



PLOW Learning Resource: Disaster Risk Reduction

Important Note:

This learning resource was developed as part of the Professional Development for Livelihoods Advisers Website (PLOW) which was operational between 2006-2008.

PLOW was funded by the Department for International Development (DFID) and supported the professional development of DFID livelihoods advisers. PLOW hosted 17 learning modules of which this is one. Modules were produced using guidance provided by the Livelihoods Technical Competence Framework that described technical competencies, knowledge, and experience required by DFID Livelihoods Advisers.

PLOW modules were designed to help advisers get up to speed on areas of the competency framework, to prepare for new postings, or to refresh existing knowledge on particular subject areas. They were produced and developed by a partnership comprising the Programme of Advisory Support Service (PASS) and Livelihoods Connect based at the Institute of Development Studies (IDS). Each module was written by an expert or experts in the subject and provided:

- an overview of the subject in a briefing note;
- key texts;
- a summary of recent policy debates;
- points on where to find other resources; and
- a glossary of key terms used in the briefing note.

Although the learning modules produced were written with the DFID Livelihoods cadre in mind they were accessible to a global audience through the website.

Twelve of the original PLOW modules are now hosted on the Evidence on Demand website. This PLOW module was produced between 2005 and 2008 and has not been updated since. Some of the material that it draws upon may no longer represent current thinking and some of the links to resources may no longer exist. Nevertheless, we believe that it is still a useful resource that provides useful reference material.





Disaster Risk Reduction

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In an increasingly populated and vulnerable world the incidence of natural disasters is growing, with a corresponding increase in the human, social and economic costs to communities and entire nations. Disasters affect hundreds of millions of people each year. They affect the poorest people disproportionately, often constraining development efforts. The dynamic pressures of population growth, natural resource depletion, HIV/AIDS and conflict are exposing ever-greater numbers of people to risk and at the same time increasing their vulnerability. Poorly planned or misguided economic development can, at times, also exacerbate vulnerability. Climate change is predicted to manifest itself in an increase in the frequency and severity of extreme weather. All events, whether these are large-scale 'mega-disasters' or the thousands of unreported, small-scale every day events, have both direct and indirect impacts on the livelihood opportunities of the poor.

Disaster risk reduction aims to reduce the *vulnerability* of poor people to natural hazards and to build their *resilience*. This is achieved primarily through making development processes more risk aware and by promoting alternative livelihood approaches. In some cases this may include technological innovation, for example by improving water storage efficiencies in drought-prone areas. The institutional setting, both at national government level and locally, is of critical importance to ensure that disaster risk is prioritised and acted upon. Institutions that prepare for and respond to natural disasters often require strengthening and to be much better integrated with line ministries.

This briefing note defines disaster risk reduction and explores its relevance to livelihoods, with reference to broader approaches addressing chronic food security and social safety nets. It looks at how disaster risk reduction is put into practice and examines how development processes can be made more resilient to the potential impacts of disasters. It outlines DFID's and other organisations' work in disaster risk reduction, including the links with climate change adaptation. The briefing note then describes a number of key policy areas that are currently under debate regarding aspects of disaster risk reduction.

Contents:

- [Briefing Note](#)
- [Key Texts](#)
- [Policy Debates](#)
- [Further Reading](#)
- [Glossary](#)

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Briefing Note

Contents:

- [What is disaster risk reduction and why is it important?](#)
- [Why is disaster risk reduction relevant to livelihoods?](#)
- [Implementing disaster risk reduction in practice](#)
- [Programming Disaster Risk Reduction](#)
- [Donors and international actors](#)

What is disaster risk reduction and why is it important?

Hazards such as drought, hurricanes and earthquakes occur naturally and may or may not result in a disaster. Hazards can include rapid on-set events such as earthquakes and flash flooding, as well as slow onset events such as drought that are often compounded by economic and political instability or conflict. The potential for a natural hazard to cause a disaster is a function of the magnitude of the event itself, the vulnerability of a population and its coping capacity.

Human activity is increasingly exacerbating the impact of natural hazard events and leading to more severe disasters; for example through deforestation that can cause landslides after heavy rainfalls. Dynamic pressures such as the effects of population increase and natural resource depletion are placing ever increasing numbers of people at risk. In certain contexts, particularly but not exclusively in sub-Saharan Africa, other dynamic forces such as AIDS and armed conflict are greatly exacerbating vulnerability.

Disaster

A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceeds the ability of the affected community or society to cope using its own resources.

United Nations

Disaster Risk Reduction

The systematic development and application of policies, strategies and practices to minimise vulnerabilities, hazards and the unfolding of disaster impacts throughout a society, in the broad context of sustainable development.

United Nations Development Programme

The incidence of natural disasters globally is growing with a corresponding increase in the human, social and economic costs associated with these events. The Centre for Research on the Epidemiology of Disasters reports that 160 million people were affected by natural disasters in 2005 and 90,000 were killed in 127 countries; the total economic costs were put at US\$159 billion. Climate change is already having a noticeable effect on global weather systems. Over 70% of global natural disasters are hydrological in nature (floods, droughts and storms), so as climate change accelerates this trend is likely to intensify. Effects are likely to be both direct, with more extreme and more destructive weather events, and secondary: changes in the patterns of water resource availability, food production opportunities and the burden of disease and pests.

The links between disasters and poverty are now clearly established. In global terms the poorest countries are those most likely to be impacted and it is the poorest people that suffer the most. Increasingly disasters are viewed as a constraint to sustainable development and growth and, in some regions of the world, they challenge achievement of the Millennium Development Goals. Poorly planned development can compound disaster risk. For example, unplanned urban development results in poor people building homes in highly vulnerable areas; many of those killed or made homeless by the mudslides in Venezuela in late 1999 lived along steep ravines in the shanty towns surrounding Caracas.

Disaster risk reduction is about tackling the underlying elements of risk from natural and technological hazards. Its aim is to reduce the *vulnerability* of individuals, communities and societies, and to build their *resilience* or *capacity* to prepare for and withstand the impacts of disasters. Disaster risk reduction seeks to integrate disaster preparedness and hazard mitigation into longer-term development. It also aims to improve the capacity of agencies mandated with responding to disaster events. The goal of disaster risk reduction is to '*disaster-proof* development processes. This means ensuring that development assistance takes adequate account of disaster risk, recognising that reducing all risk is in practical terms unattainable. Such disaster-proofing can take place at a number of different levels:

- As a function of investment by governments, international financial organisations and donors, whereby risk from disasters is considered along side other exogenous shocks such as political volatility or exchange rate fluctuations;
- By adapting regional and national strategic planning to account for the impact of disasters on poverty reduction and economic growth;
- Through investment in sectoral programmes, including guidelines for public infrastructure such as schools and hospitals, to better account for hazards; and

By strengthening institutional frameworks across national and local government, including improved assessment capacity, better coordination and more informed resource allocation decisions with respect to disasters.

Why is disaster risk reduction relevant to livelihoods?

Disasters undermine growth and can limit livelihood opportunities, as well as undermine people's coping capacities and strategies. When disasters strike they often result in increased vulnerability of the poor through the destruction or loss of assets, thereby placing them in a downward spiral of deepening poverty and increasing risk.

Disruption of livelihoods can occur during both rapid-onset events and chronic disasters. The effect of climate change, which has been evident for some decades in some places, for example many parts of the Sahel, is to further increase poor people's vulnerability. In chronic scenarios, efforts to address disaster risk are often complicated by long-term political crises and/or conflict situations, as is the case in southern Sudan. Whilst reducing vulnerability can potentially provide entry points to support dialogue and reconciliation, our collective understanding of how to address risk reduction in such contexts is still limited (see policy debates below).

Under certain circumstances disasters may present new opportunities. Changes in the natural environment may lead to new livelihood alternatives, such as aquaculture in areas that have regular flooding. But disasters can also act as triggers for much broader processes, such as the political reconciliation between the government and the Movement for an Independent Aceh in Indonesia following the tsunami in 2004.

Poor people, and especially the rural poor, rely directly on natural resources for their livelihood strategies. Therefore, the livelihoods framework is a useful tool for better understanding the impact of disasters and the extent to which livelihood outcomes can be impacted, both positively and negatively. Within the livelihoods framework, natural disasters can be considered alongside other exogenous factors, such as economic shocks, conflict or sudden epidemics. The framework can be useful in the analysis of hazards and for improving the development of risk reduction strategies through a better understanding of:

- Vulnerabilities to different types of hazards and why some level of risk from certain hazards may be tolerated as part of livelihood strategies;
- Hazards and seasonality, including the impact of changes in prices, food availability and employment opportunities;
- Indigenous coping mechanisms to withstand disasters, including the ways in which social organisation can protect more vulnerable members of a community;

At the household level food security is directly impacted by seasonal disasters, the local management of natural resources and the potential for adaptation to cope with long-term trends in livelihood

degradation. Where these capacities are failing social protection may be required. This aims to provide direct support to people to help them address risk, vulnerability, exclusion and poverty. There is evidence that social protection, including cash for work, can build the resilience of the chronically poor and contribute to successful livelihood diversification.

Disaster risk reduction attempts to anticipate the impact of hazards by making livelihoods more resilient to disasters *before* an event strikes. One example of disaster risk reduction which has had positive impacts on livelihoods comes from Malawi where rural communities are encouraged to develop small dams and other storage facilities. These not only help to mitigate flooding, but improve water harvesting and allow community- based fish farming which generates local incomes.

Implementing disaster risk reduction in practice

The way in which disaster risk reduction initiatives are applied will depend in part on the nature of the hazards in a particular context and whether they are likely to be rapid onset events or more predictable and/or chronic in nature. In practice disaster risk reduction is applied both *vertically* (from local level, community-based actions to improving national legislation) and *horizontally* by addressing risk across all major developmental sectors and by improving the coordination and communication between government, the private sector and civil society.

- [Figure 1: The relationship between disaster risk reduction, livelihoods and food security](#)

The examples below highlight the importance of sound institutional frameworks. Disaster risk reduction will only succeed where national governments modify legislation, strengthen institutions and build a culture of accountability. In some contexts, especially in parts of south and south-east Asia, the political patronage associated with providing disaster relief has been a disincentive to improving risk reduction measures. In Bangladesh the government has made a concerted effort over the last five years to integrate disaster risk reduction from local level upwards. This involves training front-line local government staff in risk assessment methods and providing funding for small-scale activities to increase livelihood resilience in disaster-prone areas. Early warning remains an important element of disaster risk reduction, particularly for prolonged events such as drought. The Famine and Early Warning System Network (FEWSNET) is an initiative covering 17 countries in Sub-Saharan Africa, as well as Afghanistan. The network offers a range of information products, tools and services to provide decision-makers with the up-to-date information necessary to avert or mitigate the impact of food security shocks.

But governments alone cannot address all spheres of risk reduction. There is a strong role for the private sector in providing financial services that help households and businesses to smooth income fluctuations due to disasters and the predicted affects of climate change over time, for example through micro-insurance and micro-credit schemes.

- [Table 1: Implementing Disaster Risk Reduction in Practice](#)

Programming Disaster Risk Reduction

The successful integration of disaster risk reduction into development can best be achieved through modifications to existing strategic planning and financing instruments. This means disaster risk reduction must be integrated into country or regional plans, where appropriate. In order to promote the mainstreaming of disaster risk reduction at country level, a bilateral donor such as DFID may consider the following types of interventions:

- Promoting a clearer understanding of the links between disaster risk and poverty, including the likely long-term affects of climate change;
- Raising national awareness of disaster risk and articulating the incentives for investing in risk reduction, including efforts to address corruption that exacerbates risk;
- Influencing the PRS process to include disaster risk reduction and adaptation to climate change, both directly through advocacy with governments and indirectly through multi-laterals;

- Financing institutional reforms and piloting risk reduction programmes at local level to provide evidence for policy reforms.

Disaster risk reduction should be financed and supported through regular development programming and aid instruments such as UN Development Assistance Frameworks, Country Assistance Frameworks and Joint Assistance Strategies. Efforts to support disaster risk reduction should also address adaptation to climate change (this note does not address adaptation in detail; see policy debates and resources below and the PLOW module on Climate Change).

Disaster risk reduction can also be addressed through humanitarian response strategies and financing policy in the case of large-scale disasters. In such scenarios there is often a key, but short-lived, period of opportunity to anchor disaster risk reduction into recovery strategies. Support to the re-establishment of livelihoods and asset building is a key element in this process, but care should be taken that disaster risk reduction strategies do not hamper plans for transitional recovery (for details of post-disaster livelihood strategies see ProVention/ALNAP briefing paper, 2005).

Donors and international actors

The Hyogo Framework for Action is the main reference point for international efforts to improve disaster risk reduction across both development and emergency-related programming. This ten-year plan was signed by 168 governments in 2005 and is widely supported by both donors and operational agencies.

- **DFID** has set out its policy in a document which explores why disasters are important to development and how it intends to integrate disaster risk reduction within its own aid strategies, as well as to support the efforts of national governments and international partners in achieving the same goal (*Reducing the risk of disasters*, DFID Policy Paper, 2006). It is promoting the integration of disaster risk reduction into its own development programming and funding for a range of partners to strengthen institutions at regional and national level with mandates for disaster risk reduction. DFID also supports research and innovation on the part of NGOs and the private sector working in disaster risk reduction.
- The **World Bank** and other international financial organisations, particularly the **Inter-American Development Bank**, are increasingly including disaster risk as part of their loan assessment procedures. Support for research into economic benefits of disaster risk reduction and application of risk sharing mechanisms.
- The **European Commission** is developing a disaster risk reduction policy that brings together the work of the various Directorate Generals working in development. The Commission already undertakes a number of important initiatives in this area, including the disaster preparedness and capacity building work of the Humanitarian Aid Office (ECHO).
- The **UN International Strategy for Disaster Reduction (ISDR)** is a global strategy focusing on reducing disaster risk through a system of international, regional and national bodies and platforms.
- The **Bureau for Crisis Prevention and Recovery of UNDP (UNDP/BCPR)** promotes and supports the implementation of risk and vulnerability reduction by strengthening national government and regional capacities.
- Other UN agencies including the **World Health Organisation** and the **Pan American Health Organisation**, the **World Food Programme** and **UNICEF** are all working to incorporate disaster risk reduction as part of their respective sector mandates, as well as building more effective emergency response capacities.
- The **Food and Agriculture Organisation** works in several areas of relevance to risk reduction and livelihoods, including research into resilient crop types and cropping practices, as well as important surveillance work and emergency response in the case of biological and pest hazards, such as the recent Avian Influenza outbreaks.
- The **Pro Vention Consortium** - a global coalition including development and humanitarian organisations, public bodies and private sector companies; provides forum for research and dialogue on disaster risk issues.

- The **International Federation of Red Cross and Red Crescent Societies (IFRC)** - works in partnership with National Societies in core mandate for disaster preparedness, prevention and response with a strong focus on community-based interventions.

International NGOs - research and advocacy activities with established operational partners (**Tear Fund, Action Aid, Christian Aid, Plan International, Practical Action**).



Key Texts

A Global Report - Reducing Disaster Risk: A challenge for development United Nations Development Programme, Bureau for Crisis Prevention and Recovery, 2004 (recommended reading: chapter 1. 'Development at Risk')

This report from UNDP illustrates the dynamic relationship between disaster impacts, vulnerability and development. It argues that disasters pose a considerable threat to sustainable development, whilst at the same time exploring the premise that the process of development itself has a huge impact – both positive and negative – on disaster risk. It addresses the challenge of how countries facing repeated natural hazards can integrate these threats into national development planning and policy formulation. To help frame such efforts, the report also introduces a pioneering Disaster Risk Index (DRI) that measures the relative vulnerability of countries to three key natural hazards – earthquakes, tropical cyclones and floods.

Sustainable Livelihoods Approaches

Twigg, J., Guidance Note 10, Tools for Mainstreaming Disaster Risk, International Federation of Red Cross and Red Crescent Societies/ProVention Consortium, Geneva, 2007

This is one of a series of 14 such guidance notes aimed at providing short, practical introductions to the mainstreaming of disaster risk reduction into programme design, management and evaluation. This note focuses on the relevance of taking a livelihoods approach to better understanding the impacts of natural hazards and disasters on communities. It outlines the methodology and data collection and analysis approaches for assessing disaster risk within a sustainable livelihoods framework. It also provides practical examples of indicators that can be used to measure external shocks and seasonal variations affecting livelihoods.

Policy Debates

Contents:

- [Economic Argument of DRR](#)
- [Climate Change and DRR](#)
- [DRR in Conflict Situations](#)
- [Incentivising National Governments](#)

Economic Argument in Support of Disaster Risk Reduction

As the human and economic costs of natural disasters continue to rise, there are increasing calls to demonstrate that disaster risk reduction actually 'pays'. Although there is some evidence that investment in disaster risk reduction can have economic benefits, this is by no means systematic and there is a continuing debate around this issue in the context of resource allocation decisions. In addition, the economic benefits of disaster risk reduction should not always be automatically presumed. The economic case for disaster risk reduction therefore probably remains one of the weakest areas in terms of rigorous empirical research.

Understanding the Economic and Financial Impacts of Natural Disasters Benson, C. and Clay, E. World Bank, Disaster Risk Management Series, No. 4; 2004

Stern Review on the Economics of Climate Change Stern, N., HM Treasury, October 2006

Economic Analysis Benson, C., Guidance Note 8, Tools for Mainstreaming Disaster Risk, International Federation of Red Cross and Red Crescent Societies/ProVention Consortium, Geneva, 2007

Climate Change and Disaster Risk Reduction

Climate change is fast becoming one of the key issues affecting global development and is increasingly at the centre of international political debate on how poorer countries can achieve sustained economic growth. Disaster risk reduction and climate change share many of the same objectives and there is a large degree of overlap between the two disciplines, especially when considering adaptation interventions. However, in practice there is continued confusion about the interface between these two important areas, not least because of the fact that these two disciplines use differing language and perspectives to describe similar issues and concerns. There is the need for further debate and clarification to define, in practical terms, how these areas relate to one another, and indeed to define the added-value of disaster risk reduction in the broader context of the climate change agenda.

Livelihoods and Climate Change International Institute for Sustainable Development, International Union for the Conservation of Nature and Natural Resources and Stockholm Environment Institute, 2003

Adaptation to climate change: making development disaster-proof
Key sheet 06, DFID Climate Change and Poverty, 2006

On Better Terms: A Glance at Key Climate Change and Disaster Risk Reduction Concepts Working Group on Climate Change and Disaster Risk Reduction of the Inter-Agency Task Force on Disaster Reduction (IATF/DR), 2006 (consultative version)

Stern Review on the Economics of Climate Change Stern, N., HM Treasury, October 2006

Addressing Disaster Risk Reduction in Conflict Situations

Many populations in developing countries are increasingly vulnerable to violent conflict which can quickly destroy livelihoods and developmental gains. Equally, many countries are subject to 'complex emergencies' where conflict and natural disasters interact with devastating impacts. The interface and interrelationships between conflict and disasters is complex. There are both positive and negative dynamics at work, wherein conflicts may often perpetuate vulnerability to natural hazards on the one hand, but where disaster risk reduction actions can serve as valuable entry points to address conflict on the other. There is limited understanding of these relationships and, if disaster risk reduction is to be successfully introduced into countries suffering from chronic conflict, further research and analysis will be critical.

WorldWatch Institute A two-year project addressing the intersections between natural disasters, environmental degradation, conflict, and peacemaking.

Links to on-line articles and papers: <http://www.worldwatch.org/taxonomy/term/435>

Violence and complex humanitarian emergencies: implications for livelihoods models Sue LautzeAngela Raven-Roberts, in *Disasters*, Volume 30, Issue 4: 383-401, December 2006

A Study on the Link Between Conflict, Poverty and Disaster Risk Reduction in Uganda; A case-study in Katakwi District: Uganda P. Namuwulya and T.Kaita Tumwesige, no date

Incentivising National Governments to Invest in DRR

There is evidence that national government ownership in prioritising and leading on commitments to disaster risk reduction is a critical success factor for integration efforts. However, the benefits of disaster risk reduction are often long-term in nature, and may be difficult to quantify. This is at odds with the fact that political horizons are usually short-term and demand high-profile returns, particularly in a resource scarce environment. If governments are to show real political will and accountability to improve the vulnerability of the poor, there must be strong incentives for them to invest in disaster risk reduction. A better understanding of the incentives - and disincentives - facing governments will therefore make it easier to 'sell' the concept of disaster risk reduction.

Disaster Risk Reduction: a development concern: a scoping study on links between disaster risk reduction, poverty and development DFID 2005 (recommended reading chapter 4)

What does governance have to do with it? - strengthening national capacities to manage disaster risk, UNDP, 2005

Summary of guiding principles for national platforms on disaster risk reduction, UNISDR, 2006

Further Reading

Websites

United Nations International Strategy for Disaster Risk

Web: <http://www.unisdr.org>

The UN International Strategy for Disaster Reduction (ISDR) is comprised of a system of international, regional and national bodies and platforms. The Hyogo Framework for Action is the core policy instrument that guides the work of the ISDR system. The ISDR has a global secretariat function in Geneva and regional offices, as well as links with operational UN agencies such as UNICEF, OCHA etc. ISDR was established in 2000 to successor arrangement to the International Decade of Natural Disaster Reduction. It serves as a global strategy for engaging various national and international actors to focus on DRR and building a 'culture of prevention' around disaster risk. The ISDR maintains a large database of literature and hosts on-line resources.

Recommended reading: 'Living with Risk: A global review of disaster risk reduction initiatives', UNISDR, Geneva, 2004 http://www.unisdr.org/eng/about_isdr/bd-lwr-2004-eng.htm

United Nations Development Programme - Bureau for Crisis Prevention and Recovery

Web: <http://www.undp.org/bcpr/>

The Bureau for Crisis Prevention and Recovery (BCPR) focuses on the development dimension of crisis situations. UNDP-BCPR works through UNDP's country offices to support local government in needs assessment, capacity development, coordinated planning, and policy and standard setting. The Disaster Response Unit within BCPR works to achieve a sustainable reduction in disaster risk and sustainable recovery from disaster, by strengthening national and regional capacities. This involves ensuring that disaster risk considerations are factored into new development, that disaster impact is mitigated and development gains protected and also that risk reduction is factored into rapid disaster recovery.

Duryog Nivaran

Web: http://www.duryognivaran.org/index.php?option=com_content&view=article&id=25&Itemid=28

Duryog Nivaran is a research, training and advocacy network committed to promoting disaster risk reduction in South Asia at policy and community level. It strives to build the knowledge base of stakeholders by sharing research findings, information, experiences and insights on emerging issues of disaster management in the countries and among the communities of the region. The network comprises of NGOs, journalists and development agencies and produces a range of publications around the subject of disaster risk reduction and livelihoods directly informed by the field-based research of members.

'Livelihood Centred Approach to Disaster Management: A Policy Framework for South Asia' 2006

<http://www.preventionweb.net/english/professional/publications/v.php?id=11693>

The World Bank - Hazard Risk Management Team

The Hazard Risk Management team provides technical support to World Bank operations, promoting capacity building and establishing partnerships with the international and scientific community working on disaster issues. In addition the team works to identify policy, institutional and physical interventions aimed at reducing catastrophic losses from natural disasters through both structural and non-structural measures. The website contains useful examples of how disaster risk reduction is integrated into strategic planning documents including poverty reduction strategies.

Natural Disaster Hotspots: A Global Risk Analysis by Maxx Dilley , Robert S. Chen , Uwe Deichmann , Arthur L. Lerner-Lam , Margaret Arnold, World Bank, 2005

http://publications.worldbank.org/ecommerce/catalog/product?item_id=4302005

European Commission Humanitarian Aid (ECHO) - Disaster Preparedness Programme (DIPECHO)

DIPECHO provides funding for implementing partners, often working at grassroots level, to establish simple and inexpensive preparatory measures, particularly those implemented by communities themselves, to limit the damage and save lives when disaster strikes. Typically, DIPECHO-funded projects cover training, capacity-building, awareness-raising, early-warning, and planning and forecasting measures. DIPECHO has documented experiences with linking livelihoods to disaster preparedness as part of these community-level initiatives.

Useful texts:

Reducing the Risk of Disasters - Helping to Achieve Sustainable Poverty Reduction in a Vulnerable World, DFID policy paper, March 2006

Mainstreaming Disaster Risk Reduction: A Tool for Development Organisations, Davis, I. and La Trobe, S., Tearfund, 2005

South Asia Earthquake 2005: learning from previous recovery operations, ProVention Consortium/ALNAP, 2005 (see pages 8 to 12 for a discussion on risk reduction and livelihoods)

At Risk Natural hazards, people's vulnerability and disasters (Second Edition) Wisner, B. et al,
Routledge, 2006

Purchase online : <http://www.amazon.com/o/ASIN/0415252164/002-2855028-5967210?SubscriptionId=10YYZWRFPWEVBCTR502>



Climate Change Climate change refers to a statistically significant variation in the Earth's global climate or in regional climates over time. This can be caused by processes internal to the Earth or human activity affecting the global atmosphere.

Disaster A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk (UNISDR).

Disaster Risk Reduction The systematic development and application of policies, strategies and practices to minimise vulnerabilities, hazards and the unfolding of disaster impacts throughout a society, in the broad context of sustainable development (UNDP).

Food Security The condition when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Hazard A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation (UNISDR).

Natural hazards can be classified by origin namely: geological, hydro meteorological or biological. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing (UNISDR).

Social protection

In recent years there has been a growing interest in social protection among donor agencies. In its broadest sense, social protection can be defined as an approach to thinking about the processes, policies and interventions which respond to the economic, social, political and security risks and constraints poor and vulnerable people face. According to the World Bank, the purpose of social protection is essentially threefold:

- to reduce the vulnerability of low-income households with regard to basic consumption and services;
- to allow households to shift income efficiently over the life-cycle, thus financing consumption when needed; and
- to enhance equity particularly with regard to exposure to, and the effects of adverse shocks. Social protection is concerned with the ways in which individuals' or households' resilience to adverse events can be strengthened.

Vulnerability The probability or risk of falling into, or deeper into, poverty .

Figure 1: The relationship between disaster risk reduction, livelihoods and food security

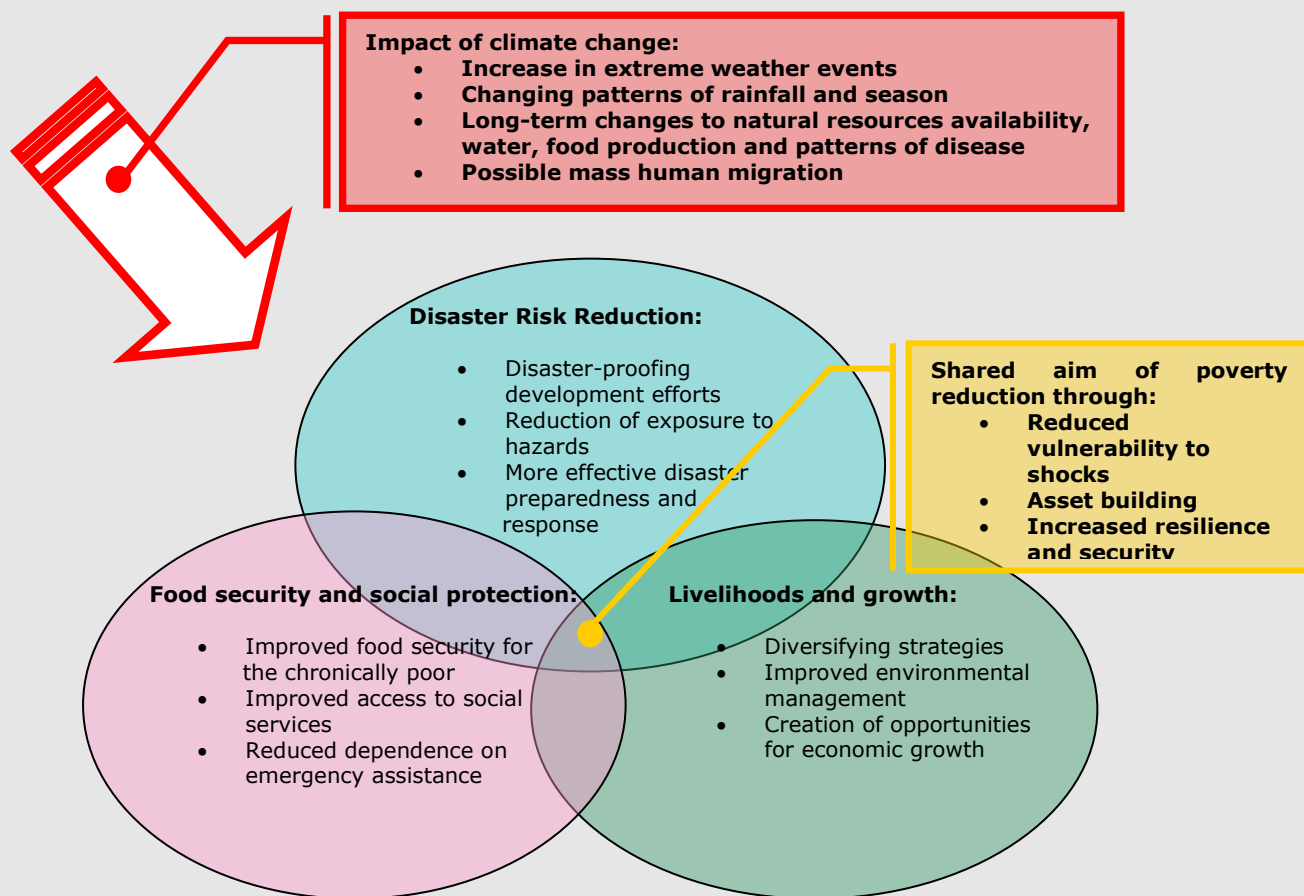


Table 1: Implementing disaster risk reduction in practice:

Implementing disaster risk reduction in practice:

- ***Institutional structures and good governance***
Reform of national disaster management structures and policies and development of a comprehensive national strategy for disaster risk management; **National government, Bangladesh, UNDP/DFID/EC 2004 - 2007.**
- ***Technical & Physical Risk Mitigation:***
Seismic risk mitigation and emergency preparedness, including a programme of retrofitting public facilities to make them physically resistant to earthquake risk, **National government/World Bank, Turkey 2004.**
- ***Risk Identification, Monitoring, Early Warning:***
Introduction of modern hydraulic modelling to assess flood behaviour, including estimates of flood levels, depths, velocities and rates of water level rise, resulting in 'floodmaps'; **AusAid, Viet Nam 2005.**
- ***Building Resilience, Promotion of Innovation, Knowledge & Education:***
Improving affordable domestic rainwater harvesting technology for domestic and farming use; and effective solutions to overexploitation of water resources and drought-mitigation; **DFID, Ethiopia 2001 - 003.**
- ***Risk sharing & Risk Transfers:***
Risk transfer through micro-insurance against disaster losses, piloted by the Gujarat State Disaster Management Authority; **Government of Gujarat, India, 2006**
- ***Preparedness, Effective Response & sustainable recovery:***
Promotion of community-based preparedness and response committees, local risk mapping and identification of vulnerable households at community level; **DIPECHO programme South Asia 2000 - 2004**