

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

HFA Priority 3, core indicator 3.3:

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

Know the Risks and Take Action

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

This report compiles inputs by Hyogo Framework for Action (HFA) priority for action 3.3 from 86 countries' final national HFA progress reports in order to better facilitate analysis and provide examples by priority and region. Inputs are provided in their original reporting language.

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

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

An HFA Monitor update published by PreventionWeb

Africa

Algeria (in French)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

L'évaluation environnementale est prévue par les dispositions de la loi 03-10 sur la protection de l'environnement dans le cadre du développement durable.

Concernant les analyses de coûts, il n'y a pas d'instruments dédiés à ces activités (pas de réglementation, ni de procédures...). Cependant, les assureurs nationaux, en coopération avec les réassureurs développent des initiatives en vue de préparer un système de tarification et d'estimation des dommages.

En ce qui concerne les établissements classés, l'étude d'impact sur l'environnement prévoit l'évaluation des incidences financières allouées aux plans de gestion de l'environnement et l'étude de danger prévoit l'analyse des impacts économiques et financiers en cas d'accident.

Par ailleurs, dans le cadre de l'application de la loi de programmation de la recherche scientifique et de développement technologique 2008-2012, l'un des 34 programmes nationaux de recherche (PNR) concerne les risques majeurs. Dans ce cadre, des sujets d'investigation sur les risques multiples et les analyses de coût seront très probablement abordés.

Context & Constraints:

La principale contrainte réside dans la faiblesse des échanges d'information et des données entre les acteurs nationaux concernés et l'insuffisance du partage des connaissances, notamment avec le secteur industriel.

La délégation nationale aux risques majeurs permettra certainement de surmonter ces défis.

Botswana (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

The NDMO is preparing a national strategy to implement DRR.

Context & Constraints:

Lack of capacity and resources

Burundi (in French)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Des instruments d'évaluation des risques ont été élaborés mais reste t-il à les appliquer.Des méthodes de recherche sont encore à développer.

Context & Constraints:

Manque du personnel qualifié et nécessité de renforcement des capacités en terme de formation.

Cape Verde (in Spanish)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Quanto ao risco vulcânico os projecto MAKAVOL e MIAVITA têm desenvolvido algum trabalho para um

acompanhamento contínuo desta actividade e uma melhor gestão deste risco. Relativamente ao risco sísmico, o Instituto Nacional de Meteorologia e Geofísica (INMG) e o projecto MIAVITA já tem instalado alguns sismógrafos para o acompanhamento da actividade sísmica nas ilhas mais recentes de Cabo Verde. O projecto MAKAVOL, para além da monitorização geoquímica, em 2011, prevê a instalação de uma rede sismográfica na ilha do Fogo e de estações de GPS, permanentes.

O INMG faz o acompanhamento diário do estado do tempo em Cabo Verde, tem estações meteorológicas em todas as ilhas, e diariamente envia dados das previsões ao SNPC. Para este ano está em curso o processo de instalação de marégrafos em algumas ilhas, para fazer o seguimento do nível médio das águas dos mar.

O Instituto Nacional de Gestão de Recursos Hídricos (INRGH), tem em curso projectos ligados à hidrologia superficial, que contemplam instalação de limnígrafos, e sistemas de seguimento dos caudais dos cursos de água, para a monitorização das cheias e inundações.

O Instituto Nacional de Estatística, deu início a um programa de colheita de dados relativos a danos ambientais e catástrofes, envolvendo um grande número de instituições nacionais com responsabilidade nesta matéria.

A Direcção Geral do Ambiente, elabora frequentemente relatórios sobre a qualidade do ambiente que servem de pista para a avaliação de riscos a nível nacional. Também existe projectos de seguimento da qualidade do ambiente e de seguimento do impacte das mudanças climáticas em Cabo Verde.

Com o projecto SIERA, pretende-se compilar alguns dados sobre os riscos em Cabo Verde e implementa mecanismos que poderão servir para a avaliação multi-risco. Este projecto prevê a criação de um observatório nacional de risco onde serão compiladas e seguidas dados relativos a todos os riscos que poderão afectar Cabo Verde.

Context & Constraints:

Este capítulo de avaliação e investigação ligado ao risco em Cabo Verde é um tem novo e ainda não existe muitos técnicos capacitados nesta matéria.

Ainda neste capítulo da investigação as capacidades nacionais continuam a ser fracas, grande parte por falta de investimento nesta área, a grande dispersão dos técnicos por muitas instituições do públicas e privadas, a falta de projectos conjunto das instituições nacionais, ausência de incentivos à produção científica, etc.

Muitos projectos de cooperação não têm seguimento quando terminam e grande parte dos trabalhos são desenvolvidos por técnicos internacionais e não há reforço da capacidade nacional.

Quanto à análise custo-benefício, a nível local tens registado boas experiências principalmente no que toca às cheias e inundações, mas existe a necessidade de uniformizar os critérios para esta avaliação.

Comoros (in French)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Des études sur l'état de santé des récifs et mangroves ont été réalisées en 2010 dans le cadre du projet COSEP, financées par le PNUD et ont permis de mettre en avant l'importance d'investissements sans regrets pour ces écosystèmes particuliers.

L'organisation du colloque sur le Karthala (novembre 2008), dans le cadre du premier projet du PNUD en gestion des risques de catastrophes, avait permis de démontrer le potentiel économique du Karthala et donc l'importance de gérer cette aire de manière durable. Par ailleurs, le projet OCB du PNUD a aussi permis la conduite de nombreuses études scientifiques sur le Karthala et sur les bénéfices pouvant être tirés de la protection de cet aire.

Context & Constraints:

Il n'y a pas aux Comores d'instruments d'étude des risques et de leur impact potentiel sur l'économie. Les recherches dans ce domaine sont pratiquement inexistantes.

Cote d'Ivoire (in French)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Bien que peu financées, des recherches et des études sont néanmoins faites dans les institutions de recherche dans le domaine de l'environnement pour la compréhension des phénomènes. Les thématiques sont peu orientées vers les impacts de ces phénomènes sur d'autres secteurs d'activités, cela en raison du fait que la notion de réduction des risques de catastrophes est relativement nouvelle, mais aussi en raison du non financement de la recherche et du peu de moyens disponibles pour les études.

Context & Constraints:

La solution à ce niveau reste fondamentalement le financement de la recherche et des études dans le domaine de la réduction des risques de catastrophes qui nécessitent des équipes pluridisciplinaires. Cela résoudra à terme le problème de la diversité et de la disponibilité de l'information et permettra aux décideurs d'orienter les politiques d'adaptation aux aléas.

Ghana (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Research has been going on at the institutional level. Based on the type of hazards they deal with. However methods and tools for multi risk assessment and cost benefits are as yet to be developed.

Context & Constraints:

Lack of coordination and commitment.

Lack of adequate resources for DRR research.

Guinea-Bissau (in French)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Manque de cadre institutionnel, de volonté politique et des ressources

Context & Constraints:

La Guinée Bissau ne dispose pas de Service National de la Protection Civile, ni de plan communautaire d'alerte précoce et ni de réponse aux situations de crise et d'urgence, ni de Stratégie Nationale de Prévention des Catastrophes, et ni de plan d'urgence national multirisques. Les interventions dans ce projet permettront de réduire la vulnérabilité des communautés face aux catastrophes et accroître les capacités d'intervention communautaires et nationales lorsque de telles catastrophes se produisent

Kenya (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Alot of research on DRR is being done in the country and this information is scartered with different institutions and sectors especiallyin the intitutions of higher learning like the Universities, the UN system like UNDP, UNISDR, UNOCHA, WORLD FOOD PROGRAMME,IGAD,KENYA REDCROSS,ACTION AID, OXFAM GB,WORLD VISION,amongst others have carried out a number of research work.

Context & Constraints:

The challenge remains the consolidation of some of these research findings and coordinated sharing of the information on these researches.

Lesotho (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Lack of expertise and financial resources.

Context & Constraints:

Lack of financial resources.

Madagascar (in French)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

L'Institut d'Observation de Géophysique d'Antananarivo (IOGA) ainsi que le Service de la Météorologie Malagasy mènent des recherches en partenariat avec des organisations internationales dans le domaine de la RRC, notamment la détection et l'alerte.

Particulièrement, le Service de la Météorologie Malagasy contribue actuellement aux recherches sur la sécheresse, l'inondation, les cyclones tropicaux à Madagascar. Un protocole d'accord entre lui et le Ministère de l'Agriculture est en cours dans le cadre de l'assistance météorologique à l'agriculture (pluies provoquées...).

Context & Constraints:

L'insuffisance des ressources financières et humaines pour mener des recherches d'évaluation des risques est le défi majeur. Nous sommes dans une large mesure tributaires de l'appui de nos partenaires financiers et techniques internationaux pour ce faire.

Malawi (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

A flood assessment tool has been developed for flood assessments by stakeholders at national, district and local levels. The Malawi Vulnerability Assessment Committee also undertakes detailed assessments on vulnerability to food insecurity. Other stakeholders like FEWSNET also complement with assessments on

famine and food security.

Context & Constraints:

So far, there has been limited investment in research methods and tools for a multi-risk assessments has been done. Studies on cost-benefit analysis especially on floods and drought (prolonged dry spells) have been done to inform decision making. However, lack of adequate resources is a challenge in the development of research methods and tools for a multi-risk assessments. However, a detailed pilot project proposal has been developed.

Mauritius (in English)

Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

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

One of the recommendations of the Fact Finding Committee set up after the 26 march 2008 floods in to set up a Central Disaster Centre

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

Context & Constraints:

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

Morocco (in French)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

La loi sur l'Eau 10-95 adoptée en 1995. Cette loi sur l'eau constitue la base légale de la politique de l'eau du pays. Elle a permis d'élaborer et de mettre en oeuvre la stratégie et la politique nationales en matière de gestion et de développement des ressources en eau de manière à accompagner et à soutenir le développement économique et social du pays, où la prévention des inondations et des sécheresses constitue l'objectif majeur. Elle contribue à la protection des populations et des biens contre les aléas climatiques et météorologiques

- La loi n° 11-03 relative à la Protection et la Mise en Valeur de l'Environnement (PMVE) adoptée en 2003 : Elle a pour objet d'édicter les règles de base et les principes généraux de la politique nationale dans le domaine de la prévention des pollutions et des nuisances.

La loi n° 12-03 relative aux études d'impact sur l'environnement dont l'objectif est d'évaluer de manière systématique et préalable les répercussions éventuelles directes et indirectes, temporaires et permanentes des projets sur l'environnement.

Le projet de loi sur les installations classées pour la protection de l'environnement : Ce nouveau texte a pour objectif principal de remplacer la législation sur les établissements insalubres, incommodes ou dangereux de 1914, dont la nomenclature a fait l'objet d'une dernière adaptation en 1950. Il est basé sur une politique plus adaptée pour la maîtrise des risques inhérents aux activités industrielles notamment en ce qui concerne les autorisations d'ouverture des installations dites "classées".

Concernant l'évaluations des coûts, il n'existe pas un de système d'assurance pour fournir une protection financière contre les risques de catastrophe, cependant une nouvelle législation est envisagée (projet de loi N°34-08) pour combler cette lacune, elle est en cour d'adoption et elle pilotée par le Ministère des Finances.

Context & Constraints:

Le projet de loi N°34-08 exige que la couverture contre les tremblements de terre, les inondation le terrorisme soit comprise dans toutes les polices d'assurance.

L'absence de décret d'application pour la mise en oeuvre des lois précitées pour l'évaluation des risques environnementaux

Mozambique (in English)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

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

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

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

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

Context & Constraints:

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

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

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

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

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

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

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

academia and research institutions to be fully engaged in DRR research.

Nigeria (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Baseline Studies for six (6) States had been carried out and the reports are available. A multi risk assessment tool was develop to collect data in communities during the vulnerability and capacity analysis.

The Centres for Disaster Risk Management and Development Studies are also to carry out research programmes. Equally, Students are expected to write a Research Project before the award of Masters in Disaster Risk Management.

Context & Constraints:

Study on economic costs and benefits of DRR has not been carried out.

Senegal (in French)

Level of Progress achieved:

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

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

No

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Dans un avenir proche, l'Etat mettra l'accent sur la recherche en RRC en incluant dans son budget national une ligne budgétaire destinée à la recherche appliquée.

Context & Constraints:

L'opérationnalité de la plateforme devrait permettre d'y arriver.

Les moyens financiers pas assez suffisants

Sierra Leone (in English)**Level of Progress achieved:**

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Disaster Risk Reduction is not included in the national scientific applied research agenda as the country is not scientifically grounded. However there is a collaboration between the disaster management department and the two main universities of Sierra Leone. Infact the research of the national hazard profile was conducted by professors from the two universities. The department also enjoys a close collaboration with the nationan metreological services and the bureau for climate change.

Context & Constraints:

There is a dire need to link DRR with Scientific applied-research agenda and budget, this is especially so for the establishment of an effective and timely early warning system. The upgrading of the Mets department fits into that category

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

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

The main institutions undertaking basic and applied research on disaster and DRR are Ardhi University, Dar es Salaam University and Sokoine University of Agriculture. The researches undertaken are important for the purpose of improving local understanding of hazards, vulnerabilities and community preparedness and response behaviors.

Context & Constraints:

There is inadequate utilization of research findings due to lack of funds and knowledge to translate and integrate the said. Reward and incentives for researchers to engage in disaster risk issues should be encouraged.

Zambia (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

The country has developed tools for conducting multi-hazard risk assessments. There are also capacities for doing rapid and impact assessments.

Context & Constraints:

Although there is capacity to conduct impact assessments, there is still a gap in relating investments in DRR to reduced losses due to this investment when disasters strike. This has made the calculation of cost benefit analysis difficult.

Americas

Anguilla (in English)

Level of Progress achieved:

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

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

No

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Pilot of one village completed and working to add in climate change and adopt the assessment from a community based level.

Participation in the R3i initiative. GIS & Hazard Mapping is ongoing to create a collection of and creation of Geographic Based Data Layers for national mapping programmes which will facilitate HRV assessments.

Context & Constraints:

Project in process and an improved base data is being obtained.

Antigua and Barbuda (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Multi risk assessment tools are slowly being introduced. However, the skill sets are moving to private sector, and replacement has been an issue. Great progress has been made as the NODS, fisheries, agriculture, land and survey dept, statistical unit, Public works Department. The environment division has started a process that allows us to share information and analysis between these agencies.

The information is being used to assist with cost benefit analysis in DRR related matters. Where we are and where we need to be is a gap that needs to be filled.

Context & Constraints:

The information sharing process is still very challenging, the gains made so far must be enhanced for maximum benefit.

Argentina (in Spanish)

Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

El algunas especialidades el nivel de evaluación e investigación es realmente alto. Pero no es parejo ello. Hay temáticas, como la del Desarrollo Territorial, que exigen niveles de evaluación importantes y en base a las investigaciones se ha diseñado un Plan de Inversiones y Desarrollo Territorial por parte del gobierno nacional, como ya fuera comentado. Pero aún no ha alcanzado el mismo nivel en los niveles provinciales y locales.

Hay un fuerte compromiso en tal sentido desde la coordinación de la Plataforma Nacional, que busca por diversas vías el mejor acceso a la problemática.

Context & Constraints:

El fuerte compromiso a nivel del gobierno nacional, todavía no ha alcanzado a otros niveles.

Algunos aportes en post grados de especialización universitaria (como la USAL, por ejemplo) resultan importantes, pero se muestran aislados en el contexto general.

Barbados (in English)

Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

A number of individual projects have resulted in some risk assessment results for Barbados. A pilot project for storm surge modelling and vulnerability assessment for the city of Speightstown (an area prone to flooding) was conducted and produced useful hazard maps for the area. It was generally agreed, however, that the project should have extended to include economic loss data, so that the DEM would have a template upon which to build for the complete risk assessment cycle. The project did produce maps showing vulnerable zones for events with different probabilities, and identified the critical infrastructure in the inundation zones.

Another such project for tsunamis was completed by the Norwegian Geotechnical Institute for the capital city, Bridgetown. The Consultants identified a few credible scenarios, and modeled the propagation of tsunami waves from the source to the shores of the city. Based on available high resolution bathymetry, they were able, as with the Speightstown storm surge project, to produce high resolution hazard maps for the city, showing areas vulnerable to different tsunami wave heights. In collaboration with the University of the West Indies, Cave Hill Campus in Barbados, a vulnerability assessment was added as a component of the project, where a post-graduate student identified all the critical buildings in the city inundation areas and was able to ground-truth them for incorporation into a risk map.

These and similar projects have been completed over the years, but with little or no incorporation of the results into planning and development policies. In addition, the replication of the excellent results obtained has not been performed thus far. No cost benefit analysis has been conducted using the damage assessment reports from disasters over the years.

Context & Constraints:

The financial outlay involved in the conduct of risk and vulnerability assessments has been prohibitive. However, with the projected losses and damage from climate change impacts, the necessity for these assessments and analyses has been brought to the attention of policy makers, who have agreed to make the funding available for the CRAMP project. The risk and vulnerability assessments for all coastal hazards will be completed under this programme.

One constraint continues to be the cost benefit analyses to support the decision making process with respect to planning and development policy decisions.

Recommendations

The Ministry of Finance and Economic Affairs will need to take on board the results of the CRAMP and put in place methods and tools for cost benefit analysis in relation to hazards.

Other hazards experienced by Barbados other than coastal hazards must also be included in the vulnerability and risk assessments. Without these, Barbados will not have a truly multi-hazard programme, with all risks identified and managed.

Bolivia (in Spanish)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Algunos ejemplos en este campo son los estudios realizados por el IRD, ASDI, IHH.

Además el Viceministerio de Defensa Civil ha promovido la elaboración de investigaciones sobre la aplicación de la GRD en el contexto de los gobiernos municipales.

Context & Constraints:

Aun esta débil este componente, dado que las investigaciones no siempre son consideradas en la elaboración de estrategias y programas.

Brazil (in English)

Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

1. Participação das universidades no mapeamento e monitoramento das áreas de riscos, bem como no levantamento e demarcação das áreas não edificantes e edificantes com restrições. 1. Participação das universidades no mapeamento e monitoramento das áreas de riscos, bem como no levantamento e demarcação das áreas não edificantes e edificantes com restrições.

Context & Constraints:

. Criar parcerias com previsão orçamentária entre as universidades e órgãos de defesa civil no desenvolvimento de estudos, pesquisas técnicas e capacitação relacionados a riscos e desastres e a implementarem projetos de extensão e sistemas de gerenciamento de interesse da defesa civil. 2. Criar parcerias com previsão orçamentária entre as universidades e órgãos de defesa civil no desenvolvimento de estudos, pesquisas técnicas e capacitação relacionados a riscos e desastres e a implementarem projetos de extensão e sistemas de gerenciamento de interesse da defesa civil.

British Virgin Islands (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Multi-risk assessment and cost benefit analysis provisions are not currently in place but plans are included in CDM Strategy and Programming Framework 2009-2013 as items to be achieved. Advances are being made in the area of multi-risk assessment through the EU's Regional Risk Reduction (R3i) project being implemented by the UNDP.

Context & Constraints:

There is a need for more technical expertise to undertake the work, funding and training in cost benefit analysis as it relates to DRR.

Canada (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Research on DRR is included in the research Programs of Government of Canada departments. Examples include:

The Canadian Weather Research Program aims to improve the accuracy and timeliness of public weather

warnings. Emerging products include weather ensemble predictions that provide risk-based information for decision-makers.

The Climate Change Impacts and Adaptation Program supports the generation of improved knowledge of Canada's vulnerability to climate change with a goal to better assess the risks and benefits posed by a changing climate and to build the foundation upon which appropriate decisions on adaptation can be made. It supports scientific activities to fill knowledge gaps regarding vulnerability to climate change; to assess impacts and adaptation; to enhance collaboration between stakeholders and scientists; and to facilitate policy development.

NRCan leads several projects, such as the Climate Change and Adaptation Program, Geoscience Program, the Canadian Hazards Information Service, and GeoConnections. These projects and programs exist to enable Canadians and decision-makers to prepare and mitigate the effects of disasters through the provision of on-demand remote-sensing, geographic, geomatics, and topographical information.

Public Safety Canada encourages Canadian natural hazards research and networking through the Canadian Risk and Hazards Network launched at the 2005 World Conference on Disaster Reduction. The Network serves as an important forum to discuss mitigation activities and research in Canada.

Environment Canada is working with Public Safety Canada to develop criteria to identify significant events during flooding and extreme rainfall return periods. Real-time access to water level and flow data is provided by the Meteorological Service of Canada Water Survey and its provincial partners to provincial and municipal authorities. Flood risk area designations from a previous flood risk mapping Program contribute towards reducing flood damages and risks to the public.

Context & Constraints:

The National Disaster Mitigation Strategy (NDMS) recognizes that sustainable Canadian mitigation activities must draw from and build upon domestic and international disaster mitigation research initiatives, scientific developments, best practices, and lessons learned from disaster events. The NDMS supports new and ongoing research efforts that build a knowledge base for mitigation decisions. Research is essential to the program.

Cayman Islands (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

> Enhancing the Climate Risk and Adaptation Fact Base for the Caribbean CCRIF (2010)

http://www.preventionweb.net/files/13946_enhancingtheclimateriskandadaptatio.pdf [PDF]

> ENHANCING CAPACITY FOR ADAPTATION TO CLIMATE CHANGE IN THE UK OVERSEAS TERRITORIES PROJECT (2009)

http://www.preventionweb.net/files/13946_climatechangestrategypeoworkshoprep.pdf [PDF]

> Preliminary Vulnerability Assessment of Grand Cayman (2009) <http://www.caymanprepared.ky/pls/portal/docs/PAGE/NEMHOME/RESOURCES/PUBLICATIONS/PRELIMINARYVULNERABILITYASSESSMENTCAYMANISLANDS19062009.PDF>

* No: Research programmes and projects

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

Description:

Storm surge maps have been completed for a number of hurricane path scenarios. Work is being done to analyze the flood threats from excessive rainfall events including the identification of flood prone areas. It is hoped that this information will eventually inform the decision making process and lead to effective mitigation and prevention strategies

Context & Constraints:

Work needs to be done to identify areas vulnerable to the earthquake threat.

Natural run off areas, wetlands, locations prone to flooding and places where the sea traditionally breaches the coastline in storms need to be identified and researched to identify (at a minimum) appropriate minimum elevations and or setbacks. Ideally this information would result in special consideration given to planning (construction) applications for these vulnerable areas.

Chile (in Spanish)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

No existen procesos continuos ni integrados de investigación de amenazas múltiples. Los estudios existentes dependen en su mayoría de iniciativas dispersas y en general son llevadas a cabo por organismos no gubernamentales. Una buena práctica realizada fue el proyecto PROTEGER Coquimbo (2007-2009) que, en colaboración con JICA, tuvo como objetivo generar un ordenamiento territorial para la gestión del riesgo que permita identificar sectores vulnerables.

A modo de ejemplo, UNESCO, a través de fondos obtenidos en proyecto Dipecho VI de la Comunidad Europea, desarrolló el 2010 una investigación y trabajo en las comunas de Lota, Coronel y Penco.

Asimismo, Save The Children, mediante ACHNU, desarrollo diversas actividades en Cauquenes para estudiar el grado de afectación de la población, en particular infantil, con posterioridad al terremoto.

PNUD y oficinas asociadas a la Estrategia Internacional, trabajan día a día en estos aspectos, pero el dialogo con los organismos gubernamentales y, en particular con ONEMI, no es lo suficientemente fluido aún para permitir un traspaso e integración de los aspectos.

Existen indicadores de impacto monetario, pero son desarrollados reactivamente de acuerdo a los eventos específicos. No existen herramientas específicas de análisis de variables socioeconómicas. En este aspecto, se toma como indicación de vulnerabilidad y como medida, la encuesta CASEN que desarrolla el

Context & Constraints:

Por el momento, desde el Gobierno, no se han desarrollado iniciativas concretas que permitan estandarizar sistemas de evaluación de impacto de políticas, programas, capacitaciones o actividades asociadas a la reducción del riesgo de desastres.

El principal reto contextual identificado es la elaboración de instrumentos válidos, replicables y perdurables en el tiempo, con lógica de costo-beneficio, que permitan ir evaluando el impacto de las diferentes acciones y medidas que permitan darle seguimiento al Marco de Acción de Hyogo.

Colombia (in Spanish)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Las autoridades en los ámbitos nacional y regional tienen un importante papel que desempeñar en el fortalecimiento de las capacidades técnicas y científicas para desarrollar y aplicar metodologías, estudios y modelos para evaluar las vulnerabilidades y el impacto de las amenazas, lo que incluye el mejoramiento de las capacidades de monitoreo regional y las evaluaciones afines.

Si bien existe responsabilidad por parte de diversas entidades técnicas del Sistema Nacional de desarrollar investigaciones en torno al tema de su competencia generando herramientas metodológicas para orientar a los demás niveles territoriales para realizar evaluaciones de amenazas y vulnerabilidades. Dichas Investigaciones giran en torno a amenazas principales geológicas, geofísicas, hidrológicas e hidrometeorológicas - las cuales han desarrollado protocolos a nivel nacional.

Cabe destacar, que en un grado importante la aplicación de metodologías, estudios y modelos para evaluar las vulnerabilidades y el impacto de las amenazas se encuentran materializados en los procesos de Ordenamiento Territorial que se hacen a nivel municipal y regional, de igual forma en los procesos de Planeación y Ordenamiento de las principales cuencas hidrográficas del país, entre otros procesos de ordenamiento, lo anterior se ha logrado gracias a la implementación de una política nacional liderada para consolidar el desarrollo territorial comenzando con el ordenamiento del mismo.

En la actualidad el Departamento Nacional de Planeación -DNP - está liderando un proceso de evaluación de las inversiones realizadas a nivel nacional, regional y municipal en gestión del riesgo, para analizar el costo efectividad de las mismas, y para evaluar como se ha reducido la vulnerabilidad del Estado ante desastres naturales.

Context & Constraints:

Se presentan debilidades en cuanto a recursos económicos y capital humano, para desarrollar métodos, herramientas e investigaciones sobre la Gestión del Riesgo. Lo anterior, se complementa con las diversas corrientes de pensamiento, que han obstaculizado desde una visión técnica de los parámetros básicos para realizar el abordaje técnico de las investigaciones.

Existe procesos incipientes pero no muy dinámicos, un proceso de descentralización para que entidades a nivel local y regional desarrollen investigaciones de calidad (responsabilidad de generar términos de referencia, disponibilidad presupuestal para estudios e investigación).

De igual forma, no se han incorporado los análisis de costo beneficio en torno al riesgo para articularlo a los procesos de planificación (investigaciones en proceso de formulación), con las obvias consecuencias de la falta de articulación entre los resultados técnicos de las investigaciones y la toma de decisiones en lo político.

Entre los retos están:

Consolidar procesos técnicos y metodológicos para liderar procesos de evaluación del riesgo los cuales serán los insumos para los diversos procesos de formación formal y no formal en Gestión del Riesgo.

En el marco del Sistema Nacional de Ciencia y Tecnología liderar procesos presupuestales para consolidar las estrategias de investigación científica aplicada a la reducción del riesgo.

Diseñar una metodología por parte del DNP para realizar el seguimiento de las inversiones correlacionadas con el Gestión del Riesgo de Desastres para así poder evaluar con esta información la relación costo/beneficios de las mismas, con el fin de poder direccionar políticas a nivel nacional, departamental y municipal para optimizar las inversiones correlacionadas con la gestión del Riesgo.

Costa Rica (in Spanish)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Las universidades estatales (en este país realizan investigación de muy alto nivel) tienen un programa de investigación en desastres, cuyo rol principal es la gestión y asignación de los recursos disponibles para las investigaciones. La CNE aporta recursos para investigaciones: Estudios de cuenca, estudios de impacto ambiental, emplazamiento de sitios de obras de inversión pública, estudios hidrológicos, estudios de percepción, Estudios de geotécnica, simulaciones, modelajes, informes y análisis del clima, sismicidad,

mareas, vulcanismos, estudios probabilísticos, tesis, entre otros.

Context & Constraints:

Año a año se producen muchas investigaciones de diversa índole sobre los que no cabe la referencia a un estudio en particular.

Cuba (in Spanish)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Los estudios de peligros, vulnerabilidades y riesgos (PVR) se realizan a todo nivel por los sectores claves atendiendo a los tipos de peligros y disponen de los recursos presupuestarios para realizar las investigaciones necesarias. Sus resultados y productos se presentan a las autoridades locales y superiores para la toma de decisiones para la reducción de riesgos de desastres.

Context & Constraints:

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

Dominican Republic (in Spanish)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

- En el caso de las universidades, se realizan de manera aislada, se estudios e investigaciones como tema de tesis, tanto de grado como postgrado, sobre temas relacionados con la gestion de riesgos.

Context & Constraints:

- Es necesario establecer un mecanismo para definir temas de investigacion de acuerdo a las necesidades determinadas en el pais que planteen soluciones a los principales problemas detectados en el pais con relacion al riesgo de desastres.

Debe definirse programas de maestrias y doctorados para fortalecer el grado de especializacion del recurso humano.

Ecuador (in Spanish)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

La Secretaría Nacional de Ciencia y Tecnología SENACYT tiene presupuesto para el apoyo en proyectos de investigación científica en el tema de gestión de riesgos.

Así mismo se estan trabajando propuestas de investigación en este campo en las Universidades y Escuelas Politécnicas encaminadas a la investigación de esta área para conocer mejor el comportamiento de los fenómenos naturales a los que esta expuesto el país.

Context & Constraints:

Contar con una línea de financiamiento permanente para la investigación de los fenómenos naturales y hacer un análisis de costo - beneficio de lo que cuesta la inversión en proyectos de investigación.

El Salvador (in Spanish)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Se está participando a nivel regional en el Proyecto de la Reducción del Riesgo Sísmico, donde entre otros elementos se está trabajando para evaluación de la vulnerabilidad sísmica estructural para efectos de costo-beneficio

En el Plan de Gobierno se establece la necesidad de fortalecer las capacidades científico y técnicas del Sistema Nacional de Protección Civil y su vinculación con centros académicos, de investigación científica y de la sociedad civil para identificar los escenarios potenciales de riesgo y formular medidas de prevención, mitigación, de intercambio y aprendizaje entre las comunidades.

Context & Constraints:

Fortalecer los vínculos con las instituciones encargadas de la investigación científica a nivel local y regional.

Falta de recurso financiero que permita potencializar la capacidad técnica científica del personal de las instituciones del sistema nacional de protección civil del País.

Guatemala (in Spanish)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Guatemala es mayormente afectado por las amenazas de tipo hidrometeorológico, cuyo impacto se traduce en deslizamientos e inundaciones. Por ello, SE-CONRED actualmente trabaja en la producción de información para realizar evaluaciones de amenazas múltiples. En deslizamientos, ha contrapuesto diferentes resultados como: cartografía de alta definición (ríos, cortes de talud, cobertura vegetal, modelo de elevación, pendiente y su orientación, geología...), firma espectral de deslizamientos en zonas altas y todo el país, comprobación con imágenes hiperespectrales; y lo referente al impacto por deslizamiento en los últimos 10 años. Se validó la información resultante con incidentes de deslizamiento en 2008, con una certeza de 91,53%, y 90,25% en 2010. Para inundaciones se desarrolló la cartografía del país, se identificó la firma espectral del suelo en condiciones secas y húmedas para establecer condiciones topográficas del terreno susceptible a inundaciones. Se validó la información resultante con los eventos de 2,008 llegando a una certeza del 90.35% y 91,2% en 2010.

En el mismo tema, se trabajó el proyecto de Evaluación Probabilística de Riesgos en Centroamérica (CAPRA, por sus siglas en inglés) que pretende fomentar la comprensión del riesgo de desastres a través de la visualización de los mapas de riesgo, tomando en cuenta tanto la intensidad como la frecuencia de las amenazas durante un período determinado.

Por otro lado, actualmente se elabora el instrumento que incorporará la gestión de riesgo en la formulación de los proyectos de inversión pública, contemplando la relación costo–beneficio y criterios para valorar e imputar en los costos del proyecto las medidas de mitigación. Este instrumento permitirá operativizar, internalizar y homogenizar la RRD en la formulación y evaluación de proyectos de preinversión e inversión pública. Asimismo, en el marco normativo del Sistema Nacional de Inversión Pública para la presentación de proyectos 2011 el tema está presente.

Context & Constraints:

SE-CONRED ha avanzado en la generación de información que permitan realizar mejores estudios para la evaluación del riesgo. Sin embargo, aún no se concluyen los análisis para impacto por deslizamientos e inundaciones, por lo que debe continuarse en la generación y análisis de información en estos temas y en el resto de incidentes que impactan al país.

El proyecto CAPRA también ha aportado una plataforma que permita un adecuado manejo de la información para generar mapas de riesgo. Sin embargo, presupone que el país cuenta con todos la información necesaria para construir los mapas de riesgo, por lo que a pesar de contar con la plataforma más no con la información en el formato requerido, será en un futuro cuando pueda aprovecharse su potencial. Mientras tanto es importante lograr la transferencia de archivos entre el programa que se utiliza actualmente y el de CAPRA, así como gestionar la capacitación técnica para los usuarios de manera que se deje toda la capacidad técnica instalada en el país para aprovechar el potencial de dicha plataforma.

Honduras (in Spanish)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Existen ya muchos esfuerzos a nivel de educación superior el haber constituido una Maestría en Gestión de Riesgos, Diplomados con orientaciones técnicas específicas (ingenieros, arquitectos, geólogos, y demás). Existen además contemplados en la Ley del SINAGER los Oficiales de Prevención que de ahora en adelante estarán evaluando el tema de la Prevención así mismo contribuyendo a los análisis costo - beneficio. No existe una línea presupuestaria dentro del estado para la RRD, lo que se ha acostumbrado es atender a las contingencias en vez de prevenir.

Context & Constraints:

Si hay esfuerzos pero son muy aislados y no estan integrados.

No existe recurso especializado y el profesional especializado no está integrado al sistema de prevención.

Las limitantes es la inversión en preparar personal calificado y posteriormente a la preparacion academica adecuada no existen los recursos financieros dentro del sistema gubernamental para contratar dicho personal y de la misma forma dichos profesionales no les garantiza el estado una estabilidad laboral ni profesional.

Jamaica (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Agencies with authority have been identified at the national level with the necessary expertise to carry out multi-risk assessments. Accepted scientific methodologies have been used to carry out these assessments with the aid of GIS technology. GIS also facilitates project assessments. At present data is shared between key agencies such as the Meteorological Service, Earthquake Unit, Mines and Geology, Water Resources Authority and the National Disaster Organisation, ODPEM.

ECLAC and USAID/OFDA methodologies have been used to assess the impact of hazards. Vulnerability assessment methodologies have also been established and models developed for hazard impact analysis. CDERA, as the regional response agency has developed reporting strategies and bench-marking tools for participating states. These tools are used for evaluation and monitoring at the regional level.

Agricultural research - hazard resistant crops and livestock.

Climate change centre established at UWI.

Infratstructure (road devpt) - materials to strengthen road base.

Scientifi approach applied to community research development.

Context & Constraints:

There is a need for strengthening the capacity of human resources at the National Disaster Organisation to do meaningful work in this area. The additional human resources on implementation would also act as a national coordinator for harnessing the necessary information from the agencies who have done research to bring a more holistic approach to research conducted.

No effort made to integrate Cost Benefit Analysis as compared to Latin American counterparts.

Absence of the data formulated at the national level translated to the community based level to effect action.

Mexico (in Spanish)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Los programas de investigación del CENAPRED, analizan los principales factores del riesgo: la amenaza que representa cada fenómeno, la probabilidad de su ocurrencia, la vulnerabilidad de la sociedad ante su presencia y el grado de exposición ante los fenómenos. Muchos de estos programas, han rendido frutos que se traducen en una efectiva reducción de la vulnerabilidad de distintos sectores de la población mexicana ante las frecuentes manifestaciones, a través de la concepción de diversos dispositivos de preparación.

Como parte de las iniciativas del Gobierno de México, la Secretaría de Salud, mantiene dentro del programa de urgencias epidemiológicas y desastres, un sistema de información que genera datos para cada evento que se atiende, el cual colabora en la elaboración de reportes e informes que permiten tomar decisiones para la programación y planeación, así como para los ajustes futuros del programa nacional. Asimismo, desarrollan estudios de caso y de brotes de enfermedades que se generan durante el desastre.

Context & Constraints:

Actualizar y modernizar el sistema informático EPI-Desastres, así como las variables y formatos primarios de concentración, y desarrollar asimismo, un sistema automatizado para la realización de la Evaluación de Daños y el Análisis de Necesidades de Salud–EDAN Salud.

Nicaragua (in Spanish)

Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

El desarrollo de las herramientas de investigación científico-técnica en Nicaragua, ha tenido importantes avances, en los últimos años, elaborándose estudios y mapas de amenazas y riesgos municipales, apoyados por agencias de cooperación que se encuentran en el país, un logro importante es la formación de técnicos municipales en el uso de estas herramientas y la elaboración de mapas de riesgo elaborados con fondos de proyectos comunitarios.-

El estudio de vulnerabilidad sísmica de Managua, con el que se estimaron las probables pérdidas por terremotos en la Ciudad de Managua, es uno de los estudios que sirve como insumo para las medidas de prevención, mitigación y preparación ante desastres. Sus datos se han utilizado para el Proyecto Regional "Análisis Probabilista del Riesgo para Centro América" que se finalizara en el 2010. Esta será una de las primeras herramientas en la región que brindara insumos a las aseguradoras para iniciar las gestiones en la transferencia del riesgo.

La Universidad de Ingeniería dentro del Programa de estudios ambientales urbanos territoriales (UNI-PEAUT) promueve cursos de postgrado vinculados a especialización en urbano-ambientales y de ingeniería sismo-resistente. Hasta la fecha se han realizado dos ediciones de la Maestría de Medio Ambiente, Mitigación y Prevención de desastres, con una graduación efectiva de 18 másteres.

El Centro de Investigaciones Geocientíficas, instancia académica especializada de la Universidad Nacional Autónoma de Nicaragua (CIGEO/UNAN-Managua), impulsa la tercera edición de la Maestría Centroamericana en Evaluación de Riesgo y Reducción de Desastres, igualmente la UNAN-León a través del impulso de postgrados sobre metodología de reducción de gestión de riesgo.

Context & Constraints:

- 1.- A nivel municipal no se están aprovechando el conocimiento de los técnicos que han sido capacitados en el uso de estas herramientas científicas.-
- 2.- Se han realizado diferentes esfuerzos a nivel nacional con la participación de instituciones públicas, privadas y el sector académico para avanzar en los métodos e investigaciones sobre las amenazas, sin embargo, el progreso ha sido lento para incidir en planes y políticas.

Panama (in Spanish)

Level of Progress achieved:

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

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

No

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

El Ministerio de Educación no cuenta con presupuesto asignado para el desarrollo de investigaciones de este tipo. Lo que se puede desarrollar se hace en un marco de competencias Institucionales.

La Facultad de de Ciencias de la Educación no ha realizado acciones específicas para poder alcanzarlo, y la universidad en su conjunto deberá establecer políticas bien definidas que integren a todos los estamentos, ya que de manera particular otras instancias sí realizan acciones en estas áreas. La Secretaria Nacional de Ciencia y Tecnología promueve becas y apoyos para trabajos de investigación en temas relacionados con el riesgo, tal es el caso de la convocatoria para un el Estudio de Sistemas de Alerta temprana para Tsunami. Existen a su vez trabajos de graduación en universidades como la USMA, la Tecnológica.

Context & Constraints:

Lograr concienciar a los decisores de los presupuesto de la importancia de contar y asignar presupuesto necesario para el desarrollo del programa. Hace falta mayor apoyo para programas de investigación e divulgar las que se han estado realizando.

Hay voluntad institucional para llevar a cabo esta misión, pero se carece de incentivos económicos para seguir adelante .

Paraguay (in Spanish)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

En base a lo expreso por la LEY N° 2615/2005

"Que crea la Secretaría de Emergencia Nacinal (SEN)" se crea un recurso del Tesoro Nacional determinado en el Presupuesto General de la Nación y un Fondo Naciona de Emergencia para la respuesta, mitigación, prevención, ect. de situaciones adversas de todo tipo que afecta la población nacional y a sus bienes.

En muestras de una politica de prevención y reducción de riesgos,la Secretaría de Emergencia Nacional ha puesto en fucionamiento el primer Complejo sustentable de investigación en la obtención de Agua Segura, en la Región que se caracteriza por ser declarada constantemente en Situación de Emergencia por Sequias.

Context & Constraints:

Si bien se cuenta con el marco legal para la atención de Emergencias y Reducción de Riesgo, los recursos destinados para tales menesteres son insuficientes y es necesaria una colaboración mayor colaboración de los actores del concierto internacional, no solo en lo tocante a la contribución economica, sino ademas a la contibución en la creación de políticas que se ajusten a las exigencias actuales y la realidad de nuestro país.

Peru (in Spanish)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

El IMARPE desarrolla programas de monitoreo y de investigación para posibles desastres como el Fenómeno El Niño y La Niña y sus resultados son publicados a nivel local y regional.

Productos o estudios de investigación: A nivel de Post-grado en las universidades si se contemplan; también en organismos científicos: CONCYTEC, IGP, IMARPE, SENAMHI, etc. Programas y proyectos de investigación con financiamiento de Agencias Cooperantes y ONG si se realizan programas y proyectos investigativos.

INGEMMET, por intermedio de Dirección de Geología Ambiental y Riesgo, considera los siguientes proyectos de investigación:

Glaciares en la Cordillera Blanca

Geotectónica y Peligro sísmico en los departamentos de Cusco, y Moquegua

Monitoreo de volcanes activos del sur del Perú

Estudios de Riesgos geológicos en la Región Loreto

Evaluación de peligros y geología del volcán Sabancaya

Peligros geológicos y comunicación con comunidades en el Sur Peruano.

Context & Constraints:

Se requiere una base de datos sobre las investigaciones realizadas y las que están en progreso.

Falta una mayor voluntad política por parte del Estado para incentivar la investigación sobre el tema.

Hace falta desarrollar mecanismos de investigación sobre la vulnerabilidad que permita implementar su proceso de reducción

Saint Kitts and Nevis (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

There are no significant Research programmes and projects being undertaken, and hence there are no outputs, products or studies.

Limited studies on the economic costs and benefits of DRR are being carried out. Recently an Economic Impact Assessment was completed for Nevis post Hurricane Earl (August 29, 2010)

Context & Constraints:

A fledgling core of resource personnel is being developed as economic impact assessors.

Saint Lucia (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

> Saint Lucia Wind Guidelines (2008) http://www.preventionweb.net/files/13471_sluwind.guidelines.pdf [PDF]

> Climate Change Technology Needs Assessment for Saint Lucia (2004) <http://unfccc.int/ttclear/pdf/TNA/Saint%20Lucia/Climate%20Change%20Technology%20Needs%20Assessment%20for%20Saint%20Lucia.pdf>

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Studies have been undertaken (including modeling, mapping for sea level rise using various climate change scenarios) to improve the knowledge base with respect to disaster risk.

Coastal habitat mapping has also been completed and this can enhance knowledge of vulnerable areas.

Projects are on-going (Investment and Financial Flows for Climate Change) and on financial and economic costs of adapting to the impacts of climate change

Context & Constraints:

A number of initiatives are donor-driven and although of national value may not be synchronised with national priorities and available capacity.

There is need for some mechanism for transitioning from donor-driven projects to programs and sustainable activities in the area of DRR.

Turks and Caicos Islands (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

There is currently no budget allocation for DRR research related activities within the TCI

Context & Constraints:

At a minimal a cost benefit analysis should be conducted to highlight DRR activities

United States of America (in English)**Level of Progress achieved:**

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

The National Science Foundation and other federal agencies support research and development in a number of physical and social science fields to improve understanding and assessment of disaster risk reduction. For example, through its Turner Fairbank Highway Research Center, the Federal Highway Administration (FHWA) continues research and development of hazard mitigation methodologies and technologies to improve the national transportation system's resilience against flooding and hydraulic events, hurricanes and extreme wind events, and earthquakes. Methodologies and guidelines have been produced under the FHWA's Cooperative Research Programs to assist transportation owners in assessing risk, planning for disaster response, evacuation and recovery, and designing for extreme events. A guide to the research literature on facility vulnerability, risk assessment, loss estimation, and disaster resilience has been produced by the National Institute of Standards and Technology to inform planning at the local and regional levels. A tool for multi-hazard risk assessment available to government planners, GIS specialists, emergency managers, and others in the U.S. is the Hazards US – Multi-Hazard (HAZUS-MH) software package. HAZUS-MH is a nationally applicable, standardized methodology that contains models for estimating potential losses from earthquakes, floods, and wind hazards, such as hurricanes.

HAZUS-MH uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters. All FEMA public assistance and hazard mitigation grant projects must meet certain eligibility requirements, such as a positive benefit/cost ratio, and be assessed for potential impacts the proposed project will have on the human and natural environment under the U.S. National Environmental Policy Act. Furthermore, the U.S. Environmental Protection Agency continues to research and develop science-based tools for communicating before, during, and after a crisis. Much of this research is directly applicable to strengthening community, local and state government capacity and resilience with respect to both natural and human-caused disasters.

Context & Constraints:

See above.

Venezuela, Bolivarian Rep of (in Spanish)

Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Existen instituciones de nivel universitario, como la Universidad de la Seguridad (UNES), la Universidad Experimental de la Fuerza Armada (UNEFA) y el Instituto Universitario que están desarrollando las líneas de investigación en riesgos múltiples, elementos socioeconómicos y su aplicación en el entorno ambiental y social.

Context & Constraints:

- Fortalecer las capacidades técnicas y científicas nacionales orientadas desarrollar métodos y herramientas de investigación para las evaluaciones de amenazas múltiples y los análisis de costo - beneficio.

Asia

Bangladesh (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Community Risk Assessment (CRA) tools have been developed and practicing in Bangladesh before the reporting period. Risk assessment mechanism is also being practicing by different development organizations in their respective working areas based on their own research methodology. During the reporting period, similar research methodology and tools are under developed for earthquake and tsunami risk assessment. An awareness raising orientation and training programme is going on for the teachers and students in the selected schools of Dhaka, Sylhet and Chittagong city (through MoE). Sector specific risk assessment and risk reduction guidelines are being developed under CDMP Programme of DMRD. Under the MoPME, DRR issues have been incorporated in the sub cluster training modules for primary teachers. A guideline for constructing disaster resilient educational institutes is being developed during the reporting period.

Context & Constraints:

While the country has generated substantial knowledge on disaster management by promoting diversity in use of research methods and tools, there is absence of central knowledge hub to preserve the findings. DMRD has planned to establish a Library at Disaster Management and Relief Bhaban. The continuity of research initiatives is also a big challenge because most of the researches are done under various projects. There has been increasing recognition to have uniform methodology in assessing common risks. Proposed institute on disaster Management Research and Training is expected to address some of these challenges. Research methods and tools that have been developed in assessing risks need to be applied in a coordinated way and comprehensive training is needed for conducting action research on risks. A central Data Bank also needs to be developed for sharing the available information and mapping for DRR inclusive sustainable development mechanism in all sectors.

Brunei Darussalam (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

-

Context & Constraints:

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Georgia (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

NEA carries out the relevant warnings of hydro meteorological and geological origin hazardous events, hydrodynamic and morpho-dynamic dangerous processes of shoreline and extremely high level of environment pollution. Based on the investigation of long time observation data in NEA is adopting relevant recommendations for palliative and preventive measures.

Based on the practical studies in NEA is prepared special maps on diverse/hazardous hydro meteorological, geological processes and erosion in territory of Georgia, which are accessible on the web-page (www.nea.gov.ge): Populated area and Urban Territories of Georgia, located in the Geological Hazardous Risk Region;

10. Landslide risk zones in Georgia and damage area;
11. Mudslide risk zones in Georgia and damaged area;
12. Areas at Risk of Flooding in Georgia;
13. Drought Prone Regions in Georgia;
14. Areas with High Wind Speeds in Georgia;
15. Risk of avalanches in Georgia;
16. Areas with intensive hail in Georgia;
17. Engineering Defense Master Plan of black sea coastline (2004); and etc.

NEA is involved in the different scientific research projects aiming disaster risk assessment and mitigation of damages, financed by the National Scientific and International fund.

Context & Constraints:

The practical studies of disaster risk assessment are carrying out in NEA, but there is a lack processing mechanisms of historical data (geo-morphological, shoreline hydro-morpho-dynamic, hydrometeorological) and their introduction in relevant software.

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

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

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

-- Nothing reported within this timeframe. --

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

No standardized research methodology or tool exists in the country for multi hazard risk assessments and cost benefit analysis.

However Department of Science and Technology, Government of India has developed a model for seismic microzonation with Indian perspective and piloted it in selected cities of India. The model was designed to assess earthquake hazard risks and evolve suitable mitigation strategies.

Geological Survey of India is also conducting a study on landslide risk assessment which includes landslide hazard zonation mapping, site specific study to understand the causative factors and suggest ameliorative measures to prevent further sliding.

Few state governments have also taken up initiatives to design methodologies/tools for hazard risk and vulnerability assessment .

For assessing drought risk National Agricultural Drought Assessment and Monitoring system has been developed for in-season assessment and monitoring of drought through application of satellite imageries and geo spatial technologies.

Large number of nongovernmental organizations have carried out community level hazard risks and vulnerability assessments in different parts of the country

Context & Constraints:

There is a strong need for basic and applied research to understand various hazard risks and associated vulnerabilities. This issue has been acknowledged by Government of India and efforts are being made to build human resource capacity and strengthen research institutions/organizations in the country.

A core group of experts from scientific and technical institutions has already been set up by NDMA to identify the broad research needs and establish linkages and effective collaborations between various knowledge/resource Institutes. The real challenge lies in applying the scientific knowledge and research

findings into policy planning and practice.

Indonesia (in English)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Government ministries/agencies at the national level have developed research methods to conduct multi-hazard risk analysis in line with their key duties and responsibilities, for example BMKG has developed tsunami Early Warning System and analysis of climate, forest fire, extreme weather, extreme wave, earthquake and flood risks; ESDM through its Geological Agency (PVMBG) has developed volcanic eruption and land mass movement Early Warning System; PU has developed flood risk analysis and so forth. The Indonesian National Science Institute (LIPI), with support from other agencies, has developed Preparedness Analysis that has been applied in several regions. BNPB has developed multi-hazard risk analysis approach and mechanism. Although there are many institutions that have conducted multi-hazard risk analysis, the coverage of these studies needs to be expanded to cover the entire Indonesia.

Context & Constraints:

The constraint in the development of methods and tools for multi-risk assessment is the absent of political commitment towards the use of science and technology and the lack of inter-agency coordination. Due to this weak coordination, it is difficult to know exactly how many relevant research initiatives have been undertaken. Also, such initiatives are usually under-funded. The cost-benefit analysis of these initiatives has never been conducted as the awareness and understanding of such efforts have not been widespread.

In future Indonesia needs to increase and enhance its disaster research, including the relevant cost-benefit analysis. It is expected that in the near future a journal that contains disaster research could be published. BNPB will become a center for the collection and dissemination of disaster research and will enhance coordination with the relevant ministries/agencies at the national level for this purpose. The result of these research endeavors will be directly used for the benefit of the wider communities. It is expected that BNPB will also advocate to the legislature (DPR) to mobilize support/political commitment and funding for disaster management and disaster risk reduction research efforts.

Japan (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Scientific Technology Research in Disaster Reduction has been steadily addressed based on the Basic Plan for Research and Development in Disaster Reduction (revised in December 2003). On 6 March 2009, the decade policy for earthquake research "Towards Promotion of Innovative Research Study - the Comprehensive and Basic Policy on Promotion of Observation, Monitoring, Survey and Research on Earthquake" was compiled by the Headquarters of Promotion of Earthquake Research.

The Fire and Disaster Management Agency has drawn up a procedure enabling local public bodies to make an objective assessment of their own disaster risk reduction and crisis-management systems. National Research Institute for Earth Science and Disaster Prevention has studied the methods for multi-risk assessments in conjunction with the development of disaster information sharing system among various stakeholders in collaboration with local communities.

Context & Constraints:

In the meanwhile, efforts for development of research methods and tools for multi-risk assessments which reflect social and environmental change and cost benefit analysis are currently on going by several actors including governments and academia.

Lao People's Democratic Republic (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Although a comprehensive national Multi Hazard Risk & Hazard Assessment has now been completed in Lao PDR that will assist not only the NDMO but also all DRR stakeholders in Lao PDR, no known cost benefit analysis are available for inclusion in this report. While various organisations stress the importance of cost benefit analysis undertaking, no major national undertaking pertaining to CBA is available.

Organisations conducting DRR assessments tend to do so on an organisation centric basis to assist with programme planning.

A post Typhoon Ketsana joint assessment and full recovery report was undertaken by the Lao government in consultation with DRR stakeholders that produced a series of medium and long term sectoral impacts on housing, health, education, agriculture, commerce, tourism, transport, telecommunications, power and water and sanitation within the affected areas and concluded that the Government considers the further development and scaling up of the disaster preparedness programme to strengthen national and local capacity to manage and cope with future natural disasters as all-important.

A Global Fund for Disaster Risk Reduction supported project through the World Bank, entitled “ Strengthening in-country capacity for post-disaster reconstruction and recovery planning in Lao PDR” was undertaken from October 2009 to December 2010 by the Ministry of Planning and Investment (MPI) with technical assistance from ADPC. The project aim is

1) to development of a national methodology and strengthen the capacity of the Lao Government to conduct damage, loss and needs assessments
2) to formulate recovery and reconstruction plans within the MPI, NDMO and other sectoral Ministries. The activities included the development of standard methodology on post disaster needs assessment for Lao PDR and capacity building of government officials from various sectors and various levels on how to undertake post disaster needs assessment.

A Lao PDR IASC forum meeting held in March 2011 the NDMO advised stakeholders that a Rapid Assessment Taskforce has been established to review and revise all currently utilised Risk Assessment tools and questionnaires within Lao PDR, with the view of formulating a common approach assessment tool. IASC members will share their existing Rapid Assessment tools and questionnaires to allow the taskforce to consolidate the tools and questionnaires and share with IASC members at future IASC meetings.

Laos is considered to be a least preparedness country, but has high exposure to disasters. As a result of disaster preparedness being difficult to monitor and report to the national government, an IASC Contingency Plan is presently being discussed the IASC through assistance of OCHA Bangkok make disaster preparedness measurable, accountable and practical.

While various Ministries within the Lao government have likely conducted provincial or nation wide research efforts to improve the DRR capacity within their own ministries, these reports are not available for purposes of this report and it would prove beneficial to the DRR community if reports were collected and collated by NDMO for sharing amongst all DRR stakeholders.

Context & Constraints:

Constraints

Limited capacity of NDMO and availability of research institutes in the country result in the lack of cooperative research being undertaken at government level. Whilst the IASC initiatives are commendable it would be most beneficial to see tangible results prior to the onset of the 2010 wet season when the country is most vulnerable to flood disaster.

The sharing of DRR research to assist DRR as a collective amongst the Lao government and DRR stakeholders is pertinent for the future of DRR in the country.

Cost benefit analysis at this point, while considered as a priority overall in DRR programmes, is likely not overly deliberated as a priority given that Laos is considered as a least preparedness country with high exposure to disasters and also ranked within the UN's least developed country index.

The Way Forward

The Lao government with cooperation from International/INGO DRR stakeholders could work towards a achieving a National Disaster Research Institute, which could facilitate and collate all DRR research initiatives within Lao PDR. Furthermore, collection and collation of DRR research undertaken within the

government of Laos could be made available via the IASC forum or similar to assist the DRR community in their ongoing efforts in Laos

Lebanon (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

National authorities including CNRS, LARI, LIBNOR, and the Industrial Research Institute currently exist. In addition, there are several universities and research institutes that are involved and/or have research expertise in the area of natural disasters.

It is notable to mention that the studies conducted on earthquakes, tsunamis, floods, and forest fires are advanced in nature, analysis, and content.

As such, studies on the economic costs and benefits of Disaster Risk reduction exist for some hazards.

Context & Constraints:

The most noticeable constraint is that such studies have not been conducted on all levels and for different sectors. In addition, it is difficult to obtain information about all ongoing research throughout the country.

Recommendations include:

- Finalizing the National Risk Assessment
 - Finalizing Hazard Mapping
 - Developing a National Strategy for each hazard
 - Collecting data and efficiently sharing it among stakeholders
-

Malaysia (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Researches and studies have been undertaken by respective agencies on specific hazards. On landslide, the National Slope Master Plan by Public Works Department is compiling and evaluating information on economic impacts of landslides as well as developing a predictive understanding of landslide processes, threshold and triggering mechanisms. Through its Public Awareness Program on Landslides and Slope Safety, the Department conducted market research to gather baseline and follow-up data for program design and measurement purposes. The Department is also currently producing alternative design of high pillar building concept for implementation on school block at flood prone area through its High Pillar School Building Concept Project. On earthquake and tsunami hazards, studies are continuously being implemented by the Malaysia Meteorological Department assessment of potential risks.

Through the Science Fund Programme under the Ministry of Science, Technology and Innovation, research projects on risk assessment of hazards are funded and cover flood risk assessment and flood risk map and decision support system for management of severe flood; new methods to detect landslides and land movement as indicator for landslide occurrence; development of a model to investigate the stability of Malaysian slopes; and investigation of earthquake disruptions on the present adopted vertical reference system for Peninsular Malaysia and its implications.

Context & Constraints:

Efforts are underway through the Working Committee on Adaptation under the National Council on Green Technology and Climate Change to encourage knowledge-based decision-making in support of climate resilient growth strategies. Several key DRR players, including the National Security Council, Drainage and Irrigation Department, and Southeast Asia Disaster Prevention Research Institute (SEADPRI-UKM) are also the main members in the Working Committee, relevant DRR elements will be promoted and are expected to be integrated while it pursues R&D agenda on climate change adaptation enhances the understanding on costs and benefits associated with adaptation responses.

Maldives (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

UNDP Maldives has conducted a cost benefit analysis on sea walls with the report being published. With the utilization of methodology and tools a disaster risk profile of Maldives and a disaster risk assessment has been published.

In addition to this MRC and Care Society have developed multi risk assessment tools that can be used in

VCA.

Context & Constraints:

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

A National Climate Change Research Strategy has been formulated by MHE.

Mongolia (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

The implementation of the project "Methodology to establish a disaster risk assessment and risk reduction system", which was commissioned by the Government Office, is underway. The current project is under implementation in 2010-2011 with funding from the Science and Technology Fund based on a tripartite agreement signed by the Deputy Prime Minister, Director of the Science and Technology Fund, and Director of the Disaster Research Institute.

Within the framework of this project NEMA has developed methodologies to assess the risks of flood, earthquake, fire, contagious diseases, radioactive accidents, and chemical accidents in cooperation with professional organizations including the Institute of Hydrology and Meteorology, Public Health Institute, Natural Disaster and Transmittable Disease Research Center, and the Nuclear Research Center at the National University of Mongolia.

In result of the research project, the following documents have been developed and are being applied in real life situations. These documents are "Urbanization and comprehensive assessment of various disasters", "Difficulties faced in conducting disaster risk assessment and ways to overcome them", "Methodology to assess the fire risk of public and industrial constructions", "Methodology to assess the risks of contagious diseases that may cause severe damage to the public health (bubonic plague and avian influenza etc.)", "Flood risk assessment methodology", "Earthquake risk assessment methodology", "Methodology to assess vulnerability to and risk of possible radioactive accidents", and "Methodology to assess the risk of accidents related to poisonous and hazardous chemical substances".

The laboratory of the Fire Research and Analysis Center has become an accredited laboratory with the Order No. 268 of 26 October 2009 issued by the Head of the Standardization and Measurement Agency after successfully passing the examinations and inspections conducted by the commission assigned by the Standardization and Measurement Agency. The accreditation has been achieved in result of methodical preparation works including development of over 10 procedures and documents, and Quality Guidelines.

In addition, a research conference under the topic “Using geographic information in coping with urban disasters” has been held.

Context & Constraints:

We are facing financial constraints in purchasing an x-ray equipment to be used in major firefighting operations in Mongolia.

Nepal (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Some research activities on DRR and Climate Change Adaptation are carried out by academic institutes, individual organizations and individual researchers. However, the research activities are sporadic and have not contributed significantly as research agenda are not implementation oriented nor the part of a comprehensive framework for DRR.

Economic and financial analyses are hardly used in decision making to mainstream DRR into development planning. Recently, MoHA and UNDP have completed a study on Economic and Financial Decision Making in DRR which seeks to develop, for the first time, an evidence-based strategic approach to mainstreaming DRR into development in Nepal, based on sound economic and financial analysis.

Risk assessment methodology available around the world have been used for couple of Hazards at limited geographical areas. Study on cost/benefit analysis of DRR in Kailali has been done and impact of Cash for Work as a crisis mitigation measure in Kailali, Dadeldhura and Baitadi district has been evaluated as a pilot case.

Context & Constraints:

'Actionable' research is lacking in Nepal. The research activities are scanty, sporadic and seldom originate from need based issues. This is mainly due to lack of institutional dialogue among academic institutes, professionals and practitioners. In order to scale up implementation oriented research, multi-stakeholder forums such as National Platform will be effective. The Platform needs to ensure active participation of academic institutes as one of the major stakeholders. The institutional dialogue can also be strengthened

by providing graduate level course in disaster risk management.

There has been relatively little macro-economic and financial analysis of the impact of disasters in Nepal, which is one of the hindrances for cost-benefit analysis of investment in DRR. Central government has yet to internalize the importance of local level planning and implementation of DRR.

Recommendations

Involve academic institutes in the National Platform as one of the stakeholders and ensure that there is enough discussion on policy and implementation which needs research intervention.

Include DRM as one of the core or elective subjects in related ongoing graduate/undergraduate programs of different universities.

Allocate budget to carry out research through students. For this purpose, the universities should take the lead.

Tool for financial analysis of large projects should be developed in order to carry out Disaster Impact Assessment. Such tools should also facilitate decision making by accounting for the contribution made by such projects in building resilience of communities.

Pakistan (in English)

Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Pakistan has yet to go a long way to develop its own tools and research methods for multi-risk assessments and for cost benefit analysis. In terms of provisions of the Ordinance, the National Institute of Disaster Management (NIDM) is to be established as the national centre of excellence in the field of Disaster Management. The NIDM will provide state of the art facilities for planning and promoting training and research and developing core competencies in the area of disaster management. It will also be responsible for documentation and development of national level information base relating to disaster management policies, prevention mechanisms and mitigation measures. The Government has shown its commitment for the establishment of NIDM through allocation of land and funds. Basic infrastructure design and funds utilization plan have been finalized. The infrastructural development is planned to be undertaken with donors support for which commitment has been secured from JICA.

A research exercise has been undertaken under the auspices of NDMA to highlight cost benefit analysis of Disaster Risk Management. The research output made a comparative analysis of response and relief cost against investments made in terms of prevention, mitigation and preparedness.

At the university level, the University of Peshawar, NED University of Engineering and Technology, Karachi,

University of Engineering and Technology, Lahore, Karakorum International University, Princeton University, Quaid-e-Azam University offer research courses in disaster risk management, safer structural engineering, climate change, environment etc. The University of Karachi has developed a risk assessment model for Karachi City.

Context & Constraints:

As discussed earlier, the DRR, being relatively a new concept in Pakistan, is yet to be institutionalized as a core subject in public as well as private research institutions. These institutions lack the knowledge, expert human resources and technical and scientific facilities to carry out objective research, aimed at developing and applying methodologies, studies and models to assess vulnerabilities and impacts of hazards, including the improvement of regional monitoring capacities and assessments.

Institutional commitment is due on the part of the public as well as private research institutions to treat DRR as one of the core research subjects through allocation of substantial resources and provision of research facilities. The Federal and Provincial Governments are also required to ensure adoption of DRR research as integral part of the institutional competencies in the research and educational institutions under their respective control.

Sri Lanka (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

The Disaster Management Centre and universities organises an annual Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) Symposium.

The Department of Agriculture is conducting research to produce drought, flood, and salinity tolerant crop varieties, especially focussing on paddy.

Research is also conducted on integrated pest management practices. In agriculture, researches are also conducted in cost and benefit analysis of DRR.

The NBRO, CCD, Ministry of Power and Energy, and universities are conducting research on prevention, adaptation, and mitigation of climate change.

Many researches are conducted in the area of health (i.e. chronic kidney failure), in collaboration with many relevant stakeholder agencies.

Multi-risk assessment methodology was developed and agreed upon by all agencies. Hazard and

Vulnerability Maps need to be completed to develop Risk Profiles.

Context & Constraints:

Due to limited resources available, development of Vulnerability Maps are time consuming. However, Hazard Maps are being used in the development planning process in some areas.

There is a lack of dissemination and communication of research results and lack of accessibility to the general public.

Syrian Arab Republic (in English)

Level of Progress achieved:

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

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

No

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Progress is being accomplished through projects and research studies that some disaster management concerned parties implement, in addition to execute some technical workshops that aim on reducing risks and exchange information, also some researchers participate in different seminars and workshops through presenting work papers and research in the field of disaster assessment and reduction.

Context & Constraints:

There is still a need to establish plans for institutional commitments and provide budgets needed for implementing scientific research projects and programmes that lead to disaster risk reduction.

Thailand (in English)

Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Research methods have embraced variety of methodology and technology such as geophysics, multi-disciplinary approach, so that research studies are more accurate and comprehensive. Besides, national agency in disaster management also applies automatic electronic devices for conducting research and data collection with high consistency and relevancy. The results of the study are published and updated through internet which local offices can get access to the results.

Context & Constraints:

Thailand still has insufficient high/advanced technology and experts for the on-going improvement of risk assessment and studies.

Yemen (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

The initiative between the MWE and Research Organization (Disaster Vulnerability and Emergency Management, Asia) UK, University of Northympreia that states to establish a master's degree program in Yemen in cooperation with the Center of Water and Environment, Sana'a University in the field of disaster management and reduction, but has not yet seen light.

Due to the absence of a national budget for the applied national researches concerning disaster, the National Policy for the budgets allocated for the process of research in all fields are weak and may not exceed 5% of the overall budget as the general statistics provide indicators of a lack of support for scientific research.

There are a number of centers and institutions related to the production and dissemination of technologies, technical information and scientific knowledge as ISAs research, studies centers, universities and a number of other similar institutions. These sectors have plans, programs and activities to discuss and study aspects related to the environment, but they are done without a link or a unified vision or in accordance with unified national policies and platforms. But It differs from one side to another on this matter. Many of these entities have results of research, studies and surveys that include a lot of information about the different aspects of environment, but there is no clear mechanism for information exchange and dissemination. Efforts flowing in the direction of scientific research are great, but without clear policies. There is inertia in the process of dissemination of data and in making it available.

Multi-risk assessments and cost benefit analysis are being completed and strengthened through the three

risk assessment studies financed by the World Bank.

Context & Constraints:

- Lack of awareness at the level of decision-makers.
- Scarcity of the governmental financial resources.
- Lack of confidence to support research, especially in this aspect as if it is considered pointless and redundant.
- The absence or lack of presence of staff that is interested and active in the disaster field.
- The absence of binding legislations and laws.
- The lack of appropriate, effective and coordinated information systems based on united standards.
- Most of the outputs of research institutions' information are directed for different purposes, too. And often they are not regularly available, appropriate and sufficient.
- Acquisition of agricultural research on the outcomes of scientific research and scientific disciplines are available up to (85%) in different regions.
- Inadequate or in some cases the absence of institutional forms of the organized and active communication among the stakeholders to promote cooperation and integration of resources and capabilities.

Lack of cooperation between national partners is limiting the performance of cost benefit analysis and of the systematic assessment, evaluation and communication of risks.

Recommendations needed here are focused on raising awareness and availability of financial resources and technical training and rehabilitation of existing capacities to reach their demands to decision makers in reasonable and logic ways.

Europe

Armenia (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

The main indicator

Authorities, scientific-research companies ("Georisk", "Geocom", "Iris") and non-governmental organizations (AO International Academy of Ecology and Life, Armenian Technological Academy) play a key coordinating role in the development and implementation of research, modeling, with the goal to assess vulnerability and risk of natural and man-made disasters and ecological and biological processes realizing due to budgetary and investment tools as well as consultative assistance to international organizations (the Armenian branch of the United Nations, Department of the OSCE, the Coordination Council of CIS countries on prevention and liquidation of consequences of emergency situations).

Results and derivatives of researches

Studies to reduce the risk and consequences of possible disasters in Armenia increase awareness and preparedness for the adoption of administrative decisions:

1. The introduction of an integrated approach to the assessment of natural hazards and man-made impacts on the environment as an example of Yerevan, NICK "Geocom, 2003 (investing financing UNDG)
2. Geodynamic and geological engineering aspects of risk assessment from the manifestation of the exogenous production of RA, NICK "Geo", 2002-2003, UNDP funding
3. Assessment of vulnerability and reliability of areas and the aquatic environment from the manifestation of man-made objects and natural processes in mining objects of Syunik marz. 2003, "Iris" (PROON financing)
4. Geophysical model and expert system evaluation of seismic activity for Earthquake Risk Management, 2003-2007, Department of Emergency Nssp RA (Government funding)
5. Improving the information base of natural and man-made disaster in the territory of Armenia and the establishment of a common information base on actual damages for various emergencies for risk assessment. PAS MES RA - 2007 (Budget financing)
6. Evaluation of landslide hazard and risk from the manifestation of landslide genesis and activity in the territory of Armenia. Studies evaluating risk factors for activation of landslides and erosion, development of control mechanisms and engineering activities of seismization, landslide sites in Armenia. Ministry of Urban Development, NIC "Geo" 2004-2006. (Funding for the project under contract with Georgia LSAI)
7. Improvement and implementation of integrated risk assessment:
 - From heavy metal pollution in urban areas (2005)
 - From natural and man-made radioactivity (2005)
 - From biogeochemical mineral elements in the ecosystem (2005, 2006).
UENI NAS (Government funding).

Research programs and projects

1. Engineering studies of the complex in the Tavush region.

Identify factors that contribute to enhancing the stability of landslide sites in the architectural complex. Engineering measures to prevent the activation of landslides and erosion, protection of territories and agricultural territory. (Order ARM/02/011 UN program - "Partnership in the implementation of development programs at the community level" - 2005. NICK Geo)

2. A joint partnership program of the South Caucasus (Commonwealth of Armenia, Azerbaijan, Georgia, Belgium, Norway, USA - 2005. Funding and support for the NATO / OSCE "Science for Peace) 2005. TSENI NAS.

3. Development of scientific and methodological basis of forecasting of dangerous hydrometeorological processes, provoked by the spring and autumn flood for example, river basin Aghstev in Tavush marz and development of activities to advance the protection of the population and territory. (PAS MES RA Ministry of Nature Protection) - 2010-2012. Organizational support and funding for the OSCE.

Study of economic effectiveness of DRR

Any program of research and evaluation of geo-ecological and economic security is ensured by economic and operational efficiency, which is evaluated by engineering protection of territories and objects in the area of hazardous processes. The project provides monitoring control of effectiveness.

Context & Constraints:

The absence of overriding responsible for planning, analysis, methodological and organizational activities, coordinating the full range of assessment and vulnerability of DRR.

Lack of information partnerships of monitoring of the various professional synergistically linked by the common purpose, provision of ecological and sociological public safety and reducing the vulnerability of areas and natural and man-made objects.

Significant negative role in the development of DRR is the lack of financial provision.

Bulgaria (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Currently Mol works together with universities, Bulgarian Academy of Science, National Institute of Meteorology and Hydrology on the DRR related topics.

Context & Constraints:

n.a.

Czech Republic (in English)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Some institutions like the Czech Hydrometeorological Institute, Institute for Atmospheric Physics or Water Research Institute of TGM and River Catchment Authorities participate in various projects devoted to flood and disaster reduction. Also some universities participate in such projects and programs.

Context & Constraints:

They are many research projects but a systematic and coordinated approach needs to be improved.

Finland (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Climate Change Adaptation Research Programme ISTO. The financing of the five-year research programme (2006-2010) comes from various sources. Studies are carried out under the performance guidance of various institutes and by means of project funding from different ministries and other research and development funding. In 2006-2009 a total of 0.5 million euros was allocated to altogether 28 research projects. The main financiers are the Ministry of Agriculture and Forestry and the Finnish Environmental Cluster Research Programme of the Ministry of the Environment.

Academy of Finland has also launched a multidisciplinary research programme on climate change (FICCA). The programme is approx. 12 million euros in 2011 - 2014.

Context & Constraints:

Limited budget.

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

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

There is a sophisticated research structure in Germany and many research projects are granted by the different national and European authorities. One example, the "Center for Disaster Management and Risk Reduction Technology" (CEDIM: see link) has dealt for many years with the subject of multi-risk assessments and analysis. These efforts continue and are readily made available to users at all levels with increasing measurement tools. Its "Synopsis of Natural Hazards" involves the development of probability or scenario-based deterministic methods to compare different types of risks. Currently, the German Free State of Saxony, where flood, storm and earthquake hazards dominate, has been selected as a case study. Additionally, the "CEDIM RiskExplorer Germany" is a web-based map viewer that interactively presents the results of the CEDIM project "Riskmap Germany" and allows the user to retrieve maps of datasets including natural and man-made hazards, vulnerability and risk, as well as assets (elements at risk) (see links). This attempt has kicked off the establishment of a multi-risk-disaster-management-system at the local level (ORTIS). Some municipalities began to introduce multi-risk disaster managements systems like ORTIS. Multi-risk assessments expand more and more as an important research activity in the European Union. In this context the EU tries to use the approaches more effective and improve the acceptance of risk reduction.

Together with the UBA (its "Competence Centre on Global Warming and Adaptation" (KomPass) and its professional information system (see links)) the "Federal Office of Civil Protection and Disaster Assistance" (BBK) centrally generates data of federal agencies/departments, countries, institutes and international institutions, providing them in a revised form to users of deNIS IIplus. Contents of this data include not only information about personnel, material and infrastructural assistance potential, but also information on the locations of risk-afflicted facilities. In its LUEKEX (Länderübergreifendes Krisenmanagement Exercise) the "Federal Office of Civil Protection and Disaster Assistance" (BBK) trains different actors at all levels in various situations of disaster management, in particular the crisis squads of the upper administration levels. The concluded research and development of the "German Research Network on Natural Disasters" (2004) included cluster analyses for floods, storms, earthquakes and wildfires as well as decision-making support for early warning, monitoring, information management and simulation hazards (see link).

The German insurance industry has sophisticated methods such as the databases of the Munich Re Group, e.g., the MRNatCat or MRNathan (see link). MRNathan is an Internet-based tool that helps to

develop risk profiles as a basis for risk assessments and rating of natural hazards. Even the direct insurers in Germany use local risk assessments such as ZÜRS to rate the risk for insured facilities.

The German development cooperation aims to enhance its approaches for multi-risk analyses through the promotion of research at all levels. The GTZ accomplishes these mainly in South America and combines this research with cost-benefit analyses. At the World Conference on Disaster Reduction in Kobe 2005 the GTZ presented a concept for "Cost-Benefit Analysis for Disaster Risk Management" (see page 16 in the annex).

German Red Cross (GRC) programming on DRR including risks assessments always involves the local authorities, but depending on the country some achievements are neither comprehensive nor substantial at the moment. In other regions substantial achievement has been attained.

Context & Constraints:

Germany has sophisticated research tools for multi-risk assessments, however, there still remain some basic deficits, such as a lack of quality control/oversight mechanisms as well as publicly accessible disaster databases. Generally, with the exception of the insurance industry, cost-benefit analyses are not integrated in the assessments and parts of the research are frequently just research without enough practical application or implementation.

While automatic fire detection systems have been installed in the most fire-prone Federal States (Laender) and a fire-danger rating system with 1-day forecast capability has been implemented nationwide, an advanced fire spread modelling system as well as training/capacity building for utilizing this information is not yet in place. Starting in 2008, a joint initiative of the "Global Fire Monitoring Centre" (GFMC: see link), a professional fire service and forestry school, is building a model for capacity building (wildland fire training academy), inter-agency cooperation, and integrated fire management in the State of Hesse, to serve as model for the other 15 Federal States (Laender).

Taken together, Germany has the right components for a centralised national multi-risk assessment program, which must be addressed in the next years by properly utilising the extensive resources that exist.

The German development cooperation aims to integrate climate change risks into its risk analyses and sees challenges in terms of a global necessity of scientific research.

The local authorities are always integrated in GRCs programming and risks assessments, but the level of collaboration could be strengthened, especially in linking local DRR plans with governmental plans and in supporting local DRR initiatives.

Supporting document:

GTZ - Cost-Benefit Analysis http://www.preventionweb.net/files/2967_DKKVKobe.pdf [PDF 3.78 MB]

Related links:

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

MRNathan <http://mrnathan.munichre.com/>

German Research Network on Natural Disasters <http://bib.gfz-potsdam.de/pub/str0401/0401.pdf>

UBA - KomPass http://www.anpassung.net/cln_117/nn_702286/SharedDocs/UDK-Dokumente/InKA.html

CEDIM - Research <http://www.cedim.de/english/14.php>

CEDIM - Synopsis of Natural Hazards <http://www.cedim.de/english/1020.php>

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

CEDIM <http://www.cedim.de/english/index.php>

Italy (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

Regional and National authorities are in charge of mobilizing resources and capacities to develop methodologies and tools for assessing vulnerability and the impact of hazards. In this framework, a particular attention is given to multi-risk assessment tools and capabilities. A system of multi-risk “functional centres” is in place, composed by a Central Functional Centre hosted at the National Civil Protection Department and Regional Functional Centres arranged by regions. Functional centres are the core of the National warning system. Each centre performs forecasting, early warning and now-casting by pooling, analyzing, synthesizing and disseminating data and information produced by their own technologies (such as networks of remote sensors, etc.) and by systems belonging to other agencies. Cost-benefit analysis is an integral part of the procedures of identification, evaluation and acquisition of technologies and tools. Moreover, arrangements are in place aiming to ensure the full participation of the scientific and research community in all mentioned activities.

Context & Constraints:

The National warning system is being further improved through the development of stronger earthquake and volcanic networks. The only challenge identified in this field is the need for a more structured coordination of research policies and programmes.

Norway (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

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

Description:

A national risk assessment is carried out in 2010/2011. The aim is to create a cross sector approach to risk assessments enabling national authorities to compare different types of hazards and risks. The methodology is inspired by the Dutch and British approach, in which different types of events are measured according to their likelihood and consequences, and finally put into a matrix. A cross sector risk matrix will give Norwegian authorities a better understanding of national risks and vulnerabilities, and hence a better basis for prioritizing preparedness resources. The first national risk assessment will be published early 2011.

Through science programmes on disaster risk, authorities is playing a role in strenghtening the technical and scientific capacities to develop and apply methodologies, studies and models to assess vulnerabilities and impacts of hazards, including the improvement of regional monitoring capacities and assessments. The research is conducted in several scientific networks involving all the major univerisites and research establishments.

The research programme "Societal Security and Risks" - SAMRISK aims at increasing the knowledge about threats, dangers and vulnerability, about how unwanted events can be prevented and crises management be strengthened, whilst respecting basic human rights and privacy. To obtain this the programme will contribute to developing new knowledge, build networks and also qualify the research community to participate in the EU research programme "Security".

Context & Constraints:

-

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

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

There are examples of research activities financed by EFRD as well as VIIth Framework Programme and also national research sources. One of the examples is project conducted by Institute of Meteorology and Water Management :“Impact of the climate change on environment, economy and society”(changes, impacts, ways of limitation, proposals for science, engineering in practice and economy planning)

Source of financing: Operational Programme 2007-2013 -Innovative Economy (IE OP), financed from the EFRD.

Key tasks of the project:

- Climate change and its impact on environment in Poland and estimation of economical effects
- State of atmospeheric pollution in Poland and its impact on the quality of life –possible solutions
- Sustainable management of water, natural and forest resources
- Natural disasters, civil protection, internal public safety
- Development of the new methods of forecasting, warning systems

- The Baltic Sea - element of the climatic system and its role in creation of risk conditions
- Determinants, risks and possibilities of realization of water supply program in view of climate change
- Preventing of degradation of the artificial reservoirs (technical aspects, sediments)
- The development plan of the Vistula basin

Context & Constraints:

The important for future success will be dissemination of results of already realized as well as next research projects focused on DRR.

Romania [\(in English\)](#)

Level of Progress achieved:

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

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

-- Nothing reported within this timeframe. --

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

There is a project upon developing an East-European Multi-Risk Management Center. This center will ensure the risk management for geological, hydrological, climate and technological events. The project takes into account the existing system upon which this center will be build.

Context & Constraints:

The mentioned project is almost complete, but it requires further funding and institutional support.

Sweden [\(in English\)](#)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

National authorities such as MSB, the Swedish Geotechnical Institute and the Swedish Transport Administration finance and decide on appropriate research projects related to natural disasters, climate adaptation and DRR. MSB partially finances the Center for Climate and Safety at the University of Karlstad. A decision has been made to establish the Centre for Natural Disaster Science in Uppsala, Sweden.

There are some universities and research institutes involved in research or at least have research expertise in the area of natural disasters, for example, the universities of Uppsala, Karlstad, Stockholm and Lund. Research is also conducted by scientists employed at the Swedish Geotechnical Institute, the Swedish Meteorological and Hydrological Institute and the Swedish Environmental Research Institute, IVL.

The Swedish International Development Cooperation Agency (Sida) funds research on natural disasters. Sida has also supported regional research cooperation for the prevention of natural disasters in Central America.

Context & Constraints:

More knowledge about ongoing research throughout the country is needed. The Swedish National Platform for DRR needs to identify areas within DRR where there are gaps in the knowledge base.

Switzerland (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

DRR strategies of Federal and Cantonal authorities in Switzerland strongly base upon scientific findings. Earlier methods and tools for multi-risk assessments have been revised and further developed because the results of the risk analyses following the guidelines were not comparable to each other. The guideline "RIKO" provides a documentation of the theoretical background and a manual for the practical application of the risk concept.

"EconoMe" is a tool provided by FOEN to assess the cost-efficiency of protection measures. It supports the Federal administration to prioritise among mitigation projects in the frame of limited financial resources. FOCP and FOEN developed an e-learning platform and a calculation tool that allows for a simplified risk analysis (LearnRisk and RiskPlan).

In 2010, SDC assessed the effectiveness of DRR in their projects abroad by applying – among others – cost-benefit analyses.

Context & Constraints:

Tools exist and can still be improved.

The former Yugoslav Rep of Macedonia (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Under the NPDRR, the implementation of DRR policies, imply the development of methodologies based on which risk and threat assessments will be conducted and accident and disaster scenarios will be developed. Reliable assessments and scenarios are prerequisites for developing plans for preparedness, prevention and operations as well as standard operational procedures. The methodologies, assessments, scenarios, plans and procedures are to be frequently checked through a system of drills and simulations, which assist in the development of institutional and civil response capacity and the verification and improvement of operative solutions.

In order to produce reliable risk assessments, it is necessary to develop three types of methodologies:

1. Risk assessment and risk consequence assessment methodologies;
2. Risk mapping methodology;
3. Risk monitoring methodology;

These methodologies are basis for developing the following assessments:

1. Assessment of events implying risk and threat;
2. Communal resilience and vulnerability assessment;
3. Competent institutions' capacity assessment (both actual and required capacity);
4. Damage assessment, as well as additional vulnerability assessment;
5. Assessment of quality of overall respond to occurred accidents and disasters.

The assessments are basis for developing escalation scenario.

In November 2009 the European Center on Vulnerability of Industrial and Lifeline Systems (ECILS) developed and published "Guidelines for development of methodologies for assessment of risks and hazards and their implications." The guideline, which serves as instruction on how to develop risk assessment, risk consequence assessment, risk mapping and risk monitoring methodologies, was distributed to all NPDRR stakeholders.

Integration into European Meteorological Infrastructure (EUMETSAT, EUMETNET and ECMWF).

Furthermore, a formal proposal for the National Coordinator for Implementation of NPDRR to organize and coordinate the development of methodologies, assessments, scenarios, plans, procedures has been submitted to the Government.

Context & Constraints:

Despite the achievements, there is still need for substantial commitment in terms of research methods and tools for multi-risk assessments and cost benefit analysis.

In order to achieve harmonization and avoid overlapping, there is need for coordinated development of DRR related methodologies, assessments, scenarios, plans and procedures.

Furthermore, there is currently no study on economic costs and benefits of DRR.

Oceania

Australia (in English)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

The Australian Government supports a range of disaster resilience related research activities including:

- climate change science research activities through the \$US28m Australian Climate Change Science Program;
- the work of Geoscience Australia and the Bureau of Meteorology described elsewhere in this report; and
- bushfire research, by the Bushfire Cooperative Research Centre (CRC) (www.bushfirecrc.com), to undertake research tasks arising from the 2009 Victorian bushfires and to implement programs relating to safe prevention, preparation and suppression, fire management, community self-sufficiency, protection of people and property, education, training, communication and community outreach. The Bushfire CRC is a national research centre developed in partnership with fire and land management agencies and research institutions to reduce bushfire risk to the community.

Other Australian Government initiatives that invest in projects can also contribute to research methods and tools that indirectly assist with broader disaster resilience objectives.

One example is the 'digital regions initiative' which promotes projects to improve services and make sure that regional, rural and remote communities benefit from broadband and digital technologies and are not left behind (www.dbcde.gov.au). In 2009 several of the projects that successfully applied for funding will contribute to improved emergency management and broader disaster resilience objects, such as:

- bushfire spotting and response technologies in the north east region of the State of Victoria, to use remote cameras, telemetry and video conferencing to enhance fire detection, management and response capability; and
- bushfire prediction technology project in the State of Western Australia, to provide communities with bushfire alerts and access to simulation maps.

Context & Constraints:

The National Risk Assessment Framework is designed to improve collective knowledge about natural hazard risk in Australia so that support can be provided to emergency risk management and natural hazard

mitigation. The natural hazards covered in the Framework are bushfires, earthquakes, floods, storms, tropical cyclones, storm surges, landslides, tsunami, tornados and meteorite strikes.

The main objective for the National Risk Assessment Framework is to support the development of an evidence base which can be used for effective risk management decisions. Three other goals are linked to this main objective. They are:

- to increase the value of risk information acquired by improving methodologies for risk analysis and by employing minimum levels of acceptance for methods and deliverables;
- to support the objectives of risk management by developing tools, guidelines and databases which assist all stakeholders to conduct risk assessments; and
- to foster the development of systems for coordinating, sharing, aggregating, and making available consistent information on risk that is essential to support risk management decisions.

Australian, State and Territory Governments as well as local governments have endorsed and agreed to apply national guidelines for the preparation of risk assessments in a consistent way and with a focus on outcomes.

Another current priority is to reach an understanding of existing gaps in knowledge and develop strategies to prioritise and address these gaps so the understanding of natural hazard risk in Australia will be increased.

Cook Islands (in English)

Level of Progress achieved:

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

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

Yes

* No: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

There has been progress in term of assessing vulnerabilities and impacts and also on economic and social impacts. However, addressing or putting into place appropriate measures to mitigate these impacts have not been fully met due to reasons of competing priorities and budgetary constraints.

Currently, there is no active research underway into seismology or tsunami warning and mitigation, and communities, government and media lack access to adequate information.

Context & Constraints:

As mentioned above, key challenges are competing priorities and budgetary constraints. Another key challenge is the capacity to conduct assessments. This is refers to both skill and availability of already stretched resources to carry out these assessments. There are opportunities with partnering with other agencies, development partners and so forth to conduct research.

Level of Progress achieved:

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

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

No

* Yes: Research outputs, products or studies

* Yes: Research programmes and projects

* Yes: Studies on the economic costs and benefits of DRR

Description:

Technical and scientific researches on DRM are budgeted and executed separately as relevant to each ministry, mainly Meteorological Services, Fisheries, Forests, Health, Environment, Agriculture, Mineral Resources, and the Water Authority. Although NDMO has a research unit, it operates only as fund permits - there is no national research budget on the applied sciences of DRM. In practice, ministries pool their resources where there is common cause eg. Water Authority, Water Resources Management, Mineral Resource Department and Lands conduct in consultation research activities on watershed management, Flood Level Monitoring, hydro-geological studies and aquifer mapping.

Generally researched data and information exist but is dispersed in each ministry. Major DRM related research works of ministries are done with support of external agencies. The primary industry sector conducts research with ministries of agriculture, fisheries and forests maintaining research stations, as well as the Fiji Sugar Cane Research Division.

Land use information is researched and widely disseminated; whilst government organisations are funded on climate change researches eg a new CC and health project will expand researches centred on CCA-DRM issues.

Vulnerability assessments are driven on project basis by different actors with marked differences in tools used both for scientific assessments and for community based vulnerability assessment (VCA). Some social/economic assessments are done, both before and post-disaster. Socio-economic reports for disasters exist but are not detailed. Impact and damage reports of past disasters are kept at NDMO. Work is in progress to demonstrate the economic costs of disasters with scenarios and potential losses particularly on floods following recent extreme events.

Availability of disaggregated (age, gender, diversity) social impact assessments is limited, highlighting the overall need for better social impact assessment to understand the impacts and needs for different groups/persons.

Context & Constraints:

A fundamental constraint in the development of cost benefit analysis is the time consuming data collection given the lack of information sharing and poor information management. The proposals to establish an Information Kiosk would facilitate data collation, in addition to introducing procedures and protocol to facilitate access to and sharing of assessment reports.

Cost benefit analysis is not practised generally at the sector levels for lack of awareness, knowledge and tools. There are tools for assessing national level macro-economic costs of disasters but few tools for sector level micro-economic assessment for the socio-economic costs of disasters. A manual exists for the region to apply at the sector level, i.e. "Economic Impact of Natural Disasters on Development in the Pacific: Volume 2 Economic Assessment Tools". DRM socio-economic cost analyses of actual flood events have been conducted in Navua, Nadi and Ba. Little awareness exists on the existence and application of such sector level micro-economic tools and their potential benefits.

The socio-economic costs assessments need to be built into a bigger framework outlining the economic costs and benefits of DRM. Such analytical studies on the cost and benefit are urgently required in order to support the case for incorporating DRR into development planning. Also lack of human resource capacity to do such an analysis currently limits the implementation of this kind of work.

With the pending review of the NDRMA, these gaps will be highlighted for the attention of the Training and Preparedness Committee which has the following specific functions:

- Establish an integrated national information system, for collection and management of comprehensive data and information, for disaster risk reduction and disaster management
- Strengthen national capacity for conducting comprehensive disaster impact assessment, and cost benefit analysis of disaster risk reduction and disaster management measures.

Marshall Islands (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

There is no dedicated budget to perform research associated with DRM in the RMI. Any such research is generally undertaken by donors, or donor funded programs. An example is an initiative within the MoH called Health Vulnerability and Adaptation working group, which is investigating the links between climate and health. This program is being assisted by US Centre for Disease Control (CDC), WHO, SPC and EPA.

Research is not generally high on the RMI's agenda with regard to DRM. It is not given any priority in the DRM NAP, and seen by most government representatives as somewhat of a luxury when more urgent requirements (such as supply of fresh, clean water) are apparent.

Context & Constraints:

This core indicator is constrained by the limited priority given to research. National budgets are therefore unlikely to cover research initiatives until potential benefits of doing so are realised.

New Zealand (in English)

Level of Progress achieved:

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

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

Yes

* Yes: Research outputs, products or studies

> Natural Hazards Research Platform Interim Research Strategy (2009)

http://www.preventionweb.net/files/14579_interimstrategyfornhrpv1.8jul2009.doc [DOC]

* Yes: Research programmes and projects

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

Description:

New Zealand's National CDEM Strategy emphasizes the importance of well promoted, coordinated and accessible hazards and disaster research in underpinning national aspirations towards resilience. A wide range of basic and applied research is undertaken in New Zealand for the purposes of improving our quantitative understanding of our complex hazardscape, assessing community and infrastructural vulnerabilities, understanding community preparedness and response behaviours, and developing models and tools that can be applied to inform hazard, risk and emergency management.

Priorities for central government funding of hazards and disaster research emphasises an all-hazards approach with research objectives linked to national outcomes.

Central government (via the Earthquake Commission) funds science capability and technology for a nationwide geological monitoring and reporting network (GeoNet). National research and science capabilities are applied to national models and to specific regional level issues within the constraints of local resources.

Since 2010 the New Zealand Government has moved towards longer-term negotiated funding for hazards and disasters research, principally through the establishment of a multi-agency, trans-disciplinary Hazards Research Platform. The self-managed Platform aims to enhance collaboration between researchers from different organisations (including Crown-owned research institutes, universities, and private researchers), and promote effective engagement between researchers and research users. Funding is contingent on the research directly contributing to improved economic, infrastructural and social resilience to natural hazards in New Zealand. The science capability supported by the Platform will also be available to assist decision makers during significant hazard events.

Context & Constraints:

Key challenges are:

- New Zealand's relatively small economy which limits the total available investment in hazard and disaster research;
- Effective engagement between researchers and research users to support improved accessibility, transfer and uptake of research;
- Developing more robust formal and informal pathways to practice.

The newly evolving Natural Hazards Research Platform seeks to address aspects of these challenges through better alignment of funding streams, promoting strategic integration across research organisations, and requiring participation of research users in the development of research programmes that include identifying mechanisms of transfer and uptake into practice

Samoa (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

Samoa has not fully recognised the benefits of conducting multi-risk assessments, and as such the need to promote and advocate the development and use of such tools needs priority consideration. Government is still hugely reliant on regional/international development agencies to assist in both funding and implementation of multi-risk assessments. Although Samoa receives research/study/analysis products, capacity levels to continue similar work remain low because the focus is normally on the end product rather than the process or the methodologies used to get there. This is where the major multi-risk assessment gap is, Samoa has yet to recognise the need to have local experts and to develop a national multi-risk assessment process which is relevant and applicable to Samoa. There are a number of development partner agencies who Samoa may approach to assist in the development of their own multi-risk assessment process. These agencies have in existence these tools and methodologies and who have conducted such assessments in the pasts, some of which include:

- For hydrological hazards, the Pacific Hydrological Cycle Observing System - 'Pacific HYCOS' Project has an overall objective of attaining a sustainable level of capacity in Pacific Island Countries to be able to assess and monitor the status and trend of Pacific countries' water resources, and to provide the water-related information and hazard warnings needed to support national social and economic development and environmental protection.
- Development of comprehensive hazard and risk management tools for the safeguarding of communities. Post disaster technical assessments, hazard and risk mapping, strengthening information management systems and training in the use of GIS/RS for DRM.
- Economic impact assessment of flood events in Samoa using the 2001 and 2006 events as the baseline for the study, the findings has since been addressed in the Flood Management Plan.

Context & Constraints:

Undoubtedly, the greatest challenge is translating the information and data from these studies and research projects into a format that is comprehensible to planners and other end-users, and requires a mechanism to ensure all research/study information reaches relevant planning and regulatory bodies to further DRR mainstreaming processes. The capacity to carry out cost/benefit analysis is another identified gap and addressing this will contribute to making some progress towards mainstreaming DRR into

development investments.

There is also a need to increase the number of research conducted in Samoa, as DRR integration is multi-sectoral and multi-faceted with many of its components requiring further research. This may require Government and development partners to identify potential areas of research studies aligned to National Priorities, and offered to national and regional educational and private sector as research grants.

Solomon Islands (in English)

Level of Progress achieved:

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

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

No

* No: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

There is no allocated budget for DRM research. External agencies' experts carry out most of the disaster related research in-country. However, the Ministry of Agriculture does do research on crop adaptability and food preservation, the latter with support from FAO. Prior to loss in a fire during the political crisis (circa 2001) the Solomon Islands had one of the best agriculture research centres in the South Pacific. There is the intention to rebuild this facility, but presently this is constrained by inability to identify an appropriate site.

Most vulnerability assessments are carried out by NGOs/CSOs and it is felt that they are conducted as a result of global obligations or trends. Access to and sharing of assessment reports is limited and an example of poor co-ordination in terms of DRR work. There are currently no analytical studies carried out on the economic costs & benefits of DRM.

Context & Constraints:

Procedures to facilitate greater access to and sharing of assessment reports is required.

Analytical studies outlining the economic costs & benefits of DRM are urgently required in order to support the case for incorporating DRR into development planning. A lack of understanding in terms of potential benefits of these kinds of study, as well as a lack of human resource capacity to do such an analysis currently limits the implementation of this kind of work.

Vanuatu (in English)

Level of Progress achieved:

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

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

No

* Yes: Research outputs, products or studies

* No: Research programmes and projects

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

Description:

There is currently no comprehensive applied research programme with a focus on natural hazards and disaster risk reduction in place for Vanuatu. However, a number of stand-alone scientific and technical studies on a variety of DRM and climate change related issues have been carried out, such as for example (list is not exhaustive):

- Louise Munk Klint, Min Jian, Emma Wong, Terry de Lacy: The Climate Change Adaptation Policy Analysis for the Republic of Vanuatu; Pacific Tourism Climate Adaptation Project; Centre of Tourism and Services Research, Victoria University, September 2010.
- ADB: Drainage Risk Assessment in Port Vila which identified water protection zones, drainage hotspots, environmentally sensitive features, marine coastal features, and proposes coastal water quality monitoring sites.

Context & Constraints:

A number of opportunities have arisen for moving ahead in the area of assessing the economic costs and benefits of DRR in Vanuatu. The Ministry of Finance and Economic Management (MFEM) requested the support from SOPAC to strengthen their ability to assess the economic impacts of disasters. This request followed on from a presentation on this subject to the Forum Economic Ministers Meeting in October 2009. A workshop was held on the 14th and 15th December 2010 with participants from MFEM, the Reserve Bank of Vanuatu and the Vanuatu NAP Task Force. The Workshop provided an overview of the economic impact of disasters, and resulted in the identification of a strategies and concrete actions towards mainstreaming DRM in national macroeconomic and fiscal policy and budgetary processes in Vanuatu. Also, a regional training course on economic impact assessment was held in March 2011 in Vanuatu for 8 Pacific island countries, including the Government of Vanuatu. The pilot training was organized jointly by UNISDR, SOPAC/SPC, ESCAP, ECLAC and the WB combining the prevalent methodologies currently in use. The workshop resulted in an improved understanding of the importance and key steps of economic impacts assessments.
