Mainstreaming Disaster Risk Reduction into Development:

Challenges and Experience in the Philippines

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PROVENTION CONSORTIUM

Cover photo: Knud Falk/Danish Red Cross
Design: Pascal Vittoz
Copy-editor: Sue Pfiffner

2009

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Acronyms and abbreviations

4PPAP	Four Point Plan of Action for Preparedness
ADB	Asian Development Bank
ADPC	Asian Disaster Preparedness Center
APSEMO	Albay Public Safety and Emergency Management Office
ASEAN	Association of Southeast Asian Nations
AusAID	Australian Agency for International Development
BMZ	(German) Federal Ministry for Economic Cooperation and Development
bn	billion
CBDRM	community-based disaster risk management
CLUP	comprehensive land-use plan
DA	Department of Agriculture
DBM	Department of Budget and Management
DCC	disaster coordinating council
DENR	Department of Environment and Natural Resources
DILG	Department of Interior and Local Government
DipECHO	Disaster Preparedness European Commission Humanitarian Aid Department
DND	Department of National Defense
DPWH	Department of Public Works and Highways
DRM	disaster risk management
DRMMP	disaster risk management master plan
DRR	disaster risk reduction
ECC	environmental compliance certificate
ECLAC	Economic Commission for Latin America and the Caribbean (UN)
EGGAR	engineering geological and geo-hazard assessment report
EIA	environmental impact assessment
EMI	Earthquakes and Megacities Initiative
FY	fiscal year
GDP	gross domestic product
GFDRR	Global Facility for Disaster Reduction and Recovery
GIS	geographic information system
GoP	Government of the Philippines
GSIS–GI	Government Service Insurance System General Insurance Group
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit, GmbH
HFA	Hyogo Framework for Action
ICC	Investment Coordination Committee
LDC	local development council
LGU	local government unit
m	million
MDGs	Millennium Development Goals
MGB	Mines and Geosciences Bureau

MTPDP	Medium-Term Philippine Development Plan
NAMRIA	National Mapping and Resource Information Authority
NAPC	National Anti-Poverty Commission
NCDPP	National Calamities and Disaster Preparedness Plan
NDCC	National Disaster Coordinating Council
NEDA	National Economic and Development Authority
NGO	non-governmental organization
OCD	Office of Civil Defense
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PD	Presidential Decree
PDIP	Provincial Development Investment Plan
PDPFP	Provincial Development and Physical Framework Plan
PHIVOLCS	Philippine Institute of Volcanology and Seismology
PhP	Philippine peso
PPAs	programs, projects and activities
PTFCC	Presidential Task Force on Climate Change
RCC–MDRD	Regional Consultative Committee on Disaster Management – Mainstreaming Disaster Risk Reduction (program)
READY	Hazards Mapping and Assessment for Effective Community-Based Disaster Risk Management (project)
SNAP	Strategic National Action Plan
UN	United Nations
UNDP	United Nations Development Programme
UN/ISDR	United Nations Inter-Agency Secretariat of the International Strategy for Disaster Reduction
US$	United States dollar

Acknowledgments

Invaluable comments and advice on a previous version of this paper were provided by Michael Siebert, Dr Walter Salzer, Olaf Neussner and Allen Molen, GTZ; Antonia Loyzaga, Manila Observatory; Sanny Jegillos, UNDP; Rodel Lasco, World Agroforestry Centre; and Zoe Trohanis and Brett Jones, World Bank. Particular thanks are extended to Margaret Arnold at the ProVention Secretariat for her support and encouragement.

Financial support from the United Kingdom's Department for International Development, the Canadian International Development Agency and the Royal Ministry of Foreign Affairs, Norway is gratefully acknowledged.

The opinions expressed are those of the author and do not necessarily represent the views of the ProVention Secretariat or the funding bodies. The author accepts full responsibility for all errors and omissions.

Charlotte Benson, *March 2009*

Preface

The ProVention Consortium is a unique partnership on disaster risk reduction that includes international organizations, governments, the private sector, civil society organizations and academic institutions. The Consortium provides a neutral space for these partners to come together for frank dialogue on issues related to risk and for generating cutting-edge ideas and collaborative initiatives aimed at contributing to risk management and poverty reduction in developing countries. Working through its network of partners, ProVention supports innovative research, dialogue and the development of tools for more effective risk reduction at a variety of levels.

A key objective of the ProVention Consortium is to promote the recognition and integration, or 'mainstreaming,' of natural hazard risk into development planning and practice. Recent catastrophes and increasing concern related to climate change, unplanned urbanization, rapid population growth and environmental degradation have increased the profile of disaster risk reduction and the need for its consideration as an integral part of development efforts. The past several years have witnessed important commitments by both governments and donor agencies to integrate disaster risk reduction into development frameworks, legislation and institutional structures, sectoral strategies and policies.

While policy is a key tool for guiding investment related to disaster risk reduction, successful mainstreaming requires a number of steps, including awareness-raising and the establishment of a sufficient, stable enabling environment. There is a lack of understanding around the incentives and bottlenecks for investing in disaster risk reduction, as well as a disconnect between policy decision-making and practice on the ground. In this connection, we have undertaken a first country case study in the Philippines, which examines progress to date and challenges ahead in achieving these key steps in a country context. We hope that the study will add to the understanding of what contributes to or detracts from the creation of an enabling environment and support country-level efforts to get disaster risk reduction mainstreaming put into practice.

Margaret Arnold
Head, ProVention Consortium
March 2009

Executive summary

Since the late 1990s, there has been increasing recognition by both governments and donors of the need to mainstream disaster risk reduction into development. This paper is the first in a series of case studies being undertaken by the ProVention Consortium in support of this process, examining experience to date and challenges ahead in mainstreaming at a country level. The paper focuses on the first two, and arguably most difficult steps, in mainstreaming – awareness-raising and the establishment of a sufficient, stable enabling environment. It is based on experience in the Philippines, focusing on mainstreaming from the government's perspective. The findings of this and further case studies in the series will be drawn together into a brief on essential requisites and related mechanisms, opportunities and incentives for effective mainstreaming, including good practice examples.

The Philippines was selected as the first case study country due to its urgent need to address disaster risk within the development agenda and its apparently highly conducive environment for mainstreaming. The Philippines is regarded as one of the world's most hazard-prone countries and has a high incidence of poverty, making mainstreaming of disaster risk reduction into development imperative for the achievement of sustainable growth. The government has undergone a significant degree of devolution, in principle strengthening the links between the needs of local communities, such as risk reduction, and formal development policies and strategies. The country also has a long-established medium-term national planning process, helping to ensure that longer-term concerns such as risk reduction are not overshadowed by more immediately pressing issues, and relative political stability, implying the potential ability to sustain long-term programs and initiatives. Indeed, the Philippines is already formally committed to mainstreaming as a signatory of both the Hyogo Framework for Action (HFA) 2005–2015 and the 2007 Delhi Declaration on Disaster Risk Reduction in Asia.

Initial steps in mainstreaming: awareness-raising

Awareness-raising is required in many hazard-prone countries to secure a solid appreciation and understanding of the relevance of disaster risk reduction to sustainable development and poverty reduction. Awareness-raising should be tackled, first and foremost, via the development of a solid, rigorous body of evidence on hazard mapping and physical exposure, on disaster losses, on the socio-economic impact of disasters at national and community levels, and on the scope for enhanced resilience. This body of evidence is required to establish the case for proactive disaster risk management and to develop appropriately risk-sensitive development policies and initiatives. Efforts to define and acknowledge accountability for disaster-related human, physical and economic losses and related areas of responsibility are also required. The pace and success of awareness-raising initiatives can be greatly aided by the emergence of strong political advocates for risk reduction.

In the case of the Philippines, various technical agencies are involved in the generation of hazard information. Historically, data on different types of hazard have often been held by separate agencies and there has been little effort to map vulnerability. However, various initiatives are now underway, particularly at the local level, to address these issues. There have also been significant shortcomings in the damage assessment process and resulting loss data have been incomplete. In 2004, the National Disaster Coordinating Council (NDCC) initiated a process to address this issue by adopting comprehensive damage assessment guidelines developed by the United Nations (UN) Economic Commission for Latin America and the Caribbean (ECLAC). However, progress has been very slow, due to funding constraints.

The broader socio-economic impacts of disasters are frequently acknowledged by the government but rarely substantiated with hard data; such statements, therefore, lack resonance. Limited data partly reflect measurement problems relating to the annual occurrence of disasters, which imply that the benefits of a disaster-free year cannot be directly measured. Mutual causal inter-linkages between poverty and vulnerability to natural hazards are similarly broadly recognized but, again, there has apparently been little, if any, systematic analysis of the precise impact of disasters on the poor and near-poor.

In part reflecting this limited knowledge of the direct and indirect impacts of disasters at either a macroeconomic or a household level, current knowledge and understanding of factors underlying vulnerability and the scope for enhanced resilience are also relatively weak in some quarters. However, it is important to recognize that attitudes to risk are

enormously complex and that risk management behavior is not merely a direct reflection of knowledge of the risks faced and the potential for reducing vulnerability but also of other socio-economic, cultural and financial considerations.

Finally, it is widely acknowledged that well-placed, high-level political champions with relevant expertise and knowledge can play a major role in building commitment to disaster risk reduction and its mainstreaming into broader development. However, political champions of disaster risk reduction have been relatively few and far between in the Philippines and are currently inspired more by climate change than natural hazards.

Initial steps in mainstreaming: establishing an enabling environment

Legislation. Sufficient, appropriate legislative arrangements for disaster risk management, including the mainstreaming of disaster risk reduction into development, forms a key component of an enabling environment, providing a policy framework around which disaster risk management strategies can be empowered.

Disaster legislation in the Philippines dates back to 1978 and so is predicated on a primarily reactive approach to disasters, focusing heavily on preparedness and response in keeping with prevailing thinking 30 years ago. Since then, there has been a paradigm shift in emphasis internationally from a disaster management to a disaster *risk* management approach, with much greater importance given to reducing risk ex ante. There have been some attempts to secure a change in legislation in the Philippines over the past five years or so to reflect this new thinking, but a multitude of related Senate bills have detailed somewhat conflicting changes in the current disaster risk management structure and have varied in the extent to which they incorporate principles of mainstreaming. Moreover, as yet, none has been enacted.

Other relevant approved and pending legislation for mainstreaming of disaster risk reduction into development includes that pertaining to land-use controls and building codes. However, building codes are not strictly enforced and zoning ordinances are reported to have been relaxed over time.

Disaster risk management strategy. A comprehensive disaster risk management strategy, actively involving stakeholders at all levels of government as well as the private sector, local communities and civil society, is required to implement the legislative framework and to provide coordination and monitoring mechanisms and arrangements. Individual disaster risk reduction actions and programs need to be located within this strategy, rather than treated as discrete, individual measures. Moreover, the strategy needs to indicate specific entry points and mechanisms for mainstreaming disaster risk reduction concerns into both the broader development agenda and the design and implementation of individual development initiatives.

In the case of the Philippines, as already noted, there has been a hiatus in the passage of new legislation replacing the existing primarily reactive framework for disaster risk management. Nevertheless, in recent years various efforts have attempted to 'leapfrog' this obstacle by developing more forward-thinking plans of action and strategies, reflecting modern thinking around disaster risk management and, to some degree, embracing principles of mainstreaming. If fully implemented, these plans and strategies could represent considerable progress in mainstreaming at both national and local levels. In practice, however, progress in implementation has been slow and the plans and strategies have resulted in relatively limited practical steps forward towards mainstreaming. Moreover, the basic institutional arrangements for mainstreaming and the practical steps required to achieve successful, comprehensive integration of disaster risk reduction concerns into development across all areas and levels of government require more careful thought. Sector-specific disaster risk management plans of action are also lacking, even in highly disaster-vulnerable sectors such as agriculture, while the broader strategies and plans similarly outline few practical steps into which individual line agencies and local governments can sink their teeth.

More positively, the shift in emphasis in disaster risk management plans and strategies has spawned – or created the justification for – a series of externally supported projects in support of mainstreaming. The international community is keen to move the Philippines government forward away from its traditional focus on relief. Moreover, various steps are being taken, be it sometimes on a piecemeal basis, to reduce disaster risk in certain sectors of government and in some local government units (LGUs).

Institutional arrangements and capacity for disaster risk management. Individual line agencies and local governments are legally responsible for implementing disaster management, as it is still commonly referred to in department circulars and executive orders, within their own areas of responsibility. In practice, some LGUs have yet to even establish their disaster coordinating councils (DCCs), while those DCCs that have been established vary in quality. In addition, reflecting Presidential Decree (PD) 1566's reactive approach to disasters (see Section 3.1), DCC meetings are commonly held only on an ad hoc basis, in response to crisis situations, rather than on a more regular basis to discuss ongoing risk reduction initiatives, and DCCs' risk reduction and mainstreaming capacity and capabilities are often very limited.

At a national level, disaster risk reduction is a crosscutting issue that needs to be 'owned' by all government agencies rather than by a single department. However, an overarching national agency is required to provide leadership, determine broad disaster risk management policies, oversee implementation and advocate for the inclusion of disaster risk reduction concerns in broader development. The NDCC is the highest policy-making and coordinating body for disaster management in the Philippines. However, the Department of National Defense (DND), within which it sits, is far removed from core sustainable development and poverty reduction responsibilities and decision-making. Moreover, reflecting the historically reactive orientation of disaster risk management in the Philippines, the NDCC itself has insufficient capacity and capabilities in areas of disaster risk reduction. As such, it lacks critical insights on opportunities for mainstreaming, from both a risk reduction and a wider development perspective. These constraints necessarily reduce the NDCC's effectiveness as an advocate and leader for mainstreaming, even if it were to have a legal mandate for risk reduction and related budgetary provision.

Integration of disaster risk reduction into national and local government development planning. A strategic, 'joined-up' approach to disaster risk reduction and mainstreaming is an essential component of development plans in hazard-prone countries. From a weak beginning, there has been steady, if slow, progress towards greater consideration of disaster risk management in national Medium-Term Philippine Development Plans (MTPDPs) over the past 20 years. However, successive plans have consistently failed to identify disaster risk as a factor potentially hindering the achievement of economic and development goals or to systematically treat risk reduction as an integrated, cross-sectoral objective. Instead, they have dealt with disaster risk primarily within the very narrow framework of flood control, improved preparedness, relief, rehabilitation and preparedness capabilities and ex post support to vulnerable groups. The latest plan, which runs from 2004 to 2010, does seek to integrate a 'disaster preparedness and management strategy' in the development planning process at all levels of government. But this laudable goal is only set within the context of the environment and natural resources sector while the plan is even explicitly complacent about disaster risk in its discussion of the highly vulnerable agricultural sector. Similarly, successive Millennium Development Goal (MDG) progress reports for the Philippines have paid little regard to disaster risk management or, more specifically, its mainstreaming into socio-economic development, despite the fact that disaster events could be a significant obstacle to the achievement of the MDGs.

At the level of local government, various shortcomings in the basic planning process have posed considerable obstacles in effectively mainstreaming disaster risk reduction concerns into sub-national planning, most importantly relating to the fact that development and investment plans are not necessarily in place and, if they are, are not necessarily linked. The record on comprehensive land-use plans (CLUPs) has been slightly better, although far from ideal, and there have been some efforts to strengthen consideration of disaster risk concerns in land-use planning.

The recent introduction of six-year Provincial Development and Physical Framework Plans (PDPFPs) and related six-year Provincial Development Investment Plans (PDIPs) is a welcome development as these plans imply closer integration of spatial and physical considerations and sectoral factors, supporting enhanced disaster risk analysis and the identification of risk reduction needs. The PDIPs will also help ensure that, when funding is allocated, short-term needs do not overshadow longer-term ones. Under a parallel initiative, guidelines explicitly outlining a detailed disaster risk assessment process and the use of resulting risk estimates to enhance planning analyses, decision-making and the incorporation of disaster risk reduction principles and measures into development goals, objectives and strategies in PDPFPs have been prepared. However, as they stand, they entail a lengthy, data-intensive and costly procedure requiring considerable technical capacity and related computer equipment. Several other internationally assisted initiatives have also been undertaken or are currently underway in support of the mainstreaming of disaster risk reduction concerns into sub-national planning.

Intra-government horizontal and vertical integration. Existing breaks in the planning system between different levels of government pose a potential impediment to mainstreaming as they imply that locally identified needs are not necessarily reflected in higher-level plans and strategies, while there can be problems in implementing national policies and

regulations at the local level. At the provincial level, the recent introduction of PDPFPs and PDIPs should hopefully help in this regard, however, particularly if these plans include careful consideration of disaster risk reduction concerns.

Horizontal integration is required most critically because issues such as flood management and water resource management require careful cooperation and coordination between contiguous LGUs. Horizontal integration between national line agencies is also important given the crosscutting nature of disaster risk and potential implications of decisions in one area of government for vulnerability in another. Current levels of horizontal integration are rather patchy, however, and in part hindered by the absence of a comprehensive national disaster risk reduction strategy.

Budgetary considerations. Integration of disaster risk concerns into government budgets should be tackled from two angles, ensuring that levels of public expenditure on risk reduction are sufficient and that there are adequate financial arrangements to manage the residual risk.

In practice, disaster-related budgetary allocations in the Philippines are primarily intended for post-disaster response, in the form of annually appropriated national and local government calamity funds. However, for the country as a whole, these resources may be insufficient even in years of lower loss and, although actual figures are not reported, unplanned reallocations of government budgetary resources are probably the primary source of relief and rehabilitation funding in most years.

Similarly, no data are available on total disaster risk reduction expenditure but levels of spending are almost certainly inadequate. Risk reduction activities are implemented through line agencies and regional and local disaster coordinating councils and, by implication, financed through their budgets. However, risk reduction implementation responsibilities are very general and, with the notable exception of specialist technical agencies such as the Philippine Institute of Volcanology and Seismology (PHIVOLCS) and the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), national agencies have few explicit disaster risk reduction activities in their programs of work or budgets. Meanwhile, there are neither mandatory requirements relating to LGU expenditure on risk reduction nor any dedicated funding. Instead, LGUs are expected to finance this spending out of other budget heads. LGUs are not required to establish disaster risk management offices either, making it extremely difficult to create budget lines to support the basic functioning of such offices where they exist.

Project appraisal. Consideration of disaster risk concerns as part of the project appraisal process is an essential step in ensuring that development gains from individual projects are sustainable, in ensuring that potential disaster risk reduction benefits both of dedicated risk reduction projects and of other development projects are optimised and in highlighting related issues of responsibility and accountability. Such concerns should be considered in all components of project appraisal, reflecting the fact that vulnerability to natural hazards is complex and multi-faceted and so needs to be viewed from all angles. Specific guidance on this analysis is also important because it entails some distinctive challenges, in particular how to handle uncertainty.

In practice, most current guidelines of the Government of the Philippines (GoP) on project appraisal do not mention disaster risk reduction or longer-term climate change concerns, let alone provide any specific guidance on the issues, although some initial effort is being made to address this shortcoming. Environmental impact assessment (EIA) guidelines are a notable exception but even these do not provide comprehensive guidance. All projects in environmentally critical areas, including those frequently visited and/or hard-hit by natural hazards, are required to undergo an EIA and data on both climatological and geological hazards should be presented as part of the baseline environmental profile. However, there are no specific requirements or related guidance concerning analysis of the potential impact of climatological hazards on a project's outcome or of the potential disaster risk-related consequences of a project via its impact on the environment.

Beyond platitudes: setting disaster risk reduction goals and related indicators. Capacity to monitor and evaluate disaster risk reduction initiatives, generate hard evidence on related inputs, outputs, results and impacts, and learn lessons for the future is an essential component of the enabling environment for mainstreaming. In practice, although the importance of monitoring and evaluating disaster risk reduction initiatives is recognized in principle in the Philippines, there is little detailed country-specific guidance on this topic and no overarching national disaster risk reduction goals or related indicators. Moreover, successive MTPDPs have themselves been fairly weak in setting clear monitoring and evaluation targets and related indicators across most parts of the plan and have contained few specific disaster risk reduction indicators.

Recommendations

Considerable energy is currently being expended on mainstreaming disaster risk reduction into development in the Philippines, with a number of initiatives underway to get mainstreaming off the ground. Many of these initiatives focus on local government, in keeping with the country's high level of devolution. The most critical challenge ahead is to ensure that these various initiatives result in concrete, sustained changes in development practice, particularly at the level of local government. In order to achieve this, a number of steps need to be taken both to increase awareness of the need for mainstreaming and to complete the establishment of an appropriate enabling environment. Recommendations are summarized in Box A.

Box A

Summary recommendations on integrating disaster risk reduction into development in the Philippines

Strategic objective: *To ensure that ongoing initiatives to mainstream disaster risk reduction into development are sustained and strengthened, leading to long-term institutional, legislative, judicial and development policy and practice changes, and contributing to poverty reduction and sustainable socio-economic development.*

Awareness-raising

Objective: Strengthened understanding and awareness of the need for disaster risk reduction and its mainstreaming into development, and greater accountability for disaster-related losses.

Priority action

- Systematic analysis of the interlinkages between poverty and vulnerability to natural hazards.

Medium-term measures

- Preparation of multi-hazard maps for the whole country and development of an integrated national hazards data and mapping system.
- Extensive multi-hazard vulnerability mapping, focusing on individual communities and related awareness-raising.
- Improvements in post-disaster damage assessment procedures and practice.
- Analysis of the long-term macroeconomic and related budgetary impacts of disasters.

Establishment of an enabling environment

Objective: Enhanced enabling environment for mainstreaming of disaster risk reduction concerns into development.

Priority action

- Passage of new, comprehensive disaster risk management legislation.
- Establishment of strong national institutional leadership and oversight mechanisms, and related technical capabilities, for disaster risk management, ideally within the National Economic and Development Authority (NEDA).
- Creation of disaster risk reduction focal points in individual line agencies.
- Development of a comprehensive, long-term disaster risk management strategy, incorporating individual sectoral strategies, embracing principles of mainstreaming and replete with meaningful monitoring and evaluation indicators.
- Initiation of measures to ensure close collaboration with the climate change adaptation community at different levels of government.

Medium-term measures

- Establishment of permanent LGU disaster risk management bodies or the integration of disaster risk management responsibilities into the duties of pre-existing LGU officers and provision of related technical support to strengthen capabilities.

- Integration of disaster risk reduction concerns into the MTPDP, including specification of overarching risk reduction objectives and strategies, mainstreaming principles and linkages into the MTPDP's key socio-economic goals and more specific sectoral goals, measures and activities.
- Integration of disaster risk reduction concerns into local government development plans and the merger of the recently prepared provincial disaster risk reduction mainstreaming guidelines into the more general PDPFP guidelines.
- Establishment of a tracking system to monitor levels of expenditure on ex ante risk reduction and ex post disaster response.
- Development of an explicit disaster response financing strategy.
- Establishment of dedicated funding lines for disaster risk reduction and, possibly, permanent disaster risk management offices, at each level of government.
- Revision of existing EIA and other project appraisal guidelines and procedures to require comprehensive analysis of both the potential impact of natural hazard events on a project and the potential disaster risk-related consequences of the project.
- Revision of land-use regulations and building codes and introduction of judicial and other measures to ensure enforcement.
- Strengthened vertical and horizontal integration of disaster risk reduction plans between different levels of government, between various line agencies and between neighboring LGUs.
- National coordination of sub-national mainstreaming initiatives.
- Documentation, evaluation and replication of successful local mainstreaming initiatives.
- Strengthened collaboration between the climate change adaptation and disaster risk reduction communities via institutional, policy and research coordination and the development of joint strategies to integrate the two issues into national planning processes, strategies and budgets.

Mainstreaming Disaster Risk Reduction into Development: Challenges and Experience in the Philippines

1. Introduction

1.1 The case for mainstreaming

Since the late 1990s, there has been increasing recognition by both governments and donors of the need to 'mainstream' disaster risk reduction into development – that is, to consider and address risks emanating from natural hazards in medium-term strategic development frameworks, in legislation and institutional structures, in sectoral strategies and policies, in budgetary processes, in the design and implementation of individual projects and in monitoring and evaluating all of the above (Benson and Twigg, 2007). Mainstreaming requires analysis of both how potential hazard events could affect the performance of policies, programs and projects and the impact of those policies, programs and projects, in turn, on vulnerability to natural hazards. This analysis should lead to the adoption of measures to reduce vulnerability, treating risk reduction as an integral part of the development process rather than as an end in itself. It does not require a re-working of government objectives; instead it seeks to help ensure that these objectives – such as poverty reduction – are both attainable and sustainable. From a disaster risk reduction perspective, mainstreaming supports and encourages the adoption of disaster risk reduction measures by linking it to other development priorities and securing a risk-aware ethos.

This integral approach is considered essential in view of the fact that development initiatives do not necessarily reduce vulnerability to natural hazards but, instead, can unwittingly create new forms of vulnerability or exacerbate existing ones. As the United Nations Development Programme (UNDP, 2004) highlights, disasters are both a cause and a product of failed development. Indeed, a recent international conference concluded that 'the development process in many countries is not reducing vulnerability to natural hazards... in fact, in many cases new forms of vulnerability are emerging, impeding efforts to reduce poverty and promote growth' (Oslo Policy Forum, 2008:4). 'Win–win' solutions for securing sustainable development, reducing poverty and strengthening hazard resilience therefore need to be explicitly and actively sought, particularly as climate change looks set to increase the incidence of droughts and floods and the intensity of windstorms (Benson and Twigg, 2007). This process should take account of the impact of climate change on the intensity and frequency of hydro-meteorological events in the future, as well as historical hazard records.

1.2 Objective of this paper

Mainstreaming risk reduction into the development process is one of the ProVention Consortium's priority initiatives. In close collaboration with international financial institution partners and bilateral donors, ProVention aims to address natural hazard risk within the development context and to ensure that development policies, projects and programs, particularly in high-risk countries, do not unwittingly create new forms of vulnerability.

A number of countries have taken the first steps towards mainstreaming by incorporating disaster risk concerns into poverty reduction strategies and other national development policies. There is also wider international commitment to mainstreaming in the context of the HFA 2005–2015 (see Section 1.3). However, few governments have begun to translate these international and national commitments into practical steps and cross-government buy-in to mainstreaming remains weak in many countries. Moreover, there has been little investigation and analysis of the key challenges around mainstreaming or of mechanisms, opportunities and incentives for progress.

This paper is, therefore, the first in a series of case studies being undertaken by the ProVention Consortium to examine experience and achievements to date and challenges ahead in mainstreaming at a country level. The paper focuses on the first two, and arguably most difficult steps in mainstreaming – awareness-raising and the establishment of a sufficient, stable enabling environment (see Figure 1). These two steps are fundamental in securing the active partici-

pation of policy- and decision-makers and development practitioners across all areas and all levels of government. It is based on experience in the Philippines, focusing on mainstreaming from the government's perspective. The Philippines was selected as the first case study country because of both its urgent need to address disaster risk within the development agenda and its apparently highly conducive environment for mainstreaming.

The findings of this and further case studies in the series will be drawn together into a brief on essential requisites and related mechanisms, opportunities and incentives for effective mainstreaming, including good practice examples.

1.3 Disaster risk in the Philippines

The Philippines is widely regarded as one of the world's most disaster-prone countries.[1] This reflects both the high incidence of natural hazard events, including typhoons, floods, landslides, droughts, volcanic eruptions, earthquakes and tsunamis, and the country's considerable vulnerability to these events, in turn closely linked to poverty and environmental degradation. The Philippines experiences an annual average of 20 typhoons alone in its area of responsibility and many parts of the country are prone to a range of types of hazard. Hazard events contribute to further degradation and poverty, creating a complex vicious cycle of poverty, environmental degradation and natural hazard events. Climate change looks set to exacerbate this cycle, causing more frequent and more intense typhoons, floods and droughts while rapid population growth could expose increasing numbers of people to natural hazards.

Figure 1 Steps to mainstreaming

Source: Adapted from Benson and Twigg (2007)

The toll of disasters is already high in the Philippines. Between 1990 and 2006, the country incurred average annual direct damage[2] of 19.7 billion (bn) Philippine pesos (PhP) per annum, or equivalent to 370 million (m) US dollars (US$), in constant 2005 prices as a direct consequence of reported disasters, equivalent to an average 0.5% of gross domestic product (GDP) each year (see Table 1).[3] Agricultural damage alone averaged PhP 12.4bn per annum and an average of 1,009 lives were lost every year. Typhoons accounted for 74% of lives lost, 62% of total damage and 70% of agricultural damage, reflecting their high, annual frequency.

These direct losses to infrastructure, including social as well as productive infrastructure and standing crops, can lead to a series of indirect impacts relating to the flow of goods and services (e.g., reduced output, loss of earnings and job losses). Collectively, they can result in a number of secondary effects relating to short- and long-term impacts on the overall economy and socio-economic conditions (e.g., fiscal and monetary performance, levels of indebtedness, the distribution of income and the scale and incidence of poverty). Indeed, disasters are persistent, annual events, continually gnawing away at development gains in the Philippines.

1 See World Bank and NDCC (2004) and UN/ISDR (2008) for a fuller discussion.
2 Defined in terms of direct losses to agriculture, infrastructure and the private sector.
3 These figures do not reflect the impacts of a large number of smaller hazard events that are not registered in the statistics, but which have very large impacts at the household level, particularly on poorer families.

Table 1 Average annual disaster losses by hazard type in the Philippines, 1990–2006

	Total damage		Agricultural damage		Lives lost	
	Million PhP in constant (2005) prices	As % total damage	Million PhP in constant (2005) prices	As % total agricultural damage	Persons	As % total lives lost
Typhoons	12 166	61.9	8 739	70.3	747	74.1
Flooding/flash floods	888	4.5	564	4.5	50	5.0
Drought	2 237	11.4	2230	17.9	0	0.0
Earthquake	2 235	11.4	259	2.1	82	8.1
Volcanic eruptions	1 915	9.7	524	4.2	57	5.7
Others	230	1.2	115	0.9	72	7.2
Total	19 670	100.0	12 431	100.0	1 009	100.0

Source: Philippines National Disaster Coordinating Council

In terms of institutional arrangements, the National Disaster Coordinating Council is the coordinating body for disaster risk management in the Philippines. The NDCC is located within the Office of Civil Defense (OCD), chaired by the secretary of National Defense, and includes 14 department secretaries as members. The NDCC structure is replicated at the regional, provincial, city, municipal and *barangay* (district) levels, with local disaster coordinating councils composed of representatives of national government agencies operating at local levels and local officials.

At face value, the Philippines would appear a good candidate for mainstreaming. The government has undergone a significant degree of devolution which has been deemed to have 'broadly worked' (Balisacan, Hill and Piza, 2006:4), in principle implying a close reflection of the needs of communities, such as risk reduction, in (local) development policies and plans; a long-established medium-term planning process at the national level, in theory helping to ensure that longer-term concerns such as risk reduction are not entirely overshadowed by more immediately pressing issues; and relative political stability, implying the potential ability to sustain the funding and impetus for long-term programs and initiatives. The Philippines also has a high frequency of natural hazard events, as already noted, and has a high incidence of poverty, making mainstreaming of disaster risk reduction into development imperative for the achievement of sustainable growth.

Indeed, the Philippines, along with another 167 nations and multilateral institutions, is formally committed to mainstreaming as a signatory of the HFA 2005–2015. This ten-year framework resolves to reduce disaster losses. It is centered on three principal strategic goals, the first of which is 'the more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction' (UN/ISDR, 2005:3). The 2007 Delhi Declaration on Disaster Risk Reduction in Asia, adopted at the Second Asian Ministerial Conference on Disaster Risk Reduction and including the Philippines as a signatory country, reiterated the importance of mainstreaming as the second of six key areas of action. Mainstreaming initiatives advocated by the declaration included the mainstreaming of disaster risk reduction into national sustainable development strategies, plans and programs in key sectors and efforts to ensure that development does not create further disasters; further strengthening of the legislative frameworks and institutional mechanisms for disaster risk reduction; the positioning of communities at the center of all aspects of disaster risk management; the conduct of risk assessment as an ongoing process; and the strengthening of financial mechanisms for disaster reduction.

2. Initial steps in mainstreaming: awareness-raising

Awareness-building is required in many hazard-prone countries to secure a solid appreciation and understanding of the relevance of disaster risk reduction to sustainable development and poverty reduction and thus of its fundamental importance to core development goals. Such awareness is most critically essential on the part of planning and finance ministries, key line agencies and local authorities and communities in high-risk areas. However, in view of the holistic, crosscutting nature of disaster risk and potential consequences of decisions in one sector for disaster risk in another, policy- and decision-makers across all areas and levels of government as well as the private sector and civil society also need to be aware of the importance of considering disaster risk as a routine part of their work.

Awareness-raising must be tackled, first and foremost, via the development of a solid, rigorous body of evidence on:

- Hazard mapping and physical exposure.
- Disaster losses.
- The socio-economic impact of disasters at national and community levels and their relevance to the sustainable development agenda.
- The scope for enhanced resilience.

This body of evidence, once complete, will both highlight the nature and extent of disaster risk issues faced, establishing the case for proactive disaster risk management, and provide the information basis required to develop risk-sensitive development policies and initiatives. The evidence needs to be maintained in a readily accessible form, regularly updated to capture changes in risk, particularly any newly emerging risk, succinctly summarized and disseminated in relevant, self-explanatory and meaningful formats to key stakeholders.

Indeed, both knowledge-building and awareness-raising should be viewed as continual, ongoing tasks rather than one-off activities. If not, political interest and commitment to disaster risk reduction and the capability to maintain appropriate disaster risk management mechanisms can rapidly wane.

This process needs to be accompanied by efforts to define and acknowledge accountability for disaster-related human, physical and economic losses and related areas of responsibility for risk reduction initiatives. The pace and success of awareness-raising initiatives can also be greatly aided by the emergence of strong political advocates for risk reduction. Political champions with relevant expertise and knowledge can play a major role in building awareness of and commitment to disaster risk reduction and its mainstreaming into broader development, particularly within government.

2.1 Hazard mapping and physical exposure

Maps and data on geological features, including fault lines and volcanoes, and areas prone to floods, droughts, tsunamis and landslides and related information on the location of infrastructure are fundamental in mainstreaming disaster risk reduction concerns into land-use planning, building appropriately hazard-resilient infrastructure and targeting vulnerable groups.

Various technical agencies are involved in the generation of hazard information, including geohazard mapping, and related warning systems in the Philippines. These agencies include PAGASA, PHIVOLCS, the National Mapping and Resource Information Authority (NAMRIA), the Mines and Geosciences Bureau (MGB) and the Bureau of Soils and Water Management as well as the privately owned Manila Observatory.

Historically, however, data on different types of hazard have often been held by separate agencies and some issues have arisen around sharing of data and geographic information system (GIS) files, both between technical agencies and with LGUs and civil society. For instance, other government agencies have to purchase PAGASA data at considerable cost should they require it. Moreover, there has been some confusion at the local level in areas where both MGB and PAGASA have developed flood maps, or MGB and PHIVOLCS have produced landslide maps, as the respective maps have differed slightly.[4]

4 Personal communication with GTZ.

There has also been little effort to map vulnerability. A World Bank/NDCC report concluded that

> **there are inadequate reliable data on the type and amount of Philippine economic activity at risk from natural hazards. A fundamental obstacle is the absence of accurate hazard and vulnerability maps. An integrated national natural hazards data and mapping system needs to be designed and implemented.**
> (World Bank and NDCC, 2004:44)

Various initiatives are underway to redress these shortcomings, including via the Hazards Mapping and Assessment for Effective Community-Based Disaster Risk Management (READY) project, which is supported by the Australian Agency for International Development (AusAID) and UNDP, and jointly implemented by OCD, PAGASA, PHIVOLCS, MGB and NAMRIA. The READY project includes a multi-hazard identification and disaster risk assessment component, under which multi-hazard provincial, municipality, city and *barangay* maps are being produced and physical infrastructure, such as school, hospital and residential buildings, plotted against these hazard maps (UNDP, 2006). The project is explicitly intended to initiate risk reduction mainstreaming into local development planning. The first phase of the project, from 2006 to 2010, focuses on 27 priority provinces. It is intended that a further 17 provinces will be included in the second phase. According to NDCC (2007a), the READY project is being complemented by a government-supported Harmonization and Prioritization of Hazard Mapping project, covering an additional 16 provinces while the NDCC-led Task Force on Hazard Mapping will also produce a manual on *Standard Hazard Mapping*.

The German international cooperation enterprise GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit, GmbH) has supported the production of 52 community flood hazard maps, employing a participatory approach. With local residents, commonly flooded areas have been identified and mapped with GPS (global positioning system) and the resulting maps validated by the local community. These maps are in general more detailed than those available from MGB, typically indicating three different water heights.

Other initiatives to generate disaster risk information include the 2002–2004 Metro Manila Earthquake Impact Reduction Study, which was funded by the Japan International Cooperation Agency and generated earthquake hazard and physical infrastructure vulnerability maps for risk identification purposes, and the Manila Observatory's Mapping Philippine Vulnerability to Environmental Disasters project, which mapped hazards and vulnerability across the country. The recently launched Global Facility for Disaster Reduction and Recovery (GFDRR) project will also include some hazard mapping.

Such efforts need to be continued to cover the whole country and to produce an integrated national multi-hazards data and mapping system, recognizing geological, watershed and other ecosystem boundaries, rather than political and administrative districts. They also need to be further extended to map risk, a considerable challenge according to Loyzaga (2008) due to the existing functional and budgetary compartmentalization between different government departments. Loyzaga comments that

> **as the determination of impact requires multi-disciplinary approach toward data integration, the READY project, predictably, stops short of mapping vulnerability. The project concludes with overlaying discrete single-hazard datasets from different participating agencies, thereby requiring a separate round of field assessments for vulnerability and adaptation analysis.**
> (Loyzaga, 2008:2)

2.2 Disaster loss data

The Philippines has relatively good historical disaster loss data as compared with many other developing countries. Nevertheless, there have been some significant shortcomings in the damage assessment process, most critically relating to the fact that the country has lacked comprehensive damage assessment guidelines or a standardized methodology for assessing damage in most sectors (except, apparently, in the area of agriculture). In consequence, damage assessments have been only partial in coverage, focusing on lower income groups and sub-sectors that could be eligible for public assistance, and may vary in accuracy.

In 2004, the NDCC in conjunction with the UN Economic and Social Commission for Asia and the Pacific initiated a process to improve disaster loss assessments by adopting guidelines developed by ECLAC. The ECLAC guidelines are widely regarded as the definitive methodology in this regard (see ECLAC and World Bank, 2003). As part of the same process, the NDCC and World Bank Institute, in partnership with the Earthquakes and Megacities Initiative (EMI),

developed an online training course on damage and reconstruction needs assessment based on the ECLAC methodology specifically for use in the Philippines and conducted some training.[5] However, due to funding constraints, progress has been very slow and the online course was only launched in May 2008. The NDCC's plans to apply the ECLAC methodology in selected pilot areas remain on ice.

2.3 Socio-economic impact of disasters

2.3.1 Macroeconomic impacts

In the face of tight budget constraints and many competing demands for public resources, quantitative evidence on the macroeconomic impact of disasters is essential in building commitment to disaster risk reduction objectives and securing related financial resources.

In the case of the Philippines, the broad socio-economic impacts of repeated disaster events have been clearly articulated by the NDCC for many years. For instance, the government's statement of programs planned under the 1990s' UN International Decade for Natural Disaster Reduction, which began almost 20 years ago, included a sentence to the effect that 'the Philippines considers natural disasters as one of the major deterrents to economic progress and its development process' (GoP, undated:2). Some 15 years ago the NDCC similarly stated that losses arising as a consequence of natural and technological disasters as well as conflict 'contribute to the perennial underdevelopment of our economy, as we have to use scarce resources to repair, reconstruct and rehabilitate the damaged facilities, instead of being able to use these resources for further investment towards development' (NDCC, 1993:1).

However, these statements have rarely, if ever, been substantiated with hard data and, as such, lack resonance. Instead, disaster risk has largely been ignored in detailed economic planning, in economic forecasting and, thus, in the annual budgetary planning process into which GDP and gross national product forecasts are fed to determine the annual budgetary envelope (see Benson, 2008).

Limited hard data on the macroeconomic impact of disasters partly reflect measurement problems relating to the annual occurrence of disasters in the Philippines, implying that the benefits of a disaster-free year cannot be directly measured, as well as incomplete physical-loss data. Only severe El Niño episodes (specifically, over the past 30 years, the 1984, 1987 and 1998 events) and major geophysical disasters are generally regarded as economically significant events. Meanwhile, the macroeconomic ramifications of the considerable, cumulative direct damage caused by typhoons each year are ignored except in years of exceptional loss (notably 1987 and 2006) (Benson, 1997; World Bank and NDCC, 2004).

Clear efforts are required to improve analysis of the macroeconomic and related budgetary impacts (see Section 3.6) of disasters in the Philippines. The introduction of the ECLAC approach, once implemented, will help to some degree. Indeed, the methodology has already been used to generate a macroeconomic assessment of the impact of a series of five typhoons in late 2006. The results indicated that the typhoons, together with the postponement of an Association of Southeast Asian Nations (ASEAN) Summit meeting in Cebu, collectively resulted in a 0.4% reduction in GDP in the fourth quarter of 2006 (NEDA, 2006b). However, such analysis needs to be extended to capture the longer-term impacts of disasters. In the case of the 2006 typhoons, their effects are still being felt in, for instance, the form of an ongoing power deficit. The typhoons damaged or toppled 118 power transmission towers in the South Luzon transmission system and the economic cost of an initial two-day blackout in the South Luzon area and a continuing power deficit in the Bicol region had already exceeded US$ 250m (PhP 10bn) as of late 2007 (World Bank, 2007).

A more disaggregated approach, focusing on the impact of hazard events on particular sectors or regions of the country, would also help shed further light on the economic impact of disasters and help overcome problems relating to analysis at a national level. Certain sectors are potentially particularly vulnerable to natural hazards (e.g., agriculture) while there is considerable regional variation in the incidence of hazards. Analysis exploring the direct impact of natural hazard events on specific sectors or sub-sectors and tracking the indirect and secondary effects through the economy could be highly illuminating in understanding vulnerability and the challenges posed to sustainable development and in identifying opportunities to strengthen resilience both of individual sectors and sub-sectors and of the economy more broadly.

5 For further information see http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/CMUDLP/0,,contentMDK:21286950~pagePK:64156158~piPK:64152884~theSitePK:461754,00.html.

2.3.2 Household and community impacts

The Philippines has a high incidence of poverty, standing at 26.9% of families in 2006, and poverty reduction has consistently been a central theme of development policy over the past two decades. In the foreword to the latest MTPDP, the president describes it as the country's 'biggest challenge' (NEDA, 2004:vii).

Two-thirds of the poor are located in rural areas and primarily dependent on agriculture, which in turn is highly vulnerable to natural hazards (ADB, 2007a). The sector accounted for 63% of total reported disaster losses between 1990 and 2006 (see Table 1, Section 1.3). Consequences for the poor are illustrated in the extreme by the fact that much of the increase in poverty from 25% in 1997 to 28% in 1998 was attributable to the impact of an El Niño shock on the agricultural sector, rather than to the effects of the concurrent Asian financial crisis, which primarily affected relatively better-off wage earners (World Bank, 2001). The urban poor are also often highly vulnerable to natural hazards, in part as rapid urban growth and lack of tenure have forced many to squat in marginal areas such as river easements – a phenomenon all too apparent in Metro Manila.

Mutual causal inter-linkages between poverty and vulnerability to natural hazards are broadly recognized. For instance, the chairman of the NDCC stated in 2007 that 'we attach particular importance to addressing disaster risk as an integral part of strategies and programs for poverty reduction and sustainable development in the Philippines' (Ebdane, 2007:1). The links between disasters and poverty were reiterated by the president in August 2007 at the opening session of a National Multi-Stakeholder Dialogue on Disaster Risk Reduction when she encouraged 'due focus to disaster risk reduction and mitigation to protect the poor, the most vulnerable segment of the population, from the onslaught of disasters, both natural and man-made' (NDCC, 2007b:1).

However, there has apparently been little, if any, systematic analysis of either the precise nature of the linkages between poverty and vulnerability or the impact of disasters on the poor and near-poor. By implication, there is limited related evidence that can be used in support of arguments for risk reduction or its mainstreaming into broader development. Possibly in part reflecting this, the National Anti-Poverty Commission (NAPC), which is invested with an oversight and coordination role on poverty reduction in the Philippines, lacks any distinct disaster risk reduction programs, despite the fact that 'victims of calamity and disasters' are one of the groups served by the commission and that there are plans to place NAPC on a newly formed National Disaster Management Council under pending new disaster risk management legislation (see Section 3.1, Senate bill number 1444). Instead, recognized linkages between poverty and vulnerability to natural hazards are currently largely addressed via post-disaster support for the poor. Even this assistance may be far from adequate. For instance, the Asian Development Bank (ADB, 2007a) reported that about half of the average 8 million people annually affected by disasters between 2004 and 2006 received assistance from government and private relief institutions. Those assisted received support equivalent to less than 1% of the average income during 'normal' times of the poorest 30% of the population.

The gap in knowledge and ex ante action around the linkages between poverty and vulnerability and to natural hazards urgently needs to be addressed. As already noted, poverty reduction is the GoP's single most important goal under its 2004–2010 MTPDP. The contribution that disaster risk reduction could make to the achievement of that goal needs to be carefully drawn out and substantiated with practical evidence, preferably including good-practice examples, and translated into practical action.

2.4 Appreciation of the scope for enhanced resilience

Appreciation of the scope for enhanced resilience is essential in providing crucial meaning to data and information on disaster risk, related losses and socio-economic impacts and in triggering impetus for action. There is little point in information for information's sake. Policy- and decision-makers as well as the wider society at large require an understanding of the potential scope for using this information to design disaster risk-sensitive development strategies, to identify specific disaster risk reduction needs and to identify relevant and meaningful performance indicators. This, in turn, requires knowledge and understanding of the underlying, highly dynamic factors determining levels and forms of vulnerability to natural hazards and how they can be addressed. Indeed, Loyzaga (2008:1) argues that 'a government's capability to deconstruct and address socio-economic vulnerability may be considered among the fundamental measures of effective governance.'

In reality, current knowledge and understanding of determinants of vulnerability and the scope for enhanced resilience appears relatively weak in some parts of government in the Philippines (see Section 3.3 for a fuller discussion). For instance, there was a flurry of activity in the late 1990s to provide training and related guidance materials to

agricultural officers on measures to mitigate the impact of El Niño and La Niña events. Since then, however, no further disaster risk reduction training has been provided, implying perhaps considerable potential in some LGUs for strengthening knowledge and understanding in order to support the mainstreaming of disaster risk reduction principles into agricultural plans and projects at the local level (Benson, 2008).

Certain cultural and religious attitudes to disasters may also need to be overcome within some communities to ensure that knowledge on disaster losses is translated into momentum to reduce risk. According to Oxfam, an assessment of participatory capacities and vulnerabilities found that disasters

> **were perceived as "god's punishment" or a "fact of life". Since a disaster was considered to be a "natural phenomenon", many people expressed doubts that they can actually do something about it. This fatalistic attitude is also reinforced by strong religious beliefs. *"Bahala na ang Diyos"* ("God will take care of everything") is the usual prayer in the face of an impending disaster in the community.** (Oxfam, 2002:66)

At the macroeconomic level, the effective gap in information on the wider consequences of disasters has itself directly limited knowledge of the scope for risk reduction. It has implied that there has been little analysis of factors determining the nature and extent of vulnerability and of the scope for influencing it via economic development policies and investments and longer-term strategies. Instead, disasters continue to be perceived primarily as intermittent, external shocks, largely beyond the control of policy-makers

At the same time, a cautionary note is required. Attitudes to risk are enormously complex and behavior is a direct reflection of not only knowledge of the risks faced and the potential for reducing vulnerability but also other socio-economic and financial considerations. For instance, a recent study found that rice farmers in the Philippines broadly have a basic understanding of current climate risk but that their knowledge of measures for enhancing resilience to climatic risk is not being fully applied (Benson, 2008). There are likely to be a number of reasons behind this apparent failure to maximize use of risk management knowledge, most importantly – and particularly on the part of poorer farmers – credit constraints. Ironically, Llanto (2005) attributes limited formal financial institution lending to the rural sector in part to a lack of instruments to mitigate and manage various risks affecting the sector, including weather vagaries. In other words, farmers lack the credit to invest in risk reduction yet will only improve their access to credit by first making that investment. Such findings bring one back to the fact that disaster risk needs to addressed within its broader socio-economic context and underline the case for mainstreaming disaster risk reduction into development.

2.5 Accountability

This process needs to be accompanied by efforts to define and acknowledge accountability for disaster-related human, physical and economic losses and related areas of responsibility for risk reduction initiatives.

Efforts to strengthen awareness of the level and nature of disaster risk and its relevance to sustainable development and poverty reduction need to be accompanied by the acceptance of accountability for disaster-related losses and related responsibilities for risk reduction initiatives. As regards the rationale for public sector involvement in disaster risk reduction and, latterly, its accountability for losses, some disaster risk reduction measures require public provision on the basis of the fact that they constitute public goods – that is, are non-rival in consumption (users do not reduce the supply available to others) and non-excludable – and so markets fail to provide them. Scientific forecasting and some forms of dissemination of disaster warnings, for instance, can be characterized as such. Others may be justified on grounds of equity. There are additional moral obligations on the part of government to prevent loss of human life, for instance via the establishment of regulatory frameworks and disaster preparedness and response systems.

In the case of the Philippines, Loyzaga (2008:2) argues that an extremely resilient social culture entailing a strong sense of community may have 'inadvertently delay[ed] government's accountability for failing to anticipate a disaster.' '[S]ocial mobilization in the spirit of bayanihan or "good neighborliness" often seems to outpace institutional efforts towards managing vulnerability and mainstreaming DRR [disaster risk reduction],' hindering government acceptance of its risk management responsibilities (ibid.:1). Jegillos (2009) makes a similar point, arguing that the patronage system that forms the socio-cultural foundation of the current disaster management system in the Philippines prohibits a risk management ethos and that this state of affairs is reinforced by the fact that local government officials are themselves often from big landowner families or their proxies.[6]

6 Personal communication.

Loyzaga suggests that for reduction policies and programs to be truly effective, clear penalties and legal consequences for non-adherence to government's responsibility to protect a population need to be introduced and the public educated on the availability of compensation for public or private acts which increase vulnerability by causing injury, death, loss of income and damage to property.

2.6 Political champions

It is widely acknowledged that well-placed, high-level political champions with relevant expertise and knowledge are key in building commitment to disaster risk reduction and its mainstreaming into broader development, particularly within government (e.g., Wilkinson, 2008). It is relatively easy to garner this political interest in the immediate aftermath of major disaster events, when their devastating impacts are fresh in people's minds. However, as is also widely acknowledged, it is far more difficult to turn this interest into a longer-term commitment to reduce risk, particularly as the benefits of risk reduction investments may not be accrued for many years (e.g., Benson and Twigg, 2007). Indeed, simply sitting back until the next disaster and then providing emergency relief can secure far more political favor than investment in much less visible ex ante risk reduction. GoP (2008) warns that political figures can even limit progress in disaster risk reduction more deliberately, reporting in the context of the Philippines that they have been known to limit the declaration of high-risk areas when hazard maps are produced to avoid devaluation of property.

Political champions of disaster risk reduction have been relatively few and far between in the Philippines and, currently, are inspired more by climate change than natural hazards. The governor of Albay province in Bicol, billed as a 'green economist,'[7] has recently emerged as a strong vocal advocate for climate change adaptation, organizing and hosting the country's first national conference on the topic in October 2007 as well as initiating a number of climate change initiatives in his own province (Box 1). This conference included a keynote speech by President Gloria Macapagal Arroyo and was attended by some 1,200 participants, including representatives of Bangko Sentral ng Pilipinas (Central Bank of the Philippines) and NEDA as well as of key line agencies and international development agencies. The president, in turn, reportedly developed an interest in climate change adaptation after viewing former US Vice-President Al Gore's 2006 documentary film, *An Inconvenient Truth*. Participants at the conference adopted the 'Albay Declaration on Climate Change Adaptation,' committing them to a plan of action for change. Points of action in the declaration include working towards the passage of a policy prioritizing climate change adaptation in the national agenda, promoting 'climate-proofing development' through genuine multi-sectoral participation, promoting mainstreaming at the level of local government and providing increased budgetary provision for climate change adaptation.

Box 1 **Albay provincial government**

In 2007, the provincial government of Albay introduced an 'Albay in Action on Climate Change' program, which seeks to promote climate change adaptation and mitigation and enhanced resilience to natural hazard events. The program has three basic components: information, education and communication; legislation; and projects and programs, including the clean-up of rivers and creeks, post-disaster agricultural rehabilitation, composting of waste, the substitution of fossil fuels and reforestation (Lasco, Delfino et al., 2008).

In August 2007, the province approved the country's first local legislation on climate change adaptation, limiting the issue of licenses and permits to businesses and projects that are consistent with adaptation. The provincial government is currently setting up a GIS to inform disaster risk management and climate change adaptation policy and initiatives. As of March 2008, it was also in the process of revising its PDPFP and the CLUPs of LGUs to integrate disaster risk reduction (DILG, GTZ and DipECHO, 2008). Other activities planned over the next three years include community-based training and public information on the importance of disaster management concepts, strengthening of the LGU capabilities on disaster management and implementation of risk reduction measures (Lasco, Delfino et al., 2008).

In 2008, the provincial government of Albay established a center for initiatives and research on climate adaptation to support the province in adapting to climate change.[8] The center aims to:

- 'Enhance awareness of the various sectors on the threats by a changing climate;

7 See, for instance, http://albaycirca.org/apccca/index.html.
8 See www.albaycirca.org/overview.html.

- Develop academic curriculums for climate change adaptation in all schools, colleges and universities;
- Enhance the capabilities of farmers and fisherfolks to adapt to climate change;
- Promote climate risk adaptation by enhancing resilience of the most vulnerable groups;
- Mainstream climate change adaptation in the basic academic curricula of the primary, secondary, tertiary, vocational and technical institutions in the province;
- Enhance the interdisciplinary knowledge-base of the province on climate change adaptation; and
- Conduct and explore concrete policy studies that will support better climate risk adaptation."[9]

In contrast, disaster risk reduction per se has lacked a strong political champion. Individual senators have consistently sought relevant legislative changes over a number of years (see Section 3.1) but the fact that no disaster-related legislation has been passed in many years must surely in part reflect either their insufficient clout or their lack of focused dedication to the cause.

Disaster risk reduction is, admittedly, a difficult area to champion because it is not a single sector issue. Instead, leaders need to understand and spearhead change across many areas and levels of government. It is, therefore, perhaps no surprise that the political champion that has emerged in the related area of climate change is located at a provincial level where it is arguably easier to muster different sectors together under a common cause. Although less vocal than their climate change counterparts, disaster risk reduction champions have also emerged within several LGUs, such as Makati City. However, many more political champions are needed at the local level to break beyond administrative boundaries and engage with national government.

It is also important to bear in mind that political champions come and go. Even in Albay province which, most exceptionally, has a long-standing formalized disaster management office (see Section 3.3.2), local disaster management officials have expressed concerns about the potential implications of political leadership changes for the sustainability of disaster management priorities and programs (Lasco, Delfino et al., 2008). Awareness-building among the general public and strong engagement of communities in disaster risk management offer potentially important mechanisms for overcoming such difficulties by creating demand for risk reduction, helping ensure that it remains on the political agenda after incumbent officials fall from power or move on to new challenges. Initiatives to create this demand should be incorporated as an important component of any champion's program of action.

9 http://albaycirca.org/overview.html.

3. Initial steps in mainstreaming: establishing an enabling environment

In countries such as the Philippines, where disasters represent a considerable obstacle to sustainable socio-economic development, it is essential that governments prioritize risk reduction as a critical development challenge and develop related policies, strategies and capabilities. They also need to make necessary legislative, institutional, budgetary, project preparation and monitoring and evaluation arrangements. This section reviews these variables to determine the state of the enabling environment for mainstreaming in the Philippines and to identify potential ways of further strengthening it.

3.1 Legislation

Sufficient, appropriate legislative arrangements for disaster risk management, including the mainstreaming of disaster risk reduction into development, form a key component of an enabling environment (Britton, 2006; Pelling and Holloway, 2006). As Britton states

> **Without a comprehensive and binding legal directive that obliges actors and agencies to take action, the natural inertia of bureaucracies mean that non-specified essential tasks are unlikely to be undertaken, initiatives are unlikely to be pursued, and the status quo will be maintained. By contrast, far-sighted legislation will not only "draw a line" on what is the minimum acceptable level of action and responsibility within a bounded area. It will also enable actors and agencies to take calculated risks and initiate action that meet the purpose to which the legislators who adopted them actually intended.** (Britton, 2006:3)

Pelling and Holloway further add

> **Legislation provides the framework around which strategies to build risk reduction into development and reconstruction activities can be empowered. The law can be used to provide penalties and incentives by enforcing standards in construction, land use, tenants' rights and by defining people's rights during relief and reconstruction. Legislation can also empower agencies with new responsibilities for risk reduction or establish new bodies to advise or undertake risk reduction work. Budget lines as well as policy remits can be set by legislative acts. The legislative process should be a constructive period for generating informed support for disaster risk reduction among the policy community and those who will be entrusted with implementation.** (Pelling and Holloway, 2006:7)

In the case of the Philippines, Presidential Decree 1566 of 1978 formally established the current institutional structure for disaster management at national, regional and local levels, creating the NDCC, regional DCCs and local DCCs, and basic responsibilities, centered around a policy of self-reliance among local officials and their constituents in preparing for, responding to and recovering from disasters. The related Implementing Rules and Regulations defined disaster management activities, procedures and guidelines in further detail, including a requirement for local DCCs to develop disaster management plans conforming to guidelines in a National Calamities and Disaster Preparedness Plan (NCDPP) to be prepared by the NDCC, disaster management training and various preparedness activities. The Local Government Code of 1991 further strengthened the role of sub-national government in disaster risk management, making the legislative body at municipal, city and province levels responsible for measures to 'protect' its inhabitants against 'natural disasters and calamities' and to provide post-disaster relief and rehabilitation support (GoP, 1991).

The legislation was predicated on a primarily reactive approach to disasters, focusing heavily on preparedness and response in keeping with prevailing thinking 30 years ago. PD 1566 made no reference to ex ante risk reduction measures other than the preparation of manuals covering 'disaster prevention, control and mitigation.' Meanwhile, the Local Government Code of 1991 only mentioned risk reduction in the context of flood control measures, making municipalities and provinces responsible for servicing the flood protection needs of their respective residents.

Since then, there has been a paradigm shift in emphasis internationally from a disaster management to a disaster *risk* management approach, with much greater emphasis on reducing risk ex ante. Some attempts have been made to secure a change in legislation in the Philippines to reflect this new thinking. Indeed, since the beginning of the 13th Session of Congress in June 2004 at least 31 bills have been submitted to the Senate of the Philippines regarding some

aspect of disaster risk management (including a number of bills that have been submitted twice, under both the 13th and the 14th Sessions of Congress).[10] To date, at least 18 bills have been submitted under the current session of Congress alone.

However, the various bills differ in the extent to which they incorporate principles of mainstreaming. Moreover, none of the bills has been enacted. To some extent this undoubtedly reflects the fact that relatively few bills of any nature have had a successful passage through to enactment. For instance, during the 13th Session of Congress (2004–2007), 2,682 bills were submitted to the Senate but only 179 were enacted.[11,12] Arguably, the process has not been aided by the fact that a series of slightly conflicting changes in the current disaster risk management structure has been proposed by various senators, superimposed with additional submissions for piecemeal change around highly specific issues, the latter often focusing on aspects of preparedness and response rather than ex ante risk reduction (Boxes 2 and 3). Indeed, the fact that at least 18 bills related to disaster risk management have so far been submitted under the current Session of Congress is more shocking than impressive, indicating a desire for change but also very poor coordination of efforts, which must surely have stymied progress.

Urgent effort is required to streamline the bills, create order out of this quagmire of ideas and opinions and secure a strong body of advocates for the successful passage of a single, comprehensive bill, incorporating measures to mainstream disaster risk management into broader development at all levels of government. In accordance with normal procedure, the Senate Committee should undertake this merger, with technical support from relevant agencies. The NDCC, which itself has supported one of the bills for reform (currently recorded as Senate bill number 1444 in the current Session of Congress) since its original submission to the Senate in 2000, should play a central role in this process.

Box 2

Proposed reforms to the broad disaster risk management framework in the Philippines

Since the beginning of the 13th Session of Congress, seven bills have been submitted to the Senate of the Philippines proposing changes in the institutional arrangements for disaster risk management in the Philippines and related measures to strengthen disaster risk management.

- Two separate but similar bills, both submitted under the 14th Session of Congress, outline detailed institutional mechanisms and responsibilities and related measures to strengthen, enhance and decentralize disaster risk management in the Philippines, encompassing mainstreaming principles. Under the bills, the NDCC would be renamed the National Disaster Management Council, under the chair of the secretary of National Defense. A National Disaster Management Center would be established as the operating center for the council, manned by staff of the Office of Civil Defense (within the Department of National Defense). The council would develop and implement a National Disaster Risk Management Plan in conformity with a National Disaster Risk Management Framework. This framework would based on a comprehensive, coordinated, multi-sectoral, inter-agency and community-based approach to disaster risk management, encompassing all actions and measures from ex ante risk reduction through to post-disaster reconstruction and recognizing the need to decentralize powers, responsibilities and resources for disaster risk reduction. The framework would incorporate principles of mainstreaming disaster risk management into national, regional and local development policies, plans and budgets and the council would be specifically tasked with ensuring that the related plan was integrated into the MTPDP and national budget. Parallel disaster management council centers would be established at regional, provincial, city, municipal and *barangay* levels as well as at all LGU levels. Local disaster management council responsibilities would include the identification and implementation of cost-effective risk reduction measures or strategies; the development and implementation of local disaster risk management plans and their vertical and horizontal integration into other 'relevant planning programs' and the integration of risk reduction into local development plans, programs and budgets. The bills would also permit the use of local calamity funds for risk reduction as well as preparedness and post-disaster response needs. (14th Session of Congress, Senate bill numbers 1444 and 2013. Senate bill number 1444 is backed by NDCC and referred to in the 2004–2010 MTPDP.)

10 These bills were identified by searching on the words 'disaster', 'hazard', 'calamity(ies)', 'flood', 'drought' and 'typhoon' in the Senate of the Philippines database for 13th and 14th Congresses (2004–2007 and 2007–2010). See www.senate.gov.ph/lis/leg_sys.aspx?congress=14&type=bill (visited 10 July 2008). According to searches based on the same key words no disaster-related bills have been submitted through the House of Representatives (lower house).

11 Some of the bills may have been merged during the process of enactment.

12 ADB (2005) similarly reports that from the 8th to the 11th Congress (July 1987 to March 2001), 81,186 measures were filed of which only 6.0% were approved or adopted. A total of 10,618 measures were filed in the Senate from the 9th to the 11th Congress of which only 7.0% were approved or adopted.

- A bill submitted under the 14th Session of Congress, again intended to streamline, improve and strengthen the country's disaster management system and create more self-reliant local governments. As above, the NDCC would be renamed the National Disaster Management Council, under the chair of the secretary of National Defense; a National Disaster Management Center would be established as the operating center for the council, manned by staff of the Office of Civil Defense; and disaster management councils would also be established at the regional level. However, the existing disaster coordinating councils would be retained at lower levels of government. Moreover, although the bill aims to strengthen 'preparedness and prevention capacity,' its coverage of risk reduction is very general; it does not mention any measures to support its mainstreaming into broader development and, although it discusses local calamity funds, does not extend their use for risk reduction purposes. (14th Session of Congress, Senate bill number 1493.)
- Somewhat in contradiction of the above, two identical bills submitted by two different senators under the 13th and then 14th Session of Congress proposed moving disaster management responsibilities from the Department of National Defense to a new, separate disaster management body to be known as the National Disaster Management Commission, defining its powers and functions and authorizing related budgetary appropriation. The chairman of this new body would be appointed by the president and would command the rank and privileges of a department undersecretary. It would also have two commissioners with the rank and privileges of assistant secretaries of a department. As with the above, these bills purport to outline a more comprehensive disaster risk management approach than that defined in PD 1566. Listed responsibilities of the new commission include several that potentially support mainstreaming – in particular, the formulation and implementation of a 'disaster management' policy (including risk reduction projects), framing of legislation, preparation of recommendations on the prioritization and inclusion of risk reduction projects in the National Development Plan, the related monitoring of disaster risks and their mitigation according to priorities in the national policy and the preparation of a methodology for undertaking disaster risk assessments of investment proposals. However, the scope of the bills is less comprehensive than those reported above. They contain no clauses relating to the use of national or local calamity funds or strengthening of disaster risk management at lower levels of government, including nothing on risk reduction responsibilities of local government. (13th Session of Congress, Senate bill number 61; 14th Session of Congress, Senate bill number 699.)
- Two identical bills submitted by the same senator under the 13th and then 14th Session of Congress outlining a separate, much shorter, disaster preparedness and mitigation bill authorizing the president to establish measures for 'disaster preparedness and mitigation' (including the preparation of hazard maps, disaster preparedness and relief plans and mitigation, preparedness and response programs, provision of related manuals, training and exercises and coordination of national and local preparedness programs), requiring that the president should ensure that warning systems function and requiring that public and private facilities should be made available for rescue and relief operations if needed. This bill does not cover mainstreaming of disaster risk reduction concerns into development. (13th Session of Congress, Senate bill number 2040; 14th Session of Congress, Senate bill number 145.)

Box 3 **Proposed piecemeal disaster risk management-related legislation**

Since the beginning of the 13th Session of Congress, 24 bills have been submitted to the Senate of the Philippines proposing legislation around specific aspects of disaster risk management.

Education

- Six virtually identical bills, requiring the teaching of disaster awareness and mitigation as part of primary and secondary curriculums in all schools, submitted by four different senators (in two cases under both the 13th and the 14th Sessions of Congress). (13th Session of Congress, Senate bill numbers 306, 1225 and 1469; 14th Session of Congress, Senate bill numbers 55, 170 and 571.)

Post-disaster health and safety

- Two bills on protection of health and safety of individuals working in disaster areas, dumpsites and garbage collection, submitted by the same senator under the 13th and then 14th Session of Congress. (13th Session of Congress, Senate bill number 2214; 14th Session of Congress, Senate bill number 693.)

Emergency response services

- Two bills on the use of the police, fire or rescue/disaster lines, submitted by the same senator under the 13th and then 14th Session of Congress. (13th Session of Congress, Senate bill number 701; 14th Session of Congress, Senate bill number 244.)

Post-disaster price controls

- Two bills prohibiting increases in the price of certain good and services in areas affected by major disasters, submitted by the same senator under the 13th and then 14th Session of Congress. (13th Session of Congress, Senate bill number 2297; 14th Session of Congress, Senate bill number 129.)

Post-disaster tax concessions

- Two bills granting income and real property tax deductions in the event of damage to fixed capital and agricultural land as a consequence of disaster events, submitted by the same senator under the 13th and then 14th Session of Congress. (13th Session of Congress, Senate bill number 2348; 14th Session of Congress, Senate bill number 92.)

Crime and punishment

- A bill granting reduced sentences to prisoners who give themselves up again to the authorities after leaving detention during a disaster, submitted under the 14th Session of Congress. (14th Session of Congress, Senate bill number 1770.)
- A bill increasing the penalties for crimes of theft committed in areas declared to be in a state of calamity, submitted in the 14th Session of Congress. (14th Session of Congress, Senate bill number 1510.)

Calamity funds

- Four identical bills, submitted by two different senators under both the 13th and the 14th Sessions of Congress, under which 20% of the unexpended balance of annual local calamity funds should be set aside in calamity reserve funds and used to supplement concerned LGUs' annual calamity funds when deemed necessary, rather than reverting to the unappropriated surplus of their general funds. (13th Session of Congress, Senate bill numbers 1200 and 1462; 14th Session of Congress, Senate bill numbers 714 and 853.)
- A further bill on the local calamity fund, submitted under the 13th Session of Congress, requiring that 25% of calamity funds should be set aside for use for mitigation and preparedness measures. (13th Session of Congress, Senate bill number 827.)

Regional institutional arrangements

- A bill seeking to amend PD 1566 to provide more responsive regional disaster coordinating councils, submitted during the 13th Session of Congress. The bill calls for the establishment of regional rehabilitation councils and regional disaster operations centers with powers to formulate and implement evacuation and rehabilitation policies and the construction of provincial primary evacuation and rehabilitation centers. (13th Session of Congress, Senate bill number 1754.)

Technical hazard assessment, monitoring and warning

- Two identical bills, submitted under the 13th and then 14th Session of Congress, calling for the establishment of a natural calamities' hazard mitigation program by PHIVOLCS and PAGASA to undertake hazard assessments and provide related monitoring, warning and public education functions. (13th Session of Congress, Senate bill number 1947; 14th Session of Congress, Senate bill number 1687.)
- Two virtually identical bills, submitted under the 13th and then 14th Session of Congress, seeking to establish a modernization program for NAMRIA. The program would focus on the enhancement of mapping capabilities, the development of information technology capability and the improvement in data acquisition capability. (13th Session of Congress, Senate bill number 911; 14th Session of Congress, Senate bill number 1447.)

Other approved and pending legislation of relevance to the mainstreaming of disaster risk reduction into development include that pertaining to land-use controls and building codes. New bills pending under the 14th Session of Congress include several that institutionalize a comprehensive national land-use policy (Box 4). Meanwhile, PD 1096 (the national building code) specifies minimum requirements and standards on building designs to protect against fires and natural hazards (World Bank and NDCC, 2004). However, building codes are not strictly enforced (Jose, 2006; UNDP, 2006) and it has been suggested that they should be examined to determine whether they are adequate with regard to hazard risk. Application of building codes and design standards has been somewhat uneven between national and lower levels, at least in the context of roads (ADPC, 2007b). Meanwhile, zoning ordinances are also reported to have been relaxed over time (Jose, 2006). At least in the case of Metro Manila, compliance has been severely compromised by demographic and economic pressures. Measures are required to strengthen enforcement of both building codes and land zoning across the country.

Box 4 **Pending land-use legislation**

The comprehensive national land-use policy outlined in several bills pending under the 14th Session of Congress would bring existing laws pertaining to land use together to provide 'a rational, holistic, and just allocation, utilization, management and development of the country's land resources to ensure their optimum use consistent with the principle of sustainable development.'[13] The draft laws include the establishment of a National Geo-hazard Mapping Program, covering all types of hazard, and a clause requiring that the subsequent maps are incorporated and integrated into comprehensive land-use plans and the National Framework for Physical Planning. Settlements within geo-hazard areas would be allowed provided that mitigating and/or protective measures are adopted to address the potential danger or risk to lives and property within such settlements. All infrastructure activities needing an environmental compliance certificate (ECC) would also be required to submit an engineering geological and geo-hazard assessment report (EGGAR). Risk reduction projects and projects serving as alternatives to existing infrastructure found in natural hazard-prone areas would be included on the list of priority infrastructure projects.

Several climate change adaptation bills have also been submitted under the 14th Session of Congress – namely, to establish and implement a national strategic plan to address the impacts of climate change within the Philippines (Senate bill number 2336); to establish and implement a framework program for climate change mitigation, adaptation and communication, create a climate change commission and appropriate relating funding (Senate bill number 1890); to establish a climate change education program providing clear information about global warming and related technologies to reduce emissions (Senate bill number 2388); and to establish and provide funding for a program of directed and applied research to assist suppliers of drinking water in adapting to the effects of climate change (Senate bill number 2359). Three Senate and four House of Representatives resolutions have also been submitted calling for the adoption of the 2007 Albay Declaration on Climate Change Adaptation (see Section 2.6) as a framework for the mainstreaming of global warming concerns into national and local planning, accounting and budgeting systems and to support local government, private and civil society initiatives for climate change adaptation.[14] A further Senate resolution calling for an inquiry into the effects of climate change and the measures that can be enacted to alleviate them has also been submitted (Senate resolution 289).

These various climate change bills (with the exception of Senate bill number 2359) and Senate resolutions have subsequently been amalgamated into a single bill on mainstreaming climate change into government policy formulations and creating a climate change commission (Senate bill number 2583) (see Box 7 in Section 4.2). As of mid-September 2008, this amalgamated bill was pending a second hearing in the Senate.

This relatively rapid progress with climate change legislation contrasts sharply with the frustrations experienced in trying to modernize the legislative arrangements for disaster risk management and undoubtedly reflects the fact that the former is currently politically in vogue.

3.2 Disaster risk management strategy

A comprehensive disaster risk management strategy, actively involving stakeholders at all levels of government as well as the private sector, local communities and civil society, is required to implement the legislative framework and to provide coordination and monitoring mechanisms and arrangements. Individual disaster risk reduction actions and programs need to be located within this strategy, rather than treated as discrete, individual measures. Moreover, the strategy needs to indicate specific entry points and mechanisms for mainstreaming disaster risk reduction concerns both into the broader development agenda and into the design and implementation of individual development initiatives.

In the case of the Philippines, as already noted, there has been a hiatus in the passage of new legislation replacing the existing primarily reactive framework for disaster risk management. Nevertheless, there have been various efforts to leapfrog this obstacle by developing more forward-thinking plans of action and strategies, reflecting modern thinking around disaster risk management and, to some degree, embracing principles of mainstreaming.

13 14th Session of Congress, Senate bill numbers 76 (p3) and 843 (p3).
14 Philippine Senate resolutions 191, 201 and 208 and House of Representatives resolutions 303, 304, 385 and 386.

- In 2002, the NDCC adopted a Comprehensive Disaster Management Framework, reflecting a deliberate effort to introduce a more comprehensive approach to disaster risk management. This framework incorporates principles of mainstreaming, including proposed initiatives such as the integration of risk reduction concerns in local government development plans, the use of calamity funds for risk reduction, land-use zoning and the implementation of building codes. Four committees were formed to operationalize the framework, including a committee on mitigation (see also Section 3.3.1). These committees were tasked with reviewing existing policies, plans and activities and developing operational national strategies for their respective areas.
- In accordance with PD 1566, the GoP also has a National Calamities and Disaster Preparedness Plan, defining the functions of each NDCC member agency and providing the planning guidance for disaster management activities in the country (Palacio, 2007). A revised draft was prepared in 2002 to reflect the Comprehensive Disaster Management Framework's approach to disaster risk management and further amended in 2005.[15] The 2005 revised draft plan incorporates some aspects of mainstreaming. In particular, NEDA is entrusted to ensure that 'disaster concerns are integrated both in the national and sub-national development plans,' to 'provide inputs in the development of national, regional and inter-regional rehabilitation and reconstruction plans within the context of development planning' and to 'determine and analyze the effects of disasters and calamities on the socio-economic plans and programs of the country' (NDCC, 2005b:18). The plan also states that all DCCs should have a 'vulnerability reduction and risk management' unit to 'conceptualize and facilitate programs, projects and activities of DCCs concerning vulnerability reduction and risk including hazard and risk mapping' (ibid.:23).
- Following a spate of disasters in the Philippines and neighboring countries, including the 2004 Indian Ocean tsunami, the president also approved a Four Point Plan of Action for Preparedness (4PPAP) for immediate implementation in January 2005. According to OCD–NDCC (2008:30), this plan currently serves as NDCC's 'overall operational strategy for disaster risk reduction' and as 'the strategic basis for determining its activities in fulfilment of its legal mandate and the goals set forth by the Hyogo Framework of Action.'
- The mainstreaming theme is taken up again, to some extent, in a recently developed Strategic Plan on community-based disaster risk management (CBDRM) for 2007–2011 (OCD–DND, undated). This plan identifies three goals: to build an effective mechanism to promote CBDRM; to establish an effective system to integrate CBDRM into development planning through replication of pilot projects (including, in the medium term, via the integration of disaster risk reduction into local development plans and, in the longer term, via the integration of disaster risk reduction policies into public projects and the functions of LGUs); and to mobilize commitment of stakeholders and institutionalize partnerships to obtain technical and financial support for CBDRM in order to strengthen its foundation, improve operational framework and approaches and sustain initiatives (in part by establishing the importance of CBDRM in socio-economic development of the Philippines and highlighting the relationship between CBDRM and poverty).
- Finally, and most recently, the GoP, with support from the UN Inter-Agency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR), is currently preparing a Strategic National Action Plan (SNAP) to provide a road map for strengthening disaster risk reduction over the next ten years.[16] The SNAP is being prepared through a series of national multi-stakeholder dialogues based on an assessment of current disaster risk, vulnerability and capacity, a gap analysis and the identification of priority disaster risk reduction activities from the 2005 HFA by stakeholders over the next three to ten years. It seeks to take off from the 4PPAP and is an integral part of the nation's commitment to the HFA and other relevant global agreements. The concept of mainstreaming disaster risk reduction into development is embedded within the HFA and, reflecting this, the draft SNAP for the Philippines outlines some 150 strategic actions and responses, a number of which could directly support disaster risk reduction mainstreaming. These include legislative changes, the formulation of a national policy on disaster risk reduction, institutional and technical capacity-building at all levels of government, the mainstreaming of disaster risk reduction into national, sectoral and local development and land-use plans, budgetary appropriations for disaster risk reduction, development, maintenance and dissemination of spatial hazard risk information, dissemination of disaster risk reduction knowledge and the monitoring and evaluation of disaster risk reduction measures.

If fully implemented, these plans and strategies could represent considerable progress in mainstreaming at both national and local levels. In practice, however, progress in implementation has been slow and the plans and strategies have resulted in relatively limited practical steps towards mainstreaming. Moreover, the basic institutional arrangements for mainstreaming and the practical steps required to achieve successful, comprehensive integration of disaster risk reduction concerns into development across all areas and levels of government requires more careful thought. As of mid-2007, the formulation of 'functional' national strategies as envisaged under the 2002 Comprehensive Disaster

15 The original NCDPP was approved as a guide for action in 1983 and revised in 1988 (OCD–NDCC, 2008).
16 As of September 2008, the SNAP was in its final review stage. Following finalization, it will be submitted to the president for endorsement. It was hoped that this process would be completed by the end of 2008.

Management Framework, including a strategy on mitigation, 'remain[ed] a challenge for the National Committees,' according to Palacio (2007:2). As regards the revised NCDPP, the Department of Environment and Natural Resources (DENR) is the only line agency tasked with any specific risk reduction implementation responsibilities (primarily via reforestation), despite the wide-ranging, multi-sectoral nature of disaster risk reduction; NEDA is not specifically tasked to incorporate disaster risk *reduction* elements into development planning; and neither the vulnerability reduction and risk management unit nor the National Committee on Mitigation are vested with any specific roles, including in relation to mainstreaming disaster risk reduction into development. More fundamentally, the revised draft has never even been adopted. Meanwhile, in reality, the 4PPAP is very narrow, focusing on four very specific issues: upgrading of PAGASA and PHIVOLCS forecasting capability; a public information campaign on disaster preparedness; disaster management training for local government units in identified vulnerable areas; and the strengthening of mechanisms for government and private sector partnership in relief and rehabilitation (NDCC, 2005a). Mainstreaming is not directly mentioned, despite being a central goal of the HFA which the 4PPAP seeks to support. The draft SNAP is a potentially more positive step towards mainstreaming but, in its current form, is not sufficiently clear on the central importance of mainstreaming. Related activities are presented in a somewhat disjointed fashion, rather than as a series of means to a clearly articulated end.

Sector-specific disaster risk management plans of action are also lacking, even in highly disaster-vulnerable sectors such as agriculture, while the broader strategies and plans similarly outline few practical steps into which individual line agencies and local governments can sink their teeth. Furthermore, none of the above documents stretches to the development of monitoring and evaluation indicators, a further critical building block towards successful mainstreaming of disaster risk reduction into development (see Section 3.8).

More positively, the shift in emphasis in disaster risk management plans and strategies has at least spawned – or created the justification for – a series of externally supported projects in support of mainstreaming. For instance, the 4PPAP's third action point – capacity-building for local government units in identified vulnerable areas – has led to a series of initiatives beginning with the READY project (see Section 2.1). The international community is keen to move the GoP forward away from its traditional relief focus. Moreover, various steps are being taken, be it sometimes on a piecemeal basis, to reduce disaster risk in certain sectors of government and in some LGUs. For instance, the Regional Consultative Committee on Disaster Management – Mainstreaming Disaster Risk Reduction (RCC–MDRD) program is implementing a project on mainstreaming disaster risk reduction into road construction in conjunction with NDCC and the Department of Public Works and Highways (DPWH), with funding support from the Swedish International Development Cooperation Agency via UN/ISDR (see RCC–MDRD Advisory Panel, 2008). Phase 1 of this project identified specific entry points for integrating disaster risk reduction concerns into the planning of roads, resulting in the development of a more generic guidance note on mainstreaming within the road sector for application across Asia. RCC–MDRD hopes to take this work further forward in the Philippines by piloting the recommendations of Phase 1 in an ongoing or pipeline road project. As a further example, in the aftermath of the two March 2006 landslides in Southern Leyte and Zamboanga del Sur, which together caused over 1,000 deaths, the National Land Use Committee (located within NEDA) agreed to further mainstream disaster risk management in the regional land-use and physical planning process (NEDA, 2006a). The UNDP/NEDA/Disaster Preparedness European Commission Humanitarian Aid Department (DipECHO) mainstreaming project (see below) is an offshoot of this undertaking. Meanwhile, within the field of education, a project led by the Asian Disaster Preparedness Center (ADPC) is planned to integrate disaster risk management modules into the secondary curriculum (NDCC, 2007a).

Further measures are being implemented within a broader development context, but again, they are not reflected in any of the above strategies and plans and may not even be conceptualized as such. For instance, ongoing GoP efforts to expand and enhance the efficiency of the country's irrigation network are categorized as a mechanism for increasing agricultural productivity. However, irrigation also enhances the resilience of rice farmers (the predominant users of irrigated land) to droughts and extended dry spells and also to typhoons, by enabling them to plant wet-season crops ahead of the onset of the rains so that they can be harvested before the peak typhoon season. As a further example, the Rice Self-Sufficiency Plan for 2008–2010 will strengthen resilience to natural hazards by supporting the development of hazard-resilient seed varieties under the plan's fourth point of action, although risk reduction is not a specific goal. The increased support to agricultural extension workers envisaged under the plan also presents an opportunity to promote techniques for minimizing hazard-related rice losses.

It is important to map and acknowledge these various measures and initiatives and their related cross-sectoral complementarities to provide an overview on existing risk reduction mechanisms and reveal critical gaps. Individual government departments should then develop detailed sectoral disaster risk management strategies. These sectoral

strategies together with the gap analysis should be combined in an overarching, proactive national disaster risk reduction policy framework, which, in turn, explicitly draws out the benefits of risk reduction for broader socio-economic development.[17] This policy should be replete with meaningful monitoring and evaluation indicators (see Section 3.8). Sectoral strategies should then be revised to ensure that they are in keeping with the national strategy.

Local mainstreaming initiatives should also be replicated. Many of the initiatives currently underway focus on local government. This is entirely appropriate in countries such as the Philippines, with a high level of devolution: it is at the local level that much practical change needs to be agreed upon and implemented. However, efforts are required to ensure that successful initiatives are replicated across the country.

3.3 Institutional arrangements and capacity for disaster risk management

3.3.1 National government

Disaster risk reduction is a crosscutting issue that needs to be 'owned' by all government agencies rather than by a single department. However, an overarching national agency is required to provide leadership, determine broad disaster risk management policies and strategies, advocate for the inclusion of disaster risk reduction concerns in broader development policies, strategies and individual initiatives, actively engage a wide range of government agencies in their implementation, define responsibilities at different levels of government, coordinate this multi-sector, multi-tiered engagement and monitor and evaluate progress.

The location of this agency needs to be very carefully determined to ensure that it is best able to play this role, in particular as regards engaging with, leading and coordinating other government agencies. In the view of UNDP, multi-sectoral communication and cooperation seems more likely to happen in many countries

> **if the coordination of DRM [disaster risk management] is ultimately overseen at the highest level of executive power i.e. the Prime Minister (PM) or President. National DRM offices attached to PM offices find it generally easier to take initiatives vis-à-vis Line Ministries than their colleagues operating at the sub-ministerial level who might face administrative bottlenecks even to communicate with peer agencies.**
>
> (UNDP, 2005:6)

In accordance with PD 1566, the NDCC is the highest policy-making and coordinating body for disaster management in the Philippines. The NDCC is chaired by the secretary of National Defense with 14 department secretaries, the chief of staff, the armed forces of the Philippines, the director-general of the Philippine Information Agency and the secretary-general of the Philippine National Red Cross as members. The Office of Civil Defense provides the operating arm and the secretariat of the NDCC.

As such, the GoP has a national agency charged with critical disaster management – as it is legally referred to – oversight and coordination roles. However, its institutional location is not entirely productive from either a disaster risk reduction or, more specifically, a mainstreaming perspective. The Department of National Defense, within which it sits, is far removed from core sustainable development and poverty reduction responsibilities and decision-making. Moreover, reflecting the historically reactive orientation of disaster risk management in the Philippines, the NDCC itself has insufficient capacity and capabilities in the area of disaster risk reduction. Even disaster response capabilities are already very stretched, reflecting the high frequency of disasters in the country as well as long ongoing conflict, leaving little time for risk reduction. As such, the NDCC lacks critical insights on opportunities for mainstreaming risk reduction, from either a risk reduction or a development perspective. In addition, the NDCC lacks any economic capacity and so does not speak the language of finance and planning departments. These are crucial gaps in an area in which multi-agency, cross-government involvement and commitment at the highest level is essential. They necessarily reduce the NDCC's effectiveness as an advocate and leader for mainstreaming, even if it were to have a legal mandate for risk reduction and related budgetary provision.

Problems are further compounded by the continuing primarily response nature of NDCC's work. Disaster risk reduction activities can be intermittently disrupted by more immediate emergency efforts rather than treated, as required, as a continual, ongoing process.

17 The Presidential Task Force on Climate Change (see Box 6) is undertaking an inventory of climate change adaptation gaps across all departments of government. However, as of September 2008, this process was reported to have stalled.

As regards inter-governmental coordination arrangements, the NDCC has a multi-agency technical working group which meets regularly to discuss and resolve any issues. In 2002, this working group was organized into four committees to operationalize the Comprehensive Disaster Management Framework. These committees include one on mitigation, chaired by the DENR, as well as on preparedness, response and recovery. Each committee is tasked with reviewing existing policies, plans and activities and developing operational national strategies for their respective areas. The mitigation committee's creation is clearly a positive development. However, DENR's involvement as chair – although better placed than the DND for this role – mirrors a more general perception to date of risk reduction as primarily an environmental issue (see below). NEDA would seem better placed to lead a truly multi-sectoral, government-wide approach to mainstreaming, particularly as NEDA itself is developing a burgeoning interest and expertise in this area via its involvement in several related, externally supported projects (see Section 3.4.3). Indeed, NEDA should be given a greater, formal national leadership role in disaster risk reduction and mainstreaming into development.

Disaster risk reduction focal points should also be created in individual line agencies to direct and coordinate sectoral disaster risk management initiatives, including the mainstreaming of risk reduction concerns into the broader program of activities, to identify and draw on existing disaster risk management expertise within the agency and to provide sector-specific technical support. No evaluation has ever been made of disaster risk management capacity within individual national line agencies. Some inherent knowledge undoubtedly exists within various professional groupings represented within a number of line agencies (e.g., engineers, physical planners, agronomists). Loyzaga (2008:4) comments, for instance, that 'the DA [Department of Agriculture] represents a currently underutilized platform for the operational, institutional, scientific and technical capacities required to manage socio-economic vulnerability and mainstream disaster risk reduction.' However, such expertise is currently not organized or exploited in a systematic, regularized fashion in any government line agency while disaster risk reduction initiatives are not coordinated.

3.3.2 Local government

In accordance with PD 1566 of 1978, the NDCC structure should be replicated at lower levels of government. Individual line agencies and local government are responsible for implementing disaster risk management within their own areas of responsibility. Flood control measures are the only explicitly disaster risk reduction-orientated measure mentioned in the Local Government Code of 1991. However, devolved responsibilities also include the delivery of a number of services of direct relevance to disaster risk reduction (e.g., land-use planning, community-based forestry, environmental management, watershed management, agricultural extension and research) or which could potentially benefit from disaster risk reduction mainstreaming (e.g., local infrastructure facilities).

In practice, institutional arrangements for disaster risk management have not been fully implemented to date. Some LGUs have yet to establish their DCCs, with only 64 provincial, 89 city, 1,106 municipal and 20,674 *barangay* DCCs as of 2006 (NEDA, 2006b) out of a total (as of 31 March 2006) 17 regions, 79 provinces, 117 cities, 1,500 municipalities and 41,975 *barangays*. Moreover, the DCCs that have been established are 'uneven' in quality, in some cases non-functional or unviable (GoP, 2008). These shortcomings are partly attributed to low hazard awareness on the part of both politicians and the general public (ibid.). Reflecting PD 1566's reactive approach to disasters (see Section 3.1), DCC meetings are also commonly held on an ad hoc basis, in response to crisis situations, rather than convened on a more regular basis to discuss ongoing risk reduction initiatives as well. For instance, ADPC (2007a) documents the case of Dagupan City in Pangasinan province, Region 1, where the city's DCC used to only be active during emergencies. As such, although the city had identified a number of measures to reduce problems of recurrent flooding (including unclogging, reconstruction and repair of drainage systems, dredging the seven river systems crossing the city, raising the height of roads and bridges and conducting vulnerability assessments of houses and other infrastructure), it had done little to implement these measures.

Moreover, again reflecting PD 1566's reactive approach to disasters in the Philippines, DCCs' risk reduction capacity and capabilities are apparently very limited in many cases. They do not have adequate knowledge and expertise or related operating procedures to mainstream disaster risk management into their broader development plans, nor financial capacity to support adequate training or hold disaster risk management planning meetings (UNDP, 2006). Moreover, the training that is provided is often heavily focused on short-term preparedness and post-disaster response rather than risk reduction. Some sector-specific training on risk reduction is provided – for instance, to municipal agriculturists in some regions – but this training is apparently only given on an intermittent basis

(Benson, 2008). A paper on lessons learned from the implementation of a project on disaster risk management planning in Metro Manila found that

> **politically willing local governments feel that – *"YES, disaster risk reduction is important"* but, *"What is it and how do I do it?"* Most often local governments do not understand their city-specific disaster risk management *"options"*, nor do they comprehend the *"process"* for successfully implementing these options. The bottom line is that across the spectrum of local government duties, disaster risk management is not very well understood, is difficult to implement, and is sometimes a risky proposition for local governments.** (Buika et al., 2007:3)

Disaster risk management presents further challenges by demanding high levels of collaboration and cooperation. Writing in a more general sense, ADB notes that local governments 'are required to interact effectively with a complex set of stakeholders... requir[ing] a wide range of skills among local politicians and government officials, which they are still developing' (ADB, 2007b:53). As a crosscutting, multi-sectoral issue, disaster risk management and its mainstreaming into development personifies these challenges and demands, requiring local governments to liaise with technical national agencies such as PAGASA, PHIVOLCS and NAMRIA as well as with local communities, private businesses, national line agencies and neighboring LGUs.

One way forward from an institutional perspective involves the creation of permanent bodies focusing on disaster risk reduction within LGUs. This has already been tested in the case of Dagupan City where, as previously noted, there had been problems in moving ahead with identified disaster risk reduction activities. Dagupan City was selected as the Philippines' demonstration city for the Program for Hydro-Meteorological Disaster Mitigation in Secondary Cities in Asia and, as part of this initiative, the city's DCC decided to form a technical working group focusing on disaster mitigation and risk reduction (ADPC, 2007a). This group

> **ensures continuity of the focus on disaster management, and involves the key stakeholders who are concerned with lowering the need for disaster response. Continuous capacity building, continuous risk monitoring, and close cooperation with key stakeholders are possible through this approach.** (ibid.:7)

The province of Albay, in Region V (Bicol), has even longer experience in this regard, having established a permanent operational disaster management office 15 years ago, in 1994 (Arguelles, 2007). The Albay Public Safety and Emergency Management Office (APSEMO), as it is known, serves as the technical and administrative arm of the provincial DCC. The office is considered to have been instrumental in strengthening the disaster management capability of the provincial government by ensuring the continuity, coordination and sustainability of risk reduction programs (ibid.). As of March 2008, Albay intended to recommend to the Department of Interior and Local Government (DILG) that disaster management offices similar to APSEMO should be established as an organic part of the local government's institutional framework across the country (DILG, GTZ and DipECHO, 2008). This is an important, if potentially costly, recommendation that should be explored further together with the alternative mainstreaming of disaster risk management responsibilities into the duties of pre-existing standing offices.

Either way, LGUs also need technical support to strengthen their capacity to identify disaster risk reduction needs, prepare and implement disaster risk reduction plans and mainstream risk reduction concerns into broader development plans and individual initiatives. Such support is essential in countries such as the Philippines where local government is responsible for the delivery of basic services, including construction of local infrastructure. Some initiatives are underway to provide this technical support (see Section 3.4.3) and should be continued and extended across the country.

3.4 Integration of disaster risk reduction into national and local government development planning

There are three basic types of planning document at each level of government in the Philippines: physical framework and land-use plans, socio-economic development plans and investment plans. National and regional physical framework plans consist of broad policy pronouncements which are translated into specific land-use allocation and regulation decisions at the local level and specified in CLUPs. These plans feed into socio-economic development plans at each level of government, which, in turn, set sectoral targets and strategies. These sectoral targets and strategies are then translated into specific programs and projects, with related budgets and timelines, and detailed in development investment plans (AAPH, undated). Physical framework and land-use plans cover periods of 15 to 30 years (the latter

in the case of the national framework); socio-economic development plans are prepared every six years; and investment plans are annual or, in the case of the national investment plan, rolling two-yearly documents. Six-year Provincial Development Investment Plans and combined Provincial Development and Physical Framework Plans are also now being introduced, with technical support from ADB under an initiative to strengthen provincial and local planning and expenditure management (ADB, 2008). The PDPFPs are intended to strengthen the connection between spatial and sectoral factors and between medium- and long-term concerns. The PDIPs include an annual breakdown in the form of annual investment programs which, in turn, are a major input to annual provincial budgets (NEDA, 2008a).

3.4.1 National Physical Framework Plan

The National Framework for Physical Planning 2001–2030 (NLUC, 2001) sets some basic policy guidelines for taking disaster risk reduction concerns into account in physical planning. It seeks to protect people and infrastructure from natural hazards by recommending that natural hazards should be taken into account in locating both residential developments and production activities and that related land-use policies and zoning regulations should be adopted and implemented. It further recommends that 'parameters and databases that aid the identification and management of high-risk, hazard-prone areas and the application of appropriate planning measures should be established and disseminated' (ibid.:12).

3.4.2 National development plans

A strategic, joined-up approach to disaster risk reduction and mainstreaming is also an essential component of development plans in hazard-prone countries. Development plans should lay out clear overarching risk reduction objectives and strategies for enhancing resilience. This broad overview is essential in view of the crosscutting nature of disaster risk reduction and of the need for inter-sectoral coordination and alignment of plans to reduce risk. These objectives and initiatives should then be translated into more specific sectoral goals, measures and activities and tied into relevant projects and programs. Targets for monitoring performance should be set for both overarching disaster risk reduction objectives and more specific sectoral goals. Development policies should also be assessed to ensure that they do not create new forms of risk and to determine their own vulnerability to natural hazards, making adjustments where necessary to enhance resilience. This process in turn requires knowledge and understanding of the relevance of disaster risk to different sectors of the economy and opportunities for enhanced resilience.

From a weak beginning, there has been steady, if slow, progress towards greater consideration of disaster risk management in national MTPDPs over the past 20 years.

- The 1987–1992 MTPDP made no mention of natural hazards except in the context of the need for more effective assistance for what it termed 'disasters victims,' further investments in flood control and efforts to improve disaster preparedness (NEDA, 1986).
- Following particularly heavy disaster-related losses in 1991, the 1993–1998 MTPDP moved a step forward, highlighting the role of disasters in hindering the attainment of social welfare and community development goals and targets and hampering the development of infrastructure and identification of a number of disaster-related needs. These included flood control measures, enhanced relief, rehabilitation and preparedness capacity and operations, strengthening of the crop insurance program and the undertaking of studies on disaster risk mapping, damage assessment and the socio-economic impact of disasters (NEDA, 1994).
- The 1999–2004 MTPDP, which was written in the aftermath of 1997 El Niño drought and a series of severe typhoons in 1998, placed further emphasis on risk reduction. The plan identified five key results areas, the first of which was productivity and competitiveness enhancement. According to the plan, this would be achieved in part by ensuring that there was a conducive environment for improving sector competitiveness, in turn to be partly achieved by 'adopt[ing] appropriate measures to mitigate the impact of adverse climatic conditions (i.e., El Niño and La Niña phenomena)' (NEDA, 1999:77). As such, the plan identified the need for investment in various structural and non-structural flood control mitigation measures, farm reservoirs and small water impoundments. It also recognized the importance of targeting and providing for victims of disasters and calamities, in part by strengthening the prevention, mitigation and disaster preparedness system and by focusing on rehabilitation rather than relief, of amending legislation governing the use of local calamity funds to permit their use for 'preparedness, mitigation and prevention' purposes as well as disaster response and of strengthening climatic forecasting capabilities.
- In the chapter on the environment and natural resources, the 2004–2010 MTPDP specifically identified the need to integrate a 'disaster preparedness and management strategy' in the development planning process at all levels of government via 'various measures including periodic risk assessments, updating of respective land use policy based

on the assessment, conduct of disaster management orientation/training among LGU officials and concerned local bodies, institutionalization of community-based mechanisms for disaster management (e.g. inclusion of legitimate disaster management organizations in various Disaster Coordinating Councils), and advocating for the bill on "Strengthening the Philippine Disaster Management Capability"' (NEDA, 2004:55). The plan laid out a series of related disaster risk reduction measures to 'mitigate the occurrence of natural disasters to prevent the loss of lives and properties' (ibid.:55) in the same chapter, focusing on structural flood control and drainage, optimization of the conveyance capacity of existing river channel floodways, drainage canals and *esteros* (estuaries), geo-hazard mapping and soil stability measures. Flood control in the Clark-Subic area was also covered in the chapter on infrastructure. Under the chapter on responding to basic needs of the poor, the plan detailed intentions to 'promote a culture of resilience amongst the poor through continuous training and education, including dissemination of readily understood information materials on disaster risks and protection options to citizens and integrate disaster risk reduction in school curriculum at the primary and secondary level' (ibid.:173). Post-disaster response would also be strengthened by providing more strategic, effective and timely ex post disaster interventions and safety nets for the poor, in part by improving damage needs and capacity assessments and a coordinated disaster recovery plan would be implemented to ensure undisrupted operations or timely reopening of financial sector institutions in the aftermath of disasters.

However, although several relatively recent development plans (1993–1998 and 1998–2003) have acknowledged the influence of disasters on recent economic performance, they have thus far consistently failed to identify disaster risk as a factor potentially hindering the achievement of their economic and development goals or, thus, to systematically treat risk reduction as an integrated, cross-sectoral objective.

Instead, rather than laying out an overarching disaster risk reduction strategy into which each sector should feed, successive plans have dealt with disaster risk primarily within the very narrow framework of flood control, improved preparedness, relief, rehabilitation and preparedness capabilities and ex post support to vulnerable groups, as just indicated. The latest plan seeks to integrate a 'disaster preparedness and management strategy' in the development planning process at all levels of government (NEDA, 2004:55), as already noted, but this laudable goal is only set within the context of the environment and natural resources sector. Indeed, this same plan includes no mention of the broad economic impacts of disasters on recent performance and, within the specific context of the agricultural sector, is even positively complacent with regard to disaster risk, stating that

> **most of the key Medium-Term Philippine Development Plan (MTPDP) 2001-2003 agriculture and fisheries production targets have been exceeded in spite of the challenge posed by the El Niño and La Niña phenomena during the period. This is a testimony to the sector's resiliency and better preparedness in meeting these recurring climatic pressures.** (NEDA, 2004:23)

As such, the agriculture chapter includes no measures specifically intended to strengthen the sector's hazard resilience, other than ex post emergency assistance, 'disaster mitigation projects for calamity-stricken' areas (also apparently ex post) and an expansion of agricultural credit guarantee and insurance systems. This apparent complacency continued on into 2006, when the country experienced agricultural losses totaling PhP 10.5bn (US$ 0.2bn) as a consequence of typhoons alone, yet NEDA's annual *Socioeconomic Report*, although acknowledging that 'agricultural output could have gone higher if not for the slowdown in the fourth quarter due to the super typhoons that ravaged the country' (NEDA, 2007:1), also stated that the agribusiness sector 'proved to be resilient amid shocks and severe weather disturbances' (ibid.:22). Similarly, although it is widely acknowledged that a succession of disaster events has been a significant factor contributing to the burgeoning rice crisis in the Philippines, the new, high-profile Rice Self-Sufficiency Plan for 2008–2010 does not directly tackle the need to strengthen hazard resilience. Meanwhile, the sector continues to experience significant, annual crop losses as a consequence of natural hazards, with sometimes devastating long-term consequences for individual households.

Similarly, the *Second Philippines Progress Report on the Millennium Development Goals* (GoP and UN, 2005) pays little regard to disaster risk management or, more specifically, mainstreaming into socio-economic development, despite the fact that disaster events could be a significant obstacle to the achievement of the MDGs. Admittedly, this partly reflects the fact that disaster risk was not taken into account in the original formulation of the MDGs or in related progress indicators (Cannon, 2007). Nevertheless, the progress report only discusses disaster risk in the context of ensuring environmental sustainability (Goal 7), listing the need to mitigate the occurrence of 'natural' disasters to prevent the loss of lives and properties as a challenge and reiterating priority areas for action as already detailed in the environment and natural resources chapter of the MTPDP with one addition – to implement a disaster risk management

plan, establish warning systems and conduct capacity-building activities. The 2007 MDG mid-term progress report is briefer, simply mentioning that measures are 'being pursued' to 'prevent or reduce the occurrence of natural and man-made disasters and minimize the damage caused through reconstruction and rehabilitation of damaged areas coupled with the provision of alternative livelihoods for those affected,' again under the section on environmental sustainability (GoP and UN, 2007:57–58). The UN Resident Representative remarks on 'the importance of climate change adaptation and a long-term disaster risk management programme' in a forward to the review but, in keeping with the measures outlined in the review, does not specifically mention mainstreaming.

In practice, specific efforts *are* being taken by various government agencies to reduce vulnerability to natural hazards, as already noted (see Section 3.2). These activities need to be explicitly detailed in the MTPDP, set within a wider framework outlining overarching risk reduction objectives and strategies, mainstreaming principles and linkages into the MTPDP's key socio-economic goals. This overview is essential in view of the crosscutting nature of disaster risk, its relevance to wider development objectives and the need for inter-sectoral coordination and alignment of plans to reduce risk. Overarching objectives and strategies should also be translated into more specific sectoral goals, measures and activities and tied into relevant projects and programs.

Despite its shortcomings with specific regard to the agricultural sector, the 2006 *Socioeconomic Report* offers some glimmer of change along these lines in the near future. In the context of the chapter 'Basic needs of the poor,' the report states that

> **The need for a more systematic and institutionalized approach to disaster risk management was further stressed as a development concern as natural disasters that hit the country last year further marginalized the poor, especially those in the rural areas... The direct correlation between disaster occurrence and poverty prompts the need for an overall national framework for disaster management; better and functional coordination system to effectively manage the roles, responsibilities, and resources of the national and local governments, the donor community, the private sector, and the communities; and adequate and working human and institutional capacities on disaster risk management at both national and local levels'.**
> (NEDA, 2007:104)

It further states that

> **efforts to advance disaster risk reduction activities shall be continued through: (a) strengthening of capacities of stakeholders on disaster risk management to include measures for disaster preparedness, mitigation and prevention as well as emergency response; (b) improving the system and infrastructure of disaster preparedness and response; and (c) prioritization and systematic integration of disaster risk management into development policies, plans, and programs, e.g. Land Use Plan.** (ibid.:108)

Also on a positive note, NEDA's agricultural staff have already developed a good understanding of the importance of mainstreaming climate change adaptation – and by implication, disaster risk reduction – into development and are trying to get other departments within NEDA to take it on board as an issue of growing concern. They have also informed donors that they need to address climate change in their country programs for the Philippines.

3.4.3 Local planning

Local development councils (LDCs) are tasked with formulating and approving comprehensive, multi-sectoral development plans, physical plans and investment plans at the LGU level, in accordance with the Local Government Code of 1991. According to the 2004–2010 MTPDP, disaster preparedness and management strategies should be integrated into these plans at all levels of government.

In practice, however, a recent study found that only 30–50% of LGUs had LDCs in place (ADB, 2007b). Moreover, less than 70% of provinces had up-to-date local development plans and annual investment plans, and development and investment plans were often unlinked, implying little correlation between an LGU's development plan and its budget of expenditure. Prioritization of projects in the investment plans – in practice, the most influential planning document – appeared to be drawn up largely on an ad hoc basis, driven by local chief executives rather than linked to clear goals, strategies and programs and an evaluation of costs and benefits (ibid.). ADB (2007b:11) further reported that 'the integrity of local budgeting is distorted by poor revenue estimates during the budget formulation process,' implying that budgetary appropriations did not necessarily reflect actual utilization. The report identified 'a need to strengthen

capacities for local development planning and strengthen the linkage between development planning and budget management in order for LGUs to meet their mandate for local economic development more effectively and efficiently' (ibid.:58).

These various shortcomings in the basic planning process have posed considerable obstacles in effectively mainstreaming disaster risk reduction concerns into sub-national planning. Moreover, until very recently, LGUs have been 'under pressure to prepare a multitude of sector specific planning documents and are besieged by numerous planning guidelines, some of which are outdated' (ADB, 2007b:58), implying that yet further requirements and related guidelines, this time relating to disaster risk reduction mainstreaming, could have little real impact. As of 2006, UNDP reported that disaster management plans are typically not being integrated into respective local development plans (UNDP, 2006).

Community participation in local planning has also been weaker than envisaged in the Local Government Code. ADB (2007b:58–59) reports that 'one survey found that less than a third of LGUs have development plans that benefited from meaningful NGO/people's organization participation.' With more specific regard to disaster risk management, Oxfam comments that

> **Because of the people's lack of participation in prioritisation of problems and identification of interventions, most development plans addressed immediate needs (e.g. dredging of river systems, building basketball courts, waiting sheds, barangay markers). Although people in the community may have benefited from these projects, local development plans usually did not prioritise disaster preparedness and vulnerability reduction.** (Oxfam, 2002:75–76)

The record on comprehensive land-use plans has been slightly better, although far from ideal. According to the Housing and Land Use Regulatory Board, which assists LGUs in the preparation of CLUPs and zoning ordinances, as of July 2007, 822 municipalities and cities had updated CLUPs, a further 385 were currently being updated and 174 had new (their first) CLUPs, leaving only 229 municipalities and cities (15%) with no CLUPs.[18] Moreover, in the context of Metro Manila at least, participants of a workshop reported that they include disaster risk reduction elements, such as the production of maps indicating areas prone to flooding, as part of their customary land-use planning process (EMI et al., 2005). However, according to the same source, several LGUs only considered risk reduction on an ad hoc, per-need basis, rather than as an integral part of land-use planning. Meanwhile, at a community level, UNDP (2006) reports that some hazard maps had been produced but were not being applied in planning and decision-making. Moreover, only 59 out of a total 80 provinces have Provincial Physical Framework Plans into which CLUPs should link.

As of 2005, some efforts were reported to be underway to strengthen consideration of disaster risk concerns in land-use planning by improving related guidance on this issue (EMI et al., 2005). The (presumably resulting) 2006 version of the guidelines for preparing CLUPs contains a number of references to natural hazards (HLRUB, 2006). According to the guidelines, community perceptions of local environmental conditions, including types of hazard faced, their impact, perceived factors contributing to vulnerability and potential risk reduction measures should be determined. Maps and data on geological features, including fault lines, volcanoes and areas prone to tsunamis and landslides, should also be drawn together and the contribution of natural hazards, including climatological hazards, to existing land-use patterns and to any related problems determined. Higher-risk areas should then be taken into account in determining land supply available for development while natural hazards should also be considered when determining the most pressing and significant problems and issues. The resulting land-use plan should take natural hazards into account and hazard-prone areas indicated on the zoning map. Several government agencies are then tasked with determining whether risk reduction measures are adequate in reviewing CLUPs, including in the case of DPWH establishing if appropriate flood risk reduction measures are identified. The CLUP manual also includes specific guidance on conducting studies of flood-prone areas as a basis for developing proposals for flood control works and for the control of flood-plain development. A complementary 'GIS cookbook,' launched in 2007, provides guidance on the application of GIS as a planning and information management tool in the creation of disaster risk reduction-conscious land-use plans (DILG, GTZ and DipECHO, 2008).[19]

Further positive developments are underway at the provincial level, where an initiative being undertaken to strengthen the planning process would also indirectly support mainstreaming of disaster risk reduction concerns and, moreover, is being accompanied by a parallel initiative intended to promote this mainstreaming more explicitly. Combined six-year Provincial Development and Physical Framework Plans and related six-year Provincial Development

18 www.hlurb.gov.ph/article/archive/261/ (visited 30 June 2008).
19 The GIS cookbook can be downloaded at www.cookbook.hlurb.gov.ph/.

Investment Plans, based on the programs, projects and activities (PPAs) identified in the PDPFP, are being introduced under a new NEDA-led initiative with ADB support.[20] The PDIPs, in turn, are intended to serve as the framework for the Municipal and City Development Investment Programs of component cities (NEDA, 2008a). According to ADB (2008), 75 PDPFPs should be formulated, reviewed and printed by February 2009 and 75 PDIPs formulated, reviewed and printed by July 2009. Various guidelines in support of this process have also been produced under the same initiative.

This introduction of PDPFPs is a welcome development from the perspective of mainstreaming disaster risk reduction as they imply closer integration of spatial and physical considerations and sectoral factors, supporting enhanced disaster risk analysis and the identification of risk reduction needs. Moreover, the PDIPs will help ensure that when it comes to allocating funding, short-term needs do not overshadow longer-term ones. As already mentioned, a parallel initiative is underway by NEDA with support from UNDP and DipECHO under a project on 'Mainstreaming Disaster Risk Management in Sub-national Development and Land Use/Physical Planning in the Philippines' to develop supplementary disaster risk reduction mainstreaming guidelines, focusing in particular on the PDPFP. The project also entails the development of training modules on the utilization of the guidelines, related provision of training for sub-national/regional planners and the production of disaster risk reduction components for two sub-national (regional) development plans and one provincial development plan.

The supplementary guidelines outline a detailed risk assessment process and the use of resulting risk estimates to enhance planning analyses, decision-making and the incorporation of disaster risk reduction principles and measures in development goals, objectives and strategies. They can be applied at the regional level, in the context of the Regional Physical Framework Plan, as well as at the provincial level. The disaster risk assessment entails hazard characterization and frequency analysis, consequence analysis (examining the consequences of the potential hazard(s) in terms of human fatalities, direct damage and related costs), risk estimation, in terms of the expected annual number of lives lost and damage to property for a given area from a particular hazard,[21] and risk evaluation, ranking municipalities according to their risk score, determining factors contributing to vulnerability and determining the acceptability or tolerability of the estimated risks based on socio-economic development criteria. This damage risk assessment generates estimates of damage and risks for each hazard type, risk maps overlaid with maps showing the location of key facilities, the identification of factors determining vulnerability and a prioritization map for risk reduction. The results of the disaster risk assessment are then mainstreamed into plan formulation by adjusting the land-use and physical planning framework to take account of the identified risk issues and concerns (e.g., by identifying alternate transport routes or rehabilitating or improving existing roads and bridges), developing an enhanced set of development issues, goals, objectives and targets based on the risks and related development issues and concerns identified and identifying specific disaster risk reduction strategies, programs, projects and activities (NEDA, UNDP and DipECHO, 2008).

In practice, there is a danger that as the guidelines are presented in a stand-alone document and, moreover, entail a lengthy, data-intensive and costly procedure, disaster risk assessments will be undertaken as one-off analyses rather than as an integral, regular element of the planning process. As such, the 2008 NEDA/UNDP/DipECHO guidelines on risk assessment at the provincial level should ideally be integrated into the more general guidelines prepared under the NEDA and ADB documents. The disaster risk assessments also require considerable technical capacity including competency in the application of GIS tools and related computer equipment, but in practice, these are not available in all provinces (UNDP, 2008). They should therefore be reviewed to explore options for simplification.

Several other internationally assisted initiatives have also been undertaken or are currently underway in support of the mainstreaming of disaster risk reduction concerns into sub-national planning:

- Under the Earthquakes and Megacities Initiative's Cross Cutting Capacity Development project, a disaster risk management master plan (DRMMP) for Metro Manila was developed to mainstream disaster risk reduction into metropolitan planning (EMI, 2005; Reyes, undated). The DRMMP is described as both a plan and a process 'to implement concrete risk reduction actions as part of the regular operations and functions of concerned institutions' (Reyes, undated:3). It places considerable emphasis on multi-level governmental collaboration, commitment and partnership involving central and autonomous local government agencies that have a jurisdiction over the city or are involved in disaster reduction. This process includes coordination of individual city and municipal plans.

20 The PDIPs will include programs, projects and activities that will be financed from national funds and other external sources as well as from the provincial 20% development fund.
21 Indirect costs are not included.

- Relevant hazard mapping initiatives in support of mainstreaming disaster risk reduction into local planning are being undertaken at municipal and city levels as part of the ongoing AusAID- and UNDP-supported READY project (see Section 2.1).
- The GFDRR has recently begun some technical assistance to help strengthen the capacity of Philippine institutions at the local level to reduce vulnerability to natural hazards, manage related risks and improve access to finance for risk mitigation and post-disaster recovery efforts (World Bank, 2008). Phase 1 will include a desk review, assessment and diagnostics of the gaps in knowledge, capacities and corresponding needs and actions required for effective disaster risk management coordination and implementation in sample LGUs and a risk financing study to determine appropriate, feasible risk transfer options for the Philippines. Phase 2 will support the implementation of the action plans and recommendations prepared in Phase 1. Its precise scope will be finalized at the end of Phase 1 but main objectives include strengthening capacities of local institutions (public, private and civil society organizations) and communities to plan for and manage disasters, including via the integration of disaster risk management into CLUPs, comprehensive development plans and city development strategies, investment plans and budgets and strengthening vertical linkages between LGUs and national agencies with regard to disaster risk management for target provinces and selected component LGUs (World Bank, 2008).
- On the related theme of climate change adaptation, a UNDP/Spanish MDG Achievement Fund project 'Strengthening the Philippines' Institutional Capacity to Adapt to Climate Change' includes a component to mainstream climate risk reduction into key national and selected local development plans (see Box 7). This project was launched in mid-2008, with NEDA as the main GoP partner.
- In March 2008, the first national conference on mainstreaming disaster risk reduction into local governance was jointly organized by DILG, GTZ-BMZ and DipECHO.

These are positive developments, although effort is required to ensure that these various initiatives are carefully coordinated and that any synergies are carefully maximized upon.

There has also been considerable streamlining of planning documents that LGUs are mandated to prepare, falling from 27 to just three documents at the municipal level (development plans, CLUPs and investment plans). This potentially provides greater space for the introduction of newer agendas such as disaster risk reduction but also highlights the importance of an integrated approach, seeking to mainstream disaster risk reduction concerns into the key planning documents – and, by implication, related guidelines – rather than to create new, parallel documents.

Some early lessons are beginning to be drawn from the above initiatives. In particular, the preparation of disaster risk components for the two regional and one provincial development plans under the UNDP/NEDA/DipECHO project is reported to have highlighted

> **a critical need to continue building the capacity of regional planners to understand the methodology of disaster risk assessment, preparedness and response highlighted in the guidelines. While the planners knew very well what disaster risks they face each year in their regions, there remained some confusion as to how to concretely compute the risk factors and what responses were required to mitigate the risks.**
>
> (NEDA, UNDP and DipECHO, 2008)

Ultimate success also depends on political commitment to risk reduction at the local level. This is by no means guaranteed.

3.5 Intra-government horizontal and vertical integration

Horizontal and vertical integration of government at different levels is also important, ensuring that principles of disaster risk reduction mainstreaming are reflected at all levels of government regardless of point of entry.

Vertical integration is particularly critical in countries like the Philippines where considerable responsibilities have been devolved to local government. In theory, the Philippine system supports this form of integration. In practice, however, a recent study found that provincial investment plans and regional and national investment plans are formulated independently of each other, implying a break in the planning chain between regional and provincial levels (ADB, 2007b). As such, regional and national programs and projects are reported to be inconsistent with the perceived needs of the LGUs in which they are implemented (ibid.). By the same token, it also implies that there are difficulties in implementing national policies at the local level. This break in the planning chain implies that mainstreaming, nec-

essarily, has to be tackled from both ends of government – local and national – and that awareness-raising and capacity-building are required across all levels of government. In fact, good practice dictates that this occurs anyway. National government has a clear role in setting overall policies and priorities, establishing the regulatory framework, designing national programs, providing technical support and monitoring and evaluating overall progress on risk reduction. Communities and LGUs at the lowest level of government have first-hand knowledge of the nature, frequency and severity of the natural hazards faced and their specific disaster risk reduction needs – critical knowledge that needs to be incorporated into local development plans and reflected in higher-level planning documents. However, a challenge remains in ensuring that disaster risk reduction priorities and needs identified at each end of the chain are transmitted up and down the system. The recent introduction of PDPFPs and PDIPs should help in this regard, particularly if they include careful consideration of disaster risk reduction concerns, but vertical integration of disaster risk reduction concerns requires careful monitoring by a national agency, most obviously NEDA which is already tasked under the draft 2005 National Calamities and Disaster Preparedness Plan with ensuring that 'disaster concerns are integrated both in the national and sub-national development plans' (NDCC, 2005b:18) (see Section 3.2).

In terms of implementation, it could be argued that the field of disaster risk reduction has the edge over some other areas by virtue of the fact that the NDCC and national government line agencies have no specific responsibilities as disaster risk reduction implementers. ADB (2007b) reports that in many other areas devolved national government agencies remain accountable for service delivery (e.g., the Department of Health for the country's overall state of health and the DENR for national environmental management) and that this encourages a two-track delivery system, blurring expenditure responsibilities and constraining improvements in local service delivery and governance. There are certainly lessons to be learned from such examples. However, the fact that no national government agency has specific disaster risk reduction implementation responsibilities or capacity is not necessarily positive and itself requires careful re-examination.

The delivery of agricultural services provides an interesting example of challenges in and opportunities for vertical integration in an area of responsibility that has been wholly devolved. Agricultural officers in the field fall under the supervision of local chief executives rather than the Department of Agriculture (DA). As such, the secretary of the DA has compared his staff to 'generals going to battle without troops or foot soldiers' (DA, 2008:1). The DA is attempting to get around this constraint in implementing its Rice Self-Sufficiency Plan for 2008–2010, a key new plan drawn up in response to the recent rice price crisis, by establishing a novel arrangement with governors and mayors whereby devolved agricultural officers under the supervision of LGUs will be detailed to the DA to help monitor implementation of the plan and provide extension work or technical support to rice farmers in their respective localities. In return, the DA will provide financial support to these LGUs to cover the services of these agricultural officers and technicians. This arrangement is initially being tested in Albay province.

As regards horizontal integration, this is required most critically because issues such as flood management and water resource management require careful cooperation and coordination between contiguous LGUs. Marikina City, which is located along a valley in eastern Metro Manila, provides a case in point. The World Bank and NDCC (2004) reported that the city of Marikina had placed considerable emphasis on risk reduction over the previous 12 years, all under the direction of the same mayor. Existing commercial buildings and informal settlers had been removed from easements, a strict refuse collection policy was introduced to reduce wide-scale dumping of garbage on open land and waterways and the local stretch of the Pasig River were dredged. In consequence, by 2003 areas prone to flooding had been significantly reduced from 20% to 5% and floodwaters were receding faster. Property values had also risen around tenfold in areas previously vulnerable to flooding. However, problems remained relating to the inflow of garbage from neighboring cities upstream.

Cooperation between neighboring LGUs is particularly critical in designing and implementing structural flood control measures, where engineering solutions aimed at decreasing the frequency and severity of flooding in one part of a river basin can increase flooding elsewhere.

LGUs already recognize that there should be greater cooperation among them for both disaster risk management and other purposes and they should be encouraged to enter into collaborative arrangements with neighboring localities to address disaster risk concerns (ADB, 2005).

Horizontal integration between national line agencies is also important given the crosscutting nature of disaster risk and potential implications of decisions in one area of government for vulnerability in another. The GoP already has a mandated convergence initiative, seeking to promote greater inter-agency cooperation, and this initiative should be amended to explicitly encourage horizontal coordination and integration of efforts to address disaster risk reduction

and climate change adaptation. Horizontal integration would be further strengthened by the development of a comprehensive national disaster risk reduction strategy.

3.6 Budgetary considerations

Integration of disaster risk concerns into government budgets should be tackled from two angles, ensuring that:

- Levels of public expenditure on risk reduction are sufficient relative to the levels and nature of risk faced, economic and social returns to risk reduction and the reasonable responsibilities and obligations of government.
- There are adequate financial arrangements to manage the residual risk.

The latter, although at face value concerned with post-disaster response rather than development, is an important aspect of mainstreaming. Disaster events can place considerable pressure on public resources, potentially forcing the partial reallocation of already committed financial resources and/or resulting in increased government borrowing. As such, natural hazards pose indirect threats to planned activities and levels of public funding available for recurrent and capital spending in future years and related risks should be taken into account as an integral part of financial planning in hazard-prone countries. This is particularly important in countries such as the Philippines where, despite recent improvements in the GoP's budgetary position, there are still relatively limited levels of discretionary expenditure and thus limited budgetary flexibility, implying potentially high opportunity costs in reallocating funding post disaster.

In the case of the Philippines, disaster-related budgetary allocations are, in fact, primarily intended for post-disaster response. National and local government budgetary resources in the form of calamity funds are annually appropriated for emergency relief and rehabilitation activities.[22] Such appropriations constitute good budgetary practice in a country where disaster-related expenditure occurs every year. Annual budgetary allocations help strengthen both financial planning for disasters and also fiscal discipline more broadly (Benson and Clay, 2004).

The Local Government Code of 1991 mandates LGUs to set 5% of their estimated revenue from regular sources aside as an annual lump sum appropriation for use in relief, rehabilitation, reconstruction and other works or services in connection with calamities. Information on the actual use of local calamity funds can only be accessed directly from individual LGUs (World Bank and NDCC, 2004). Nationwide, this implies an annual allocation of some PhP 20bn for local calamity funds. However, it is estimated that as much as 50% or more of total local calamity funds across the country are unused each year. Unutilized resources should revert to LGUs' unappropriated surplus for reappropriation the following year but, in practice, may be reallocated to alternative uses near year end, such as Christmas bonuses for local government staff.

By the same token, when a disaster does occur local calamity fund resources may be far from adequate for individual LGUs. Other LGUs are allowed by law to use their local calamity funds to assist third-party LGUs but, in practice, very few do. The national calamity fund is therefore designed to supplement and complement local calamity funds. According to PD 477, 2% of the budgetary reserve should be allocated to the national fund. Priority in use is given, firstly, for urgent and emergency relief operations and emergency repair and rehabilitation of vital public infrastructure and lifelines damaged by calamities occurring within the budget year; secondly, for the repair, rehabilitation and reconstruction of other damaged public infrastructure; and, thirdly, for pre-disaster activities outside the regular budgets of line agencies and proposed capital expenditures for pre-disaster operations. However, available evidence suggests that these existing calamity funds may be insufficient to meet much of the cost of rehabilitation and reconstruction even in years of lower loss and are likely to be grossly inadequate in the event of a major disaster. This remains true despite – by recent standards – a relatively high allocation of PhP 2bn for the national calamity fund in fiscal year (FY) 2008, compared with PhP 0.7bn in FY 2006.[23]

Longer-term reconstruction needs in the aftermath of major disaster events are sometimes projected while special rehabilitation funds have been created in the aftermath of several particularly major events, notably the 1990 Baguio earthquake and the 1991 eruption of Mount Pinatubo.[24] Some international assistance is also forthcoming following major events. There is also some partial all-peril property cover via the Government Service Insurance System General Insurance Group (GSIS–GI) insurance, a state-owned entity. In theory, LGUs are required by law to purchase insurance from GSIS–GI, securing cover against all property in which the government has an interest (e.g., government offices,

22 See World Bank and NDCC (2004) for a detailed discussion about the calamity fund and other sources of funding for post-disaster public expenditure.
23 In FY 2007, PhP 9bn was allocated to the national calamity fund but this included PhP 8bn specifically earmarked for rehabilitation, repair and reconstruction in areas affected by the devastating series of typhoons in 2006.
24 For example, in the mid-1990s it was ruled that any further expenditure relating to the eruption of Mount Pinatubo and related lahar mitigation measures should come out of regular budgetary appropriations to relevant government departments (World Bank and NDCC, 2004).

hospitals, schools, public markets). In practice, GSIS–GI estimates that about 30% of LGU properties are insured. LGU buildings in Metro Manila and other cities and first-class municipalities[25] are now largely covered and GSIS–GI is working to increase insurance cover by second- and third-class LGUs, particularly those in higher-risk areas. GSIS–GI insurance also provides all-peril cover on all government-owned or -controlled dams and power installations (although there is very limited coverage on transmission lines) (Benson, 2008).

Instead, reallocations of government budgetary resources are probably the primary source of relief and rehabilitation funding in most years. Such reallocations apparently occur on a regular, annual basis because of shortfalls in calamity funding. Upon declaration of a calamity, concerned national agencies and LGUs are permitted to program or reprogram funds for the repair and safety upgrading of public infrastructure and facilities and for agricultural rehabilitation. For instance, the DA has regularly reallocated funding from programs such as its rice, corn and high-value crops programs to support recovery of the agricultural sector (Benson, 2008). There may also be substantial additional reallocations within the recurrent budget, relating to redeployment in kind – of government staff, vehicles and equipment, supplies of drugs and other items and so forth.

Unfortunately, these reallocations are largely unrecorded and it is therefore difficult to measure their extent without detailed examination of budgetary operations as they occur internally, within budget heads. However, some sense of their scale (at least from the perspective of the DA) is given by the fact that the DA requested – but did not receive – a specific disaster standby fund of PhP 500m under the 2008 budget in order to reduce regular reallocations from its development activities into disaster response. This request was based on an analysis of actual expenditure on relief and rehabilitation over the previous five years. The figure of PhP 500m is equivalent to 3.4% of 2005 DA appropriations and 4.5% of obligations[26] for the same year, highlighting the significant pressure that post-disaster reallocations have placed on the DA's planned activities (Benson, 2008).

The GoP needs to reassess current practice regarding the financing of public post-disaster response efforts and to develop an explicit strategy based on the use of a combination of financing mechanisms for different layers of loss. Adequate calamity funds should be budgeted for minimum expected annual relief and reconstruction spending, when total losses fall at the lower end of the spectrum. A formal strategic procedure for reallocations should be developed to cover the next tier of loss, with reliance on some combination of international risk transfer mechanisms and external assistance to finance extreme events. In fact, the government is already exploring risk financing options, for instance through the municipal development fund office, and a risk financing study to determine appropriate, feasible risk transfer options for the Philippines is included in Phase 1 of the GFDRR project (see Section 3.4.3). Risk transfer options include various forms of catastrophe insurance (including parametric insurance as well as more traditional policies),[27] catastrophe bonds and contingent debt agreements and insurance.

Similarly, there are no data available on total disaster risk reduction expenditure but levels of spending are almost certainly inadequate. Risk reduction activities are implemented through line agencies and regional and local disaster coordinating councils and, by implication, financed through their budgets, in keeping with the country's disaster legislation under which individual line agencies and local government are responsible for implementing disaster risk management within their own areas of responsibility (see Section 3.1). However, there are no mandatory requirements relating to LGU expenditure on risk reduction, no dedicated funding and no explicit reporting of expenditure. Currently, local calamity funds can only be used for post-disaster response and short-term preparedness (preparation of relocation sites/facilities, disaster preparedness training and other pre-disaster activities),[28] although various amendments permitting their use for risk reduction as well have been submitted to Congress over the past decades.[29] The Department of Budget and Management (DBM) has also mentioned in discussion that calamity funds could be placed in trust funds and carried over between years, encouraging the use of accumulated funds for risk reduction. In the meantime, however, LGUs are expected to finance mitigation and preparedness activities out of other budget heads. Some, primarily richer, LGUs have spent part of their 20% development fund on disaster mitigation (World Bank and NDCC, 2004). In other cases, mitigation and preparedness activities have been funded, for instance, from the municipal social welfare and development

25 The DILG and Department of Finance classify LGUs in descending order from class 1 to 6 based on average annual income.
26 The best proxy of actual expenditures.
27 For instance, in 2006 the Mexican government took out a parametric earthquake insurance policy, underwritten with a US$ 160m catastrophe bond and reinsurance (Swiss Re, 2008). The policy provides US$ 150m relief and rehabilitation financing in the event of an earthquake above a pre-determined threshold (determined by magnitude, depth and location). The policy provides cover for three events within a three-year period.
28 According to a DBM–DILG joint memorandum of June 2003 the calamity fund may 'be utilized for undertaking disaster preparedness activities and measures, provided that the sanggunian [council] concerned shall declare an imminent danger of calamity. In extreme cases and under extra-ordinary circumstances, such as but not limited to, acts of terrorism, and outbreak of dangerous and highly communicable diseases, such as SARS (Severe Acute Respiratory Syndrome), the calamity fund may also be utilized for disaster preparedness without need of a sanggunian declaration of calamity provided that there is a Presidential proclamation of the existence of an adverse event that would warrant the declaration of the entire country to be under the state of national calamity, which needs to be prevented and suppressed' (DBM–DILG, 2003).
29 The GFDRR study will also include the development of incentives and guidelines for LGUs on the use of the calamity fund for mitigation and preparedness activities.

budget (for emergency equipment), by utilizing unexpended balances on other projects, via the establishment of a disaster administrative fund for the municipal disaster coordinating council, and from the local calamity fund itself via creative labeling of mitigation activities as rehabilitation (e.g., for a drainage project) (Luna, 2000).

Since LGU disaster risk management offices are not mandatory under the Local Government Code of 1991, it is also extremely difficult to create budget lines to support the basic functioning of these offices. The Albay provincial government has, exceptionally, managed to do this for its disaster management office, APSEMO.[30] However, APSEMO has encountered difficulties in accessing funding for risk reduction from the province's own budget and does not receive a regular budget appropriation for this purpose (Lasco, Delfino et al., 2008).

The NDCC itself only receives a small recurrent budget (totaling PhP 85m in FY 2007) to cover administration of the national calamity fund, disaster relief planning, national and regional preparedness training and coordination of national and regional disaster management. Risk reduction responsibilities of other national agencies are very general and, with the notable exception of specialist technical agencies such as PHIVOLCS and PAGASA, they have few explicit disaster risk reduction activities in their programs of work or budgets. Even funding for technical agencies is limited, as evident for instance by the country's inadequate early warning system. As noted above, national calamity funds can also be used for ex ante risk reduction activities outside the regular budget of line agencies and proposed capital expenditure but, in practice, there are only very limited allocations for such purposes.

The Philippines is by no means exceptional in this regard. The establishment of a sustained funding base for risk reduction remains a key challenge for disaster risk reduction authorities in many countries and few developing countries, in particular, have longer-term funding commitments for risk reduction activities (UN/ISDR, 2007) or allocate sufficient resources for disaster risk reduction. Instead, allocations to preparedness and response considerably outweigh allocations to risk reduction 'even in countries that have a more risk-reduction oriented agenda and institutional set-up' (UNDP, 2005). This reflects wider problems in securing political commitment to disaster risk reduction.

In some quarters it has been suggested that this issue should be addressed by allocating a certain percentage of sector budgets to disaster risk reduction (e.g., UN/ISDR, 2007 and, in the specific context of the Philippines, GoP, 2008) – for instance, for training, education, capacity-building, disaster risk monitoring and analysis and implementation of disaster risk reduction measures.[31] All government agencies and LGUs in the Philippines are already required to set aside at least 5% of their appropriations for projects that address gender issues and help create gender-sensitive organizations, programs, projects and planning (see Box 6). However, no country has so far taken a similar step with regard to disaster risk reduction.[32] Moreover, a mandatory percentage allocation is not necessarily the solution in the case of national line agencies as – arguably, unlike gender – the relevance of disaster risk concerns to their individual mandates varies considerably. In addition, disaster risk reduction is not merely about spending money but also about adjusting policies, strategies and implementation practices. Having said that, clarity around existing disaster risk reduction expenditure and the establishment of some dedicated funding to support sustained risk reduction initiatives are plainly required in the Philippines.

As a first step forward, it is essential to establish present levels of expenditure on both ex ante risk reduction and ex post disaster response. Even this is not straightforward. The national government is currently unable to report how much is spent each year on post-disaster response in the Philippines, to some extent reflecting its partial reliance on reallocations post disaster and the high degree of devolution. Similarly, it cannot calculate total disaster risk reduction expenditure, in part because spending on risk reduction at the level of national government is contained within overall budgetary allocations to relevant departments, as already noted, and actual expenditure is not reported, with the exception of a small level of expenditure under the calamity fund (see below). Indeed, a significant share of relevant spending may not even be labeled as such, instead entailing the incorporation of disaster risk reduction features into other development projects (e.g., additional expenditure on road drainage and higher-quality road surfaces in flood-prone areas or on building new schools and hospitals to higher, hazard-proof standards and the inclusion of components on managing disaster risk in agricultural extension training). In some cases, expenditure on disaster risk reduction is even more oblique, with risk reduction a 'fringe benefit' rather than a specific goal of a development initiative (e.g., enhanced environmental and water resource management; investment in irrigation; poverty reduction programs and projects; routine maintenance of infrastructure). As such, even if a figure on disaster risk reduction expenditure were reported, stated spending could be much lower than its true value.

30 Luna (2000) reports that Bulacan, Negros Occicental, Isabela, San Fernando and Marikina have also established disaster management offices, with a dedicated budget for preparedness, training, equipment and other expenditure.
31 Formulation of disaster risk reduction strategies should be incorporated within the broader development planning process.
32 To the knowledge of the author of this paper.

Despite these problems, it would be possible to design and establish a tracking system to monitor ex ante and ex post disaster expenditure in the Philippines. This system should cover all relevant public expenditure by national and local government agencies and the international community. The data generated would support the GoP in determining whether the current balance of ex ante and ex post expenditure is cost-effective and identifying any key gaps in funding. This, in turn, would place it in a much stronger position to design a dedicated funding line for disaster risk reduction, be it in the form of specific budget heads and/or percentage spending requirements for certain line agencies or even LGUs in higher-risk areas.

Budget lines should also be created at the level of local government to support the basic functioning of permanent disaster risk management offices or the disaster risk management responsibilities of pre-existing standing offices. LGU access to other sources of disaster-related funding should also be strengthened. As already noted above, the GFDRR has recently begun some technical assistance in part aimed at improving local government access to finance for risk mitigation and post-disaster recovery efforts (World Bank, 2008), supporting this latter need.

More generally, tracking of all disaster-related expenditure would also support the GoP in developing a comprehensive disaster risk management strategy, including a risk financing component, and in providing critical data for use in monitoring its progress.

3.7 Project appraisal

Consideration of disaster risk concerns as part of the project appraisal process is an essential step in ensuring that development gains from individual projects are sustainable, in ensuring that potential disaster risk reduction benefits of both dedicated risk reduction projects and other development projects are optimized and in highlighting related issues of responsibility and accountability (Benson and Twigg, 2007). Disaster risk concerns should be considered in all components of project appraisal analysis – financial, economic, environmental, social, institutional and technical – reflecting the fact that vulnerability to natural hazards is complex and multi-faceted and so needs to be viewed from all angles, incorporated into broader planning tools, such as logical framework analysis and results-based management frameworks, and reflected in the development of monitoring and evaluation indicators.

In the case of the Philippines, major public sector capital projects, defined as projects costing at least PhP 500m[33] and involving investments in physical and human capital through expenditures or transfers by the national government, must be reviewed and evaluated[34] by the Investment Coordination Committee (ICC) with regard to their fiscal, monetary and balance of payments implications, their technical, financial, economic, social, environmental and institutional development feasibility and viability and their overall sectoral and spatial context, in terms of their contributions to sectoral targets and linkages with other projects in the sector and region of implementation.[35] Historically, many local public goods and services have been too small to undergo this evaluation process. However, as part of the current initiative to strengthen provincial planning and expenditure management (see Section 3.4.3), all PPAs included in the newly created PDIPs will be required to undergo some form of project evaluation and development, reflecting the increasingly important roles and responsibilities of LGUs in development. Small and locally funded PPAs will only require basic evaluation and assessment, relating to identification of outputs and outcomes, the case for public provision or participation and pricing considerations. Large and externally funded PPAs – provisionally defined as projects for which the cost exceeds the province's 20% development fund divided by the number of municipalities in the province – will be required to undergo a fuller evaluation (including market analysis, a technical feasibility study, discounted cash flow analysis) and cost–benefit analysis (NEDA, 2008b).

Current ICC guidelines on project appraisal do not mention the relevance of disaster risk or longer-term climate change concerns to project design and achievement of objectives, however, let alone provide any specific guidance on how to handle them. Specific guidance is important because analysis of disaster risk-related concerns entails a number of particular challenges. For instance, an economic analysis of a disaster risk reduction initiative would have to take account of the fact that the flow of benefits is necessarily probabilistic, with the actual level of benefits realized dependent on the degree of severity of hazard events – if any – occurring over the life of a project, that many of the benefits would relate to direct and indirect losses that would *not* ensue should the related hazard occur, rather than to the expected streams of positive benefits that *would* ensue, as would be the case for other investments, and that levels and forms

33 The ceiling is lower for build–operate–transfer projects.
34 In the Philippines, the term evaluation is used in a pre-approval context to refer to the examination of a project's viability.
35 The ICC is located within NEDA.

of vulnerability may change considerably over the life of a project (Benson and Twigg, 2007). More generally, the various forms of project appraisal would have to handle issues of uncertainty relating to the fact that there could be little information available on the frequency and intensity of the hazard under investigation. In the case of climatological hazards, this uncertainty is compounded by further uncertainty relating to the possible impacts of climate change on future hazard frequency and intensity.

Some initial effort is being made to address this shortcoming under the Mainstreaming Disaster Risk Management in Sub-national Development and Land Use/Physical Planning in the Philippines project (see Section 3.4.3). Guidelines on disaster risk reduction mainstreaming drawn up as part of this project include a table outlining entry points for disaster risk reduction in project evaluation and development, representing an important start in improved practice.

Further steps should now be taken to conduct a peer review of this initial work and to amend the existing project evaluation guidelines and reporting formats directly to incorporate disaster risk concerns, rather than providing stand-alone separate support. ProVention's *Tools for Mainstreaming Disaster Risk Reduction: Guidance Notes for Development Organisations* (Benson and Twigg, 2007) and UNDP and UN/ISDR's *Integrating Disaster Risk Reduction into CCA and UNDAF* (UNDP and UN/ISDR, 2006) provide useful guidance materials which could be drawn on in support of this process.

Adequate funding is also required to ensure that disaster risk concerns are adequately considered, particularly at the initial feasibility stage. At later stages of detailed project design, options for addressing disaster-related issues may be both more limited and more expensive. However, as ADPC (2007b) reports, there is no budget for including hazard risk-related investigations and surveys at the initial feasibility stage in the Philippines. ADPC therefore proposes that standard operating procedures should be adjusted to provide such funding, helping to ensure that disaster risk concerns are adequately and cost-effectively addressed and that additional funding should also be provided for subsequent supplementary investigations at the detailed design stage as required (ibid.).

Meanwhile, all environmentally critical projects and projects in environmentally critical areas are required to undergo an environmental impact assessment to obtain an environmental compliance certificate, whether or not they require ICC review and evaluation.[36] This EIA process is overseen by the DENR. Environmentally critical areas include areas frequently visited and/or hard-hit by natural hazards and mangrove areas (which provide buffers against storm surges and tsunamis). Data on both climatological and geological hazards should be presented as part of the baseline environmental profile of an EIA 'for the proponent's guidance during project design' (EMB, 2007). Environmental risk assessments may also be required. However, these risk assessments are intended to focus primarily on safety risks (DENR, 2003) while risks associated with natural hazards are deemed 'more appropriately addressed in the proponent's FS (feasibility study)' (EMB, 2007). Geological risks should also be covered in a separate EGGAR, which must be obtained for all projects falling within the scope of the ECC requirements (DENR, 2000). However, analysis of the potential impact of climatological hazards on a project's outcome may fall through the net as there is no specific responsibility for it anywhere in the project appraisal system.

This gap relating to climatological hazards should be closed, possibly by expanding the scope of environmental risk assessments to consider the potential impact of natural hazard events on the project, but also by requiring that the potential impact of hazard events is considered in all other components of project appraisal (economic, technical and so on) for projects in hazard-prone areas. Systematic analysis of the potential disaster risk-related consequences of a project via its impact on the environment should also be required as a central component of the environmental assessment process in hazard-prone areas. For instance, the expansion of infrastructure, including bridges, railway lines and roads, across a valley can create barriers that impede the flow of rainwater, in turn leading to problems of flooding (Benson and Twigg, 2007). Currently, this is not a specific requirement of an EIA in the Philippines. Finally, it is important that EIA guidelines be applied more consistently. ADPC (2007b), for instance, reports that feasibility studies and EIAs are not normally conducted for roads and structures implemented by provincial and district-level agencies while EIAs are unevenly used for nationally financed projects, although they are always prepared for projects financed by external agencies. Hopefully, requirements associated with the newly created PDIPs will help ensure that project appraisal standards across the country are brought into line with official regulations.

36 Other projects are required to obtain a certificate of non-coverage from the Environmental Management Bureau certifying that, based on the submitted project description, the project is not covered by the EIA system and is not required to secure an ECC.

3.8 Beyond platitudes: setting disaster risk reduction goals and related indicators

Capacity to monitor and evaluate disaster risk reduction initiatives, generate hard evidence on related inputs, outputs, results and impacts and learn lessons for the future is an essential component of the enabling environment for mainstreaming. In practice, the use of benchmarks and indicators to monitor and evaluate disaster risk reduction initiatives is not very common anywhere (UN/ISDR, 2008). This partly reflects an inherent challenge relating to the fact that the success of a disaster risk reduction initiative is ultimately measured in terms of something – a disaster or a particular form or level of loss – that does not happen as a consequence of a hazard event. There are further complications relating to the fact that the design hazard event[37] may not occur over the life of a project, implying that the benefits and impact of related disaster risk reduction activities may not be directly measurable within the normal evaluation timeframe (Benson and Twigg, 2007). Moreover, no two hazard events are ever the same, implying that the precise nature and scale of any benefits may vary between events. Nevertheless, disaster risk reduction initiatives can, and should, be monitored and evaluated. Problems relating, for instance, to potentially lengthy time lags in the realization of benefits can be overcome to some extent by using leading or process indicators that provide a measure of progress towards the achievement of project objectives (e.g., the number of schools constructed to withstand earthquakes of a particular magnitude).

In the case of the Philippines, successive MTPDPs have been fairly weak in setting clear monitoring and evaluation targets and related indicators across most parts of the plan and have contained few specific disaster risk reduction indicators. More positively, stakeholders identified monitoring and evaluation of disaster risk reduction initiatives as an important issue in the development of the SNAP. However, although the draft SNAP contains certain quantitative output goals, it does not explicitly detail any monitoring or evaluation indicators. Instead, it merely notes that

> **Monitoring, evaluation, and reporting on the progress of DRR implementation require a system that can be comparable with those of other countries. The UN/ISDR guidelines and HFA template are suitable for the purpose.** (GoP, 2008:48)

The UNDP guidelines on integrating disaster risk concerns in provincial planning processes also provide little country-specific guidance on monitoring and evaluation beyond stating the need to perform the following steps in undertaking the logical framework analysis for all programs, projects and activities in the PFPDP:

- 'Include relevant indicators to monitor and evaluate any disaster risk reduction components
- Consider disaster-related factors in identifying critical risks and assumptions, developing a risk management plan and establishing risk indicators
- Monitor and assess performance of any disaster risk reduction components, the impact of any disaster events and implications of any changes in vulnerability to natural hazards and modify project activities, targets, and/or objectives accordingly where necessary
- Assess disaster risk reduction achievements and shortcomings and adequacy of the initial disaster risk assessment' (UNDP, 2008:129–130).

Indicators for monitoring and evaluating disaster risk reduction initiatives clearly need to be developed for the Philippines, including indicators for monitoring disaster risk reduction aspects of broader development initiatives. As already recommended in the SNAP, the GoP should draw on guidance provided by UN/ISDR on monitoring progress on implementation of the Hyogo Framework for Action at the national level (see UN/ISDR, 2008) and also on a related online tool, the HFA Monitor, which was launched in May 2008. The HFA tool is intended to monitor, review and report on progress and challenges in the implementation of disaster risk reduction and recovery actions at the national level, in accordance with the HFA's priorities.[38] The Global Network of Civil Society Organisations for Disaster Reduction, a network initiated by UN/ISDR and launched in June 2007, is developing parallel indicators for local government, local-level civil society organizations and communities in monitoring progress under the HFA, providing an additional, highly relevant resource for use in the countries with high levels of devolution, such as the Philippines.

37 The specified magnitude of a particular type of hazard against which the disaster risk reduction measure is intended to strengthen resilience. The measure may provide little or no protection against greater events and even, in some circumstances, exacerbate such losses.

38 For further information see www.preventionweb.net/english/hyogo/hfa-monitoring/hfa-monitor/index.php?pid:73.

4. Conclusions and recommendations

Considerable energy is currently being expended on mainstreaming disaster risk reduction into development in the Philippines, with a number of initiatives underway to get mainstreaming off the ground. Many of these initiatives focus on local government, in keeping with the country's high level of devolution.

The most critical challenge ahead is to ensure that these various initiatives result in concrete, sustained changes in development practice, particularly at the level of local government. In order to achieve this, a number of fundamental steps need to be taken both to increase awareness of the need for mainstreaming and to complete the establishment of an appropriate enabling environment.

Recommendations arising from this paper are presented below and summarized in Box 5, which identifies a number of priority actions that urgently need to be undertaken.

Box 5

Summary recommendations on integrating disaster risk reduction into development in the Philippines

Strategic objective: *To ensure that ongoing initiatives to mainstream disaster risk reduction into development are sustained and strengthened, leading to long-term institutional, legislative, judicial and development policy and practice changes, and contributing to poverty reduction and sustainable socio-economic development.*

Awareness-raising

Objective: Strengthened understanding and awareness of the need for disaster risk reduction and its mainstreaming into development, and greater accountability for disaster-related losses.

Priority action

- Systematic analysis of the interlinkages between poverty and vulnerability to natural hazards.

Medium-term measures

- Preparation of multi-hazard maps for the whole country and development of an integrated national hazards data and mapping system.
- Extensive multi-hazard vulnerability mapping, focusing on individual communities and related awareness-raising.
- Improvements in post-disaster damage assessment procedures and practice.
- Analysis of the long-term macroeconomic and related budgetary impacts of disasters.

Establishment of an enabling environment

Objective: Enhanced enabling environment for mainstreaming of disaster risk reduction concerns into development.

Priority action

- Passage of new, comprehensive disaster risk management legislation.
- Establishment of strong national institutional leadership and oversight mechanisms, and related technical capabilities, for disaster risk management, ideally within NEDA.
- Creation of disaster risk reduction focal points in individual line agencies.
- Development of a comprehensive, long-term disaster risk management strategy, incorporating individual sectoral strategies, embracing principles of mainstreaming and replete with meaningful monitoring and evaluation indicators.
- Initiation of measures to ensure close collaboration with the climate change adaptation community at different levels of government.

Medium-term measures

- Establishment of permanent LGU disaster risk management bodies or the integration of disaster risk management responsibilities into the duties of pre-existing LGU officers and provision of related technical support to strengthen capabilities.
- Integration of disaster risk reduction concerns into the MTPDP, including specification of overarching risk reduction objectives and strategies, mainstreaming principles and linkages into the MTPDP's key socio-economic goals and more specific sectoral goals, measures and activities.
- Integration of disaster risk reduction concerns into local government development plans and the merger of the recently prepared provincial disaster risk reduction mainstreaming guidelines into the more general PDPFP guidelines.
- Establishment of a tracking system to monitor levels of expenditure on ex ante risk reduction and ex post disaster response.
- Development of an explicit disaster response financing strategy.
- Establishment of dedicated funding lines for disaster risk reduction and, possibly, permanent disaster risk management offices, at each level of government.
- Revision of existing EIA and other project appraisal guidelines and procedures to require comprehensive analysis of both the potential impact of natural hazard events on a project and the potential disaster risk-related consequences of the project.
- Revision of land-use regulations and building codes and introduction of judicial and other measures to ensure enforcement.
- Strengthened vertical and horizontal integration of disaster risk reduction plans between different levels of government, between various line agencies and between neighboring LGUs.
- National coordination of sub-national mainstreaming initiatives.
- Documentation, evaluation and replication of successful local mainstreaming initiatives.
- Strengthened collaboration between the climate change adaptation and disaster risk reduction communities via institutional, policy and research coordination and the development of joint strategies to integrate the two issues into national planning processes, strategies and budgets.

4.1 Awareness-raising

There is growing – if still relatively limited[39] – awareness of the need for disaster risk reduction and its mainstreaming into development, including among high-ranking government officials. This progress has been in part aided by recent, aberrant weather patterns which are widely perceived to be a consequence of climate change. Sustained efforts are required to ensure that this trend continues and that geological hazards are also included in this process. Such efforts will be particularly important if recent weather patterns prove to be a temporary anomaly along a much slower path of climate change, in turn reducing the perceived need to address disaster risk. Information on hazards and risk is increasing but, as Loyzaga (2008:5) notes, 'significant' scientific and socio-economic data remain, obfuscating the links between disasters, poverty reduction and development planning and hindering risk reduction and transfer.

Further efforts should focus on strengthening understanding of the potential impact of hazard events on both individuals and the wider economy, factors contributing to underlying vulnerability and opportunities for enhanced resilience. More specifically:

- Ongoing efforts to produce multi-hazard maps should be extended to cover the whole country, recognizing geological, watershed and other ecosystem boundaries, rather than political and administrative districts, and an integrated national hazards data and mapping system produced.
- Extensive vulnerability mapping should be undertaken, focusing on individual communities and linked to related awareness-raising.
- Efforts to improve post-disaster damage assessment should be given renewed impetus, leading to comprehensive, consistent loss-estimation practices.
- Clear efforts are required to improve analysis of the macroeconomic and related budgetary impacts of disasters. A disaggregated approach, focusing on the impact of hazard events on particular sectors or regions of the country, would help overcome related measurement problems.

39 Similarly, in the related context of climate change adaptation, Lasco, Pulhin et al. (2008) interviewed 83 key stakeholders in the climate change community in the Philippines and found that the majority (83%) of respondents believed that climate change adaptation concerns had not been successfully mainstreamed in the country primarily due to a pervasive lack of awareness of the potential impact of climate change on sustainable development, together with a bias in national priorities towards more immediately pressing concerns.

- Systematic analysis of the interlinkages between poverty and vulnerability to natural hazards urgently needs to be undertaken.

The knowledge and understanding generated by these measures will also help create demand and incentives for change at different levels of government and within wider society, both critical factors in ensuring progress. Demand for change is particularly essential at the grassroots level, where it is required to override shifting interests of successive political incumbents and keep risk reduction firmly on the agenda.

4.2 Establishment of an enabling environment

A number of measures are also required to strengthen the enabling environment for the successful mainstreaming of disaster risk reduction concerns into development.

Legislation

- Urgent effort is required to bring disaster risk management legislation in line with current thinking, with much greater emphasis on risk reduction. The multitude of existing disaster-related bills pending hearing in the Senate should be streamlined into a single document, outlining a comprehensive disaster risk management policy and incorporating measures to mainstream disaster risk management into broader development at all levels of government. The NDCC should play a central role in this process.
- Steps should be undertaken to ensure that land-use regulations and building codes are appropriate relative to levels of risk and to strengthen their enforcement.

Disaster risk management strategy

- A comprehensive, long-term disaster risk management strategy should be developed, embracing principles of mainstreaming and replete with meaningful monitoring and evaluation indicators. This process should be initiated by mapping the various practical steps underway to reduce risk at a sectoral and local government level, including those which may not even be conceptualized as such (e.g., GoP efforts to expand and enhance the efficiency of the country's irrigation network) to provide an overview of existing risk reduction mechanisms and reveal critical gaps. Individual government departments should next develop detailed sectoral disaster risk management strategies. These sectoral strategies together with the gap analysis should then be combined in an overarching, proactive national disaster risk reduction policy framework which, in turn, explicitly draws out the benefits of risk reduction for broader socio-economic development as well as cross-sectoral complementarities of risk reduction in different areas of government. Sectoral strategies should then be revised to ensure that they are in keeping with the national strategy.

Institutional arrangements and capacity for disaster risk management

- Strong leadership and oversight mechanisms and related technical capabilities need to be established at the national level to develop and oversee the implementation of a comprehensive disaster risk management policy and strategy, firmly embracing principles of mainstreaming. Increasing involvement and commitment of NEDA in the mainstreaming process over the past few years is an extremely positive development in this regard that needs to be nurtured, encouraged and formalized. NEDA is well placed to lead a truly multi-sectoral, government-wide approach to mainstreaming and brings to the table the development expertise that is essential in ensuring that disaster risk reduction is treated as a development, rather than a humanitarian, issue.
- Disaster risk reduction focal points should be created in individual line agencies to direct and coordinate sectoral disaster risk management initiatives, including the mainstreaming of risk reduction concerns into broader programs of activities, to identify and draw upon existing disaster risk management expertise within their agencies and to provide sector-specific technical support.
- At the level of local government, permanent LGU disaster risk management bodies should be established or disaster risk management responsibilities mainstreamed into the duties of pre-existing standing offices to ensure sustained continuity of disaster risk reduction initiatives, including risk mapping, the design and implementation of disaster risk reduction programs and the mainstreaming of disaster risk reduction concerns into broader development. Existing technical support underway to strengthen LGU risk reduction capacity and capabilities also needs to be continued and extended across the country.

Integration of disaster risk reduction into national and local government development planning

- Initiatives underway by various government agencies to reduce vulnerability to natural hazards need to be explicitly detailed in the MTPDP, set within a wider framework outlining overarching risk reduction objectives and strate-

gies, mainstreaming principles and linkages into the MTPDP's key socio-economic goals. This overview is essential in view of the crosscutting nature of disaster risk, its relevance to wider development objectives and the need for inter-sectoral coordination and alignment of plans to reduce risk. Overarching objectives and strategies should also be translated into more specific sectoral goals, measures and activities and tied into relevant projects and programs.

- At the level of provincial planning, the recently prepared disaster risk assessment guidelines should be directly integrated into the more general PDPFP guidelines which they are intended to complement. Furthermore, they should be reviewed to explore options for simplification.
- Deliberate effort should be undertaken to ensure that the various mainstreaming initiatives underway at the sub-national level are carefully coordinated and that any synergies are maximized upon. Successful local mainstreaming initiatives should also be documented, evaluated and replicated across the country.

Intra-government horizontal and vertical integration

- Steps should be taken to strengthen the vertical integration of disaster risk reduction plans, both top-down from national government and bottom-up from individual communities. Progress in vertical integration should be carefully monitored by a national agency, most obviously NEDA.
- The GoP's existing mandated convergence initiative, seeking to promote greater inter-agency cooperation, should be amended to explicitly encourage horizontal coordination and integration of disaster risk reduction and climate change adaptation measures. Horizontal integration would be further strengthened by the development of a comprehensive national disaster risk reduction policy and strategy.
- LGUs should be encouraged to enter into collaborative arrangements with neighboring localities to address shared disaster risk concerns.

Budgetary considerations

- The GoP should reassess current practice regarding the financing of public post-disaster response efforts and develop an explicit financing strategy based on the use of a combination of financing mechanisms for different layers of loss. Adequate calamity funds should be budgeted for minimum expected annual relief and reconstruction expenditure. A formal strategic procedure for reallocations should be developed to cover the next tier of losses, with reliance on some combination of international risk transfer mechanisms and external assistance to finance extreme events.
- Clarity around the current level of expenditure on disaster risk reduction and the establishment of some dedicated funding to support sustained risk reduction initiatives are urgently required. In the words of UNDP (2005), funding 'is the ultimate litmus test of government commitment to DRM' yet, in the case of the Philippines, commitment has yet to be translated into a substantive budget. Instead, in budgetary terms, disaster risk management is still regarded primarily as a humanitarian issue. As a first step forward, it is essential to design and establish a tracking system to monitor levels of expenditure on both ex ante risk reduction and ex post disaster response. The data generated would support the GoP in determining whether the current balance of ex ante and ex post expenditure is cost-effective and in identifying any key gaps in funding. This, in turn, would place it in a much stronger position to design a dedicated funding line for disaster risk reduction, be it in the form of specific budget heads and/or percentage spending requirements for certain line agencies or even LGUs in higher-risk areas.
- Budget lines should be created at the level of local government to support the basic functioning of permanent disaster risk management offices or the disaster risk management responsibilities of pre-existing standing offices, and LGU access to other sources of disaster-related funding strengthened.

Project appraisal

- Environmental impact assessment procedures should be amended to ensure comprehensive analysis of both the impact of natural hazard events on a project and the potential disaster risk-related consequences of the project via its impact on the environment in hazard-prone areas. Guidelines on other components of project appraisal (economic, technical and so on) should also be explicitly expanded to cover analysis of the potential impact of hazard events and such analysis should be made mandatory for all proposed projects in hazard-prone areas. Some initial work in this area under a sub-national mainstreaming project should be peer-reviewed and built upon, leading to the integration of disaster risk reduction guidance into existing project evaluation guidelines and reporting formats rather than the development of separate, stand-alone guidance.
- Adequate funding is required to ensure that disaster risk concerns are adequately considered during project appraisal, particularly at the initial feasibility stage when there is the most flexibility to deal with disaster risk concerns adequately and cost-effectively.

Beyond platitudes: setting disaster risk reduction goals and related indicators

- Indicators for monitoring and evaluating disaster risk reduction initiatives at both the national and the community levels urgently need to be developed for the Philippines, including indicators for monitoring disaster risk reduction aspects of broader development initiatives.

Somewhat ironically in view of this long list of rather fundamental needs, the Philippines would score relatively well according to the indicative criteria for establishing levels of progress for disaster risk reduction under the HFA as contained in a recent UN/ISDR document on guidance on measuring progress under the HFA (UN/ISDR, 2008). This reflects the fact that many of these indicators can be relatively easily satisfied on paper alone, without any real change on the ground. However, the NDCC itself fortunately recognizes that there are significant challenges ahead, its executive officer recently summing up its challenges as follows

> **the primary challenge for the NDCC is to help mainstream DRR as a development concern for local government units (LGUs). Another challenge is the implementation of the HFA, particularly to overcome the lack of recognition of disaster risk reduction (DRR) as a development concern. Implementing disaster risk reduction is also impeded by the lack of resources. The need for intensified capacity building in ensuring policy implementation, for planning skills, and for focused leadership are equally important challenges faced by NDCC towards mainstreaming DRR in local governance.** (DILG, GTZ and DipECHO, 2008:6)

The disaster risk reduction community often draws parallels, at least in discussion, between disaster risk reduction mainstreaming and the somewhat more advanced area of gender mainstreaming from which, it believes, lessons could be learned. In the case of the Philippines relatively more progress has, indeed, been made in the mainstreaming of gender concerns into development, offering some potential pointers and lessons. In fact, a number of the recommendations indicated above have already been implemented in support of gender mainstreaming (Box 6), providing an effective endorsement of those recommendations.

Box 6

Mainstreaming gender concerns into development: the Philippines' experience

The Philippines' first national development plan for women was formulated in 1989 and ran from 1989 to 1992. It was succeeded by a 30-year plan for gender-responsive development covering the period from 1995 to 2025. NEDA is now mandated to ensure that issues and concerns on gender and development and women's empowerment are also mainstreamed in annual *Socioeconomic Reports*, MTPDPs and Medium-Term Public Investment Programs and that gender is integrated in the sectoral outcome indicators (DBM et al., 2004).

At the level of local government, all provinces, cities, municipalities and *barangays* are required to prepare annual gender and development plans and budgets detailing gender-responsive programs, activities and projects and to formulate related performance indicators. Government guidelines outline a seven-stage process for formulating these plans and budgets, entailing gender analysis of an agency's mandate and existing projects, activities and programs, the identification and prioritization of gender issues, the setting of gender and development objectives and of targets and performance indicators, the identification of activities and costing (DBM et al., 2004).

In accordance with the General Appropriations Act, since 2005 all government agencies and LGUs have also been required to set aside at least 5% of their appropriations for projects that address gender issues. This budget is intended to directly influence the remaining 95% of an agency's budget by contributing towards the creation and continuation of a gender-responsive organization, with gender-sensitive regular programs and projects, and gender-responsive development planning.[40]

Other progress on gender mainstreaming includes:

- The formation and capacity-building of gender focal points in national agencies and LGUs, with responsibility for formulating gender and development plans and advocating for related budgets. All government agencies are required to establish these focal points.

40 www.ncrfw.gov.ph/inside_pages/gender_mainstreaming/gad_planning_budgeting.html (visited on 1 July 2008).

- The establishment of eight gender resource centers nationwide and a pool of gender experts to provide technical assistance to regional line agencies and LGUs.
- The development of a gender mainstreaming resource kit for training, planning and evaluation purposes.
- The development of harmonized gender and development guidelines for project development, implementation and monitoring and evaluation, providing a common set of guidelines for the Philippine government and donors in appraising, monitoring and evaluating the gender-responsiveness of project proposals.
- The development of an assessment tool to gauge the gender-responsiveness of LGUs and integration of gender indicators in local and community-based monitoring systems.
- More focused gender mainstreaming in key sectoral programs such as microenterprise, reproductive health and anti-violence against women.
- Better coordination amongst national agencies to monitor progress (Yao, 2006).

In terms of end results, particular progress is reported to have been made in reducing domestic violence and human trafficking and in redressing gender imbalances in education (Yao, 2006). The National Commission on the Role of Filipino Women is said to have played 'a catalytic and strategically influential role' in these advancements:

- 'As knowledge broker, ... provid[ing] quality thinking and critical analysis on gender equality;
- As facilitator, ... enhanc[ing] stronger linkages among local, national, regional and international sectors through its leadership in gender mainstreaming;
- As innovator, ... encourag[ing] and uphold[ing] the promotion of best practices in gender-responsive governance;
- As policy advocate ... champion[ing] the cause gender mainstreaming in all levels of government' (Yao, 2006:8).

The related issue of climate change adaptation has appeared on the map very recently, both in the Philippines and elsewhere. Its final emergence has reflected growing evidence that global warming is happening faster than previously anticipated, in turn requiring greater emphasis on adaptation rather than mitigation alone, and increasing evidence that poor and small-island economies are being disproportionately affected (*The Economist,* 2008).

Climate change adaptation and disaster risk reduction are clearly not one and the same. However, there are significant overlaps between the two issues, including their need for mainstreaming into broader development. Moreover, it is increasingly recognized that, as Sperling and Szekely (2005:7) say, 'there is a real opportunity to reduce current and future vulnerabilities to climate risks by building on and expanding existing disaster risk management.' As such, it is widely acknowledged that the two issues should not be tackled in isolation, with the growth of two parallel agendas, a greater likelihood of mainstreaming fatigue and competition for funding and policy space (e.g., UN/ISDR, 2007; Tearfund, 2008; Oslo Policy Forum, 2008). Instead, the issues should be brought closely together, in particular via institutional, policy and research coordination and the development of joint strategies, to exploit synergies, share experiences, lessons learned, tools and methodologies and consolidate the political voice for change. This joint approach would ensure a more efficient use of efforts and resources and greater effectiveness of achievements.

In practice, although significant overlaps in objectives and individual initiatives are emerging between the two agendas (Box 7), there appears to have been relatively limited effort to date to attempt any coordination, let alone more direct collaboration. Largely parallel structures and initiatives are emerging, in the case of climate change adaptation spearheaded by the DENR, reflecting its prior involvement in climate change mitigation and, therefore, an unconscious decision that it is also the rightful home for adaptation, while the risk reduction agenda is being led nominally, but unconvincingly, by the NDCC. Currently, climate change adaptation commands greater political attention, as evidenced, for instance, by the number of bodies being created to tackle it (see Box 7) and the much faster passage of climate change legislation (see Section 3.1). However, there is a much larger body of experience around disaster risk. Deliberate, urgent efforts are required to bring the two communities together and to begin to exploit synergies, share experiences and maximize the effectiveness of their programs and actions, including initiatives to integrate the two issues into national planning processes, strategies and budgets.

Box 7 Climate change adaptation

There has been growing interest at the highest levels of government in the Philippines in the task of mainstreaming climate change adaptation into development, resulting in a recent proliferation of entities with climate change mandates. In February 2007, a Presidential Task Force on Climate Change (PTFCC) was created, composed of secretaries of the DENR (chair), DA, DILG, Department of Energy and Department of Science and Technology and specifically tasked, among other functions, with the integration and mainstreaming of climate risk management into development. The Inter-Agency Committee on Climate Change, founded in 1991, provides technical support to the PTFCC. The DENR also established an Advisory Council on Climate Change in 2007, comprised of climate change experts, including academics and ex-senior government officials, while a presidential adviser on global warming and climate change was announced in September 2008.

Objectives of the PTFCC's draft action plan[41] include climate change adaptation, focused around food security, vulnerability to natural hazards and health and welfare (Merilo, 2007). Specific measures include a number which directly overlap with ongoing or planned efforts in the area of disaster risk management and, more specifically, mainstreaming, including mapping and technical assessments to identify areas most vulnerable to natural hazards, the integration of climate change and risk management into national and local development plans, national land-use plans and building codes, the enhancement of LGU disaster 'prevention and management' capabilities, upgrading of climatic forecasting capabilities, the development of more effective early warning systems, the protection of vulnerable areas and education and information campaigns, including integration into the school curriculum.

In the most recent development yet, a bill pending second hearing in the Senate would abolish the PTFCC and the Inter-Agency Committee on Climate Change and create a Climate Change Commission under the Office of the President as the GoP's sole policy-making body relating to climate change (see Section 3.1). Responsibilities of this new commission would, again, overlap with ongoing and planned activities around disaster risk reduction mainstreaming. They include ensuring that climate change concerns are mainstreamed into national, sectoral and local development plans and programs, formulating a framework program on climate change, creating an enabling environment for the design of risk-sharing and risk-transfer instruments, formulating guidelines for determining vulnerability to climate change impacts and adaptation assessments and facilitating the provision of related technical assistance, coordinating with local government units and private entities to address vulnerability to climate change impacts, facilitating capacity-building of local communities in relation to adaptation and recommending legislation, policies, programs on and appropriations for climate change adaptation, mitigation and other related activities.

Unsurprisingly, donor-supported climate change adaptation projects similarly overlap with the disaster risk management and mainstreaming agenda. The first phase of a Global Environment Facility-funded 'Philippines Climate Change Adaptation Project' specifically aims, in part, to strengthen proactive disaster risk management within the NDCC. A UNDP/Spanish MDG Achievement Fund project entitled 'Strengthening the Philippines' Institutional Capacity to Adapt to Climate Change' includes a component to mainstream climate risk reduction into key national and selected local development plans, including the MTPDP, National Physical Framework Plan and Medium-Term Public Investment Program, and regulatory processes such as environmental impact assessment. Outputs include the preparation of vulnerability maps for 43 provinces and other priority areas, capacity development and awareness-raising as well as specific mainstreaming accomplishments, including the development and adoption of mainstreaming guidelines, the identification of entry points in planning and regulatory processes and the development of a compendium on best climate change risk reduction practices for integration into development planning. Both projects are expected to commence shortly.

41 The Action Plan was drawn up in 2007. It was still pending approval as of March 2008.

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