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UN System Task Team on the Post-2015 UN Development Agenda

Disaster Risk and Resilience

Thematic Think Piece

UNISDR, WMO

Please note that the views expressed in this paper are those of the signing agencies and do not necessarily reflect the views of the United Nations.

Following on the outcome of the 2010 High-level Plenary Meeting of the General Assembly on the Millennium Development Goals, the United Nations Secretary-General established the UN System Task Team in September 2011 to support UN system-wide preparations for the post-2015 UN development agenda, in consultation with all stakeholders. The Task Team is led by the Department of Economic and Social Affairs and the United Nations Development Programme and brings together senior experts from over 50 UN entities and international organizations to provide system-wide support to the post-2015 consultation process, including analytical input, expertise and outreach.

1. Introduction

Disaster risk and resilience¹ received insufficient emphasis in the original Millennium Development Goal agenda, despite the relationship between disasters and development. Whilst there is universal acceptance that disasters can erode and destroy development gains, there is limited recognition of the role that different approaches to development play in creating or increasing vulnerability. Reducing the risks of disasters (for example prevention, preparedness, and early warning systems) for predictable events like the major severe weather impact conditions such as cyclones, large storms, heavy precipitation events, heat and cold waves, helps to protect both human and economic assets.

As we near 2015, we now have a clearer understanding of trends (for example through climate and weather related evidence), that show how the impact of disasters caused by natural hazards and vulnerability will continue to intensify, presenting an increasingly significant challenge to development. Disaster risk reduction and resilience therefore requires more central consideration in the post-2015 development agenda if the objectives of sustainable development are to be achieved.

2. Disasters and Disaster Risk are a Development Challenge

Vulnerability and exposure to disasters is increasing as more people and assets locate in areas of high risk. Since 1970, the world's population has grown by 87 per cent. During the same time, the proportion of people living in flood-prone river basins increased by 114 per cent and on cyclone-exposed coastlines by 192 per cent. More than half of the world's large cities, with populations ranging from 2 to 15 million, are located in areas of high earthquake risk. Rapid urbanization will increase exposure to natural hazards, especially in coastal zones.² Since the year 2000, deaths related to natural hazards have exceeded 1.1 million; over 2.7 billion people have been affected. Another concern is the economic impact of disasters. Over the last 12 years USD 1.3 trillion has been lost to disasters. The trend is rising and now exceeds, on average, USD 100 million per year over the last decade.³

Based, in particular, on Intergovernmental Panel for Climate Change reports, we expect climate change to increase the frequency and intensity of the most severe weather related hazards over the next decades. In addition to climate change, the main drivers of risk are poorly planned and managed urbanization, environmental degradation, poverty and weak governance. Disaster vulnerability is reduced as a direct product of sound development. In light of the growing levels of risk of disasters, reducing them should be part of the post-2015 development agenda in order to meet international development objectives.

¹ Disaster Risk Reduction is the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events. Resilience is the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions. Definitions are from *UNISDR Terminology and Disaster Risk Reduction* 2009.

² UNISDR Global Assessment Report 2011: Revealing Risk, Redefining Development.

³ EM-DAT The International Database (CRED). <http://www.emdat.be/>

Communities will have to adapt even more to these stressful environmental conditions, through disaster risk reduction and resilience building measures. This will especially impact on least-developed countries and Small Island Developing States. While all countries are vulnerable (as demonstrated by the Great East Japan earthquake and tsunami) the impact disasters have on Least Developed Countries and Small Island Developing States is perhaps the most challenging. For these States, disaster events have a significant impact on, or in some cases completely destroy, development gains built up over decades. Hurricane Ivan (2004) cost Grenada over 200 per cent of GDP. The earthquake in Haiti (2010) is estimated to have exceeded 15 per cent of GDP or 120 per cent of GDP when total damages and losses are included. In larger LDC economies, such as Bangladesh or Mozambique, the loss of 3 to 5 per cent of GDP, due to disasters, every five to ten years has a cumulative impact on development.

The risk of losing wealth in weather-related disasters is now outstripping the rate at which the wealth itself is being created. Since 1980 the risk of economic loss due to floods has increased by over 160 per cent and to tropical cyclones by 265 per cent in OECD countries. Economic loss risk to floods and cyclones in the OECD is growing faster than Gross Domestic Product (GDP) per capita. For instance, the Great East Japan earthquake and tsunami caused an estimated 1 per cent reduction in Japan's GDP. The 2011 floods in Thailand similarly led to an estimated 2.5 per cent drop in global industrial production and caused damages of USD 40 billion.⁴

3. How Science can Inform Effective Decisions on Disaster Risk Reduction

As seen in Figure 1, over the last five decades, while economic losses associated with hydro-meteorological hazards have increased, there has been a decrease in loss of life. This has been attributed to the development of effective early warning systems, based on advancements in monitoring and forecasting of weather-related hazards, combined with effective coordination, communication and emergency preparedness at national to local levels in several countries with a history of high-impact weather-related hazards, such as Cuba, Bangladesh, France, and the United States.⁵

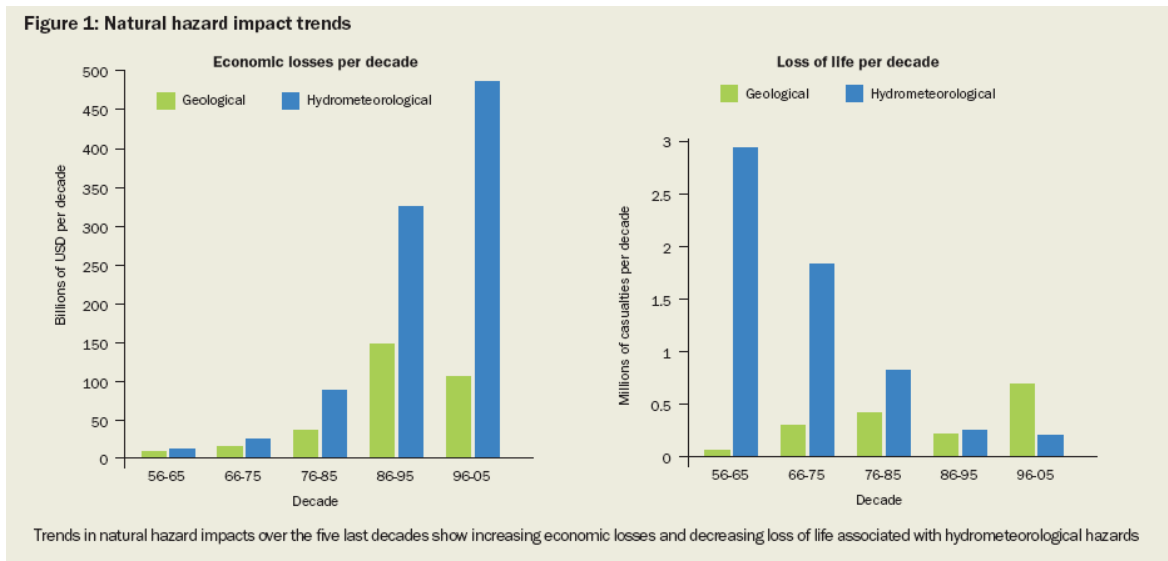
Over the last three years, a detailed analysis of seven cases of good practice with particular focus on multi-hazard early warning systems for meteorological and hydrological hazards has been completed.⁶ The specific design and implementation of early warning systems in each of the seven cases vary according to their governance mechanisms, specific history, culture, socio-economic conditions, institutional structure, capacities and resources for sustainability of their respective systems. However, there are principles common to all of them that have led to the reduction of the impacts of hazards, particularly through saving lives and increasing community

4 UNESCAP Economic and Social Survey of Asia and the Pacific 2011 -Sustaining Dynamism and Inclusive Development: Connectivity in the Region and Productively Capacity in Least Developed Countries.

5 Golnaraghi, Douris, & Baubion, 'Good Practices in Multi-Hazard Early Warning Systems', *Risk Returns*, Tutor Rose, p.95-98.

6 "Institutional Partnerships in Multi-Hazard EWS," M. Golnaraghi (ed), (2012), Springer Verlag, p 243. These include, (i) Bangladesh Cyclone Preparedness Programme; (ii) Cuba Tropical Cyclone Early Warning System; (iii) The French "Vigilance" System; (iv) The Warning Management of The Deutscher Wetterdienst in Germany, (v) Multi-Hazard Early Warning System in Japan, (vi) Multi-Hazard Early Warning System of The United States' National Weather Service; and, (vii) Shanghai Multi-Hazard Emergency Preparedness Programme.

resilience.⁷ The principles include the importance of political recognition, clear roles and responsibilities of the various stakeholders exploiting shared risks knowledge and procedures, adequate resources (human, technical, financial and institutional), authoritative messages easy to understand, access or receive, sensitization of vulnerable groups, education and training of experts and general public, and finally feedback mechanisms to ensure continuous improvement.



Source: EM-DAT: The OFDA/CRED International Disaster Database

The speed and pace of changes, and the high degree of uncertainty in many domains today pose a challenge to many decision-making processes, particularly in an interdependent world. Over the last several decades, progress with hazard monitoring, predictions and forecasting is leading to forward-looking information, assisting decision makers to reduce risks of extreme events. More and relevant data can be collected, exchanged, analyzed, and eventually injected into multidisciplinary (e.g. combining Earth, the ecology, and the socio economic system) prediction models to understand the future, in particular with regard to the frequency and intensity of natural hazards and the resulting potential exposure and vulnerability. The application of scientific evidence, supported by technology transfer and capacity development is critical in disaster risk reduction and resilience building. Further investment is therefore needed to make science and climate information more available to support policies around investment and planning.⁸

⁷ The details of the ten common principles can be found at “Institutional Partnerships in Multi-Hazard EWS,” M. Golnaraghi (ed), (2012), Springer Verlag, p 243.

⁸ See for example report of the High-Level Taskforce For The Global Framework for Climate Services at http://www.wmo.int/hlt-gfcs/downloads/HLT_book_full.pdf

4. Reflecting Disaster Risks and Resilience in the post-2015 development agenda

There has been a significant shift in attitude in addressing the challenges of disasters. For too long disasters have been seen as one-off events that were addressed through humanitarian response and relief efforts. For a few decades there was a clear move towards strengthening preparedness, and ensuring a more effective and efficient response. From the ‘preparedness saves lives’ approach came the insight that economics played a significant role and a recognition that a longer-term approach was required to reduce disaster risk and build resilience. Often missing in the analysis was the causal link between disaster risk and development, or more precisely the impact of poor development that often created increased vulnerability that result then in development losses and, for many Least Developed Countries and Small Island Developing States, increasing indebtedness.

Building on the Yokohama strategy and in recognition of the need to address the multidimensional aspects of disaster risk from a development perspective, the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters* was adopted at the World Conference on Disaster Reduction in Kobe, Hyogo, Japan in 2005. The Framework serves as the guiding instrument for international cooperation, disaster risk reduction and resilience building. The multi-stakeholder and multi-sector nature of the *Hyogo Framework for Action* provides guidance on how disaster risk reduction contributes to sustainable development: “Disaster risk reduction is a cross-cutting issue in the context of sustainable development and therefore an important element for the achievement of internationally agreed development goals, including those contained in the Millennium Declaration”. There is an opportunity for the post-2015 development agenda to draw from the *Hyogo Framework for Action* and help to address some of the challenges, for example around implementation as identified in the 2011 Mid-Term Review. One of the solutions outlined was the need for clearly defined, agreed and monitored goals and targets around disaster risk reduction and resilience.

A number of initiatives have been undertaken to build consensus on measuring results at the regional and sub-regional. In 2010 and 2011, six high level regional strategies or plans of action on disaster risk reduction were adopted in Africa, Americas, Arab States, Asia, Europe and the Pacific. For example in Africa development and humanitarian partners were called upon to invest 1% and 10% respectively in disaster risk reduction, preparedness and recovery. Another example is the Incheon Roadmap for Asia which sets out indicators such as 100% of regional partners to have coordinating mechanisms in place for joint disaster risk reduction and climate change adaptation programming (priority for 5 years).⁹

National or community targets are recognized as best practice for effective implementation. Some specific examples of national level goals, objectives or indicators can be seen in Bangladesh (Sixth Five-Year Plan 2011-15), Mozambique (Five Year Government Plan 2010-14 and Master Plan for Disaster Prevention and Mitigation 2006), Peru (State Policy 32) and Philippines (Philippine Development Plan 2010-14).¹⁰ Past experience tells us that due to the

⁹ Reference- Aligning Regional and Global DRR Agendas: Summary of key regional political commitments and DRR priorities (http://www.unisdr.org/files/19957_199572011globalplatformv12a.pdf)

¹⁰ Bangladesh ([http://www.plancomm.gov.bd/SFYF-PDF-Final%2029-08-2011/SFYF-Final-%20Part-1-17-08-11\[1\].pdf](http://www.plancomm.gov.bd/SFYF-PDF-Final%2029-08-2011/SFYF-Final-%20Part-1-17-08-11[1].pdf)); Mozambique (Government plan http://www.preventionweb.net/files/16411_pqg20102014.pdf and

intricacy of national goal setting they often do not translate well to the regional or global level. For example, it is not easy to capture the social and environmental aspects of disaster risk reduction and resilience while providing quantifiable targets that can be measured by all countries.

Global goals and targets for disaster risk reduction and resilience raises the profile particularly for implementation and accountability. But goals and targets at the global level must be credible. They also need to relate as closely as possible to human development indexes, especially as vulnerability increases. Therefore goals and targets for risk reduction at the global level are in practice based on the measurement and estimation of either mortality or economic loss suffered as a result of impact of natural hazards on vulnerable populations and assets. In this regard a credible goal, targets and indicators can be developed around loss of life due to disasters¹¹; on economic and asset losses; and on number of countries with appropriate disaster risk reduction and resilience plans and measures. A key question is the exact time horizon (i.e. 15, 20, 35 or more years?). The international community may wish to consider a possible goal, targets and indicators as shown in Table 1.

Table 1: Possible Goal, Targets and Indicators on Disaster Risk and Resilience¹²

Goal	Targets	Indicators
To reduce risk and build resilience to disasters for all	Target 1: Nations to halve disaster mortality by 2030	Indicator 1.1: Crude mortality rate (disaster deaths by 1000 inhabitants)
	Target 2: Nations to halve disaster related economic loss by 2030	Indicator 2.1: Direct economic losses as percentage of GDP
	Target 3: All nations to develop a national disaster risk reduction and resilience plan by 2020	Indicator 3.1: National disaster risk reduction and resilience plans adopted and referenced in national development plans

Master plan for Disaster Prevention and Mitigation

http://www.preventionweb.net/files/16411_masterplanfordisasterpreventionandm.pdf); Peru

(<http://www.acuerdonacional.pe/AN/politicas/textoi32.htm>) Philippines (Philippine Development Plan - Chapter 10, Goal 3 <http://www.neda.gov.ph/PDP/2011-2016/CHAPTER%2010.pdf>)

¹¹ The definition of a disaster will need careful consideration i.e., whether it includes natural hazards and man made or industrial/technological hazards. Disasters are often described as a result of the combination of: the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences. Disaster impacts may include loss of life, injury, disease and other negative effects on human physical, mental and social well-being, together with damage to property, destruction of assets, loss of services, social and economic disruption and environmental degradation. UNISDR considers disasters as: “A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources” – UNISDR Terminology and Disaster Risk Reduction 2009.

¹² The rationale for Table 1 and the goal, targets and indicators contained therein are proposed by UNISDR.

Specific targets could also be defined related to other relevant development objectives and sectors such as poverty reduction, education, health, water, cities and the environment. For example, if there was to be a goal around education in the post-2015 development agenda an indicator could include the percentage of primary schools certified to be in conformity with hazard resistant building standards relevant to the region. Or indicators could be set for risk reduction curriculum to build a culture of prevention and assist exposed and vulnerable communities.

A practical and inclusive consultative debate on goals, targets, indicators and ways to measure progress for disaster risk reduction and resilience is still required. The debate needs to address the strategic dimension of proposed targets to ensure relevance and measurability, and not solely be seen through a technical lens. The consultations on a post-2015 framework for Disaster Risk Reduction present an opportune platform to provide critical inputs, while relating to relevant discussions on possible goals in the post-2015 development agenda.

5. Conclusion

Level and quality of development to a large extent determines the way in which hazards impact on people and economies. There is growing evidence of the intensity and frequency of climate related extreme events. It is therefore critical that disasters be seen through the lens of reducing risk of and building resilience to disasters, rather than just a response to a one-off disaster event.

The outcome of the Rio+20 Summit, the post-2015 development agenda, climate change negotiations as well as the consultations on the post-2015 Framework for Disaster Risk Reduction will shape the future on reducing the risks of and building resilience to disasters. Governments now recognize the issue as fundamental for sustainable development. The question is how to reflect the recognition into tangible and focused action that reduces the risk of disasters.

Given current trends in disaster impacts and increased exposure to risk, the incorporation of disaster risk reduction and resilience into development work through public and private sector strategies and planning for development and growth, must be a priority. In addition, more explicit recognition of the importance of reducing disaster risk and building resilience – with a goal and targets against which efforts could be measured – would be a major contribution to meeting the challenges to be faced with sustainable development and the post-2015 development agenda.

**UN System Task Team on the Post-2015 UN Development Agenda
Membership**

Department of Economic and Social Affairs (DESA), Co-Chair
United Nations Development Programme (UNDP), Co-Chair
Convention on Biological Diversity (CBD)
Department of Public Information (DPI)
Economic Commission for Africa (ECA)
Economic Commission for Europe (ECE)
Economic Commission for Latin America and the Caribbean (ECLAC)
Economic and Social Commission for Asia and the Pacific (ESCAP)
Economic and Social Commission for Western Asia (ESCWA)
Executive Office of the Secretary-General (EOSG)
Food and Agricultural Organization of the United Nations (FAO)
Global Environment Facility (GEF)
International Atomic Energy Agency (IAEA)
International Civil Aviation Organization (ICAO)
International Fund for Agricultural Development (IFAD)
International Labour Organization (ILO)
International Maritime Organization (IMO)
International Monetary Fund (IMF)
International Organization for Migration (IOM)
International Telecommunication Union (ITU)
Joint United Nations Programme on HIV/AIDS (UNAIDS)
Non-Governmental Liaison Service (NGLS)
Office of the Deputy Secretary-General (ODSG)
Office of the High Commission for Human Rights (OHCHR)
Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island
Developing States (OHRLLS)
Office of the Special Advisor on Africa (OSAA)
Peace building Support Office (PBSO)
United Nations Children's Fund (UNICEF)
United Nations Conference on Trade and Development (UNCTAD)
United Nations Convention to Combat Desertification (UNCCD)
United Nations Educational, Scientific and Cultural Organization (UNESCO)
United Nations Entity for Gender Equality and Empowerment of Women (UN Women)
United Nations Environment Programme (UNEP)
United Nations Framework Convention on Climate Change (UNFCCC)
United Nations Fund for International Partnerships (UNFIP)
United Nations Global Compact Office
United Nations High Commissioner for Refugees (UNHCR)
United Nations Human Settlements Programme (UN-HABITAT)
United Nations Industrial Development Organization (UNIDO)
United Nations International Strategy for Disaster Reduction (UNISDR)
United Nations Institute for Training and Research (UNITAR)
United Nations Millennium Campaign
United Nations Office for Outer Space Affairs (UNOOSA)
United Nations Office for Project Services (UNOPS)
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