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DISASTER RISK REDUCTION (DRR): REDUCING HUMAN VULNERABILITIES TO NATURAL DISASTERS

This issue of the NTS Alert offers an overview of Disaster Risk Reduction (DRR) as a means of improving long-term preparedness against the projected increase in frequency and intensity of natural hazards. It aims to provide a better understanding of DRR in relation to the holistic frameworks of disaster management, sustainable development and climate change adaptation.



Credit: UN Photo by [Bernardino Soares]

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Introduction

Over the past decade, the world has witnessed several major natural disasters, from the boxing day tsunami in 2004, to the Haiti earthquake in January 2010 and the recent floods in Pakistan in August 2010. The 'World Disasters Report 2009' states that 3,605 natural disaster occurrences were recorded from 2000 to 2008. In many of these disasters, critics have repeatedly brought up the issue of the failure to provide adequate response, calling on states and international communities to shift from reactive to proactive approaches to disaster management. In fact, as the United Nations International Strategy for Disaster Reduction (UNISDR) acknowledges, policymakers have come to better understand how natural disasters exacerbate vulnerabilities of states and communities (UN, 2005). It should be noted that natural disasters have greater impact on poor countries and communities in particular as they tend to be more exposed to hazards and have less capacity and awareness to manage disaster risks (Concern Emergency Unit, 2005:2). This places greater importance on disaster risk reduction (DRR) as a means of reducing vulnerabilities of such states and communities and building their resilience to natural hazards.

Disaster Risk Reduction: An Overview

The concept of DRR reflects an evolution in policy approaches on disaster management. Considered a relatively new term, DRR was actually built upon earlier disaster management thinking and practices (UNISDR, 2004:5–7). Adopted by the United Nations (UN) and widely used by the international community, DRR is defined as:

the conceptual framework of elements considered with the purpose of minimising vulnerabilities and disaster risks throughout a society in order to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, and facilitate sustainable development. (UNISDR, 2007:2)

The increasing interest in DRR culminated with the World Conference on Disaster Reduction in Kobe, Hyogo, Japan in 2005, and the adoption of the 'Hyogo Framework for Action 2005–2015: Building the resilience of nations and communities to disasters' (HFA). The HFA has since become the point of reference for DRR implementation globally. It offers five areas of priorities for action (see Table 1) which represent guiding principles and practical means for DRR implementation with a medium-term goal of achieving substantive reduction of disaster losses by 2015 (UN, 2005:8).

As illustrated in the **November 2009 (Issue 2) NTS Alert**, comprehensive disaster management encompasses the aspects of preparedness, early warning, mitigation, relief, recovery and rehabilitation. DRR can be seen to be focused on the preparedness, early warning and mitigation aspects of this disaster management cycle. Its aim is to reduce vulnerabilities and increase the preparedness of states and communities to natural hazards in the long run (see Figure 1).

Table 1: Hyogo Framework for Action 2005–2015 (HFA) – five priority areas and key activities

Priority areas	Key activities
Ensure that DRR is a national and local priority with a strong institutional basis for implementation.	National, institutional and legislative frameworks. Resources. Community participation.
Identify, assess and monitor disaster risks and enhance early warning.	National and local risk assessments. Early warning. Capacity. Regional and emerging risks. Information management and exchange.
Use knowledge, innovation and education to build a culture of safety and resilience at all levels.	Education and training. Research. Public awareness.
Reduce the underlying risk factors.	Environmental and natural resource management. Social and economic development practices. Land-use planning and other technical measures.
Strengthen disaster preparedness for effective response at all levels.	

Source: Compiled from UN (2005).

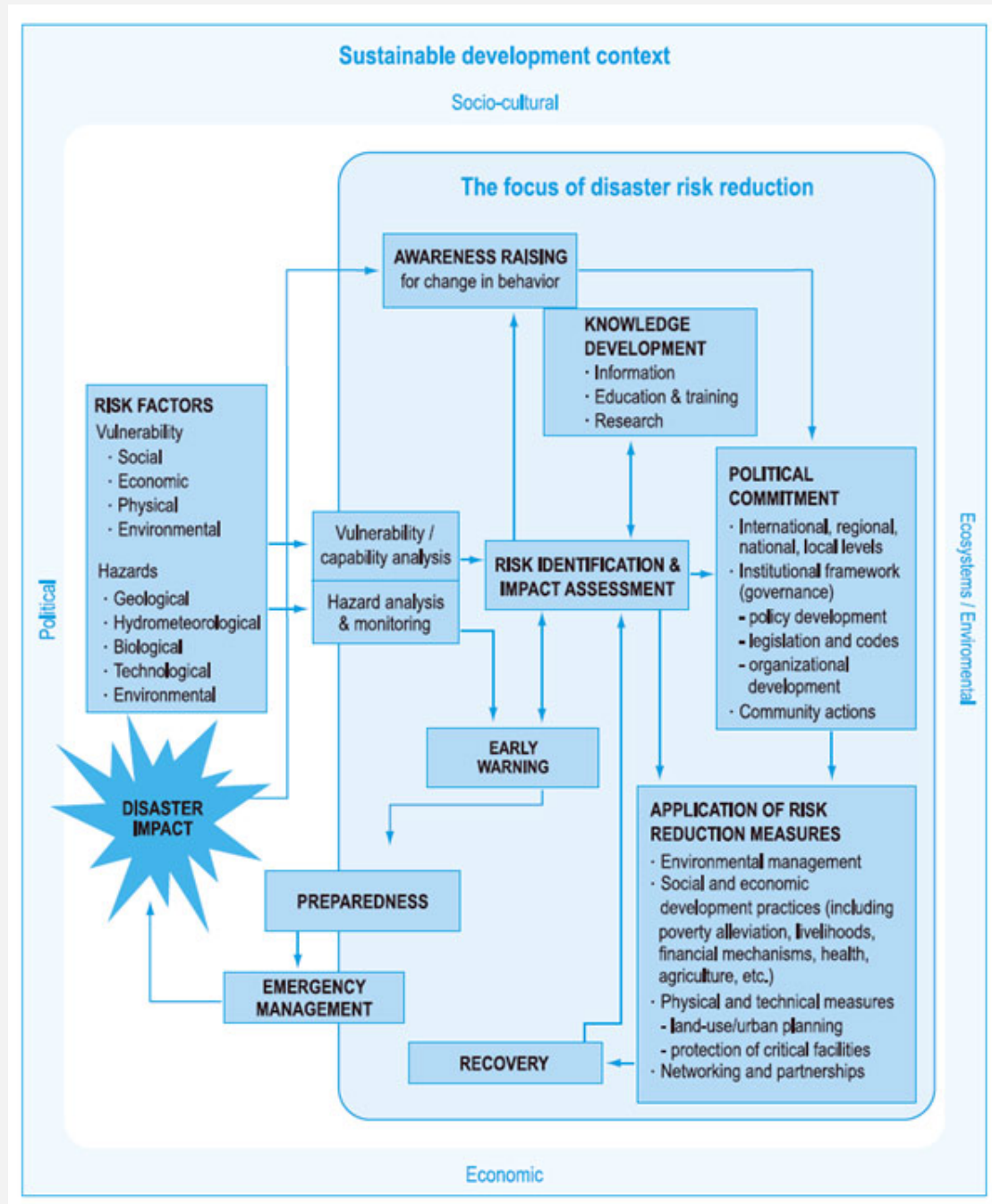
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The Stakeholders

The HFA acknowledges that states have the main responsibility to implement DRR as they own the main capacity and resources to do so

(UN, 2005). The UNISDR encourages states to mainstream DRR through their national policies. For this purpose, UNISDR published a set of guidelines to build or strengthen National Platforms for DRR. These guidelines defined a National Platform for DRR as ‘a nationally owned and led forum or committee of multi-stakeholders’ (UNISDR, 2007:4). There are thus far 57 National Platforms for DRR listed by the UNISDR (n.d.). These National Platforms have key roles in implementing provisions stated in the HFA hence contributing to the overall DRR progress globally.

Figure 1: Framework for Disaster Risk Reduction (DRR)



Source: UNISDR (2004:5).

Apart from the centrality of states, the HFA also recognises that the role of regional and international organisations as well as civil society and local communities in implementing DRR is vital. At the regional level, UNISDR facilitates sharing of information and coordination through its Regional Platforms for DRR. At the international level, there is the Global Platform for DRR. Established in 2007, the Global Platform is a global forum that takes place once every two years with the aim of promoting and assessing the progress of DRR.

Encouraging the involvement of civil society and communities in DRR is part of the effort to motivate these groups to build their own capacities. Empowering those who are vulnerable to natural hazards would in turn result in disaster reduction measures that correspond best to local vulnerabilities, enabling local communities to mitigate disaster risks (UN, 2005:4). This has been implemented through the various community-based and participatory approaches to DRR (Tran, 2009:35–36; Pelling, 2007).

Disaster Risk Reduction, Sustainable Development and Climate Change Adaptation

Policy Linkages

There has been an increasing recognition of the need to link DRR with sustainable development and climate change adaptation. Looking at the relation between DRR and sustainable development, it is clear that the impact of natural disasters could halt or even reverse the sustainable development process, exacerbating existing vulnerabilities. Compounding this, development plans, when they are poorly designed, create greater vulnerabilities to potential natural disaster risks. An example would be the poor urban planning alongside the rapid development of major cities such as Jakarta and Manila increasing the cities' exposure to natural hazards such as floods and hurricanes. In Bangladesh and Vietnam, mangrove sites were cleared to make way for shrimp farms, a move which would increase the exposure of local communities to tsunamis (DFID, 2004).



Child Victim of Pakistan Floods Receives Vaccination

Credit: UN Photo/UNICEF/ZAK.

On the other hand, successful development efforts which result in, for example, decreasing levels of poverty, better quality infrastructure and secure livelihoods, may decrease vulnerabilities, and contribute to community resilience to natural hazards. The World Summit on Sustainable Development (WSSD) held in Johannesburg, South Africa, in 2002 highlighted the importance of DRR as a core element of sustainable development with the adoption of the Johannesburg Plan of Implementation which incorporated reduction of risk and vulnerability by 2015 as one of the main targets (O'Brien, et al., 2006:70; UNISDR, 2004:20).

Moreover, the UN has argued in its '2009 Global Assessment Report on Disaster Risk Reduction' (UNISDR, 2009) that it is imperative to incorporate underlying factors that have created vulnerabilities in the first place into the policy planning for DRR. In the same report it is further argued that the implementation of the HFA has thus far failed to account for and address these underlying factors.

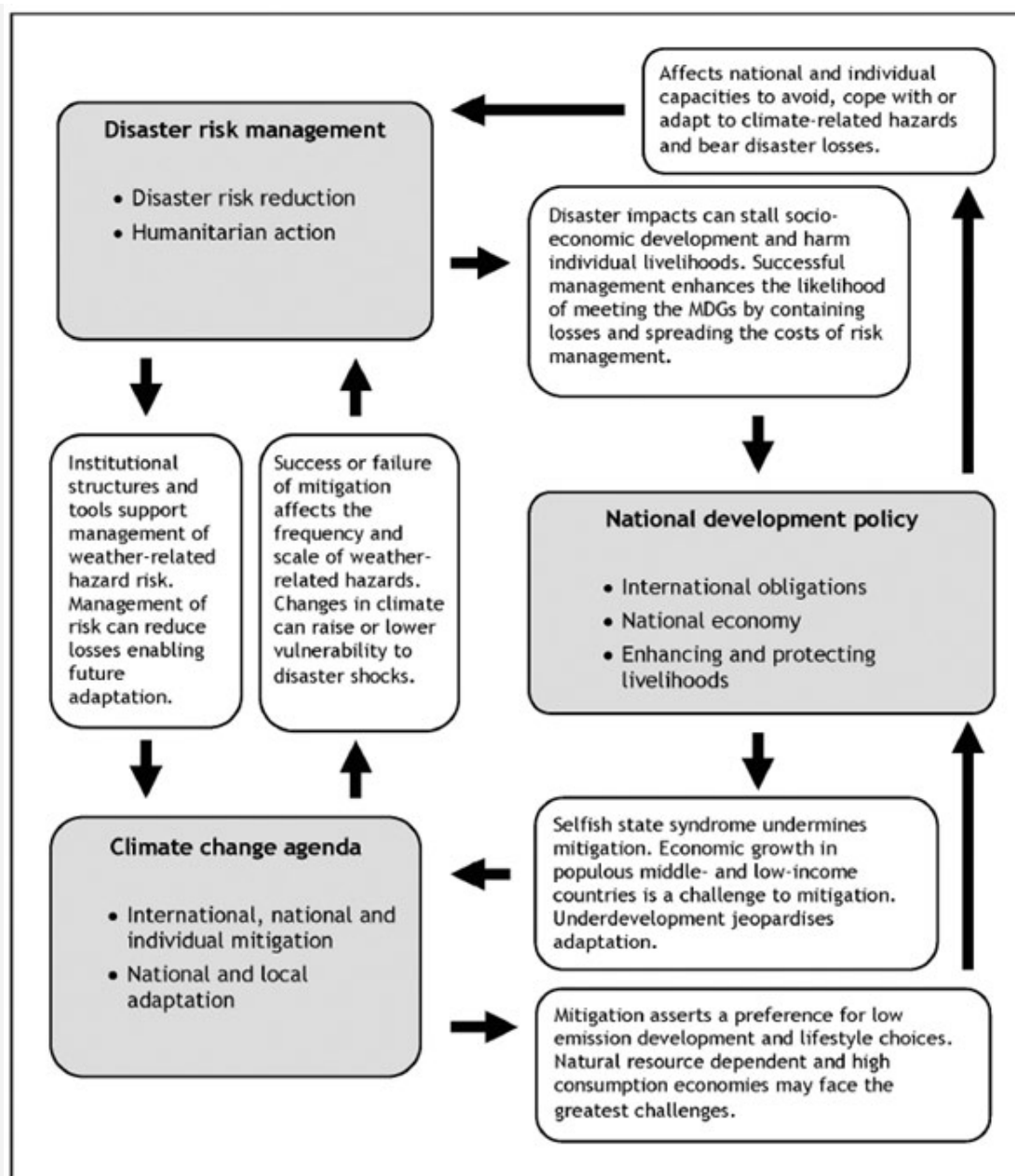
Although the relation between natural disasters and climate change remains contested, past natural disaster cases such as Cyclone Nargis, Typhoon Ketsana, the Haiti earthquake and the Pakistan floods have shown that responses to natural disasters have been inadequate. Therefore, it can be beneficial, where efforts in disaster reduction and climate change overlap, for both sides to work together to alleviate risks resulting from these threats. The most effective way to deal with these risks is by addressing the underlying factors that have contributed to the vulnerabilities while at the same time pursuing development needs (Schipper and Pelling, 2006:27–28). This in turn will increase resilience to existing vulnerabilities and future hazards, and build adaptive capacity as a buffer against uncertain future impacts by climate change.

In explaining the relation between climate change and sustainable development, Schipper and Pelling (2006:26) identifies four main issues, namely:

1. the role of industrialisation in causing changes in climate and the differential responsibility of developed and developing countries.
2. the inequitable impact of climate change on developing countries.
3. the significant role of development issues in influencing climate change policy and political negotiations.
4. the way in which climate change interacts with other forces affecting development, such as globalisation.

An illustration of rather simplified interactions among these three issues can be seen in Figure 2.

Figure 2: Policy linkages of climate change, disaster risk management and national development policies



Source: Schipper and Pelling (2006:22).

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Gaps and Challenges

To effectively utilise limited resources to fulfil various policy planning schedules, it is best to find ways to integrate DRR into development planning and policies and at the same time address the increasing need for climate change adaptation so that vulnerabilities can be reduced. There are notable challenges to the integration of DRR and climate change adaptation into the wider sustainable development agenda that, should they be successfully overcome, might offer a useful starting point for integrated policies. First, despite increasing attempts to study the interconnectedness among these three issues, practitioners and policymakers have unfortunately been working independently (Schipper and Pelling, 2006:19–21; Thomalla et al., 2006:39–42). Institutional frameworks and funding mechanisms are among important elements that remain largely separated (Thomalla et al., 2006:42). Incorporating one policy agenda into another would require not only policy changes in for example funding and planning mechanisms but will also affect minor administrative matters, such as project appraisal, monitoring and evaluation methods. This is a challenge that will require substantial effort and time, hence many groups and agencies are worried that this will hinder their current work (Schipper and Pelling, 2006:25).

Second, the main thrusts of these three issues lie on different policy levels. Climate change policies are primarily based on discussions and agreements under the United Nations Framework Convention on Climate Change (UNFCCC) that focuses on global cooperation and largely on the reduction of carbon emissions – although there has been an increasing acknowledgement of the significance of adaptation. While the climate change agenda may have impact on a higher policy level, there is a need for a community-based approach in developing climate change adaptation policies (Schipper and Pelling, 2006:31–33; Mercer, 2010:250). Moreover, the mandate of the UNFCCC is rather narrow, limiting adaptation policies from incorporating various human vulnerabilities (Schipper and Pelling, 2007:33; Mercer, 2010:252).

Although DRR is based on an international framework, the HFA is primarily conducted at the national and local levels. In fact, a wide range of DRR tools and methodologies have been developed at these levels (Mercer, 2010:250). Nevertheless, the HFA provisions agreed at the international level have failed to be implemented at the community level, that is, the level most vulnerable to the risk of disaster (Mercer, 2010:260).

Similar to DRR, development policies are conducted at national and local levels and aim to meet the Millennium Development Goals (MDGs) that have been internationally agreed upon. These differences in policy levels reflect differences in the ministries, institutions and legal status that are involved in the process, hence making it difficult to create integrated policies and approaches. The Summit on Millennium Development Goals will be held on 20–22 September 2010. As the Summit will assess the progress that has been made and challenges that lie ahead to fulfil the MDGs by 2015, this should be used as an opportunity to advance integration of DRR and climate change adaptation into the development process.

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Conclusion

Understanding the concept and challenges of DRR is imperative as there is an increasing need to place greater policy attention on reducing human vulnerabilities to potential natural hazards. A shift to a proactive approach in disaster management is necessary as it would not only create better preparedness for future disasters but also contribute to the progress in human development and the building of adaptive capacity to climate change. Moreover, addressing the underlying factors of human vulnerabilities would create a win-win-win solution to the advancement of DRR, sustainable development and climate change adaptation. This in turn will increase the resilience of state and community.

Moreover, major natural disaster occurrences always demand a great amount of international aid and assistance. Considering the limit to these resources, continued natural disaster calamities may create aid fatigue among international donors and communities. Therefore, governments are encouraged to play a key role in mainstreaming DRR across various sectors by involving various stakeholders. A well-implemented DRR offers a long-term, preventative solution to existing vulnerabilities to natural disasters hence creating greater preparedness to and minimising impact of natural hazards. However, looking at the existing gaps and challenges to the implementation of DRR, improvements are still much needed. In particular, there is a need to develop cross-cutting policy implementations through dialogue among practitioners and policymaking communities across the three issues (Thomalla et al., 2006:47).

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