1. The summarized and analyzed information on the settlements and industrial-economic objects located in disaster-prone areas, received by this Department is further submitted to the relevant subdivisions of MoES of the Kyrgyz Republic and local executive authorities for further implementation of preventive measures. At the moment these data are the key source of the information for MoES specialists to conduct monitoring of emergency situations in various disaster-prone areas of the republic. In some cases such survey activities are implemented upon the order of the Government of the Kyrgyz Republic and alarm calls from the local authorities of various areas.

2. Another key source of obtaining and accumulation of the information on monitoring and forecasting of mudflows and floods is the Hydrometeorology Agency of MoES. The timely information on accumulation of precipitations in river basins of Kyrgyzstan and the relevant forecasting of the average water run-off for the vegetation period. This Agency forecasts the expected mudflows and floods in the river basins. This information is immediately transmitted to the regional subdivisions of MoES of the Kyrgyz Republic and local authorities for further joint prevention and mitigation measures.

3. Seismological monitoring of the territory of the Kyrgyz Republic is implemented by the Seismology Institute of Academy of Sciences of the Kyrgyz Republic. The activities of this Institute is at a very low level because almost all seismic stations of the Kyrgyz Republic were constructed during the Soviet period and their equipment was not modernized since that time.

Context & Constraints:

In the context of insufficient funding of activity of the Department on Emergencies Monitoring and Forecasting, MoES of the Kyrgyz Republic it is impossible to conduct the monitoring of very dangerous processes in remote and hard-to-reach areas. Thus the continuous monitoring and forecasting of disasters are almost impossible. At the moment planning of separate measures on disaster prevention is based on the using of the analytical information provided by the Department on Emergencies Monitoring and Forecasting, behavior of the main threatening disaster, and the preventive activities developed by this Department.

Processing of the data received from the seismic stations is often delayed. Thus the continuous seismological monitoring of the Kyrgyz Republic is not conducted. To strengthen the efficiency of the Seismology Institute activity it is required to establish up-to-date digital seismological stations that can cover the whole country.

The main constraints and difficulties in the work of the governmental and international partner organizations in the issues of disaster threat, vulnerability and risk assessment are as follows:

1. Poor coordination of activity of the science-research institutions.
2. Lack of the sustainable system of communication and information exchange.
3. Domination of personal interests of separate organizations on development and introduction of the methodology related to disaster threat and risk assessment.
4. Poorly developed system of sharing the experience on the new technologies introduction (GIS, new systems of positioning and remote sensing, etc.)

Positive solution of these problems will allow overcoming the difficulties in this field.

Core indicator 2

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

Level of Progress achieved:

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

Description:

No information provided by the government

Context & Constraints:

No information provided by the government

Core indicator 3

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

Level of Progress achieved:

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

Description:

Warning of the population and the state authorities is directly linked with the monitoring system of disasters caused by activation of geological, meteorological and other processes.

The control point – communication station “Riziya” of the Chief operative department of MoES of the Kyrgyz Republic – has constant radio-telephone and telegraph communication with all regions of Kyrgyzstan, the CIS and far-abroad countries. There are three main modes of the warning system: everyday activity, advanced preparedness, and emergency.

Provincial, urban and rural executive authorities, regional and relevant district administrative departments have external radio, telephone or telegraph communication with all towns of the republic, the CIS and far-abroad countries. They can communicate with the control point of the Chief operative department of MoES of the Kyrgyz Republic.

The valuable assistance in overcoming of the difficulties with the communication established in 2006 was rendered by the implementation of the World Bank project “Emergency situations prevention”. The Center on crisis situations management was established within the framework of this project. This Center is the operative body of the Inter-agency Commission on emergencies prevention and mitigation. At the moment there is the on-line communication Osh-Bishkek-Jalalabad.

It is planned to organize the activity of a similar center in other areas of the center in other areas of the country, and equip two mobile vehicles so that the information could be transmitted from disaster locations.

Context & Constraints:

The existing problems and constraints are as follows:

Funding

1. Paralyzed internal line communication in districts and economy objects
2. Malfunctioning of the earlier established almost in all rural areas radio centers, and individual radio points located in private houses.
3. Lack of the monitoring and early warning systems in other more vulnerable areas. It would be appropriate to use the experience accumulated within the framework of the project on installation of the monitoring and early warning systems in other areas of the country after the preliminary assessment of the safety of the man-made and natural dams.
4. Lack or malfunctioning of the early warning system in the economy objects that use highly toxic poisonous agents.

Replacement of the worn-out telephone stations with new ones and implementation of serious rehabilitation works on the broken communication lines require significant material and monetary expenses. But in case of such an opportunity it would be more appropriate to install the up-to-date communication devices that could provide wireless external and internal communication.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Central Asia is one of the most disaster-prone regions. Natural disasters that significantly threaten the region are as follows: mudflows, floods, landslides, avalanches, droughts, earthquakes, etc. At the moment the vulnerability reduction is considered as the key factor of sustainable development. The level of awareness of decision-makers on the issues related to the need for establishment of an Integral Disaster Risk Management System that will strengthen the response training capacity is consequently being increased.

Preventive activities, such as risk assessment, disaster forecasting, and raising of awareness of the target groups promote disaster risk minimizing. Trans-boundary integration of disaster prevention activity reduces vulnerability of the mentioned countries and helps avoiding the economic and material losses.

Nowadays the solution of the problem on trans-boundary disasters is being fulfilled within the framework of several international projects that are implemented and are being implemented in CA countries. Among these projects is the project on "Ecological safety of Central Asian countries" that considered the problems on trans-boundary disasters of some parts of Fergana valley on the territory of CA countries. This project also included establishment of the International Coordination Group for consideration of the issues on reclamation and rehabilitation of the tailing dams located of the territory of the Kyrgyz Republic and being of the trans-boundary character.

In the course of the ICG project implementation there were inspected the dumps of uranium wastes in Kyrgyzstan.

As a result there were identified the areas of trans-boundary disasters damaging both territory and population of Central Asia at the same time.

The next project is devoted to trans-boundary issues related to strong earthquakes occurring in Central Asian countries. The preliminary phase of this project is implemented from July 1, 2008 to February 28, 2009. All five Central Asian states will be involved in the implementation of this project.

Trans-boundary issues related to the tailing dams were considered and discussed at large conferences, workshops and symposiums conducted in Kyrgyzstan for many times. The international conference devoted to this issue is organized under the assistance of the UN and OSCE representative offices.

Context & Constraints:

General problems related to trans-boundary disasters:

- Lack of the unified warning system and communication in case of emergency situations
 - Non-preparedness of the population inhabiting trans-boundary areas to possible disasters
 - Poor awareness of the population in border areas on possible disasters
 - Lack of joint trainings on preparedness to disasters
 - Lack of experience sharing on the issues related to disaster preparedness, prevention and response, etc.
-

Lao People's Democratic Republic (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

The Mekong River Commission is undertaking the Flood Vulnerability Assessment and Mapping Project (FVAMP-started in June 2007) which is intended to provide flood vulnerability indices to better manage flood and drought impacts in the Lower Mekong Basin. As of February 2008, the project has established that the national line agencies have a more consistent data collection system and their dataset seems to contain substantial information that can be useful for FVAMP. NGOs and international organizations collect data more proactively through community based survey under their rural development and disaster risk reduction projects in remote villages and some others along the Mekong and its tributary rivers for

flood vulnerability assessments.

A report from the project concluded that all agencies are generally willing to participate in the FVAMP in terms of sharing available data and information in the next phase project. However, almost all agencies recommended that the orientation meeting and a series of consultation should be conducted beforehand. All concerned agencies should be invited to share their ideas on the data collection methodologies and implementation for the next phase.

Context & Constraints:

Although useful data for vulnerability assessments exist in line agencies, NGOs and UN agencies, there is no plan, leadership or incentives to more systematically share information, which may contribute to a comprehensive vulnerability assessment. Limited expertise in hazard assessments is another important constraint to be addressed in the future.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The NDMO has recorded disaster information, particularly flood impact data since 1966, while flood information has been standardized since 2000. Most information is of provincial and district level such as the number of affected provinces, district and villages, number of population affected disaggregated by gender, number of production areas and livestock affected, etc.

The NDMO developed disaster database (2000 to 2005) and is further improving the system. The NDMO is also planning to develop a standard disaster data collection format with line agencies concerned at the national level. The NDMO has not conducted any community based data survey at the village level, however, they cooperated with NGOs partners to implement a project called 'Disaster Risk Reduction and Community Based Disaster Management' in villages prone to flood and drought.

The Lao Red Cross (LRC) is an organization working in the field of disaster preparedness and relief for disaster victims, particularly the victims from flood. Every year LRC coordinates and receives information on disaster damages from Red Cross Provincial Branches by using their own disaster damage and need assessment format. Currently, LRC is implementing a project called 'Community Based Disaster Preparedness Program (2007 - 2011)' in 5 flood and drought prone villages in Hinboun district of Khammoaune and Mahaxai district of Savannakhet province. Community based data survey were conducted in the 5 target villages in the form of Hazard, Vulnerability and Capacity Assessment. Participatory Rural Appraisal tools have been used for gathering and analyzing information. Village hazard map will show all hazards, particularly flood occurring in villages and element at risk such as housing, roads, production areas, community and other infrastructures, etc. Other tools such as livelihood analysis, problem trees, seasonal calendar, and history profile, are also utilized.

Context & Constraints:

Due to financial constraints, the NDMO lacks the human and information management capacities to meet the requirements to put systems in place for a comprehensive monitoring and dissemination of hazard and vulnerability information.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The Department of Meteorology and Hydrology is the main agency that produces the early warning information and disseminates to disaster management organizations, mainly to the NDMO. The NDMO then sends this information to the local disaster management organizations to take appropriate actions and disseminate early warnings to communities at risk. The early warning information consists of weather forecast (rainfalls, storms, typhoons) and information on water level along the main river and its tributaries.

Under project cooperation with NGOs, community based early warning systems are developed which include setting up monitoring equipment (flood mark) along the river and assignment of responsible unit and person in charge of monitoring and reporting to the village disaster protection unit head, district authority and province. In addition, village disaster risk maps are produced and placed within the village head. The disaster risk maps consist of information on disaster types in different areas within the village, elements at risk, evacuation route, etc.

A communication system exists from national to the local (provincial) level by using the telephone, fax machines, etc. However, the communication system for issuing the EW information from province to district and villages are inadequate. Thus communities located in very remote areas often can not receive early warning information due to difficult or total lack of access to road, mountain areas with deep slope and isolated villages.

Context & Constraints:

Communication infrastructure in the country is inadequate and the sparse distribution of population in wide and rugged areas poses a major challenges. More attention is given to flood early warning than drought early warning, as floods are 'seen' to be more urgent.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The floods in 2000 caused significant damages to the countries in the Lower Mekong Basin, with 450 million USD for Viet Nam and Cambodia. Therefore, the MRC council instructed the MRC secretariat to prepare the flood management and mitigation strategy for Lower Mekong Basin, and the strategy was endorsed by the council in 2001. In order to implement the MRC flood management and mitigation strategy, the flood management and mitigation programme (FMMP) was formulated, which includes 5 components: (1) establishment of regional flood management and mitigation center, (2) structural measures and flood proofing, (3) transboundary flood management, (4) flood emergency management strengthening, and (5) land use. The objective of FMMP is to prevent, minimize or mitigate people's suffering and economic losses caused by floods while preserving the environmental benefits of floods.

MRC needs quantifiable flood vulnerability indices in order to direct on going and future activities of each of five FMMP components into the most cost-effective and socially-effective areas. MRC recognizes that if the FMMP Program does not make significant improvements in reducing flood vulnerability at the community level, the program misses its mark. Therefore, the flood vulnerability assessment and mapping project (FVAMP) started under the FMMP component 1, the project phase I and fact findings and concept development were carried out during 18 June - 13 July 2007. Assessments were done in terms of the project needs and relevance to agencies operating at the community level and the potential contribution of these agencies to the project.

Context & Constraints:

Information on this is not available

Maldives (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

A detailed Disaster Risk assessment was carried out in 13 islands that are currently the targeted growth nodes in their respective islands of the country by the Planning department. The report is in its final stages. This is to supplement the country level assessment that was carried out by the Government of Maldives with the assistance from international partners to develop the disaster risk profile for the Maldives. In 2005, Disaster Risk Profile of the Maldives was published

Context & Constraints:

Local risk assessments are a tedious process in the country as there are nearly 300 odd islands to be considered. The National assessment has been a project based initiative and no effort by any government agency to fine tune it as per the requirement of their sector is seen due to lack of incorporation methods. Local risk assessment could be realized by involving a partnership either with the community or with the school children through simple methods of data collection and reporting.

Core indicator 2

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

Level of Progress achieved:

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

Description:

“DesInventar” which is a conceptual and methodological inventory system about disasters has been initiated. Simultaneously Maldives Disaster Reduction Network was also initiated. Sustainable monitoring and archiving seems to be a constraint due to adhoc methods of data collection. Data dissemination has been carried out by the Meteorological Department when needed or requested for.

Context & Constraints:

Maintaining monitoring system for the country which is widely dispersed is an uphill task. Lack of resources and systems not in place add to the constraints. Lots of resources need to be allocated to establish a dedicated system in the country.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The Meteorology Department has procured equipments and carried out staff training to enhance the department's monitoring mechanism. A National Early Warning System Code has been developed and disseminated among all departments to standardize early warning mechanisms. Although all major hazards have not been addressed key hazards in the region are addressed to. Outreach to communities has been a priority to the government and the process is strengthening day by day.

Context & Constraints:

The progress has been slow as transfer of knowledge took its own pace. All early warning systems were introduced recently and with limited human capacity outreach activities are moving at a slow pace. Early Warning Systems which could be maintained by communities should be introduced with incentive for regular maintenance. Ownership by the community for protecting their lives should be emphasized by the government and international agencies.

Core indicator 4

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

Level of Progress achieved:

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

Description:

National Tsunami Warning System takes into account regional and Trans-boundary risks. The government has established many partnership to realize the above but inadequate study of the region and less priority of this region in the global scenario has caused a little realization of regional/trans-boundary risks.

Context & Constraints:

International bodies like the IPCC and other leading Universities must be invited to do a region specific study as the study is much beyond the government's present capacity and resources. Strong advocacy in international forums could help in obtaining the desired outcome.

Nepal (in English)**Core indicator 1**

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

Level of Progress achieved:

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

Description:

Few agencies (both government and non-government) have initiated local level hazard mapping in few communities. However, such information is scattered and scanty. There is no national level multi-hazard risk assessment covering regularly occurring disasters such as floods, landslides, etc. However, a historical record of disaster occurrence called "Desinventar" for last 35 years at national level is available and regularly updated. Unfortunately, no proper use of such information on planning and decision making process as of now. Some NGO/INGO are undertaking research projects to better understand local adaptation strategies to natural hazard risks. International organization such as International Centre for Integrated Mountain Development (ICIMOD) has initiated process to assess the socio-economic impacts of GLOFs and flash floods through case studies. Similarly, ICIMOD and UNDP together with relevant government agencies have been involved in GLOF hazards assessment and monitoring in specific areas.

Context & Constraints:

Key Contextual Challenges:

No initiative by both government and non-government sectors to undertake a national level multi-hazard risk assessment covering major and annually recurring natural disasters such as flood, landslides, drought, fire, epidemics, earthquake, etc. Also most of the available information on disaster occurrences has not been used for any planning and decision making purpose.

Some Recommendations:

Concerned Government Ministry in close cooperation/ collaboration with non-government agencies should initiate a national level risk assessment exercise covering major hazards in the country. This single exercise will enable all agencies working in the field of DRR to identify the most vulnerable communities, major hazards, disaster prone districts/ VDCs/ communities. This information can also be used for any development planning initiatives in the country.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Few agencies at the central and district levels regularly publish and disseminate disaster related information. However, transparent and effective systems to monitor and archive of disaster related data are still to be institutionalized. Similarly, as of now the focus to collect information at any level is only limited to any disaster occurrence or post disaster situation.

Context & Constraints:

Key Contextual Challenges:

Disaster related information collected and disseminated by different agencies doesn't tally each other. The data collection formats are different for different agencies, the collection level is different, disaggregated information are not available at all levels. Manipulation of information is also a challenge, etc.

Some Recommendations:

In normal time, disaster related agencies can work together to develop information collection formats, software, pre-test, etc. Government has developed a Disaster Management Information System (DMIS) in early 2000s, before Desinventar and was in practice in six districts. This DMIS software can be updated and circulated widely for use at all levels.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Few localized single hazard oriented early warning systems are in few places for last 2 decades (Tsho Rolpa GLOF, Chitwan Flood, etc.). However, there is no early warning system in place for major hazards with outreach to disaster prone communities (end to end EWS).

Context & Constraints:

Technical know-how, financial resources, trained human resources, and collaboration between government agencies and communities, are the major challenges to establish a fully functional and effective multi-hazard early warning system both at central and community levels.

Recommendations:

Identification of major hazards and institution to deal with such hazard, capacity of such identified agency for an effective and efficient early warning, networking with similar organization both within and outside country, appropriate policy and institutional mechanism will help to establish efficient and effective end to

end early warning system. Government should initiate/improve public-private partnership for EWS (especially in case of GLOF, flash floods, landslides, etc.) and people centered EWS.

Core indicator 4

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

Level of Progress achieved:

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

Description:

National and local levels risk assessment is still a new phenomenon in the country. The need for regional cooperation and especially real time data sharing has been recognized by most stakeholders in different forums. Some initiatives have been taken place such as dialogue with India regarding inundation, regional flood information system initiative, etc. With the support from UNISDR, government of Nepal is undertaking the disaster-poverty interface study.

Context & Constraints:

National and local levels risk assessment is still a new phenomenon in the country. The need for regional cooperation and especially real time data sharing has been recognized by most stakeholders in different forums. Some initiatives have been taken place such as dialogue with India regarding inundation, regional flood information system initiative, etc. With the support from UNISDR, government of Nepal is undertaking the disaster-poverty interface study.

Pakistan (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

The progress on this account may be taken at level three. 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. Accordingly, the NDMA has launched the the National Composite Risk Assessment Project.

The initiative is aimed at carrying out a comprehensive risk analysis and hazard mapping of Pakistan. The digitalized hazards maps will be integrated into the GIS system for accurate and timely decision making in the field of disaster management. The Project is a multi-sectoral exercise, encompassing geological, hydro-meteorological and technological hazards and a major part is expected to be completed by June 2009

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 Reconstructions and Rehabilitation Authority (ERRA), UNDP, FAO, Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), Aga Khan Planning and Building Service (AKPBS) and OXFAM. The NDMA is in touch with these organizations to benefit from the local level assessment results.

Context & Constraints:

The foremost challenge faced by the NDMA in carrying out National Risk Assessment is the non availability

of local expertise and professionals which is further exacerbated by technological gap in the field. 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.

Reliable data is a very important input in carrying out Risk analysis. This can be turned out as the weakest link in the ongoing risk assessment exercise. Data availability in Pakistan is far from desirable levels. It is scattered, most oftenly inaccessible and sometimes suffers from lack of reliability. In such a situation, collection of data and subsequent hazard analysis becomes a very intriguing job for the project implementers.

Core indicator 2

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

Level of Progress achieved:

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

Description:

With regard to the systems of monitoring of hazards and archiving and dissemination of data on hazards and vulnerabilities, Pakistan can be ranked at level two. Although, Pakistan has a fairly reasonable system of collecting, archiving and disseminate data on hydro-meteorological hazards through the Pakistan Meteorological Department, WAPDA and Federal Flood Commission but the same needs to be streamlined to ensure timely dissemination of data/information to the communities. However, a national comprehensive system needs to be put in place to monitor, archive and disseminate data encompassing all hazards and supported by a comprehensive compatible IT infrastructure. The completion of the National Composite Risk Assessment Exercise alongwith development of compatible IT infrastructure, would allow Pakistan to develop a system for monitoring of hazards and efficient dissemination of data for effective disaster management.

Context & Constraints:

The major challenge being the lack of local capacities on account of expert human resources and application of modern technology to develop a comprehensive system for monitoring, archiving data and disseminating information down to the community level. The huge investment on account of time and resources is required to develop the compatible IT infrastructures and human resources. However, the resource scarcity being faced by the Government is a major stumbling block in implementing the national policies and strategies on this account.

Core indicator 3

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

Level of Progress achieved:

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

Description:

With regard to effective Early Warning Systems, Pakistan can be ranked at level three. Pakistan has good institutional capacities for monitoring and warning of flood hazards. Following floods of 1992, a comprehensive Indus Forecasting system was launched with the assistance of Asian Development Bank (ADB). It is an ongoing work executed by Federal Flood Commission (FFC). Flood Forecasting Division (FFD), Lahore which is part of Pakistan Meteorological Department (PMD), undertakes dissemination of flood early warning to national stakeholders through an institutionalized process that connects inputs down to vulnerable communities using multiple channels.

Accurate forecasts with regard to precipitation are disseminated by PMD one week in advance and progressively these are issued till one hour before occurrence.

Flood forecasting occurs through a four fold input system which includes:-

- Network of weather radars

- Telemetric system which sends real time inputs on water flows
- Satellite coverage which includes both indigenous capacity and through WMO network
- Ground observation through PMD ground station deployed across the country
- Among weather radars deployed across the country more significant are the Doppler radars that furnish quantified inputs and are deployed in Lahore, Sialkot and Mangla to cover the flood catchments region.
- Water and Power Development Authority (WAPDA) has installed telemetry gauges along the rim of rivers in the catchments region and along some major rivers and it monitors water flows in these channels and provides real time information to FFD.
- Provincial Irrigation Departments also monitor river flows in respective provinces and they also communicate inputs to FFD.

Indus Water Commission (IWC) receives flood information from India and its inputs also end up with FFD. FFD (PMD) in Lahore constitutes the nerve centre for flood early warning in the country. Warning is sent to over 100 end users which include disaster management agencies, provincial and affected district administrations, armed forces, FFC, WAPDA, Irrigation departments, maritime agencies and airspace users. However, NDMA provides early warning to key national stakeholders. Critical warnings are communicated verbally besides other channels to relevant stakeholders.

Early warning within districts to vulnerable communities is communicated through the following channels:-

- Revenue Department down to 'patwaris', who work in group of 3-4 villages.
- Police wireless network deployed in police stations across the district.
- Through the Forestry Department in forested districts
- Through mosque committees and other grass root organizations. However, experience shows that vulnerable communities tend to keep each other informed courtesy the ever widening GSM network.

In order to further augment its existing EW capacities the Government of Pakistan has prepared a National Plan on Strengthening National Capacities for Multi-Hazard Early Warning and Response System and submitted it as part of Phase 1 in the Third Session of the Intergovernmental Coordination Group for the IOTWS, Bali, Indonesia (31 July to 2 August 2006). The cost of the first phase of the National Plan is estimated about US\$ 32 million. It includes nine essential components dealing with all major disasters generally experienced in Pakistan. This was subsequently revised to US\$ 8 million for IOTWS.

Among the eleven countries, Pakistan has requested for capacity building support from the Indian Ocean Consortium in the Third Session. Specifically, Pakistan has requested support for Power systems, central recording station, strengthening onshore / offshore sea-level network, up-gradation of warning capabilities of National Meteorological Service and establishment of specialised control centre at NDMA.

Context & Constraints:

Pakistan needs consistent support from the international community for implementation of its National Plan for EW capacity building. As already mentioned above, the Government of Pakistan has prepared a National Plan on Strengthening National Capacities for Multi-Hazard Early Warning and Response System and submitted it as part of Phase 1 in the Third Session of the Intergovernmental Coordination Group for the IOTWS, Bali, Indonesia.

Under Phase II, the Consortium partners need to assist in the implementation of the national plan, as their existing programmes and resources allow, and further assist in fundraising efforts to support the implementation stage. Progress reviews will be conducted at the middle and end of year. Due to resource constraints and the tight time-frame of 4 months under Phase 1, the Consortium can only guarantee assistance to 10 requesting Governments. There is an urgent need to accelerate national efforts and better synchronise them with regional and global developments.

Pakistan was one of the first countries to submit the Plan. Increased efforts are needed from ISDR to mobilize necessary funding, the absence of which is causing serious delays in being prepared for meeting future challenges.

Core indicator 4

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

Level of Progress achieved:

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

Description:

With regard to the regional trans-boundary risk analysis, Pakistan can be ranked at level two. Institutional commitment has been attained as Pakistan has already entered into regional partnerships in the field of disaster risk reduction. It is one of the 27 member states of Asian Disaster Reduction Centre (ADRC). The Center works to build disaster resilient communities and to establish networks among countries through many programs, including personnel exchanges in this field. Through the ADRC forum, Pakistan is committed to share information and knowledge about disasters with the member states. It also contributes in Research at the ADRC through nomination of research scholars.

Pakistan is also one of the 8 member states of SAARC Disaster Management Center (SDMC) which serves as the regional forum for the member countries for providing policy advice and facilitating capacity building services, including strategic learning, research, training, system development, expertise promotion and exchange of information for effective disaster risk reduction and management. Being one of the member states, Pakistan is committed to the charter of the SDMC which calls for sharing of best practices and lessons learnt from disaster risk reduction efforts at national levels, developing and implementing regional programmes and projects for early warning, establishing regional system of exchange information on prevention, preparedness and management of natural disasters and a regional response mechanism dedicated to disaster preparedness, emergency relief and rehabilitation to ensure immediate response

Context & Constraints:

The regional geopolitical situation does not allow free flow of information and sharing of data between countries in South Asia. Besides, South Asia being one of the less developed regions on account of technology and communication infrastructure, the arrangements for flow of information and early warnings are not at the desirable levels. Therefore, governments of the Region ought to take practical steps to ensure free flow of information and exchange of experiences on disaster management through mutually agreed mechanisms on disaster management. The member states of ADRC and SDMC are also required to take meaningful steps to implement regional strategies and policies as envisaged under the charters of the respective forums.

Philippines (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Risk assessments conducted so far cover about one-fourth of the country's land area through an ongoing project described below. Much needs to be done in terms of making relevant procedures part of normal business operations of concerned government agencies.

A pioneering multi-agency and multi-level effort is the "Hazards Mapping and Assessment for Effective Community-Based Disaster Risk Management Project" (called READY) which is funded by a \$1.9-million grant the AusAID with technical assistance from UNDP for the period 2006-2011. The project covers 28 provinces which have been selected on the bases of the hazard level (frequency and magnitude), elements

at risks, availability of base maps, peace and order situation, economic indicators, and accessibility. READY builds on the experience of an earlier project using a similar approach. Together with local stakeholders, hazard maps are produced and community-based early warning systems are established. Through these tools, community residents are better prepared against geologic and hydro-meteorological hazards and are enabled to make sound decisions about locating settlements and human activities, thus empowering them in the process. In order to get the tools ready, Mines and Geosciences Bureau (MGB), Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Philippine Institute of Volcanology and Seismology (PHIVOLCS), National Mapping and Information Resources Authority (NAMRIA) and OCD need to work out a whole system by which the harmonized product is delivered.

Manila Observatory, a private non-stock, non-profit and scientific research institution, also engages into disaster vulnerability and land-use mapping and classification. The institution developed a report entitled "Mapping Philippine Vulnerability to Environmental Disasters." Hazards and vulnerability were mapped and analyzed using Geographic Information System (GIS) and environmental modeling tools.

Context & Constraints:

The big challenge is to go beyond successes in project implementation and continue or adopt procedures, institutional arrangements, and mechanisms as part of day-to-day business and practice. The field of DRM is just taking root in the country and needs full cooperation among scientists and engineers. In this regard, since maps are the bases of understanding risks and vulnerabilities, appropriate protocols and procedures must be put in place to ensure harmonization. Healthy scientific exchanges should be encouraged so knowledge can be furthered and promoted evidence-based agreements for the benefit of the wider population.

Local chief executives must be educated about how risk assessment can help them serve their constituents. In areas not covered by the READY project, LGUs may either continue on indigenous mapping activities or initiate scientific mapping themselves (in coordination with appropriate agencies).

To facilitate the production of risk maps, vulnerability mapping must also be explored by the government. An overlay of multi-hazard and vulnerability maps can produce risk maps which are more indicative of areas, critical infrastructures, and population at risk.

Core indicator 2

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

Level of Progress achieved:

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

Description:

While the need for a database information system for key hazards and vulnerabilities is recognized, there is no coherent strategy towards putting up such a system.

The OCD monitors, records, and archives disaster information such as casualties, population affected, damages (houses and agricultural, infrastructure and private property) and total cost of assistance. Data storage problems are met occasionally.

Except in those areas where projects such as READY are in progress, information on hazards and vulnerabilities are not available in most LGUs. No inventory of previous disaster events has been made at the local level leading to dependence only on oral history. Planning tools available to LGUs do not apply hazard, risk and vulnerability data to spatial information using GIS. LGUs are not technically equipped to incorporate disaster planning into planning and information systems that may be available. Several hazard prone provinces not covered by READY and mapping projects, lag behind in terms of developing a system

to collate and organize data required of risk assessment.

Context & Constraints:

LGUs must be enabled to generate data on disasters and their impacts. On the other hand, local residents should also be mobilized and enabled to provide ground truth data on risks and vulnerabilities. Some of the techniques are already being employed by certain projects but are not fully utilized to generate a more permanent database for communities and linked to the planning information of LGUs. Most LGUs are not equipped with the capability to collect and store planning data and information such as population statistics. Current planning tools promoted by the DILG could include disaster as a parameter. In this connection, LGU planning officers must be trained to integrate DRR into development planning.

Many stakeholders perceive the need for an integrated information system. An inventory of past disaster events and existing hazards and vulnerability information systems should be done to provide direction and support decision-making. Based on target users, an appropriate information system may be designed.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Forecasting and warning systems for typhoons and floods exist. Radio and television remain the speediest source of warnings related to hazard events.

Inexpensive tsunami sensors developed by PHIVOLCS scientists have been deployed in a pilot site in Lubang Island and are planned to be installed in other parts of the country. The installation of sensors is being done while also intensifying community-based early warning systems (CBEWS) in the provinces. CBEWS for tsunami, established in pilot coastal villages in several provinces, includes hazard and risk assessments, evacuation planning, drills, tsunami signage installation, and information and education campaigns. Drills utilize indigenous practices such as ringing of a bell (“batingaw”). SMART, a telecommunications company also donates mobile phones and airtime load to PHIVOLCS and OCD Region 5 (Barangay Bulusan, Irosin, and Sorsogon) as preparedness measure. Early warning signs like flood markers are only beginning to be put up in areas where recent hazard events became near disasters or reached disaster proportions. PAGASA has partnered with SMART to provide the public with weather alert service for typhoons, floods, and climate change updates. A more proactive approach to early warning is yet to develop in many hazard-prone LGUs.

There are few good examples where different parties collaborated in preparedness activities incorporating locally generated EWS. For example, a community radio station that was put up since late 1999 in the Municipality of Labo Camarines Norte (located 335 km south of Manila), was recognized as a good practice in an Oxfam Publication. DWLB-FM provided the cheapest yet fastest information tool to warn residents of threats and educate people of their responsibilities to reduce disaster risks.

Urbanized areas bring a challenge different from rural communities. A local tsunami early warning system for Manila Bay and vicinity is being started through a project implemented by PHIVOLCS with funding support by the Finnish government.

PHIVOLCS is also linked with the Hawaii-based Pacific Tsunami Warning Centre (PTWC) which evaluates potential tsunami triggering earthquakes and disseminates tsunami warnings based on seismic waveform data streams from a network of seismic stations all over the Pacific.

Context & Constraints:

When communication facilities break down during strong typhoons, most LGUs do not have an alternate

system to communicate warnings to residents and inform when and where to evacuate. Forecasting models and equipment for tropical cyclones are available but constantly require maintenance and upgrading; thus the need for appropriate government investment.

Setting up an end-to-end EWS that delivers accurate warning information of potential hazards dependably and in a timely manner to authorities and populations at risk, and enabling them to take action remains to be a challenge. A multi-hazard approach would make it possible to building on existing EWS capacities and infrastructure of various stakeholders. The job of facilitating stakeholders' involvement bears mostly on LDCCs, which themselves need capacity building in the area of community participation. Much work is needed to integrate the EWS in the emergency preparedness and response planning. NGAs also need to be alert on what guidelines may be needed and what technical assistance and know-how can be shared to communities and their LGUs.

Government funds must also be available to enable procurement of monitoring instruments and equipment, which has been dependent on foreign aid. Investment for continuous training of personnel, particularly from the warning agencies, is also a concern.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Global climate change, Severe Acute Respiratory Syndrome (SARS), acts of terrorism, and weapons of mass destruction are trans-boundary hazards have emerged as priority concerns of the nation. Although enhanced capability through trained personnel and protective equipment is gradually being improved, other emergency preparedness components need to be integrated into current and future contingency plans.

The Philippines is an active member of the Association of Southeast Asian Nations (ASEAN) regional cooperation on risk reduction. This is mainly through the joint disaster drill called ASEAN Regional Emergency Response Simulation Exercise (ARDEX) held annually in a host ASEAN country. The exercise tests regional capacity to respond and render humanitarian assistance using a different disaster scenario every year. In 2009, ARDEX will be hosted by the Philippine Government.

With regard to extreme weather events, the broader context of climate change needs to be addressed by LGUs as well. DILG's Local Governance Resource Center has began a 3-day program in 2008 to help LGUs understand how climate change would likely impact the Philippines, and the role of they will play in mitigation and adaptation. On the national level, the Presidential Task Force on Climate Change is undertaking a strategic approach to address issues on climate in the country and is collaborating with international partners to support a global front to stabilize greenhouse gas emissions.

In addition, there are noteworthy sub-national efforts to monitor the migration of foreign birds which are potential carriers of the avian flu virus into Philippine territory. The Regional Task Force on Avian Influenza organized the Bantay Ibon (Bird Watch) in Eastern Visayas. In July 2008, a new bird watching group has been formed in about fifty (50) barangays in Leyte Province.

Context & Constraints:

Generally, people's awareness of transboundary risks is low. National, regional and local mechanisms to inform and educate citizens should be established and utilized.

Adapting to climate change and its associated and projected impacts such as accelerated sea level rise, particularly in low-lying coastal communities will entail resourceful planning and resource allocation.

Singapore (in English)

Core indicator 1

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

In the area of disaster monitoring and effective response, SCDF has put in place a robust emergency response system to handle new challenges such as the global threat of terrorism.

in the area of natural hazard, Singapore has completed the tsunami risk assessment on Singapore and has put in place a tsunami response plan from various agencies to deal with any tsunami threat.

Context & Constraints:

Nil

Core indicator 2

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

The National Environment Agency (NEA) provides weather surveillance and multi-hazard warning services on a 24/7 basis to the public, industry and relevant agencies in Singapore. Singapore has also developed the tsunami early warning system in 2008.

Context & Constraints:

The challenge is to study on vulnerabilities due to climate change

Core indicator 3

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

SCDF also has in place a Public Warning System (PWS) to provide early warning to the general population of any imminent threats that could endanger lives and property. In the event of an impending attack by a hostile element or the occurrence of a man-made or natural disaster, the PWS will be sounded to alert the public to seek refuge at communal or household shelters. In conjunction with the activation of the PWS, the commercial radio and television stations will also broadcast any advisory messages from SCDF.

The Met Service has in place all SOPs for early warnings of heavy floods, prolonged rain, high temperature, strong winds, tremors due to earthquake and tsunami warning.

Strong outreach to communities on prevention of dengue fever and ways to reduce aedes mosquito breedings.

Regular exercises conducted by various individual organisations to deal with Avian epidemic flu.

Context & Constraints:

More effort required to educate the communities.

Core indicator 4

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

Singapore is actively involved in various regional meetings to deal with transboundary smoke haze pollution in order to reduce the risk.

Context & Constraints:

The problem of transboundary smoke haze is sometimes beyond Singapore's control. There are also other diseases such as the chikuniya disease which was imported to Singapore by foreigners.

Sri Lanka (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

The national level hazard maps for landslide are developed by National Building Research Organisation and available for practitioners. Risk profiles for landslides are being developed for some of the landslide prone areas.

Risk profile for Kandy Municipal Council area developed as a pilot project.

Local level hazard maps that prepared by community for tsunami affected areas are available. International workshop was held on 30.03.2009 in Wadduwa to share experience on development of risk profile and agree on a methodology for developing risk profile for flood, tsunami, cyclone, drought and landslides.

Agreement entered with following institutions for the development of risk profile by end of 2010

Floods- irrigation Dept with Peradeniya University

Tsunami- Coast Conservation Dept. with Peradeniya and Moratuwa universities

Drought- Agricultural Dept.

Rapid assessment for flood impact conducted in 2006 and 2008 for flood affected Kalutara, Gampaha, Colombo and Rathnapura districts for the development of mitigation programme.

A Data base on climate change is maintained by Meteorological Department.

The Ocean Observation Centre (OOC) of National Aquatic Resources Research and Development Agency (NARA) also maintaining a physical ocean environmental database.

DMC has developed a data base on disasters from 1974 published in a separate website www.desinventar.lk. Records for past 30 year's data on disasters collected from news papers were revalidated with actual records from districts before publishing in the website. A mechanism for updating data with the assistance of divisional offices is established. EOC collect data and enter in to data base on daily basis.

Policy level approval obtained to consider disaster impact in environment impact assessments process.

However small projects which could create disaster situations are not cover by EIA.

Context & Constraints:

Risk profile not available for hazards other than landslides. Capacity of focal agencies responsible for developing risk profiles should be developed.

Technical assistance required to formulate criteria for assessment of disaster impacts of new development projects. National level workshop was held to obtain views of development agencies and EIA practitioners to strenthen the EIA process to consider disaster impacts.

It is compulsory to undertake EIA for all projects above certain limit to get the approval for implementation and funding. However projects of lower value do not require EIA and are not monitored by any agency.

Development of criteria for evaluating smaller project, which donot require an EIA or IEE and training local and district level staff to undertake disaster impacts need to be undertaken.

Community level hazard mapping should be undertaken for all hazard prone villages.

Funding for capacity development programmes are not available at present

Core indicator 2

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

Level of Progress achieved:

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

Description:

Database for disaster information for last 30 years have been developed and available in the website.(www.desinventar.lk)

Mechanism to update data with assistance of Divisional Secretary offices is in place. EOC DMC enter the data to data base on daily basis.

Sri Lanka Disaster Resource Network Database (SLDRN) is being developed and to be updated by district level organizations. Any responding organization could have an access to this web site.

National Aquatic Resources Research and Development Agency (NARA) is operating emergency centre on 24 hrs, 7 days basis and monitoring and gathering real time and near real time ocean physical environmental data around Sri Lanka Waters from reliable sources. Disaster Management Centre (DMC) and the Department of Meteorology to provide the necessary technical information and guidance for early warning and mitigation of impacts from natural ocean disasters.

Intra- governmental net work connecting DMC, Irrigation Dept. Met Dept. Police, Media Institutes, and seven district offices, in the I phase of Project implemented with JICA assistance, to exchange data and information on disaster.

35 automatic meather station are established covering the entire Island with JICA assistance and available for use of the public.

Meteorological department exchange weather information on daily basis with the Disaster management center which is the focal point to disseminate early warning messages and information..

Vulnerability and capacity indicators are still not developed.

Context & Constraints:

Records are available at individual institutional level. However there is no system to exchange the information. Some of the institutions are reluctant to share their data and information. DMC with the

assistance of JICA has established a Intra-Governmental net work to share data relevant to disaster management. This system need to be strengthened.

Capacity of agencies has to be improved to develop indicators to assess vulnerability and coping capacity of communities.

Officers developing DRR proposal should be trained to use data bases to identify the suitable mitigation projects based on the past experiences.

Minimizing the dependency of vulnerable communities should be taken in to account.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Nationally based early warning system for floods, tsunami, cyclone, landslides and sea surges is in place. Focal points for formulation of warning messages are identified.

DMC is responsible for dissemination of early warning messages up to the last mile.

An effective people centered early warning system available with the participation of early warning teams using local communication methods (Bells, Drums, Horns, etc).

Community level early warning systems are implemented in selected sites on pilot basis.

Assessment was made after tsunami early warning issued in September 2007 to identify gaps and improve the system. It was observed that 80% of the populations in the coastal belt have moved away from the coast after issue of the tsunami early warning.

Periodical tsunami early warnings issued at Community level for training and preparedness purposes.

Island wide communication system being implementing to cover the whole island with special emphasis on coastal belt. The project will be completed by year 2009.

Early warnings disseminate through TV, radio, and other local systems are in place. Mobile phone operators have initiated actions to send early warning messages to their client using their system.

Three early warning towers are in operation on pilot basis at present and 25 towers are added to the system in April 2009. Balance will be completed by the end of 2009.

Department of Metrology (DoM) issue early warning messages for cyclone. International links are established to receive data and information from early warning providers.

DoM is in the process of establishing Doppler Radar system which will improve the prediction capability of the dept.

DMC disseminate weather forecast through early warning towers. An assessment done in Hikkaduwa has shown that people are very receptive to the forecast issued. This system will keep the people alive to the early warning dissemination system.

Context & Constraints:

Sri Lanka does not have financial capacity to acquire and maintain necessary equipment for data collection and human resources to analyze and forecast natural hazards. Sharing information regionally also not in

place at present. This has become a major obstacle in issuing early warning messages in time.

The community level mechanism to disseminate the early warning to the last mile with in the lead time available is not adequate and should be improved.

Community loose confidence and doubt about the reliability of the warning issued if the disasters do not occurred as predicted by respective authorities.

Early warning system based on electronic media may not be suitable in the night and some times could create panic situation if they make it sensational.

It is required to strengthen dissemination of EW messages through police communication network improve the capacity of Local police to disseminate the message help to evacuate vulnerable communities.

A system to network early warning committees in the area and data base available to DM workers should be developed.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The Department of Meteorology maintains an effective regional data exchange and monitoring system. Met. Dept. has established link with Pacific tsunami warning center (PTWC) and Japanese meteorology agency (JMA) through Global Telecommunication System.

Trans-boundary meteorological hazards are monitored by department of meteorology.

Memorandum of understanding had signed by DMC with ADPC for exchange of information

DMC connected with Japanese meteorology agency and receives information on tsunami and earth quakes.

Technical agencies responsible for monitoring and assessing risk are connected to DMC with a inter government network.

DMC has established close links with SAARC disaster management organisation for training and exchange of information.

National Aquatic Resources Research and Development Agency Provide real time sea levels and other available information's at any given time to DMC, Department of meteorology and other relevant authorities for ocean based disaster early warning and mitigation.

Ocean based trans-boundary hazards are monitored by National Aquatic Resources Research and Development agency.

System is been developed with the assistance of Atomic Energy Authority Sri Lanka and IAEA to monitor the trans boundary effect of nuclear accidents in the region specially from India.

Contingency Plan for oil spills has been developed and contacts have been established to get the assistance to respond to major oil spills from the regional agencies.

Context & Constraints:

Financial assistance is required to develop capacity of institutions and to procure required equipment.

Absence of regional contingency fund hamper the quick response to major disasters such as oil spills, tsunami etc.

There is no regional early warning provided in the Indian Ocean. Countries in the Asian region have to establish bilateral links for exchange of data and information.

There is an urgent need to strengthen the regional cooperation in this area.

Syrian Arab Republic (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Current work is on preparing assessments for national and local risks which will be feasible to decision makers and society to understand all risks that might occur, and consider the social, economical and environmental weak points which increase risk volumes.

This is based on analytical databases and maps for assessing risks, that will assist communities to take effective action according to type of risks and available capabilities. In addition to build more capacities to reduce the risks as possible and to respond in the best way.

Context & Constraints:

The constraints are the insufficient financial resources and the need to develop experiences in this field.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The availability of systems to monitor and disseminate data on key hazards and vulnerabilities are varied, there are multi hazard mapping system which includes:

1. Digital maps for Epidemics: these maps include data about common diseases, their location, and the number of infections in each region. These maps are frequently modernized in order to know the increase or decreased of infections depending on prevention.
2. Digital maps for seismic events: these maps include data about different seismic events in all regions, and its strength, this will highlight the most critical places.
3. Data and Digital maps for forest fires: these maps include locations, frequency of wildfires, and estimating the vulnerable locations.
4. Data on Informal settlements: includes locations, number of inhabitants, probable risks that might occur because of natural disasters.

Context & Constraints:

Constraints include: insufficient financial resources which helps in developing these systems in order to cover all risks in all regions, in addition to the need to capacity building.

Core indicator 3

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

Level of Progress achieved:

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

Description:

There aren't early warning systems for all hazards, but if we take the elements of early warning individually (risk knowledge, monitoring and warning services, dissemination and communication, and response capabilities) we can consider that some of them are available in some regions such as monitoring services for forests where there are many centers for monitoring wild fires 24 hrs.

For the element of response capabilities, there are some means which are available to deal with disasters such as alternative routes in forests for facilitating the mission of fire fighters during wildfires.

Another example on early warning systems is the earthquake early warning systems (GPS systems) placed near active faults that give seismic data on the location, depth, and strength of the earthquake if it occurs.

Context & Constraints:

Constraints are the insufficient financial resources according to the high costs of these systems.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The government is attempting to strengthen the regional and international cooperation in regard to risks reduction through holding cooperation agreements in the field of exchanging experiences and information and providing aids during disasters. In this context Syria has cooperation agreements with Jordan, Tunisia, Malta and Switzerland.

In addition to the mentioned agreements there is a direct cooperation with Turkey in the field of forest fires including direct contact in order to adopt the immediate procedures for firefighting besides providing technical equipments.

Context & Constraints:

The means of communications and customs procedures are factors that constraint the implementation of monitoring regional and trans-boundaries risks.

Tajikistan (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

- 4 - Substantial achievement attained but with recognized limitations in capacities and resources

Assessment of risk of natural disasters was paid much attention in the period of the USSR. That is why the maps of risk were developed for almost all natural disaster hazards for the territory of Tajikistan: seismic, landslide, mudslide, erosion, avalanches, etc. Groups of highly qualified scientists took part in development of those maps (1982-1985). Now, these maps are in need of thorough revision.

Partial revision of these maps was done at the Information and Analytic Center of the Committee for Emergency Situations and Civil Defense. The maps were scanned, digitized and are stored in the GIS format, and in the future can be used in assessment of hazard and risk of disasters.

Assessment of vulnerability and risk of disasters are paid utmost attention in the entire world, because the results of such assessment can be of high economic value in planning of important economic objects, urban planning, development of national development strategy, risk reduction strategy, action plans and plans for response to disasters.

Unfortunately, assessment of vulnerability and risk was not paid due attention then, and therefore the maps of risk and vulnerability and threatening processes were not generated. Even now, the state institutions responsible for monitoring of major threats and processes had not worked out the methodology of such assessment. In some cases, only the qualitative characteristics of such assessments are available.

The most advanced in this sense is FOCUS - Humanitarian Assistance, which with support of specialists from Russian Federation worked out the more detailed methodology for assessment of hazards, vulnerability and risk of natural disasters in the territory of Mountainous Badakhshan of the republic of Tajikistan and compiled the relevant maps for over 200 urban areas.

Assessment of threats and risk of natural disasters at the lower level (community level) is carried out by CCDR, Caritas, Oxfam, Mission East and DRMP, in the Kulob zone of Khatlon region and in the Zarafshon valley in the Sughd region, in close cooperation with the Committee for Emergency Situations and Civil Defense.

Context & Constraints:

The main difficulties and challenges in the work of governmental and international partner organizations in the field of assessment of hazard, vulnerability and disaster risk are:

1. Weak coordination of activities and interaction among these organizations
2. Lack of reliable systems of communications and exchange of information
3. Prevalence of institutional interests of some organizations in development and introduction of methodologies in assessment of hazards and risk of disasters
4. Under-developed system of exchange of experience in introduction of modern technologies (GIS, systems of positioning and remote sensing, etc.)
5. Difficulties related to the state borders and administrative-territorial units

Resolution of these problems will allow overcoming the challenges in this sphere.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Since 1969, monitoring of natural processes is conducted by Chief Directorate for Geology (CDG) of the Government of RT.

The consolidated analytic information of CDG on the condition of settlements and objects of industry and economy in dangerous zones has been transferred in 1995 to the Agency for Construction and Architecture, CoES, and to local authorities for consecutive preventive measures. It is now the main source of information for CoES and CDG in monitoring of emergency situations in the especially dangerous zones. Such surveys can be made by resolutions of the Government and by requests of local authorities.

The other source of information on monitoring and forecasting of mudslides and floods is the Republican

Hydrometeorological Service. This Service forecasts the mudslides and floods. The information is relayed to CoES for the consecutive alerting of local authorities and joint preventive measures for mitigating the emergencies.

Seismological monitoring in RT is on low level - during the civil war almost all of the 49 seismic stations of the country were destroyed and looted. Of the fourteen remaining analog stations only one functions - in Dushanbe. However, the new network of seven digital stations is to become fully functional, with financial support of SDC. The network is being installed by local NGO "PMP International" with the Institute of Seismology of the Academy of Science.

A modern system of monitoring was installed and flawlessly functions at Lake Sarez in the Pamirs, monitoring the landslide-prone slope, and strong motion detectors and water level meters were installed. The system is linked to the early warning system unique in Central Asia. Both systems were parts of "Lake Sarez Risk Mitigation Project", supported by the World Bank, Government of Switzerland, AKF, USAID and the Government of Tajikistan.

Context & Constraints:

Until the end of 1995 the activity of the State Service for Monitoring of Threatening Processes was focused on:

1. Provision of service by resolutions of the Government of RT and requests of local authorities of regions (cities, districts).
2. Annual revision and inspection with use of air and road transport.
3. Creation of automated information-search system for processing the data collected by the Service.

Since 1996, the functioning of the State Service for Monitoring of Threatening Processes was almost fully terminated, and only the first paragraph is implemented. In view of this, continuous monitoring and forecasting of emergency situations related to activation of various geological processes became almost impossible. At present, planning of concrete actions in prevention of emergencies is based on use of consolidated analytical information provided by the State Service for Monitoring of Threatening Processes, detection of major threats of disasters and preventive measures, worked out by this Service.

Only ten seismic stations function at present. Processed information on the data from these stations is released after one month. Thus, one may conclude that continuous seismic monitoring in the territory of Tajikistan is not provided.

On the positive side, modern digital seismic stations are being installed in Tajikistan with support of the Swiss Office for Development and Cooperation. Seven stations will be installed before end of 2008. Altogether, the anticipated projects will help install fourteen stations throughout the country.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Substantial achievement attained but with recognized limitations in capacities and resources

Alerting population and the state is based on the system of monitoring of emergencies caused by geological, meteorological and other processes.

The Republican Center for Management of Emergency Situations (RCMES) at CoES has permanent radio-telephone and telegraph connection with all regions of Tajikistan, countries of CIS and beyond. There are three main regimes for alert and signal systems: regular, high alert and emergency.

The regional, city and district Hukumats and ES branches have radio, telephone or telegraph communication with all cities of the Republic, CIS countries and beyond. In need, they have communication with the Republican Center for Management of ES at CoES.

Beginning of operation of mobile communication companies in 2004 was helped overcome the difficulties, and by the moment the issue of reliable communications is almost resolved.

For the timely alert of settlements in the valleys of rivers Bartang, Panj, Amu-Darya of the possible burst of Lake Sarez, in accordance with the June 1999 resolution of the Inter-State Council of CIS on emergency situations of natural and technological character, and with financial support of ECHO and WB and with support of the Government of RT, the system of monitoring and early warning was installed in the Bartang valley. The system from the Usoy facility on Lake Sarez to Rushan, to Khorog in MBAR, and to Dushanbe and eight villages in the Valley of Bartang. The system uses the compact alert system Codan. The facility was tested, put into operation and is run by the Directorate for Lake Sarez of CoES.

The plans include installing similar equipment in the settlements on river Panj downstream of Rushan up to the border of Uzbekistan. According to CoES and NGO Focus, 116 settlements are in the Sarez flood area.

Context & Constraints:

The existing problems and difficulties include:

1. Paralysis of wire communications within districts and within organizations
2. Non-functioning radio systems and wire information networks in the district centers with extensions to individual households. Only the Sughd region and some districts in MBAR are the exception (e.g. the Rushan district).
3. Lack of system of monitoring and early warning in most dangerous areas. In particular, it would be rational to use the experience accumulated through other projects in installation of systems of monitoring and early warning in other districts of the Republic, with preliminary assessment of safety of natural and artificial dams.

With the purpose of timely alert of the population in case of threat or actual burst of a glacier lake the radio stations were installed in four settlements (Vanj, Khrustalny, Chkalov, and Godjavist). These radio stations do not function now; creation of radio and telephone communications in the mountainous areas has always been difficult, even in the former USSR.

It would be rational to install the compact early warning systems similar to the system in Bartang in the valley of river Vanj and in other most vulnerable territories of the Republic of Tajikistan. The probability of mudslides in the Vanj valley due to activities of the Medvezhi and RGO glaciers and other threats is much higher than probability of the similar threats to Bartang valley due to burst of Lake Sarez.

Replacement of the worn-out telephone stations and serious repair and restoration works at destroyed communication lines requires significant financial and material resources. However, if such resources become available, it would be more rational to install modern means of communication providing wireless internal and external communication.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Central Asia is one of most natural disaster-prone regions. The natural disasters include mudslides, floods, rockslides, droughts, earthquakes, avalanches, etc. That presents enormous danger to the safety of the region. At present, reduction of vulnerability is viewed as a key factor for sustainable development. The awareness of the persons who make decisions on necessity of creating the Integrated System of Disaster Risk Management is growing; such system would help improve the potential in preparedness and response.

Preventive measures, such as risk assessment, forecast of natural disasters, increasing awareness of target groups allow in general minimizing the risk of natural disasters. Trans-border integration in activities for prevention of natural disasters reduces vulnerability of countries and helps reduce economic and material losses.

At present, problems of trans-border natural disasters are addressed in a number of international projects that were accomplished or continue in the countries of Central Asia. Among them is the "Project for ecological safety of countries of Central Asia", part of which reviewed issues of trans-border natural disasters in some areas of Ferghana Valley in the territory of countries of Central Asia.

In the course of the project, three districts were surveyed in the territory of Tajikistan: Asht, Kanibadam and Isfara. The survey revealed areas where the trans-border natural disasters (mainly landslides and earthquakes) cause damage and threaten the population and territories of sections of Tajikistan, Uzbekistan and Kyrgyzstan at the same time.

The other project, the preliminary phase of which is implemented from July 1, 2008 through February 28, 2009 focuses on trans-border problems, in connection with strong earthquakes occurring in the countries of Central Asia. All five countries of Central Asia take part in implementation of the project.

The trans-border problems related to the possible burst of Lake Sarez, were considered and discussed at many international conferences, seminars and symposiums in Tajikistan. The last international conference on this subject was organized and conducted with support of the UN International Strategy for Disaster Reduction in (UNISDR) May of 2007. The participants of the conference determined a number of measures required for ensuring stability of the Usoy dam and the Pravoberezhny rockslide.

Context & Constraints:

The main unresolved issues:

- The mudslides and floods that originate in the territory of the Kyrgyz Republic and inflict enormous damage to the territory of Tajikistan (the Kanibadam and Isfara districts)
- The catastrophic raise of water table in the Lakan valley in Isfara district of the Sughd region caused by filling up of the Toktogul water reservoir in the territory of the Kyrgyz Republic
- The risk of contamination of the water in the Syr-Darya river flowing through to the territory of the republic of Uzbekistan, by the washed-off radioactive waste from the nuclear waste tailings in the territory of the Sughd region of the Republic of Tajikistan

Common problems related to trans-border natural disasters:

- Lack of unified system of alert and communication in emergency situations
- The population of border areas is not prepared for possible catastrophes
- Low level of awareness of population of border areas of the possible natural disasters
- Joint trainings and exercises for preparing for possible natural disasters are not organized
- There is no exchange of experience in the issues of preparedness for natural disasters, their prevention, response, etc.

Uzbekistan (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

A mapping system was created in the Republic of Uzbekistan to evaluate various hazards and potential risks. In particular, seismic zoning maps OCP 2001 of the territory of Uzbekistan (S 1:1000000) were developed which specify recurrence (frequency, periodicity) of earthquakes on various levels of recurrence and risk. Seismic zoning maps of Tashkent city; micro-zoning maps of 26 large cities of Uzbekistan on scales of 1:100000; maps of type designs of the territories relevant to the complexity of geologic-engineering conditions, seismic activity potential, seismogenic zones and other potential sources of natural and technological hazards; maps of maximum possible earthquake magnitudes; maps of hydro meteorological factor risks were developed and compiled.

Vulnerability assessment of assets and capacities is carried out continuously by the operational and territorial subsystems of the SSPR.

Context & Constraints:

Information is not available

Core indicator 2

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

Level of Progress achieved:

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

Description:

Vulnerability assessment of assets and capacities is carried out continuously by the operational and territorial subsystems of the SSPR. Emergency situations risk monitoring is conducted by the Monitoring and Forecasting Centre of MoES by sectors: Uzhydromet, Seismology Institute, State Service on Geological Phenomena Monitoring, State Sanitary-Epidemiologic, Veterinary and other services. In case of emergency situations on republican level, the governmental commission comprised of stakeholder ministries and agencies conducts analysis of the socio economic and ecological consequences and losses. The results of the analysis are shared with stakeholder structures by way of recommendations for making decisions and conducting urgent measures.

For the population of the republic, there functions a centralized state early warning system which goes down to district level and performs by means of sirens, loudspeakers, television and radio broadcasting, as well as by the special local early warning systems on dangerous facilities.

Within the framework of the SSES system, there is also a well-adjusted system where non-governmental organizations share information on emergency situations of natural and technological character.

Context & Constraints:

n/a

Core indicator 3

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

Level of Progress achieved:

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

Description:

In case of emergency situations on republican level, the governmental commission comprised of stakeholder ministries and agencies conducts analysis of the socio economic and ecological consequences and losses. The results of the analysis are shared with stakeholder structures by way of recommendations for making decisions and taking urgent measures. A centralized state early warning system which goes down to district level and performs by means of sirens, loudspeakers, television and radio broadcasting, as well as by the special local early warning systems on dangerous facilities. Within the framework of the SSES system, there also exists a well-adjusted system where non-governmental organizations share information on emergency situations of natural and technological character.

Specifically, mobile (cellular) communication companies have been used since 2007. In this way, the population is provided in advance with information on potential hazardous natural phenomena (avalanches, mudflow dangers, floods, and etc.). The legislation stipulates that information in the field of protection of population and territories in emergency situations is open, and the organs of state power and administration, the self-governance structures, administration of enterprises and organizations are responsible for the timely and accurate informing the population through the means of mass media and other channels.

Context & Constraints:

n/a

Core indicator 4

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

Level of Progress achieved:

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

Description:

In the territory of Uzbekistan such natural hazards are present as earthquakes, landslides, mudflows, floods and drought. Earthquake is the disaster that causes the largest aftermath. For example, the strong earthquakes that took place in the 20th century in Andijan (1902), in Tashkent (1946 and 1966), in Gazli (1976 and 1984) caused great economic losses and large numbers of casualties.

Context & Constraints:

The earthquakes with magnitude of 7.0-7.3 degrees in Iran, Armenia, Japan and Turkey killed tens of thousands people. Three earthquakes of the same magnitude in Uzbekistan caused death of only eight persons. This indicates the high level of seismic zoning and the earthquake resistant construction, and can serve an example of effectiveness of measures.

Viet Nam (in English)**Core indicator 1**

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

Level of Progress achieved:

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

Description:

Some line agencies, ministries and local authorities have developed natural disaster related databases for their own sectors and purposes. Particularly the statistical system has been developed from commune level to central level. This is a specialized system for collecting the socio-economic development of Viet Nam, in which disaster related data has been included. The data has been regularly updated annually. With their capacities and resources, some line agencies, ministries and local authorities have actively carried out disaster risk assessment for their sectors/localities, such as the disaster risk zoning maps, hazard maps based on available information. In addition with the supports of foreign projects, the risk assessment has also implemented in project areas.

Context & Constraints:

Current system for collecting information and data related to disaster does not cover all countries and sectors. It is developed for some specific purposes of some sectors and localities. This information system is not developed for sharing. The risk assessment is only in the pilot stage in some disaster prone areas and not updated and reviewed annually.

There is not a standardized risk assessment approach and method for relevant stakeholders to apply. Therefore, it is difficult to use and error-prone. Moreover, the maps are not overlapped even in the same areas. Hence, comprehensively analyzing the risks including hazard data and vulnerability information is a real challenge. Furthermore, disaster risk assessment is not required in the socio-economic development projects and plans

Proposed solutions:

In order to solve above motioned challenges, it needs to standardize the risk assessment methodology, and risk mapping with the agreement of all relevant stakeholders. Risk map, and hazard map should follow a consistent standard of GIS format in order to optimize the use and retrieve the information.

The Disaster Management Center, DDMFSC should develop a system to store and share the standardized database and maps. This is to ensure the effective use of standardized and approved risk information and assessment. Any relevant authorized stakeholder can contact DMC to obtain data.

Secondly, the policies and guidelines should be developed and disseminate widely from local to central levels to ensure the development of information system for DRR including hazard database, vulnerability information, risk assessment highly reliable.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Statistical system from central to local levels is developed to monitor, archive and share information on socio-economic development nationwide in which hazard and vulnerabilities information is included. In the disaster prevention, response and mitigation sector, information system has also developed, updated and archived through the CFSC system from central to commune levels. The disaster-related damage information is collected and archived in two different formal systems. One is the data collection system of CCFSC for the purposes of emergency response and another is the system of General Statistics Office (GSO) used for long-term statistical purposes. Additionally, some NGOs and international organizations have the damage and need assessment data of some specific disasters. Another system to monitor, archive and disseminate data on key hazards and vulnerabilities is the webpage and the monthly newsletter of NDMP. The information in this system is available in both Vietnamese and English and free access for all stakeholders.

Context & Constraints:

Lack of DRR related information is a big challenge to ensure the rights of communities to participate in DRR planning and implementing process. When the information, and data on disaster risk, resources, and the information of policies are not clear and detail enough, the development and implementation of DRR action plan with the participation of communities will face difficulties.

Proposed solutions:

Current system and mechanisms of NDMP to monitor, archive and disseminate data on key hazards and vulnerabilities is seen as useful and effective. Therefore, its existing role and performance should be enhanced and improved.

However, in order to sustain the functions of NDMP, it needs to be integrated into the government system and its autonomy should be strengthened. Only those Government staffs whose work are directly linked to the functions of NDMP have shown genuine interest in the management and strategic direction of the Partnership.

One of the options is that the NDMP Phase III should be a core component of DDMFSC with the support of donors. Then, the function and mandate of NDMP should be upgraded and strengthened to be a national platform for DRR fully integrated into Government system.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Recently, disaster early warning information has been disseminated through two channels: a government system, and a mass media system (television, and radio). The government system disseminates the information down to local communities through the CCFSC communication networks by using telephone, fax, and finally by loudspeaker system to the local people. However, at some isolated areas the disseminating early warning message to as well as receiving reports from on the disaster situation is difficult due to the poor communication system such as no landline or mobile phone system available. Moreover, Radio the Voice of Viet Nam (VOV) in collaboration with relevant agencies timely and promptly disseminate the information of disaster, of the response and recovery activities.

In 2008, VOV has completed all the procedures to start the first phase of "East Sea radio signal coverage project" which can cover the sea areas up to 3,500km. VOV also built small and medium radio stations at northern mountainous areas, valleys, and weak-signal areas. It is planned that by 2009 99% of all residential areas have been covered radio signal in order to effectively disseminate the disaster information to isolated and remote areas.

At provincial level, warning messages received from the CCFSC are passed on to the district, which in turn passes to the commune. Though, daily weather forecast are show on Vietnam TV and radio, warnings are given to people using the telephone and fax to all provinces.

Context & Constraints:

The geographic and socio-economic conditions of Viet Nam included many isolated and remote areas with limited infrastructures, especially in the areas far from city centers, contributes to the possibility of information gap on the dissemination of early warning information at the community level. Furthermore, the limited capacity at the local levels in understanding or comprehending the early warning information and its preparedness measures in responding to early warning also adds the challenges face by the country.

Proposed solution:

Ministry of Information and Communications, VOV, VTV, other ministries, and local authorities should strengthen, upgrade, and develop the disaster early warning systems at local levels to ensure the warning message can reach to the remote and isolated communities before and during the disasters.

Education or knowledge on various hazards and vulnerabilities should also be increased, especially to relevant communities so that they could understand and response effectively toward the early warning information that they receive. The utilization of local wisdom and knowledge can also enhance the acceptance of local community as compared to scientific early warning information.

Core indicator 4

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

Level of Progress achieved:

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

Description:

At local level, some provinces have paid attention to regional/transboundary disaster risks in their provincial disaster risk assessments. MARD is the technical ministry responsible for the overall disaster management and reviewing structural measures that consider the balance of cost and benefit of different regions and areas. For example, in 2007 Prime Minister approved the flood mitigation plan for Red river delta, and MARD reviewed existing plans for flood mitigation in Mekong delta. In 2008, Ninh Binh, Thanh Hoa, Nghe An, Phu Tho, Vinh Long, Phu Yen, Hai Phong, Bac Giang Provinces and Hanoi City have completed the flood reduction plan in which the trans-boundary risks have been taken into account.

At national level, the bi/multilateral corporations with other countries in Mekong region like Thailand, Laos, and Cambodia through MRC have achieved some preliminary results such as the strategy for flood mitigation and management of the lower Mekong basin with a view to regional cooperation on risk reduction developed and implemented.

Context & Constraints:

At local level, the trans-boundary risks have been taken into account. However, it is still common that each community and province tend to more emphasize its benefits than the risks of others. These are the big challenges of dealing with the trans-boundary risks.

There are existing and regular cooperation and collaboration agenda on socio economic, trades, and security between neighboring countries, local authorities, but the cooperation on risk assessment and disaster risk reduction has not been initiated and established well and joint planning on disaster risk assessment and risk reduction between neighboring countries and local authorities have not be developed and implemented.

There are few efforts of local, international and regional organizations to provide technical and financial support to strengthen cooperation, collaboration, and mechanisms of regional cooperation on risk assessment and risk reduction.

Proposed solutions:

Trans-boundary risk assessment should be a must for any structural measures, particularly large-scale infrastructure project.

Assessment on country framework to identify the gaps, needs and priorities for developing joint plan and mechanism to implement the plan and to develop procedures of cooperation on risk assessment and risk reduction. Neighboring countries and local authorities should include disaster risk assessment and risk reduction into regular and permanent agenda of cooperation and collaboration through joint plan and implementation. Increasing engagement and involvement of local, international and regional organizations to provide technical and financial support for strengthen regional cooperation on disaster risk assessment and risk reduction.

Yemen (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

The term of Early Warning System is not yet included in the majority of Disaster management legal framework system yet but several authorities are practicing the some tasks of some Early warning .These National bodies can be utilized ,if the suitable resources secured, within an appropriate coordination mechanism to act as Disaster and Climate Change National Early Warning system as follows:

1. For the geological Hazards; the National Center for Seismic and Volcanic Monitoring ,under the Supervision of Ministry of Oil and Minerals.
2. For the Desert Locust attacks, he National Center for Desert Locust Fighting with the Ministry of Agriculture and Irrigation.
3. he National Center for Remote Sensing under the Ministry of Telecommunication and Informational Technology.
4. For the Climate and Meteorological Hazards, Environment Protection Authority under MWE, the National Meteorological Center under the Ministry of Transport, the National Water Resources Authority under MWE

5. The National Information Center under the Presidential Office..

- The General Directorate of Environmental Emergencies within MWE is mandate to address the issues of EWS for the Environmental (Natural and Man-made) hazards including establishing the national Risk Maps

- Presidential Decree No, 218 , year 2005 about the by-law of MWE assigned the Environmental Emergencies General Directorates (EEGD) mandates to direct the Emergencies and Disaster and Climate Change Risk Reduction.

Context & Constraints:

the main constraints are:

- Lacking for the National Strategies and legal framework.
- lacking for the financial and technical resources.
- Lacking for knowledge.
- Lacking for the public and official awareness .
- Other aspects.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The Ministry of Water and Environment (EEGD) through the NTEDR (the DRR National Platform) is committed by its mandates to develop and establish the appropriate arrangements for the NEWS, this will be achieved through the existing cooperation program with GFDRR/WB and UNISDR.

2006, A coordination Unit for Disaster and climate change risk reduction has been established, with the MWE, chaired by the DG of Environmental Emergencies. Under the NTEDR 5 technical committees from the stakeholders (Geological, Climate Change and Meteorological , Marine , Technical hazards and coordination) to address the required action on HFA and submit the outputs to the NTEDR.

Context & Constraints:

the main constraints are:

- Lacking for the National Strategies and legal framework.
- lacking for the financial and technical resources.
- Lacking for knowledge.
- Lacking for the public and official awareness.
- Lacking for the required equipments, capacity and experience.
- Absent of the historical data- bases.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Same issues as at the national level.

Context & Constraints:

- Lacking for the National Strategies and legal framework.
- lacking for the financial and technical resources.
- Lacking for knowledge.
- Lacking for the public and official awareness.
- Lacking for the required equipments, capacity and experience.
- Absent of the historical data- bases.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Risk assessment and mapping has been identified as a priority for Yemen to support the development of the national strategy and legal framework for Disaster and Climate Change Risk Reduction.

The MWE (GDEE) is working through support of GFDRR/WB in developing a National Risk Map covers the majority of hazards and risk in the country.

Context & Constraints:

- lacking of the experiences and knowledge.
 - lacking for the financial and technical resources..
 - Lacking for the public and official awareness.
 - Lacking for the required equipments, capacity and experience.
 - Absent of the historical data- bases.
-

Europe

Armenia (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

There are some achievements in development and compiling the digital GIS based hazard and risk maps for the territory of Armenia and specific areas and settlements. The seismic hazard map for the territory of Armenia has once been developed is now under re-evaluation due to emerging new concepts and approaches as well as the rising level of seismic activity in the region. Mapping of secondary hazards such as landslides, rock avalanches and mudflows are carried out by the relevant organizations with foreign support. Current seismic hazard assessments or short term earthquake predictions are regularly provided by the Armenian National Survey for Seismic Protection (Armenian NSSP), the agency functioning within the newly established Ministry of Emergency Situations. The Armenian NSSP has accumulated the valuable experience in the seismic hazard and risk assessment. Two landmark nationwide comprehensive programs adopted by the Government of the Republic of Armenia namely Seismic Risk Reduction in the territory of Armenia and Seismic Risk Reduction in Yerevan-city have been developed and put in action with special emphasis on hazard and risk assessment.

Context & Constraints:

In order to improve risk assessment in Armenia the following measures are needed:

Analysis and interlinking of existing structures and capacities which could be reached by the coordinating efforts of the Ministry of Emergency Situations which is incorporating such key DRR actors like the Armenian NSSP, Armenian Rescue Service and Hydrometeorology and Environment Monitoring Agency.

Development of appropriate methodology and common approaches for multi-hazard risk assessment.

Mobilization of additional finance, manpower and technology.

Improvement of institutional structures to ensure efficient risk assessment.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The Armenian NSSP is monitoring about forty geophysical, geochemical, hydrochemical, electromagnetic etc. parameters through National Observation Network incorporating about 150 stations. The monitoring systems involve in the global IRIS, READINESS, GPS and CTBTO and COSMOS networks which enable to change and disseminate data on seismic hazard. The same principle is laid in the activities of Armenian State Hydrometeorological and Monitoring Service which responsible for atmospheric and water resource monitoring. It has numerous countrywide monitoring sites controlling the level, quantity and quality of water resources.

Inspections, visual screening and vulnerability assessment of critical facilities and public buildings have been carried out by the specialists of the Armenian NSSP resulting in retrofitting and upgrading the structures. Seismic design for projected new Nuclear Power Station is of high importance and to be

tendered in 2008.

Common annual natural hazards are as follows: spring deluges, windstorms, and hail.

In 2007 the 329 communities were suffered and the property and crop losses due to those hazards are evaluated as 41 mln. USD. The anti-hail devices are used to prevent the damage and losses. The demand in such devices exceeds the available quantity about 30 times.

Context & Constraints:

“Processes for data collection and dissemination are in place for all hazards and most vulnerability factors, but the poor state of technical means of monitoring as well as shortcomings in data dissemination and analysis should be addressed.

There is urgent need to improve amount, quality and accessibility of data as well as vulnerability evaluation techniques.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Earthquake early warning non-automatic system (so called “early notification”) is in place with distinctive hierarchical subordination and responsibilities. The core element of the system is expert evaluation of the seismic situation based on brainstorming method of decision-making.

The automatic or technical early warning system for Yerevan-city which main principles had been developed in 1998 is still not operable due to lack of funding.

Context & Constraints:

It is necessary to include the early warning system development in national poverty reduction plan.

Request the ISDR platform for the promotion of Early Warning to facilitate the decision on funding the Project “ Towards the Implementation of Earthquake Early Warning for Megacities (Capital of Yerevan) Ref.17 presented to the Third International Conference on Early Warning in March 2006 (Bonn, Germany). Implementation of the International Early Warning Programme as called for at the EWCIII.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Regional cooperation is essential for risk assessment and reduction.

Armenia signed the Inter-governmental Agreements on seismic risk reduction with the Islamic Republic of Iran, the Republic of Tajikistan. The international Armenian-Russian Project “ Earthquake source investigation and seismic hazard prediction in Caucasus” between the Armenian NSSP and Geophysical Survey of Russian Federation has recently been renewed.

The Armenian NSSP is a member of Euro-Mediterranean seismological center and exchange valuable earthquake information with partner countries in the region.

The Project “ Prevention of emergencies in the Southern Caucasus” funded by the German Government and to be implemented by GTZ. In Lori and Tavush marzes of Armenia and Sheki-Zakatala region of Azerbaijan with the population of around 150 thousand people..

The Important objective of the Project: capacity building of the Southern Caucasus communities which are most suffered from negative consequences of natural disasters

Context & Constraints:

Some political reasons are still considered as obstacles to manage successful cooperation though as is often admitted: the disaster has no boundaries, and the neighboring countries ought to jointly do the best to prevent the forthcoming catastrophes.

Bulgaria (in English)**Core indicator 1**

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

Level of Progress achieved:

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

Description:

Minor progress

Context & Constraints:

More work should be done on the risk assessments based on hazard data

Core indicator 2

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

Level of Progress achieved:

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

Description:

Some progress.

Context & Constraints:

More institutional commitment is needed.

Core indicator 3

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

Level of Progress achieved:

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

Description:

This is the first time in Bulgaria at 09.2008 when It has given the start of design, delivery and installation of a modern nationwide System for early warning and announcement in case of disaster. The system will have 2 subsystems:

- Subsystem 1 for announcement of authorities and the parts of Single Life-Saving Integrated Rescue System;
- Subsystem 2 (The Siren system) for early warning and announcement population of the country. All existing warning installations will be upgraded with the latest radio-communication technology, the warning installations network will be expanded to meet up the infrastructural changes over the past years, and the control command system will be replaced with State-of-the-Art control equipment.

At the moment we have deployed Subsystem 1 in 6 regions. We are going to have deployments in the rest 22 regions.

We have deployed Subsystem 2 in towns Sofia (20 sq. km zone), Bourgas, Ruse, Kurdjaly, Pleven and Smolian.

Context & Constraints:

The development will continue.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Close cooperation on risk reduction with all countries and relevant institutions in SEE

Context & Constraints:

Closer cooperation on joint projects needed.

Croatia (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

There is threat assessment in place at all levels. At national level, the protection and rescue system links all state administration bodies and expert institutions, such as Croatian Waters Company, State Office for Radiation Protection and State Office for Nuclear Safety.

Context & Constraints:

The implementation of the SEVESO II Directive has started calling for personnel training at local and national levels in the next one or two years, including the level of operators who will be responsible for the implementation of the Directive.

In order to carry out efficient rescue operations in the aftermath of a disaster or a major accident, a communication system is an imperative, to which purpose the TETRA system is being implemented, which is a long and expensive procedure.

Core indicator 2

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

Level of Progress achieved:

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

Description:

There are theme databases in place, as is linkage with systems measuring various parameters (radiological, weather, seismologic, air quality), as well as operating procedures for providing data to relevant services.

Context & Constraints:

The process of linking separate databases into a single database and their transfer to GIS. The process is

time-consuming and requires financial means and appropriate information technology equipment and well-trained personnel.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The system functioned well during the war in 1991-1995. The system is now upgraded but the modernization has not been finished yet due to financial limits. It is regularly maintained and tested.

Context & Constraints:

Expensive maintenance of equipment and the overall system have resulted in search of new contemporary solutions based on the information technology development.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The Republic of Croatia has an active international cooperation with the neighboring countries through bilateral agreements signed with Slovenia, Hungary, Bosnia and Herzegovina, Montenegro, Austria,, Poland, Slovak Republic, as well through regional initiatives and organizations (Disaster Preparedness and Prevention Initiative) and CMEP SEE (Civil-Military Planning Council for Southeast Europe) and participation in the EU Civil Protection Mechanism.

Several projects of common interest have been conducted covering risks such as earthquakes, forest fires and floods.

Context & Constraints:

Strengthening of the system at local level is a precondition for joint operations of neighboring counties of two states in case of disasters and major accidents in border areas.

Czech Republic (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Databases are available especially for floods and hydrometeorological type of hazards. Problem is with building of databases for all types of risks including man-made disasters.

Context & Constraints:

Coordination and financial constraints.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Such systems are being build - step by step. IT WILL NEED MORE TIME.

Context & Constraints:

Financial constraints.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Early warning systems are well build for all kinds of Hydrometeorological hazards and also for nuclear hazards. All levels have been included in the system. Early warning has been provided for all hydrometeorological hazards by the Czech Hydrometeorological Institute and dissesminated via the Fire and rescue Service, via media and also by means of an Internet and SMS messages.

Context & Constraints:

Financial constraints occur in some cases and levels.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Regional and trans boundary cooperation is relatively well established with neighboring countries- Austria, Germany, Poland and Slovakia. Also cooperation with EU in general has been improving. As an example - the Czech Republic participates in an International warnings web pages within EU for hydrometeorological hazards coordinated by Austria.

Context & Constraints:

More coordination and exercises might be beneficial.

France (in French)

Core indicator 1

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

Des bases de données, mises à jour régulièrement, ont été mises en place pour la connaissance des aléas et de la vulnérabilité (création d'un répertoire, cf. Ponts et Chaussées) :

- les axes principaux de la prévention des risques naturels portent sur :

-> la connaissance de l'aléa et de la vulnérabilité, la surveillance des phénomènes, les mesures de protection et de réduction de la vulnérabilité, la gestion du territoire et de l'aménagement (cartographie réglementaire...), l'éducation, la formation, l'information, les retours d'expérience.

- la connaissance des aléas est l'un des piliers majeurs de la prévention des risques. Les différents aléas identifiés sont pris en compte et accompagnés de documents cartographiés et / ou répertoriés dans des bases de données. A titre d'illustration, on citera : les cartes de localisation probable des avalanches, la carte de sismicité, les cartes de mouvements de terrain et cavités souterraines, les atlas de zone inondable, les atlas d'inondation par remontée de nappe, la carte de sécheresse géotechnique, la carte des vents extrêmes

Context & Constraints:

...

Core indicator 2

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

Level of Progress achieved:

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

Description:

- Financés par l'Etat, les documents sont conçus par des établissements publics et des bureaux d'études. Ils sont établis en priorité pour les zones géographiques identifiées comme les plus vulnérables et sont mis à jour en tant que de besoin. Ils sont accessibles sur le site www.prim.net au fur et à mesure de leur parution mais aussi au plan départemental sur le site internet des préfetures.

- Les cartes de risques sont d'une approche plus complexe. Elles supposent, en effet, de prendre en compte la vulnérabilité, domaine dont l'approche et la définition sont plus délicates à cerner. Des études sont conduites actuellement dans ce domaine qui reste encore à développer largement. Elles portent sur la caractérisation de la vulnérabilité ainsi que sur les approches coût-bénéfice. Quelques actions de type « expérimental » ont été conduites, en particulier sur de grandes agglomérations telles que Paris pour le risque inondation ou Nice pour le risque sismique ou encore sur de grands ensembles comme le bassin de la Loire pour les inondations. Entrent également dans ce processus, les diagnostics portant sur la résistance aux séismes des bâtiments de classe D (bâtiments stratégiques) aux Antilles ou des études plus ponctuelles liées à des catastrophes récentes telles les inondations dans le Gard (Sommières). Ces initiatives permettent de dégager des ordres de grandeur des pertes potentielles directes, elles ne donnent en revanche aucune indication sur les conséquences dans le temps des catastrophes. Le concept même de vulnérabilité est à ce stade sans doute trop imprécis.

Context & Constraints:

...

Core indicator 3

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

Level of Progress achieved:

4 - Substantial achievement attained but with recognized limitations in key aspects, such as financial

resources and/ or operational capacities

Description:

- Autre pilier de la prévention, la surveillance des phénomènes relève pour l'essentiel de l'Etat et des établissements publics compétents placés sous sa tutelle, en particulier pour les phénomènes de grande ampleur. Certaines collectivités territoriales se sont engagées dans la mise en place de dispositifs de surveillance sur des zones restreintes notamment vis à vis des crues rapides.
- Pour assurer cette surveillance, il existe des structures et des systèmes de mesure. Ainsi en est-il des volcans, des séismes, des avalanches, des cavités souterraines, du niveau de la mer...
- La carte de vigilance météorologique a été instaurée à l'automne 2001. La procédure de vigilance crues est opérationnelle depuis juillet 2006. Dans les deux cas, les informations sont directement accessibles par tous sur internet. Quatre niveaux de couleur indiquent le degré de vigilance à porter aux crues sur les cours d'eau surveillés par l'Etat. Des bulletins complémentaires commentent les phases de forte vigilance. Ces informations sont disponibles sur les sites www.meteo.fr et www.vigicrues.ecologie.gouv.fr pour toute la France métropolitaine.
- Cette surveillance permet une première approche de la cartographie des zones à risques. Celle-ci est cependant délicate car elle suppose des référentiels largement tributaires de l'expertise et de l'appréciation du possible et du probable.

Context & Constraints:

...

Core indicator 4

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

Level of Progress achieved:

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

Description:

- La gestion des inondations des fleuves transfrontaliers est une préoccupation française. Les coopérations régionales et internationales prennent tout leur sens dès lors que l'on aborde les phénomènes météorologiques, les inondations transfrontalières ou le risque de tsunami. S'agissant des risques nouveaux, un travail important doit être conduit afin de distinguer ce qui peut faire l'objet d'une prise en compte pratique et concrète de ce qui relève encore de la prospective. Ainsi les conséquences perceptibles du changement climatique portent sans doute dans l'immédiat sur l'élévation de la température moyenne et celle du niveau de la mer. A contrario, le risque météoritique ou encore les conséquences à très longue échéance du déplacement régulier non négligeable du pôle magnétique ne relèvent pas de ce niveau. Sur les premiers points, il existe aujourd'hui des processus de concertation et d'échange ainsi que des dispositifs partagés qu'il convient d'améliorer. Sur les seconds, notamment ceux pour lesquels on perçoit des effets à moyen terme, des réflexions s'engagent au plan national et le réseau européen des plates formes nationales qui se met en place pourrait promouvoir quelques approches communes.

Context & Constraints:

...

Germany (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

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 for Civil Protection and Disaster Response” (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 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”.

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.

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 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.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The BBK runs a “German Emergency Planning Information System” (deNIS: see link) together with various partners from all areas of disaster management. It includes information about hazards (and other dangers), vulnerabilities and risks, but is not completed and currently does not attempt to address climate change risks. In its recently improved version - deNIS II - it also delivers information for civil protection/disaster management (see detailed description in Priority 5). The DWD provides extensive weather forecasts and data through its Satellite Application Facilities and seeks to warn the public and the relevant authorities in case of an extreme weather event. Therefore, the DWD has reached an administrative agreement with the Federal States (Laender) in the areas of storm and thunderstorm warnings and water management. The prediction and consultation headquarters (Vorhersage- und Beratungszentrale: VBZ) in Offenbach is responsible for nationwide information, while the regional headquarters in Essen, Hamburg, Leipzig, Munich, Potsdam and Stuttgart each handle regional warnings. The DWD is currently working on a national warning centre to be established by 2010. The “Federal Environment Agency” (UBA: see link) and its “Competence Centre on Global Warming and Adaptation” (KomPass: see link), aim to identify future regional impacts of climate change and proactive adaptation to mitigate or at least minimize future losses.

Forest fire statistics are available for the whole country, although under the jurisdiction of the Federal States (Laender). At the federal level, statistics are compiled and distributed to key agencies and are publicly available on the website of the Global Fire Monitoring Centre (GFMC: see link). In some states, forest fire defence maps have been developed. The flood centres and local authorities, including responsible members of the fire brigades, collect data about hazards and vulnerabilities.

The NatCatSERVICE of the “Munich Re Group” (see link), with more than 25,000 data set entries, is one of the world’s largest damage databases for natural disasters. Between 700 and 900 events are detected and analyzed annually. As a direct result, magnitude and intensity of single damage events can be documented in different regions of the globe and be approached for regional and global danger analyses as well as to

examine trends. The “Helmholtz Research Network” (see link) also provides data on natural disasters in its “Natural Disasters Networking Platform” (NaDiNe: see link).

Context & Constraints:

The challenges for deNIS and the “Joint Hazard Estimation of the Federal States (Laender) and the Federal Government” consist mainly of issues related to a lack of common understanding or appraisal of impacts: which losses are taken into consideration (e.g.: (1) capital stock risks such as damage to residences, lifelines/utilities, crops; (2) environmental risks, such as water/air/land pollution, loss of biodiversity; (3) economic risks, including reduced tax income or increased government expenditures, financial loss to government/business/residents; (4) social and cultural risks, including loss of life or injury and illness, loss of residence, decreased quality of life; (5) institutional and policy risks, such as liability, damage to reputation, increased distrust of government). Therefore experts from all areas of disaster reduction and management (including Public Private Partnerships) are integrated into a standardised structure that is currently in the process of development.

Furthermore, the precipitation prognosis of the DWD must be improved to be able to provide enhanced high water predictions and secure early warnings, the use and utility of statistics and fire defence maps to reduce wildfire risk has to be improved, and an open access rule for providing stakeholders with data needed for adaptation has to be established.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The “German Meteorological Service” (DWD: see link “Weather + Warnings”) has a multi-level warning system of three pillars: “Early Warning”, “Forecast/Premonition” and specific “County Warnings” which improve gradually in chronological and geographic sophistication. “Early Warning” as on week prognosis of risky weather events enfolds spacious areas like entire Federal States (Laender), while the “County Warnings” work as accurately as possible to allow the emergency management facilities an early planning tool. The DWD delivers information directly to facilities like fire fighters, police or civil protection and even to special users like the energy industry or water management services (see link DWD Special Users). The public weather forecast and the storm and thunderstorm warnings of the DWD are provided through the media or Internet (see link). Since 2005 the DWD has been running a steadily improving “Heat Warning System” (HWS), which is based on the “Health Related Assessment of the Thermal Environment” (HeRATE). A “Forest Fire Danger Index” and an “Experimental Grassland Fire Danger Index” has also been developed by the DWD, which is accessible on the Internet (see link) and provides the weather-based prognosis of fire danger for the next day. During periods of high fire danger, this index is published/broadcasted systematically by the media. Weather warnings are also available on different German websites or even distributed by text message (see attached links). The “German Emergency Planning Information System” (deNIS) and the “Joint Hazard Estimation of the Federal States (Laender) and the Federal Government” have also implemented first approaches to early warnings.

Most Federal States (Laender) have their own flood management centres that deliver local information and are integrated into local emergency services (see for example the centre in Cologne in the link below that even conducts risk assessment for private properties). On the one hand, these are organized through their relevant ministries in the “Working Group on Water Issues” (LAWA: see link) for all water-related concerns, while the different international river commissions (see ICPR, ICPO, ICPDR and ICPER in the following Core Indicator), on the other hand, simultaneously manage such issues. The flood management centres have different early warning systems in place because there is no central regulation, rather outreach at the

community level.

Baden-Wuerttemberg, Bavaria, Hesse, North Rhine-Westphalia, Rhineland-Palatinate and Saxony each has its own seismological service and earthquake early warning system, also organized in the “Federal Institute for Geosciences and Natural Resources Seismic Data Analysis Centre” (SDAC: see link). For single communities in the alpine area, avalanche warning systems exist.

The GFZ Helmholtz Centre in Potsdam (see link) is engaged in different early warning systems worldwide, including the “German Indonesian Tsunami Early Warning System” (GI-TEWS) mentioned above or the earthquake information service GEOFON (see link). The GEOFON Global Seismic Monitor works as an ongoing information platform and “Early Warning” system, which informs stakeholders in real-time after an earthquake.

The “Federal Foreign Office” (AA) and the “Federal Ministry for Economic Cooperation and Development” (BMZ: see links), support the development and extension of early warning systems worldwide through the GTZ, InWEnt or local partner organizations. These people-centred early warnings aim to accumulate data through communities, analyse them centrally and disseminate the warnings back through the local authorities. In addition, the AA supports the Platform for the Promotion of Early Warning, PPEW of the UN/ISDR, which resides in Bonn. In 2006 the German Government hosted the “Third International Early Warning Conference” (EWC III) in Bonn, which resulted in a checklist of actions and a catalogue of early warning projects (see link for conclusions from the conference).

The GTZ and the Munich Re Foundation, for example, have supported local early warning systems in a Public Private Partnership (PPP) for the Buzi river in Mozambique since 2005. This people-centred early warning system integrates the communities in data collection and dissemination of warnings. The GTZ is also engaged in the GI-TEWS by implementing effective communication structures, public campaigns and consulting. Further German actors in this project are InWEnt, the “Federal Institute for Geosciences and Natural Resources” (BGR) and the United Nations University (UNU-EHS) (see links).

Context & Constraints:

The DWD aims to take a Single Voice Approach because it usually has, as a federal state authority, the sole duty to warn the public, although not by law. The “Forest Fire Danger Index” and the “Experimental Grassland Fire Danger Index” do not yet offer forecasts beyond one day. The DWD should receive the necessary financial support to develop medium-term (1 to 2 weeks) fire-danger forecast capabilities. The precipitation prediction capacity of the DWD is on the raise to be able to provide improved high water predictions and secure early warnings. Moreover, a large-scale or Federal State coverage area must be further developed to guarantee national early warning capabilities.

The DWD plans to improve early warnings particularly by including the prediction tools of other nations and new statistical procedures (ensemble calculations), but altogether data access across national boundaries is complicated, time consuming and at times impossible, as individual data owners must be addressed in each country. Therefore, new international agreements (but also between the Federal States (Laender)) need to be reached, based on the aforementioned examples of the GFZ or the BBK.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The BBK established a GIS to carry out risk analyses for civil protection and conducted spatial analyses related to different subjects of protection, hazards and risks at a joint national level, when considering efforts that cross Federal State lines. From an international standpoint, the BBK carries out a research project together with partners such as UNU-EHS, DLR or the flood management centre in Cologne to identify indicators for the measurement and assessment of vulnerabilities and coping capacities (see link). This study is based on the work of national actors such as CEDIM and GFZ, but additionally on the EU-projects “Applied Multi-Risk Mapping of Natural Hazards for Impact Assessment” (ARMONIA: see link) and “Security and Trust in Cities” (SETRIC: see link).

In the case of the “Federal Agency of Technical Relief” (THW: see link) it is well integrated into a domestic and international network of those making requests and those partners offering cooperation. Networks are continuously broadened, further developed, and expanded on all levels, from local to international. In terms of efficient cooperation, several cooperation agreements and Memoranda of Understandings were concluded between THW and various partners.

One of the most important transboundary collaborations includes the international river commissions: Prevalent German examples include the “International Commission for the Protection of the Rhine” (ICPR: see the links below), the “IC for the Protection of the Danube (Donau) River” (ICPDR), the “ICP of the Elbe River” (ICPER), the “ICP of the Odra River” (ICPO) and the “Internationale Kommissionen zum Schutz der Mosel und der Saar” (IKSMS), which all carry out flood risk assessment appendages to ensure flood control and management in an cooperative approach. On the Rhine, for example, an action plan exists (see link) which contains all riparian states (see also the “European exchange circle on flood forecasting” (EXCIFF) and “TIMIS-Flood” links).

For storm and thunderstorm warnings the weather services use supra-regional information, but the warning systems of the different countries are not harmonized. The warning system “metealarm” contains EU-wide extreme weather warnings and the national meteorological services work together in “The Network of European Meteorological Services” (EUMETNET: see links).

The GFZ and other German research institutes and universities are partners in the “Seismic eArly warning For EuRope” (SAFER: see link). The current OECD program “Global Earthquake Model” (GEM: see link) aims to interlink the different projects and actors and provide a uniform, independent standard to calculate and communicate earthquake risk worldwide.

In the case of wildfire response, the authorities of the most wildfire-prone Federal State of Brandenburg and the neighbouring province of Poland have signed a bilateral mutual assistance agreement, while mutual visits and cooperative forest fire research have been conducted between Germany and Poland.

The “Federal Foreign Office” emphasises in its guidelines for DRR (see link) the future priority placed on development/advancement of regional networks. Therefore it supports, among other initiatives, a current project conducted by GFZ Research Centre Potsdam and InWEnt, which aims to build a risk-analysis network in Central Asia.

The German development cooperation supports concrete regional measures within the flood management programme „Mekong River Commission“ (Laos, Thailand, Cambodia, Vietnam), in Central Asia (Armenia, Azerbaijan) and in the Caribbean (Haiti, Dominican Republic). In Central America it has supported (together with the EU) the “Centro de Coordinación de la Prevención de Desastres Naturales en América Central” (CEPRENAC) in various activities.

Context & Constraints:

Data access across national boundaries is complicated, time consuming and partly impossible, as individual data owners must be addressed in each country. Although there is strong national coordination with respect to disaster response and protective systems, in the field of critical infrastructure the

cooperation is less pronounced, as this industry is largely controlled by the private sector. In the case of wildfires, however, there is no common terminology, training, protocols or incident command systems in place to provide standardized and efficient cooperative wildfire response action. Relevant capacity building/training and protocols must be developed.

However, regional cooperation is developing, especially within the EU. Due to the floods of the Oder (1990) and Elbe (2002) rivers, regional flood management cooperation is increasing and has provided the systems with crucial improvements. As well as the already-mentioned weather forecast and warning systems, a further increase in international cooperation is already taking place, e.g., in “Global Monitoring for Environment and Security” (GMES: see link) or within the WMO.

Italy (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Risk assessments concerning all main hazards are conducted at the National, Regional and Local levels. These activities are carried out according to risk maps updated continuously in order to maintain a thorough knowledge of the distribution, over the whole National territory, of risks 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 municipalities have a better knowledge of the territory.

Context & Constraints:

The main future challenge in this sector is represented by the growing magnitude of disasters occurring countrywide. Climate change is modifying the relation between the communities and their territories. This problem is complicated by the presence of human settlements and activities even in remote and/or dangerous areas, as small communities often do not have the necessary skills and assets to carry out effective risk assessments.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Comprehensive risk assessments are carried out at the different levels of the system under the responsibility of municipalities, provinces and regions, with a strong support given by the National level. The National Civil Protection Department has the responsibility to provide the whole system with guidelines and directives concerning how risk assessments have to be conducted, made available and notified from one level to the others. These measures are usually provided through National Forecasting and Prevention Programmes. The Regional Administrations are then responsible for translating the National guidelines into Regional Programmes in which roles and responsibilities of lower-level administrations are defined together with information exchange procedures. Provincial and municipal risk assessments are strongly related, since risks very often fall across the boundaries of two or more municipalities. In these cases, the coordination role played by the Provinces, or by inter-municipal cooperation bodies, is critical.

Context & Constraints:

Experience has shown that, even where standardization and notification procedures have been set, there are still differences in timing and quality of risk assessments made by small towns and middle/large cities due to the difficulty that small municipalities encounter in recruiting skilled personnel and acquiring technical resources. A number of initiatives have been undertaken in order to face this problem. The best results have been achieved through the provision of support by the administrations placed at the upper-levels of the system.

Core indicator 3

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

Early warning is a National and regional commitment. It is ensured through an extensive use of technologies owned by different administration and agencies. A number of remote networks and sensors systems covering all risks affecting the Country is in place. Early Warning has been improved through the creation of a "National warning system" composed by a Central Functional Centre and some Regional Functional Centres, introduced under a Directive issued by the Prime Minister on February 27th, 2004. Each centre has the responsibility to receive, assemble and integrate all data relevant for the main foreseeable risks, to consult with other centres and to make information circulate h24 among decision-makers of all tiers of the National Civil Protection System.

Context & Constraints:

The main challenges concerning the future of early warning can be found in the field of technological systems integration. The national warning system provides an extensive coverage of hydro, hydrogeologic and meteorological risks, but a number of independent systems and networks still exist covering the same risks as well as other ones. While almost all systems owned by National-level institutions and agencies are already linked to the network, there still remain resources managed at the regional and sub-regional level by a wide number of subjects including regional government agencies as well as research networks and private/business companies that still have to be integrated, or to be fully integrated, into the National Civil Protection Service.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Comprehensive risk assessments are carried out primarily under the responsibility and coordination of the regions, provinces and municipalities. Internal trans-boundary issues are taken into consideration according to the directives and guidelines issued by the National Civil Protection Department, which has the role to keep the whole National picture up-to-date and to stimulate and facilitate the regional cooperation. By means of the reform performed through the Constitutional Law n. 3 of October 18th, 2001, the Italian Regions have acquired the power to enter into international agreements concerning Civil Protection in compliance with the relevant National policies and commitments, so the regions with international boundaries can set up cross-border agreements with foreign Civil Protection agencies and actors. Recent examples of this kind of cooperation are the memorandum of understanding signed by the Friuli-Venezia-Giulia Region and the Republic of Slovenia on January 18th, 2006 and the one signed with the Carinthia Region on November 30th, 2006.

Context & Constraints:

Regional cooperation can be further improved, particularly when international boundaries are concerned. Specialized agencies have been set up in order to deal with risks typically involving more than one region, such as the hydrological risk tied to rivers and to major basins. With regard to trans-national issues, while some regions have already developed their own networks involving both national and foreign partners, others still remain strongly dependent on the National tier.

Macedonia, The former Yugoslav Rep of (in English)**Core indicator 1**

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

Level of Progress achieved:

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

Description:

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. The Group forwards its analysis, recommendations and conclusions to the Steering Committee, the Presidents of the Government, the Republic and Parliament. CMC provides the professional and administrative support to AG in the assessment and updating processes. On local and regional level, the Regional CMCs contribute to CMS.

Achievement has been made by CMC in fostering the risk assessment availability by setting networks that deal with specific risks and hazards. For instance, CMC is setting a National Laboratory Network (hereafter: NLN) linking universities, healthcare and other public and private institutions that will address diseases and epidemics related hazards.

Furthermore, CMC is in the process of setting a disaster management center of excellence (hereafter: DMCoE) with nineteen focal areas concentrating on expertise and research projects as well as educational programs, providing robust expert support, thus producing timely and reliable risk and hazard data and making it more accessible to the key sectors.

CMC is presently working on the implementation of the Geographic information system (hereafter: GIS) network that would enable spatial positioning and predicting possible hazard scenarios.

Finally, the network of inspectorates will provide a coordinated and more efficient approach towards risk and disaster related issues.

The Ministry of Environment and Physical Planning established a River Monitoring System and Air Monitoring System. 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 with CMC, RPD, Hydrometeorological Agency and the Health Protection Agency.

Context & Constraints:

In order to improve the CMS institutions organization and introduce good practices in the crisis management process, CMC is establishing a coordinating committee for the implementation of the ISO/PAS 22399. Also, CMC considers acquiring a DSS will be acquired to improve and assist the crisis management decision making process.

CMS data assessment methodology is not fully developed.

In order to develop a more coordinated approach to crisis management, CMC will form and coordinate intersectoral working group, aiming to develop a methodological framework for: (1) reconstruction of hazards; (2) determining the causes and damages of hazards and disasters; (3) complex estimations on the direct, indirect and postponed disaster consequences.

Another inter-sectoral working group will develop methodologies for: (1) evaluating the risks and hazards; (2) developing of possible risk and disaster scenarios; (3) making plans for dealing with risks and hazards; and, (4) determining the CMS stakeholders SOPs.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Substantial achievement has been attained regarding the regular, systematic, appropriate processes for dissemination and archiving of data, as well as the monitoring of risks, with special focus on the seismic activities and floods in the country and the region.

CMC is currently developing a multi-sectoral and multi-risk system, thus introducing new aspects and better monitoring, archiving and data dissemination practices for all hazards. To further this end, CMC is setting up networks dealing with specific risks and disasters. In that respect, cooperation agreements have been signed between CMC and other institutions for regular, timely, systematic dissemination of data and risks monitoring. For example, close cooperation exists between CMC and the National Hydrometeorological Agency which supplies CMC with meteorological data.

Also, at CMC, the free emergency phone number 195 is operational 24 hours every day, and the data received is disseminated and archived accordingly. By the end of 2010, CMC will merge all free emergency phone numbers into E-112.

CMC is presently working on the implementation of national GIS network that will enable spatial positioning and predicting possible hazard scenarios. Moreover, starting from 2009/2010, the GIS will be available online.

The effective data dissemination and archiving will be utilized by the national networks started by CMC, such as NLN and DMCoE.

Context & Constraints:

Although the systems for monitoring, data archiving and dissemination are in place, some of the equipment is outdated, and further steps are needed.

Although many public and private institutions have the basic GIS software, they are not yet connected into a national GIS network that would enable rapid share and availability of data nationwide. Therefore, CMC is starting an initiative to link all CMS stakeholders in possession of GIS system into a national network.

Also, there is a project on the introduction of an regional ultra-short wave radio network (USWRN). The network will amplify the E-112 system and the EWS alarming system. It will also improve the coordination with all USW Radio systems in the country, used by crisis management stakeholders and withing in CMC in particular.

Finally, CMC is launching an IT network that will enhance the cooperation and coordination of all CMS stakeholders.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The EWS is an integral part of the system for public informing and alarming in case of emergencies (hereafter PIACE). Currently, EWS is composed of over 250 remote control sirens grouped into 30 independent PIACEs.

CMC is currently implementing a project for modernization and improvement of the EWS by replacing the old, outdated equipment while utilizing modern information technologies.

On that point, informing and public alarming of the population, as well as the operation of the entire system is regulated by "Regulations for Conditions and Procedure for Informing and Alarming in Emergencies". All CMS participants are obliged to ensure continuous intersectoral communication, coordination and cooperation so that appropriate measures and activities for prevention and early warning can be taken.

Also, there is substantial progress on the implementation of E-112.

Furthermore, there is a project on the introduction of an regional USWRN. The network will amplify the E-112 system and the EWS alarming system. It will also improve the coordination with all USW Radio systems in the country.

Finally, CMC is launching an IT network that will enhance the cooperation and coordination of all CMS stakeholders.

Context & Constraints:

Currently, the PIACE has conventional and often outdated (from the 1970s and 1980s) equipment. Although the sirens are still functional, most of them don't have an independent power source. Instead of utilizing the modern technologies by using the wireless system for information dissemination, the old copper wire is still used.

CMC is working on a project that will introduce a three level control of the system for public informing and alarming in case of emergencies: local, regional and national. Also, CMC plans to introduce wireless remote control of the sirens and replace the old electric and pneumatic with electronic sirens, with independent power source.

The unification of all emergency numbers into the E-112 is yet to be implemented.

Supportive to E-112 is the concept of using media (TV and radio) and mobile phone operators by sending pre-fabricated messages providing pre-disaster warning, post-disaster announcement and messages containing information and guidelines for the citizens in the affected areas.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Recognizing that risks and hazards know of no borders, further efforts for enhancement of the regional cooperation is always needed.

There is institutional commitment. The international cooperation with the UN, EU, OSCE, NATO and foreign countries is endorsed. Cooperation is also encouraged with the National and the International Federation of Red Cross and Red Crescent Societies, other international humanitarian organizations, and NGOs as well as with other National Platforms (hereafter NP).

Regarding the international cooperation, in 2007/2008 CMC and the UNDP completed the project "Planning of early mitigation from wildfires." Furthermore, CMC, in partnership with the UNDP and the Government of Japan is implementing the project "Strengthening of the capacities of the Crisis management center." The goal of the project is to further develop the national DRR capacities. The implementation of the project started on July 1, 2008.

In 2007, a "Memorandum on Understanding on Institutional Framework of the Disaster Preparedness and Prevention Initiative for South Eastern Europe"(hereafter: DPPI) was signed. While holding the DPPI Presidency in 2009, Macedonia is advocating closer cooperation among specialized national services. The aim is DPPI to become regional initiative able to create, prepare and carry out exercises and trainings, thus increasing the ability of national services in dealing with: (1)Forest fires, (2)Traffic accident, (3)Rescue from the sea, (4)CBRN accident, (5)Rescue from ruins.

Great progress has been made in terms of the bilateral cooperation and building mechanisms for cooperation of CMC and other NPs. In May, 2008, the "Agreement between the Government of the Republic of Turkey and the Government of the Republic of Macedonia on cooperation in the area of prevention, limitation and mitigation of disaster's consequences" was signed. CMC is working on development and international cooperation especially with the neighborhood and the region.

Context & Constraints:

The so-called "name issue" is more than an obstacle for the international cooperation and membership of the Republic of Macedonia in respective organizations. Due to that, we are out of the possibilities for enhanced cooperation and stability.

Although there is regional cooperation regarding natural hazards, further cooperation is always needed.

Montenegro (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Within the Sector for Emergency Management an organizational unit was established to manage risks and to create a data base on elements at risk. With support from DEMA , we developed the software which will enable a good-quality access to these information. We also adopted two significant documents: the Methodology for Evaluation of Threats and the Methodology for Developing Action Plans.

Context & Constraints:

The main challenge was the lack of any data base at the level of the State as well as lack of documents that could be used in order to conduct the evaluation of threats.

Core indicator 2

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

Level of Progress achieved:

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

Description:

We perform seismic monitoring, monitoring of dangerous substances (chemical; explosives) and we recently became a member of the ARGOS Consortium, which will enable good-quality monitoring of chemical, nuclear and radiological hazards.

Context & Constraints:

Except for the seismic hazard, which is monitored by the Seismic Observatory of Montenegro, monitoring of other hazards is problematic, due to non-defined competences of various state bodies. Only after the Ministry of Interior and Public Administration defined the competences, were conditions created for a significant progress. In this area, further advancement of institutions and capacities is needed.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Early warning systems are in place for seismic, meteorological hazards and fire in the open space. The same will apply for CBRN hazard after the implementation of the ARGOS project, which is expected in the following months.

Context & Constraints:

After an integrated disaster response was established, competent authorities placed the main focus of their activities on the early warning system. The main challenge relates to modernizing the institutions for hazard monitoring and early warning.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Real time data exchange and cooperation with international and national agencies exist only for seismic risks, fires and hydrometeorological risks.

Context & Constraints:

Different levels of development of these services in neighbouring countries represents the main difficulty.

Norway (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

At national level every year the Norwegian Directorate for civil protection and emergency planning (DSB) is conducting and publicizing The national vulnerability and preparedness analysis. On local level 96% 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 identifies vulnerabilities in the society in general and in the different sectors.

Context & Constraints:

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Core indicator 2

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

Level of Progress achieved:

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

Description:

There are several systems established to monitor, archive and disseminate data on key hazards. One example is the work on climate change adaptation where a dedicated secretariat will disseminate and coordinate across sectors and administrative levels.

Another concept for disseminating information to the citizens is the project on a webportal – kriseweb - which may be a “one-stop shop” for citizens for risk information.

Context & Constraints:

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Core indicator 3

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

Level of Progress achieved:

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

Description:

It is an continuous process to assess capacity of the four elements of early warning (risk knowledge, monitoring and warning services, dissemination and communication, and response capabilities) to empower the communities threatened by hazards.

Context & Constraints:

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Core indicator 4

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

Level of Progress achieved:

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

Description:

There is improved cooperation with the neighboring countries. For instance a separate Arctic agreement on disaster risk reduction is in the final negotiating phase.

Relevant EU work is also improving.

Context & Constraints:

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Serbia (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Protection and Rescue Sector has made risk assessments regarding floods, wild fires, landslides, accidents with hazardous materials, technical accident on roads

Context & Constraints:

There is a need of more efficient implementation of the Legal Acts which are adopted (the Law on Local Self Government). It is also necessary to build capacities in the human resource and material sectors, and to update the plans for disaster management.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Nothing reported within this timeframe.

Context & Constraints:

Nothing reported within this timeframe.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Nothing reported within this timeframe.

Context & Constraints:

Nothing reported within this timeframe.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Cooperation and information and experience sharing with other countries in the region, neighbouring countries and international organisations (RCC - DPPI, CMEP, UN ISDR, CIMA Foundation, USAID, UNDP, UN OCHA etc.) are on a high level. Protection and Rescue Sector considers international cooperation extremely important for disaster management (prevention, preparedness, efficient response and relief).

Protection and Rescue Sector also takes part in regional projects in the field of disaster risk reduction.

Context & Constraints:

It is important to make an assessment of all risks on national and regional level.

It is also important to further strengthen and develop close cooperation with other countries in the region, and international organisations.

Slovenia (in English)**Core indicator 1**

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

Based on legislation, risk and threat assessments are done by the competent ministries (mostly the Ministry of the Environment and the Ministry of Defence - Administration for Civil Protection and Disaster Relief). They have to be updated every five years or after any major incident. Local communities are responsible for their own risk and threat assessments. Based on these assessments, national and local emergency response plans are prepared.

According to the plan, responsible authorities have in the period 2006-2008 prepared most of the required risk and threat assessments.

Context & Constraints:

Carry on with the work. Update all risk and threat assessments according to the legislation and planned programme.

Core indicator 2

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

The unified monitoring, notification and warning system in Slovenia comprises:

- the monitoring network,
- notification centres,
- the computer support and telecommunications service, and
- warning.

Monitoring (on water levels, weather conditions, etc.) is mostly done by the Environmental Agency and is available to other institutions and agencies. Notification centres that play a pivotal role in operation of the unified monitoring, notification and warning system have a direct link to the aforementioned monitors. Additionally, special monitoring on nuclear activity around the nuclear power plant is also in place. One recently established monitor is video surveillance of the Karst area (around 5,000 km² is covered by cameras), which is linked directly to the regional notification centre.

Another useful application that has been developed in recent years is a geographical information system called GIS_UJME (used in each emergency response centre) with more than 120 data layers. This is important for protection and rescue purposes, where locating callers from stationary and mobile phones was introduced last year. The location of the caller can also be determined by searching through the registers used in the GIS. GIS_UJME is regularly updated.

Some major projects done by ACPDR in 2007:

- the application "Monitoring waters" was developed for the purpose of monitoring the level of water in the rivers;
- the Internet application "Data on natural and other disasters" was developed; it enables a graphical overview of events in the last 24 hours, basic information on the event and the involvement of protection, rescue and relief forces;
- a moving sensor connected to the public information system was placed in the area of a landslide in Kropa; and
- a research project on a mobile unit to rapidly collect information from the site in the event of a landslide was prepared.

Context & Constraints:

Include new, advanced technologies into the unified monitoring, notification and warning system.

Establishing a national multisectoral project for improvement of warning system for the ongoing meteorological and hydrological hazardous events - especially the dissemination part and user-response part in collaboration with decision-makers and communities .

Core indicator 3

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

An unified early warning system is comprised of:

- the monitoring network
- notification centres
- early warning computer support application
- warning.

Central part in the system has Emergency Notification Centres (1 national and 13 regional). The main tasks of national Emergency Notification centre is the monitoring of the events, and the alerting and warning in

case of emergencies. The Regional Emergency Notification Centres collect and answer to the emergency calls (Single European Number 112 was introduced in 1997), and they coordinate information flow during the intervention of operational units. They have special secure connections with the special units of Fire Brigades for so called technical rescuing (those who intervene in car accidents, fires in tunnels, accidents with chemicals, and so on).

In accordance with a Study on the audibility the sirens are taking over from the local communities and are included into the common monitoring, notification and warning system. By end of 2008 more that half of 1600 sirens will already be included into common monitoring, notification and warning system, most of them will also renewed.

To improve the quality of the 112 emergency call number, some additional services are being implemented. Two of them are: E112 (to identify the location of the caller) and eCall (automatic call in case of a car accident).

THE FILED OF METEOROLOGY

Processes for elaboration and dissemination of early meteorological warnings were improved with introduction of new warning scheme for public in accordance with meteoalarm.eu principle, but there are shortcomings in human resources for further development of operational meteorological and hydrological early warning system.

Context & Constraints:

Continue to introduce and implement new, advanced technologies into the unified monitoring, notification and warning system.

Include all sirens into the unified monitoring, notification and warning system by 2011.

THE FILED OF METEOROLOGY

Ensuring human resources and financial means for improvement of meteorological and hydrological early warning system, consisting especially of the operational processing part within the national meteorological and hydrological service and the dissemination part in collaboration with protection, rescue and relief institutions and public media.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Slovenia has signed bilateral agreements with some bordering countries (Austria, Croatia, Hungary) and a protocol with Italy. Additionally, bilateral agreements have been signed with the Czech Republic, Poland, Slovakia and the Russian Federation; agreements with Bosnia and Herzegovina, Macedonia and Montenegro are in the process of adoption. All the aforementioned agreements include provisions on mutual exchange of information and warnings in the case of major disasters.

In 2002 Slovenia signed the Convention on the Transboundary Effects of Industrial Accidents. In accordance with the convention, we perform all activities related to sharing information and early warning, as well as regular testing.

Context & Constraints:

Continue to regularly exchange information on risk and threat assessments, perform trainings and provide

early warnings through appropriate arrangements on a bilateral basis and within regional mechanisms.

Sweden (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

Local level:

The Civil Protection Act demands the municipalities to develop programs for emergency prevention and emergency response. The municipalities are enforced, by law, to perform risk and vulnerability analysis. Detailed investigations, based on stability mappings and general flood inundation maps, are performed at the local level.

Regional level:

The county administrative boards supervises the programs and analysis. Risk and vulnerability analysis are compiled at the county level.

National level:

All authorities are commissioned to perform risk and vulnerability analysis within their area of responsibility.

The Swedish Rescue Services Agency (SRSA) supports the municipalities by collating statistics and providing data for risk analyses. The Swedish Centre for Learning from Incidents & Accidents (NCO), hosted within the SRSA, is a national resource for cross-sector cooperation surrounding the data and development of methods and systems for the prevention and analysis of incidents, accidents and other emergencies and the description of the consequences.

The Swedish Rescue Services Agency's work with stability mapping and general flood inundation maps continues for the remaining risk areas.

The Swedish Emergency Management Agency (SEMA) is responsible for co-ordinating the planning and for following up and evaluating the national emergency preparedness. From an emergency management perspective, some societal functions are more important than others. SEMA has produced criteria that help identify these functions. Criteria that govern preventive work are impact criteria and criteria that govern response are capability. Studies have also been conducted and critical infrastructure identified within different sectors regarding dependencies and the critical functions, essential assets, services and systems. Every year a report is compiled regarding the countries capability of emergency management and the progress of the work performed within the area.

The Swedish National Audit Office (SNAO) published in June 2008 a report on society's capability of handling drinking water supply in case of serious emergencies. The municipalities have the full responsibility for the drinking water supply and the awareness of emergency preparedness has increased over the last years, mainly due to the work performed by the National food administration. The report states that the municipality's ability to handle serious emergencies are limited. The drinking water supply faces a number of risks and some of them will increase due to the expected climate change.

The Swedish Geotechnical Institute (SGI) is a government agency dealing with geotechnical research, information and consultancy. SGI has particular responsibility as a governmental expert body for safety issues relating to landslides and coastal erosion. The institute publishes yearly a large number of reports related to different projects. In 2006 SGI published a report regarding natural hazards and climate change. The conclusion was that already today additional measurers are required in order to reduce risks and

prevent damages. The need for action will increase with the expected climate change.

The Swedish Environmental Protection Agency (EPA) and the Swedish Meteorological and Hydrological Institute (SMHI) are highly involved in climate studies and research. EPA's key tasks are to present proposals for environmental policy and legislation to the Swedish Government and ensure that environmental policy decisions are implemented. This will also impact the work related to disaster risk reduction.

Context & Constraints:

High attention is paid to climate change, risks and vulnerability at the national level. The regional and local level is however not yet fully prepared and equipped to address the issues with the same attention.

Risks related to natural hazards are not always visible in the programs and risk and vulnerability analysis. Existing knowledge (i.e. stability mappings, general flood inundation maps) is not always utilized at the municipality level due to low priority and limited resources.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The Swedish Meteorological and Hydrological Institute (SMHI) provides services such as general forecasts and weather warnings, industry-specific services, simulations and analyses, statistics, climate studies and contracted research are some examples. Warnings are issued to public and authorities regarding extreme weather (e.g. extreme rainfall, storm, avalanche risk)

A warning system for the risk for forest and vegetation fire has been in operation for about 10 years. The system has been improved during the last years. Aerial monitoring of forest and vegetation fire is in operation from 2007 after being discontinued for a couple of years.

Sweden participates in the EU-project Preview (Prevention and Early Warning).

Context & Constraints:

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Core indicator 3

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

Level of Progress achieved:

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

Description:

Meteorological, hydrological and oceanological warnings are issued 24 hours before the expected incident. Warnings are issued as level 1, 2 or 3 depending on expected consequences, and published via radio TV and the SMHI home page. Warnings are also sent directly to concerned authorities.

The development of the spring flood is monitored by collating information from the county administrative boards. The information is compiled on a weekly basis and submitted to the Ministry of Defence.

Some areas with high risk for natural hazards are monitored (e.g. risk for landslides in the valley of the river Göta älv).

The user group for the system, "Important public announcement", has been expanded with enterprises operating power transmission and electronic communications.

A project regarding dam safety and warning has started. The aim of the project is to investigate the need for specific warning systems and how they should be designed.

Context & Constraints:

Natural hazards in Sweden are mainly geological, meteorological and hydrological. The need and requirement for warning systems is mainly enhanced and more precise forecasts.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The local level has the main responsibility to develop programs for emergency prevention and emergency response, and to perform risk and vulnerability analysis. The county administrative boards supervise the process and compile the result at county level.

Context & Constraints:

There is a need for more, and more detailed, information at local and regional level regarding climate change scenarios and expected changes and deviations in extreme weather events etc.

In order to run simulations and perform more precise risk mappings a better elevation database is required. The grid and mean error in the current database is not sufficient. The Government Commission on Climate and Vulnerability has proposed that the National Land Survey should be commissioned to develop a new elevation database. The database should be generally available and free of charge. The National Land Survey has started the preparatory work.

Switzerland (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

The cantons are responsible by law to ensure the adequate production of hazard maps for all kinds of natural hazards. Coverage is around half of the national territory; percentages depend on the type of hazard: avalanche hazard maps have far greater coverage than landslide hazard maps. However, most "hot spots" (dangerous or high-risk areas) have been covered.

Context & Constraints:

The aim is to cover the whole country with hazard maps and assessments by 2011, for both geological and hydrological hazards, and have them applied in land use planning, especially for construction permit deliveries by municipalities.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The Federal Administration has established base documents at the national scale and coordinates the work of the cantons by producing technical guidelines, recommendations and tools for hazard mapping and risk evaluations. Cantons in turn perform indicative hazard mapping and coordinate the hazard and risk assessments at the municipal level, where the resulting products must ultimately be used for land use planning, preparation, protection works and other measures. The national level supports these activities financially.

Context & Constraints:

Required systems are in place for large regions (e.g. river basins), but deficits exist in smaller areas (e.g. small watersheds) and remote areas.

Core indicator 3

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

Level of Progress achieved:

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

Description:

The National Emergency Operations Centre (NEOC) is working 24 hours a day, all year round. As the federal centre of expertise it is responsible for both natural and technological hazards. In cases such as chemical accidents, dam failure or storms, the NEOC provides the cantons with guidance, information or coordination to bring a situation under control.

Context & Constraints:

The 2005 floods showed that there are still gaps to be filled. The supply of data is still heterogeneous, because different institutions participate with their own methods. A Common Natural Hazard Information Platform (Gemeinsame Informationsplattform Naturgefahren, GIN) is being developed as part of a broader system designed to improve early warning and alert (project "Optimization of Early Warning and Alerting" / "Optimierung von Warnung und Alarmierung, OWARNA"), which also aims at a better outreach to the population.

Core indicator 4

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

Regional and trans-boundary risks are especially taken into account at the regional scale, e.g. in the case of river basins, where the problems of upstream vs. downstream interests have to be addressed. For example, an early warning and alert chain exists along the Rhine river up to the Netherlands, coordinated by the International Commission for the Protection of the Rhine. Other regional and trans boundary cooperations involve other reaches of the Rhine (e.g. the upper Rhine, common to Austria and Switzerland), other rivers, the Alpine region.

Context & Constraints:

Because of its cultural diversity and adverse environment, regional and trans boundary cooperation has always been important to Switzerland.

Turkey (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

There are different scaled hazard/susceptibility maps prepared for Turkey at national level. One of them is the National Seismic Zoning Map of Turkey. The last seismic zoning map of Turkey (fifth in the history because of development in earthquake science) was prepared in 1996 by using peak ground acceleration contour map that was constructed base on probabilistic method. This zoning map is also available at local level in order give a basic understanding of the seismicity of a specific area. By taking the advantage of geographical information systems, this map can be analyzed both regionally and locally. There is also maps showing the distribution of landslide, rockfall and snow-avalanche affected residential areas at national level. Active fault map is another important input map for seismic analysis and prepared at national level by G.D. Mineral Research and Exploration (MTA). Landslide inventory mapping is also being performed by the same directorate and assumed to be concluded in the near future. G.D of State Hydraulic Works collect the data on floods at national level and published it with annual bulletins. National scaled forest fire susceptibility maps are prepared by G.D. Forestry of Ministry of Environment and can easily be accessed from internet.

In addition to national hazard data, there are lots of studies executed at local and regional level in order to evaluate hazard and vulnerability assessment. G.D. Disaster Affairs has started a regional multi-hazard and risk mapping project in 2000 in NW Black Sea region and studies are concluded in 3 main districts in the region. Within this pilot project hazard and vulnerability of whole districts are investigated, vulnerability of key sectors like governmental buildings, factories etc. are also investigated and for some disaster types hazard maps are prepared by using GIS and remote sensing technologies. Another study in this field is executed by Istanbul Metropolitan Municipality with the assistance of JICA in Istanbul where multi-disciplinary and detailed micro-zonation maps were prepared.

Some municipalities have prepared disaster recovery plans and those include hazard and vulnerability data, especially vulnerability of critical structures to disaster at multi-hazard approach. Istanbul Metropolitan Municipality has prepared those datasets mainly for whole city.

Disaster Risk Indication study is another local project implemented by Istanbul Metropolitan Municipality (IMM). IMM works together with Earthquake and Megacities Initiative (EMI), Centre for Disaster Management and Risk Reduction Technologies, University of Karlsruhe (CEDIM) and Bogazici University. Within the scope of this study physical vulnerability, social vulnerability and disaster response capability of Istanbul against to a catastrophic earthquake is investigated. Response capability and current preparedness background of the city will be rated.

Standardization of data production, data usage is an important factor and must be promoted at all levels. This will also contribute to rapid response to disasters and minimize disaster related loss of lives.

Context & Constraints:

Preparation of hazard and risk maps at national level is difficult for some specific disaster types like

landslides, rockfalls etc.

After 1999 earthquakes the municipalities located on 1st and 2nd degree earthquake zones are obliged to prepare and/or revise their micro-zonation maps based on multi-hazard approach. However this application has not become prevalent for all municipalities and also for residential areas.

Multi-stakeholder participation amongst the relevant institutions is a key factor in preparation of national level risk and vulnerability mapping and data collection. In addition to these academic units, local administration may play an important role in this process.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Disaster data is mainly stored in GDDA's databases. Databases of earthquakes, landslides, rockfalls and snow-avalanches are stored in this GD's database. The databases include date of event, affected geographical area, affected number of people, affected infrastructures and photos if available. Archive of GDDA contains more than 18.000 reports which are in digital environments. Other relevant data on floods and forest fires, marine accidents etc. are stored in relevant institutions' databases. Some databases like seismic information are open for public use. However databases on landslides, forest fires can be reached from relevant institutions by demand.

In order to collect all disaster data in one database, GDDA started a new project called "Turkish National Disaster Archive System" within Marmara Earthquake Reconstruction Project (MEER) which is funded by World Bank. Within the scope of this project a center is established in GDDA Earthquake Research Department. Other international disaster databases like EMDAT, CRED were investigated and special software was prepared. Data collection process from relevant institutions is continuing. National Disaster Archive System is compatible with e-government concept and will be accessible in three languages (Turkish, English and French). In order to decide the criterias on disaster data, the examples of other countries were reviewed and best criteria for Turkish National Disaster Archive was chosen. It will also be open for future developments. After the conclusion of the integration all disaster data, the information will be accessible for public

For Istanbul there are some vulnerability analysis of some critical buildings and structures. In Istanbul, where an earthquake is expected bigger than magnitude 7 in the near future, two bridges connecting Asian and European parts are analyzed in terms of their seismic vulnerability. Governmental buildings, especially schools, hospitals, historical and archeological structures have also been analyzed for Istanbul city under ISMEP project conducted by Istanbul Governorate.

Context & Constraints:

In developing countries which have poor social memory, the awareness on disasters is being forgotten and people live none of those events ever happened. That's why archives play an important role in the establishment of disaster awareness.

Data storage systems show differences from one institute to another. For this reason, putting all those different formatted datasets into one single database and their mutual integration takes time.

The data on vulnerabilities are mainly on project basis and are limited to the project areas. At national level some statistical information on the numbers of industrial areas located on earthquake zones are available.

Core indicator 3

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

Level of Progress achieved:

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

Description:

In terms of monitoring there are two national seismic observation systems in Turkey. One of them is operated by GDDA and there are 137 seismic stations and 231 strong motion instruments all around the country. Another institute operating seismic network is Bogazici University, Kandilli Observatory. In addition to these national systems, there are some local and regional sub-systems operated by academic research institutes.

Early warning systems in Turkey are operated by several governmental institutions. State Meteorological Organization G.D. has short and long term climate predictions and for some cases announces warning messages for flooding, severe weather conditions, meteorological hazards, extreme heat weather.

General Directorate of State Hydraulic Works, operating flood early warning and prediction systems mainly established after 1998 heavy rains and flash flood occurred in NW Black Sea Region which is funded by World Bank. The project is executed for river basins in Black Sea and Western Aegean regions. Within this project there established 206 automatic meteorological stations, 3 meteorological Doppler radar stations, 148 hydrometric data storage platforms and VSAT Telecommunication systems. By using continuous measurements, the system predicts the floods by using several flood prediction models. There are studies in order to develop those systems for other regions and studies to develop in Thrace Meric and Antalya (Mediterranean) regions have started.

In 2008 General Directorate of Forestry started pilot project on forest fires early warning. This is a joint project between Turkish Scientific and Technological Research Council and Bilkent University. The aim of this early warning system is to respond forest fires immediately and effectively. Some forests in the Western parts of Turkey are being monitored by several on-line cameras and analyzed 24 hours basis. The system automatically alarms the administrators and response teams can be directed to the fire in a short time interval. The system also uses geographical information system data layers like topography, vegetation, roads etc. Integration of those systems with online camera records facilitates effective and rapid response to forest fires.

After 1999 earthquake, by taking into consideration the vital importance of Early Warning and Emergency Rapid Response, the project prepared by Bogazici University Kandilli Observatory and Earthquake Research Institute, has been realized. The agreement involving Turkish Republic and Credit Suisse First Boston in relation to Istanbul Earthquake Early Warning System and Rapid (Emergency) Response project that will be carried out by Bogazici University Kandilli Observatory and Earthquake Research Institute, has become valid after decree of Council of Minister on 2001 Fiscal Year. The system is designed and operated by Bogazici University with logistic support of the Governorate of Istanbul, First Army Headquarters and Istanbul Metropolitan Municipality.

Context & Constraints:

Early warning systems for some types of disasters are still polemical and on evaluation process. For example, since there are some theoretical studies on early warning systems for earthquakes, there is no general acceptance on the reliability and use of those systems.

Early warning systems for atmospheric and hydrological disasters are effective tools for disaster risk reduction in these fields and national systems might contribute for long term disaster risk reduction achievement.

There had been some experimental early warning systems initiatives on landslides in Denizli (Western Turkey) and Sivas (Eastern Turkey) regions performed by universities, but those are not applicable everywhere at this moment.

The high cost of those systems are another factor for not to enhance those technology all over the country.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Natural disasters have extraordinary results in 21st century. The capacity of each country is not sufficient for dealing with these big events and also disasters are unlimited from borders. Turkey gives great importance for regional and international cooperation on DRR. In the last 40 years we realized many joint projects within the region on this issue.

Turkey has taken an important step forward in order to improve the disaster preparedness, prevention and response capability and co-ordination by signing a memorandum of understanding on the institutional framework of the Disaster Preparedness and Prevention Initiative for South Eastern Europe (DPPI SEE). Document was signed by Turkish Emergency Management Agency General Directorate on 7th of April, 2008.

Another regional co-operation in the field of disaster management is Civil-Military Emergency Planning Council of South Easter Europe (CMEP-SEE) which is focused on encouraging civilian control of military resources during disasters within countries while building a multi-national "network of networks" among countries that facilitate regional co-operation among neighboring countries.

UNDP-TCDC PROJECT; The Project title is " Technical Cooperation Amongst Developing Countries, Disaster Information and Disaster Investigation-Education Centers " and initiated in 2005 with a protocol between GDDA and State Planning Organization under support of UNDP TCDC programme. The main scope of this Project is to change and develop views and experiences on local and regional disaster mitigation issues with participant countries by multilateral agreements, technology transfer and development of technical cooperation amongst member countries. We have distinguished administrators and participants from 4 participant countries; Tajikistan (Seismology and Earthquake Engineering Institute), Kyrgyzstan (National Academy of Science, Seismology Institute), Ukraine (National Academy of Science, Geophysical Institute), Kazakhstan (Ministry of Education and Science, Seismology Institute and National Nuclear Center, Geophysical Institute).

Some other examples to international co-operations are:

- Council of Europe's " Open Partial Agreement on Prevention and Protection Against Major Natural Disasters,
- Cooperation with Germany on Earthquake prediction,
- Cooperation with China on Earthquake research,
- Cooperation with USA (FEMA and USGS),
- Cooperation with Switzerland and France (on snow avalanches),
- Cooperation with NATO (EADRCC and CEP),
- Joint Task Force Agreement between Turkey and Greece,
- Cooperation with Japan (JICA),

- Under Black Sea Economic Cooperation Agreement “ Cooperation among BSEC member states Emergency assistance and emergency response to natural and man made disasters”,
- Hazard and Risk Assessments for mass movement between Mediterranean countries (RISCMASS Project),
- GD of Disaster Affairs became authorized user to “ International Charter for Space and Major Disasters (2005),
- Scientific and Technical Cooperation Agreement for DRR with Bangladesh,
- Agreement on DRR with Azerbaijan.
- Agreement on “ Scientific and Technical Cooperation for Public Works and Natural Disaster Loss Reduction” with Lebanon.

Context & Constraints:

As it is well-known, Turkey serves as a bridge between Europe and Asia and situated in a very strategic location at the intersection of these two continents.

Turkey`s crucial geographic location makes Turkey a key point for the region defined by the Middle East and Caucasus. For this reason Turkey attracts countries of region and international bodies` attention. Too many agreement and joint projects on the same region creates some duplication on the same issue. This duplication also makes unproductive usage of limited resources (human and financial).

United Kingdom (in English)

Core indicator 1

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

Level of Progress achieved:

5 - Comprehensive achievement with sustained commitment and capacities at all levels

Description:

The UK Government has published a National Risk Register which sets out the assessment of the likelihood and potential impact of a range of different risks that may directly affect the UK.

The National Risk Register is designed to increase awareness of the kinds of risks the UK faces, and encourage individuals and organisations to think about their own preparedness. The register also includes details of what the Government and emergency services are doing to prepare for emergencies. The risks are divided into three main areas, natural events, major accidents and malicious attacks.

Community Risk Registers currently consider the likelihood and potential impact of a range of hazards occurring in specific areas of England and Wales.

They are approved and published by Local Resilience Forums (LRFs) which have been established under the Civil Contingencies Act. They include representatives from local emergency services, and public, private and voluntary organisations. In order to produce the Community Risk Registers, LRFs use a combination of their own judgement about each risk, as well as guidance provided by central government drawn from the National Risk Assessment.

Context & Constraints:

Public response to these documents has been generally quiet, although several people have written in suggesting areas that have been missed; e.g. earthquake, landslip etc. These risks do not meet the criteria necessary to make the register.

Core indicator 2

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

Level of Progress achieved:

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

Description:

Sharing information is at the heart of emergency planning, underpinning all forms of cooperation. It may involve simple liaison between public and/or private bodies - keeping each other up to date on their current arrangements and future plans. It may also involve direct contacts, formal and informal, between responders seeking knowledge of hazards, risk assessments or other planning arrangements. It can and does have a direct impact on members of the community, ensuring that they are put in touch with, and contacted by, the organisations and public bodies that can help them through traumatic events.

Events over recent years have raised awareness of information and data sharing amongst a variety of stakeholders, and have prompted further thought and queries on wider issues outside the immediate emergency planning, response and recovery phases. The issues touch on a variety of types of sharing: personal data; emergency plans; commercial or sensitive data, and all for a variety of planning, response and recovery purposes.

Within government there is a presumption in favour of disclosure of information. There are statutory requirements, such as those within the Freedom of Information Act (FOIA) and the Environmental Impact Regulations (EIR), which give any person the right to ask for and be given any information which is held by a public authority. There are also good commercial reasons why organisations may wish to release information about their business. The Civil Contingencies Act (CCA) 2004 also places a statutory duty on Category 1 and 2 responders to share information with other categorised responders. The statutory guidance on the CCA 2004, Emergency Preparedness, also encourages information sharing between the wider emergency planning and response community.

While the initial presumption is that all information should be shared, there are certain controls on doing so. Some information should clearly be controlled if its release would be counter-productive or damaging in some other way. There are various types of information which may be suitable for some audiences, but not others. The information spectrum runs from limited-access information (even within organisations) through to information intended to be absorbed and understood by the public. Access can be and is limited in a range of ways including physical access, restrictive markings, circulation lists, the 'need to know' principle and targeting particular audiences. Any information that is shared can be restricted in its use by the giving organisation.

Context & Constraints:

Increasingly, following an emergency event, it is becoming clear that the information that local emergency planners need in advance of the event is at best inconsistent and at times completely unavailable. There is regulatory uncertainty, which is open to interpretation and variations in levels of engagement (e.g. Cat 2 responders are obliged to 'co-operate and share'). There is a tension between greater transparency and control of information.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Early warning systems are dependent to a large extent on the nature of the risk. The UK, for example, a risk with a long early warning lead in could be drought. As such the early warnings of a drought occurring would be seen up to 2 dry winters ahead. Early warning of 'slow burn' risks are picked up through horizon scanning to prevent the UK being caught unawares.

However for shorter term risks of disruption caused mainly by the weather around the UK several early

warning systems are in place. The UK Met Office produce early warnings for the following; Storms, Gales, Cold, Ice, Snow, Blizzards, Heatwave.

These warnings are given with up to 60% certainty, up to 5 days before the event, and on a daily basis as the weather approaches. The Environment Agency produce flood warnings for the areas affected by heavy rain. All departments and private industry and the public have access to these warnings.

Tidal flooding is also a joint venture between the Met Office and EA. The Met Office produce a model of the weather and tidal surge showing the size of the tide which will hit the coasts. The EA will then issue warnings along the coastline should that be necessary.

Warnings are also given for potential animal health diseases whilst tests are being undertaken.

Context & Constraints:

Despite a fairly comprehensive early warning system there is an absence of clear statutory responsibilities for warning the public during many types of incidents. The lack of a national culture of awareness amongst the public of how to respond to large-scale emergencies is also a concern.

The ability to warn both a static and transient population at all times of day and night needs further development.

There is clearly a need to influence the development information and communication technology so that it can be more effectively used to warn and inform members of the public

There have been improvements in public warning and information systems in some local areas where there are identified hazardous locations, and nationally to deal with flooding. reality does not meet with public expectations.

Whilst the value of the media in informing the public should not be underestimated, not everyone is listening to either TV or radio when they need to be alerted to an emergency. Often the immediate alerting phase has been passed before the media have had an opportunity to broadcast the warning information. Depending on the location and time of the incident there could be a large percentage of the population in transit, either on public transport, in their own vehicles or on foot at the time. The ability to alert these people to the need to take shelter or evacuate is an essential component to any successful handling of the incident.

As suggested above, not everyone located within their home is likely to be listening to TV or radio. Emergencies do not just affect the residential population. Chemical sites are often located next to other industrial or commercial premises, a number being sited near to large out of town shopping complexes. Communicating with the population during the late evening, overnight and early morning periods when most people are sleeping is a difficult problem to resolve. This may be less of a problem if the solution is to keep people indoors. However, where there is a need to evacuate or a problem with water contamination requiring people to be informed either to boil or not to drink the water, there are no easy options.

Core indicator 4

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

Level of Progress achieved:

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

Description:

The regional tier is a crucial part of England's civil protection framework, ensuring co-ordination between representatives of Category 1 and 2 responders and central government bodies.

Regional Resilience Forums (RRFs) have a key role in developing regional risk assessments which provide a judgement of the likelihood and impact of emergencies that could occur in the region. The regional risk assessments build on the local risk assessments produced by LRFs, and equally ensure consistency and co-ordination with the central guidance provided by the Government on the risks facing the UK as a whole.

Risk likelihoods are assessed for a five year period so that the risk assessment will support strategic planning for the medium term, informing decisions about capability development.

The Civil Contingencies Act places a risk assessment duty on all Category 1 responders. Category 1 responders assess risk as often as is necessary to ensure that they are in a reasonable position to maintain and update their emergency plans and to perform the civil protection duties under the Act, including the duty to maintain business continuity plans.

As part of the Local Resilience Forum (LRF) process, Category 1 responders must co-operate with each other in maintaining the Community Risk Register (CRR). The CRR provides an agreed position on the risks affecting a local area and on the planning and resourcing priorities required to prepare for those risks. It is recognised that requiring each Category 1 responder to perform the risk assessment duty in isolation would lead to a wasteful duplication of resources. It is more efficient, and effective, for individual Category 1 responders to fulfil their risk assessment duties by participating in a collaborative exercise that results in a single, collective risk assessment.

Category 1 responders also have a statutory duty to publish their risk assessments, to the extent necessary to reduce the impact of an emergency on the community.

Context & Constraints:

At times of overwhelming emergency response mutual aid plans are in place to ensure those in need can receive assistance from neighbouring or other regions. On occasions where the event is on an almost national level, military aid is available, but only as a last resort. Consequently some aspects of response and recovery are difficult and seen as much less important i.e. counting the number of properties and businesses flooded or the numbers of people displaced. Equally the costs of using others and their resources can be inhibitive.

Oceania

Australia (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

The Natural Disaster Mitigation Program (NDMP) was established in 2003 04 and aims to create safer, sustainable communities better able to withstand the effects of floods, storms, bushfires and other rapid onset natural disasters. Projects that qualify for funding include natural disaster risk management studies, construction of flood levees and early warning systems.

The National Hazard Impacts Program (NHIP) supports reform commitments set out in the 2003 COAG review "Natural Disasters in Australia: Reforming mitigation, relief and recovery" to implement a national programme of systematic and rigorous disaster risk assessments, and contribute to the development of a nationally consistent approach to data collection, research and analysis to ensure a sound knowledge base on natural disasters and mitigation.

As part of the Disaster Mitigation Australia Package (DMAP), NHIP has the lead role in developing models, tools and data to support a National Risk Assessment Framework for natural hazards. NHIP's research requires the development and integration of scientific results across several technical disciplines and for a diverse range of hazards. The primary focus is on earthquake, severe wind (including tropical cyclone) and tsunami in Australia, with additional advice and data integration for landslide, flood and bushfire hazards.

The Australian Government is developing a risk assessment 'toolkit': an online resource that will provide a range of risk information including reports, hazard and exposure data, models and maps to support best-practice risk assessments across Australia.

Context & Constraints:

A challenge for the future may be the need for all stakeholders to balance conflicting priorities and advice with demands for limited resources

Core indicator 2

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

Level of Progress achieved:

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

Description:

Geoscience Australia monitors and assesses earth-surface processes which pose a risk to Australia. It gathers data and develops tools for use by governments and other authorities to help them make Australia as safe as possible from natural hazards.

Proactive steps against hazards include:

- Recognising which areas have the greatest hazard potential;
- measuring the likelihood of various hazards occurring in these priority areas;

- modelling the impact of hazards;
- estimating the potential loss to communities; and
- collecting data when a hazard occurs to help prepare for future events.

Further refinement and better use of risk assessment is dependent on the parallel enhancement of information including data (in both quality and quantity). The Emergency Management Information Development Plan has been developed through work led by the Australian Bureau of Statistics in conjunction with states and territories. The plan outlines priorities required to bring national consistency to the gathering of emergency information. It highlights gaps in emergency management information required to support policy, planning and accountability. The implementation of the plan is a priority for the National Spatial Information Management working group. The aim of this work is to gather the necessary information to understand the full impacts of costs of emergencies, devise better models and tools to allocate investment across prevention, preparedness, response and recovery, and to assess the impact of emergencies on the community.

The 'National Risk Assessment Framework for Sudden Onset Natural Hazards' has been developed by the National Risk Assessment Advisory Group (an AEMC working group). The aim of the Framework is to establish a nationally consistent approach to the assessment of risk across Australia down to local level. Guidelines which will form the basis for assessments under this Framework are being drafted and will be submitted to the AEMC for endorsement later in 2008.

Context & Constraints:

Research into the effects of disasters on communities has highlighted significant gaps in knowledge on what is really meant by 'community safety'. Further research could contribute to enhanced knowledge and mutual understanding of constructs such as community centred and community safety.

It is required to have a methodology for assessing resource needs and priorities within emergency management, tools to facilitate emergency management policy exploration and decision support, and a framework for evaluating the effectiveness of emergency service investment to optimise community risk treatment

Core indicator 3

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

Level of Progress achieved:

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

Description:

The Australian Government is currently assessing the availability of current and emerging technologies which are capable of delivering a national emergency warning system.

The Bureau of Meteorology's Head Office Weather Services Policy Branch coordinates Forecast Offices in each State and Territory and has close links with Australian Government and State emergency services and disaster preparedness organisations.

The Bureau's Early Warning Services comprise the following:

(a) Tropical Cyclone Warnings

- Provided for cyclone prone areas. Planning and operation of the tropical cyclone warning service is closely linked to, and coordinated with, emergency services organisations to maximise the effectiveness of community preparedness and response.

(b) Severe Thunderstorm Warnings

- The Bureau provides forecasts of severe thunderstorms, as well as severe weather warnings

(c) Fire Danger Warnings

- The fire weather warning service provides public, routine forecasts of fire danger during the fire season and fire weather warnings when the fire danger is expected to exceed a certain critical level.
- It provides fire management authorities and emergency services with detailed routine forecasts, fire weather warnings and operational forecasts to assist in combating ongoing fires. This service includes special forecasts for hazard reduction burns and other advice to assist the assessment and management of fire risk.

The Australian Tsunami Warning System aims to provide a comprehensive tsunami warning system for Australia, capable of delivering timely tsunami warnings to the Australian population in an effective way.

As part of a coordinated national emergency plan, a distinctive audio signal has been adopted to alert the community to the broadcast of an urgent safety message relating to a major emergency/disaster. The Standard Emergency Warning Signal (SEWS) is a wailing siren sound which is used across Australia to attract attention to a range of imminent hazards through a variety of media.

Context & Constraints:

Effective emergency warning systems alert, inform and reassure people. Emergency managers recognise that: basic warning information needs are consistent and predictable across cultures, abilities and ages; presentation needs vary; people do not act on a single warning message (corroboration is required); authoritative, factual and timely warnings are necessary to ensure that those most at risk take appropriate action; over-alerting can cause complacency; dissemination through multiple media including telecommunications, internet, broadcast media and sirens is required to ensure that warnings are accessible to the widest possible audience including vulnerable members of our community; and using different warning methods for different threats can create confusion and reduce effectiveness.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Australia works with bilateral, multilateral and regional partners to reduce the risk of, and respond to disasters and humanitarian emergencies in Africa, Asia and the Pacific. Through building strong partnerships, Australia supports the strengthening of capabilities at regional, national and local levels to prevent, mitigate, prepare for and respond to disasters.

Australia is building the capacity of Pacific and Indian Ocean nations to respond to tsunami warnings, including through funding travel of developing country partners to attend regional meetings and workshops.

The Bureau of Meteorology, with support from SOPAC is assessing the capacity of 14 Pacific island countries to receive and respond to tsunami warnings from the Hawaiian PTWC. Progress has been made on the development of a tsunami hazard map for the southwest Pacific through a partnership between Geoscience Australia (GA) and SOPAC. GA is also working with technical agencies in the Philippines and PNG to build their capacity to analyse natural hazard risk.

Australia is currently co-chair of the APEC Taskforce for Emergency Preparedness with Indonesia. APEC's strengths in emergency preparedness and response lie in regional cooperation, multi-sectoral participation, private-sector partnerships, and political buy-in. APEC can play a constructive role in enabling the region to better prepare for emergencies. Australia also worked with Indonesia to develop ASEAN

Regional Forum Strategic Guidelines for Humanitarian Assistance/Disaster Relief.

Australia provides ongoing support to the IFRC's International Disaster Response Laws, Rules and Principles (IDRL) Asia-Pacific program which aims to address operational challenges in international disaster relief operations.

Australia contributes to regional advocacy on DRR through partnerships with the Asia-Pacific Program of the UN ISDR and the World Bank's Global Facility for DRR. Australia bilaterally supports national governments to implement DRR activities and supports capacity development of NGOs to reduce disaster risk.

Context & Constraints:

A study of Disaster Risk Management Needs in the Asia Pacific in 2007 found that there is a lack of coordination between regional stakeholders for a variety of reasons, including: lack of resourcing and capacity in some organisations limiting their ability to either lead or participate in regional fora, unwillingness by some stakeholders to realign existing programs with those of other stakeholders, lack of knowledge about global and regional policy reforms and, generally, insufficient understanding about the priorities and programs of other stakeholders.

This lack of coordination results in actual, or potential, duplication of effort in a range of areas, including: regional networks and meetings, knowledge management, capacity building and training, and risk assessment and hazard mapping.

Marshall Islands (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

1. Ecological assessment of proposed Majuro lagoon rim aggregate dredging
2. Water quality monitoring. RMI Environmental Protection Agency has EPA certified laboratory
3. Regional Coordination of Pacific Islands GOOS (Global Ocean Observing System) in the SOPAC Region.
4. South Pacific Sea Level and Climate Monitoring Project [Phase IV] Support.
5. Improve access to freshwater through the provisions of rainwater tanks, expanded runway catchment, and maintained reticulation system

Context & Constraints:

- Increasing migration to Majuro and Ebeye
- Unplanned and highly congested living conditions
- Poor waste management and sanitation provisions
- Poor education system
- Adoption of western diet and lifestyle
- Shortages of skilled health personnel

Core indicator 2

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

Level of Progress achieved:

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

Description:

1. Water quality monitoring
2. Regional Coordination of Pacific Islands GOOS (Global Ocean Observing System) in the SOPAC Region.
3. South Pacific Sea Level and Climate Monitoring Project [Phase IV] Support.
4. Regional Early Warning Strategy - The Early Warning Strategy is aimed at identifying a range of initiatives with regard to early warning for different hazards which PICs and partner/donor organisations can collaborate on.
5. Tsunami Capacity Assessments for PICs - The project with AusAID, Australian Bureau of Meteorology, Geoscience Australia and Emergency Management Australia is intended to gauge the capacity for tsunami assessments in PICs.
6. MapServer installed at

Context & Constraints:

1. capacity development required
2. resources required to maintain systems
3. stakeholder buy in to contribute information into central place

Core indicator 3

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

Level of Progress achieved:

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

Description:

1. Regional Early Warning Strategy endorsed by SOPAC Governing Council covers a range of initiatives with regard to early warning for different hazards which PICs and partner/donor organisations can collaborate on.
2. Australian Tsunami Warning System capacity assessment programmed for 2009. The assessment will highlight areas for capacity strengthening in RMI.
3. RMI DRM NAP Goal 4 addresses Early Warning. Actions and agencies responsible identified

Context & Constraints:

- * communities are far apart
- * require technical resources and capacity to setup, test and maintain

Core indicator 4

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

Level of Progress achieved:

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

Description:

Australian Tsunami Warning System will facilitate warnings issued in the South-west Pacific through the Pacific Tsunami Warning System (PTWS). Capacity assessment planned 2009.

Context & Constraints:

Considerations for non traditional hazards such as pandemics need to be made

New Zealand (in English)

Core indicator 1

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

Level of Progress achieved:

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

Description:

The Officials' Committee for Domestic & External Security Coordination has published the National Hazardscape Report (2007), based on contributions from agencies 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 report is to be updated every three years.

http://www.civildefence.govt.nz/memwebsite07.nsf/wpg_URL/For-the-CDEM-Sector-Publications-National-Hazardscape-Report?OpenDocument

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.

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.

The Climate Change Plan of Action programme provides for significant investment in research and development into helping land-based sectors adapt to climate change. This includes research into modelling and methodologies to enhance the land-based sectors evidential basis for risk management with regard to climate change.

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.

Core indicator 2

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

Level of Progress achieved:

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

Description:

There is no centralized system for all hazards and risks data. There are different systems for monitoring the main natural hazard agents (meteorological or geological), and these generally form part of or link to early warning systems (see Indicator 2 below).

Data on the human elements of hazards, including vulnerabilities, are collected and disseminated through many means. Base population statistics are collected five yearly by Statistics New Zealand, with data available at different scales often down to small mesh-blocks. Statistics New Zealand also collects other relevant data on a more regular basis. Local government, central government and NGOs, may collect additional data relevant to their responsibilities, for example the Ministry of Agriculture and Forestry collects data on the agricultural, horticultural and forestry industries.

Limited loss modelling capabilities exist nationally, notably in terms of earthquake impacts.

Context & Constraints:

Work is continuing on developing data sharing protocols and mechanisms, to be underpinned by a common national geospatial infrastructure.

Current research projects are extending loss modelling by both hazard type and elements at risk.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Regional councils and the National Institute of Water & Atmospheric (NIWA) monitor, model and advise on river flows (flooding), climatic events (droughts), storm surge, sea level rise, and coastal geomorphologic processes.

GeoNet is a project to build and operate a modern geological hazard monitoring system in New Zealand.

GeoNet comprises a network of geophysical instruments, automated software applications and skilled staff.

It detects, analyses and informs responses to earthquakes, volcanic activity, large landslides, tsunami, and the slow deformation that precedes large earthquakes.

The MetService is contracted by Government to monitor and provide warnings about severe weather events.

New Zealand receives advisories and warnings from the Pacific Tsunami Warning Centre in Hawaii, and has commenced with installation of a local sea level monitoring network.

A 24/7 National Warning System operates as part of the national Civil Defence Emergency Management arrangements. Warning messages are communicated to relevant response agencies, and as necessary to the public via the media. Response agencies, and notably local agencies, develop their local systems as an extension of the national network.

Memoranda of Understandings, supported by procedures and exercises, are in place with major radio and TV broadcast companies to provide public warnings.

Context & Constraints:

The efficacy of early warning systems for meteorological events is generally well established. However outreach of warnings for tsunami are only now being implemented. Establishing appropriate warning systems and response arrangements for near source tsunami events is an ongoing challenge.

For some events, for example earthquake and local tsunami, the issues are less about early warnings, and more about being prepared for any event, necessitating ongoing public education programmes at both the national and local level.

Core indicator 4

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

Level of Progress achieved:

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

Description:

Because New Zealand shares no land boundaries with other countries, its hazards and risks assessments are in the main national or local exercises only. Within New Zealand regional and local agencies are expected to consider cross-jurisdictional boundary issues in their risk reduction and emergency planning.

New Zealand cooperates inter-regionally and globally within international science and research fora, such as in climate change modelling. New Zealand also participates in international fora that undertake risk assessments and set policy and best practice standards, to manage regional and global hazards and risks. For example, working with the WHO on public health monitoring and pandemic risks and with the PTWC on pan-Pacific tsunami hazards.

New Zealand also supports South Pacific countries in undertaking risk assessments, and advises on and supports risk reduction through its NZAID programmes.

Context & Constraints:

No significant contextual challenges are identified.

Vanuatu (in English)**Core indicator 1**

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

Level of Progress achieved:

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

Description:

The Draft Vanuatu National Disaster Risk Reduction and Disaster Management Arrangements, 2008 (NDRRDMA) highlight common examples of risk reduction measures. These measures range from the analysis of the hazards, to capacity building, appropriate policies and plans, its application to appropriate early warning systems. The NDRRDMA arrangements charge the National Disaster Risk Management Office (NDRMO) with the coordination and development of a "risk reduction plan" whose purpose is to identify and monitor priorities for risk reduction and allocate responsibilities to key agencies for the implementation of the mitigation programmes consistent with national policies and priorities endorsed by the National Disaster Risk Management Council and approved by the council of Ministers. The National Risk Reduction Arrangements obligate risk reduction planning process to take note of reducing underlying risks outlined in the Priorities Action Agenda (2005 - 2016), the DRR and DM NAP, appropriate adaptation measures to deal with emerging risks associated with climate change and climate variability, the application of risk management tools such as CHARM and modern technologies such as GIS and remote sensing. In addition to the DRM arrangements, the NAP outlines key actions for sectoral responsibility in incorporating risk reduction measures which already obligates the sectors.

a. The Ministry of Lands is currently developing a Land-Use management policy for developers to conduct full risk assessments before development is approved. For risk assessments, the Comprehensive Hazards and Risk Management (CHARM) tool is being introduced for use.

b. The Vanuatu Meteorology Services (VMS) climate change adaptation programmes has assessed for the vulnerable areas around Vanuatu. This has resulted in the current relocation of Tekua community to higher grounds and rainwater catchments for the communities of Pamma, Aniwa and Tongoa. In addition, the VMS has in place assessment tools for El-nino and La Nina.

Context & Constraints:

One of the current limitations on national risk assessment tools such as CHARM, is the lack of capacity to use such. The NDRMO has identified the need to train personal across the sectors in the use and application of CHARM. In addition, under their new disaster risk management arrangements and national

action plan, hazards and risk management personnel has been established within the NDRMO.

Core indicator 2

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

Level of Progress achieved:

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

Description:

The VMS, have their own systems in place for the monitoring of meteorological hazards, tsunami warnings and watches and the dissemination of it to communities. One of the activities under the NAP is the incorporation of geohazards monitoring under VMS to take effect in 2009.

In addition, the existing GIS based systems which could easily incorporate hazards and vulnerabilities information:

- a. POPGIS - Vanuatu National Statistics Office
- b. PEIN - Pacific Environment Information Network
- c. VANRIS - Vanuatu Natural Resource Inventory System
- d. Vanuatu MapServer

Of relevance is the Population Geographical Information System (POPGIS) of which the Vanuatu National Statistics Office incorporates in its information system. POPGIS are population maps of each of the six provinces of Vanuatu. The system can be expanded to include hazard and risks maps. At the moment, in addition to population maps of the 6 provinces, the system also has water resources and sanitation maps of these provinces. The NAP tasks the Vanuatu National Statistics Office to work with the relevant sector heads for the incorporation of area maps on hazard risks and vulnerability and for this to be made accessible.

The Vanuatu Map Server is also a tool that has been implemented to strengthen integrated development in three key areas of the islands systems (hazards and risk assessment; aggregates for construction; and water and sanitation). The objective of having the map server was to strengthen the availability of accurate and timely data in order to reduce vulnerability through the development of an integrated planning and management system. The data on the Vanuatu map server incorporates portions of the datasets of the Vanuatu Natural Resource Inventory System (VANRIS).

It is envisaged under the NAP, that linkages between these various systems is established to inform an information system for DRR and DM.

Context & Constraints:

With the recent launch of the Pacific Disaster Net, there is potential for it to serve as the disaster risk management information system. However, this is an area that needs to be worked out by the relevant working group.

Core indicator 3

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

Level of Progress achieved:

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

Description:

Vanuatu's major natural hazards are: cyclones, volcanic eruptions, floods, earthquakes and tsunamis and droughts. Under the all hazards approach adopted and encompassed in their disaster risk management arrangements, the human induced one includes industrial accidents, fires, vehicle accidents, hazardous materials accidents, marine oil spillage, aircraft accidents, exotic diseases and health epidemics. At

present, there are existing early warning systems in place for:

- a. meteorological hazards - real time links with World Meteorological Organisation, Bureau of Meteorological, Fiji Meteorological Services and NIWA
- b. tsunamis from the Pacific Tsunami Warning Centre.

Current initiatives include the implementation of 2 seismic gauges for early warning of geological hazards. In addition, the e-gov initiative of Vanuatu is being supported by the VMS as this will enable the expansion of RANET at Siviri Village to the other provinces. RANET is an international collaboration to make weather, climate, and related information more accessible to remote and resource poor populations.

Other than the early warning systems, VMS has a regular awareness programs and articles through Vanuatu's local radio stations and newspapers. There are also awareness groups around the different communities in Vanuatu.

Context & Constraints:

A risk reduction and hazard mitigation working group has just been established in Vanuatu to improve the understanding of hazards, vulnerabilities and communities at risk. The working group has been convening meetings with geology and mines, the water unit and geo-hazard to discuss monitoring arrangements and alerts systems for Vanuatu's key hazards.

Core indicator 4

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

Level of Progress achieved:

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

Description:

As part of the Pacific regions plan to strengthen regional cooperation and integration as the main instrument of realising the Pacific Vision, the Melanesian Volcanological Network (MVN), was proposed for greater effectiveness and sustainability of volcanological operations throughout the volcanically active parts of Melanesia through partnerships, resource sharing, common understanding and agreed objectives. The MVN is not to replace Vanuatu's efforts to improve volcanic risk reduction but rather enhance these through the provision of a sub-regional framework that would strengthen the volcano monitoring system, the training of staff in its use and in the public awareness of volcano risks and hazards amongst communities. While the MVN is still in the stages of being formalised, the partnership of the technical agency Geological & Nuclear Science (GNS Science) has involved a detailed review of Vanuatu's instrumentation and network requirements for monitoring volcanic hazards in 2007. The support for this monitoring instrumentation includes seismic monitoring and has been earmarked to be implemented over a period of 3 years. A few sub-regional meetings and workshops has been held to flesh out the design and operations of the MVN.

Context & Constraints:

One of the main hindrances in the establishment of the framework has been the absence of PNG in these meetings, the other key Melanesian within this network. However, this has not deterred national activity in Vanuatu who is in the process of presenting to their Cabinet, a scoping paper / policy paper on the MVN.
