POLICY

Health and Disaster Risk Reduction

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medical relief, lasting health care

Executive Summary

Disasters disproportionately affect poor people. As the global impact and incidence of disasters increases, action at all levels to anticipate, prepare for and respond to disasters becomes ever more important. In the past decade more than 2.6 billion people have been affected by disasters, an increase of one billion on the previous decade (World Bank, 2005).

All disasters are a health issue, impacting on the health of the population and bringing about substantial losses and disruption to health systems. In many of the low income countries where Merlin works, national health budgets and systems are already unable to meet basic public health needs. As a consequence, even relatively minor shocks can overwhelm the coping capacity of the health system.

Good health and strong health services are critical in reducing the risk of disasters. Effective health systems provide essential protection from disaster-related risks and support people to respond to and recover from disasters. But despite the social and economic impact of disasters it is often difficult to persuade the governments of affected countries to prioritise risk reduction, emergency preparedness and planning. This is particularly the case in the health sector, where capacity and resource constraints restrict the actions of governments, especially in fragile states.

Yet we know that health impact of disasters can be substantially reduced if authorities and communities in high-risk areas are better prepared, and able to respond to, the range of risks they face. In order to achieve this:

- **Health should play a leading role in disaster risk reduction. A fully functioning health system positively impacts on the ability of a country to protect itself, and recover from, disasters.**
- **National health plans and policy need to integrate disaster risk reduction at national and local level.**
- **Strong links are needed between health sector planning at national and local level and the experience of communities in risk mitigation, emergency preparedness and response.**

A longer-term approach is needed to build up the resilience of communities and health systems to cope with, and respond to, future hazards. Merlin will increase its work in this area; promoting the importance of reducing disaster risk, highlighting the impact of disasters on health and the critical role of an effective health system in risk reduction at local, national and international level.

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Emergency Tree and Disaster preparedness poster, Garm, Tajikistan, 2004 (Photo: Matt Wreford)

Why is Disaster Risk Reduction important?

Merlin's approach to disaster risk reduction aims to mitigate the impact of disasters on health and promote the pivotal role of an effective health system in risk reduction at local, national and international levels.

What is Disaster Risk Reduction?

It is increasingly recognised that Disaster Risk Reduction (DRR) is an important investment which can help save more lives in the longer term. It refers to the development and implementation of policies, strategies and activities aimed at:

- Identifying the extent to which communities and institutions are at risk from, and vulnerable to, hazards.
- Building resilience and mitigating the adverse impact of hazards.
- Strengthening emergency preparedness, planning and response of communities and the national and local authorities to disasters.

Why should we be concerned about Disasters?

Developing countries are disproportionately affected by disaster. More than 90 per cent of disaster-related deaths occur in these countries (de Goyet, 2006). There is common international consensus that progress on the health-related Millennium Development Goals is slow and that they are unlikely to be met by 2015. The growing burden of disasters further impedes this progress and development gains are at risk of being negated because of the economic impact on nations and regions. The Pakistan earthquake in October 2005 caused an estimated $5 billion in damage, roughly equivalent to the total development assistance for Pakistan for the preceding three years (World Bank, 2005). Despite this, persuading affected governments to prioritise disaster risk reduction remains a challenge.

Disasters impose a substantial health burden: either directly on populations, in terms of increased morbidity and mortality, or indirectly through losses to infrastructure and supplies and disruption to the health system. Disasters disrupt people's livelihoods, affect people's capacity to maintain their living conditions and can reduce access to food and health care.

In many of the countries where Merlin works, where national health budgets and systems are already unable to meet the basic public health needs, even relatively minor shocks can overwhelm the coping capacity of the system.

Vulnerability to Disasters

Disasters can be understood in terms of hazards and people's vulnerability to that hazard; a hazard will only lead to a disaster if it affects a population that is vulnerable to it (DFID, 2006).

Reducing vulnerability to disasters is a public health priority (PAHO, 2008). In many situations it is not the hazard itself that necessarily leads to a disaster, but the inability of the population to anticipate, cope with, respond to and recover from its effects. Poverty is a major factor increasing disaster risk, by increasing a community's vulnerability to disasters and reducing its coping capacity; if disaster strikes, the level of poverty in the community increases, leading to increased vulnerability and disaster risk.

Poor communities often struggle to meet their own daily needs. They often lack the capacity to manage the vulnerabilities and risks they are exposed to, and hence do not recover easily from small, cumulative losses. Although disasters are normally thought of as large scale events in terms of international media coverage and humanitarian response, in fact it is the smaller 'everyday' hazards, such as seasonal flooding or cyclical outbreaks of communicable disease - localised events that do not usually require humanitarian assistance, but nevertheless overwhelm people's capacity to cope and respond - that predominate. Evidence shows that in Latin America ten years of local disasters has had a greater impact on the poor than any one-off event (Peppiat, 2006).

In Merlin's experience, people's vulnerability to disasters is critically undermined by poor access to health care services and weakened health systems. Merlin works in the Turkana and Wajir districts of Northern Kenya, areas which are highly vulnerable in terms of the natural environment (severe drought and depletion of natural resources) and where people's livelihoods are also vulnerable, owing in part to a lack of access to health care services. In 2007 over a period of eight months the region was affected by two separate outbreaks of communicable disease, localised flooding and the movement of refugees to Wajir from Somalia.

Although each hazard in turn may have been relatively low in severity, and within the normal coping capacity of the community, in combination with existing drought and depleted resources, the cumulative impact was significant. Merlin is currently working to support the communities around Turkana and Wajir, providing access to health care services and helping the community to better mitigate the impacts of drought and prepare for and respond to future disasters.

Women with water barrels in Wajir, Kenya, 2007 (Photo: Paul Rees-Thomas).

Disaster Risk Reduction and the Health Sector

The impact of disasters on health

Disasters are, first and foremost, a social and health issue (PAHO, 2008). In the past decade more than 2.6 billion people have been affected by disasters, an increase of one billion on the previous decade (World Bank, 2005). Disasters lead to significant deterioration of the health of the population; they disrupt the health system, and leave many without access to health care.

The health sector bears a significant share of the economic burden of disasters and health infrastructure recovers at a slower rate than infrastructure in other sectors. Assessments conducted a few weeks after the Pakistan earthquake, showed that up to half of the health facilities in the affected areas were not functioning and that large numbers of staff and their families were killed, injured or displaced because of the damage (WHO, 2007). As a consequence, the protection and resilience of health and non health infrastructure (roads, communications networks), institutions and personnel is a major challenge.

While some hazards, such as earthquakes affect people directly in the short term by increasing levels of mortality, disability and illness other hazards gradually undermine the health of communities over months or even years: HIV is one of the most serious hazards impacting on public health. The levels of infection and illness associated with HIV contribute to people's vulnerability and capacity to cope with other shocks.

Climate change, characterised as a slow-on-set disaster, has been described by the WHO as a significant and emerging threat to public health. Climate change causes increased morbidity and mortality through natural disasters and many diseases are highly sensitive to changing temperatures and rainfall. These include common vector-borne diseases such as malaria and dengue; as well as other major killers such as malnutrition and diarrhoea. Climate change already contributes to the global burden of disease, and this contribution is expected to grow in the future (WHO, 2009).

How health can reduce disaster risk

Good health and strong health services are critical in reducing the risk of disasters.

Good health and well being are essential to the social and economic development of households, communities and countries. Having good health enables children to attend school regularly; men and women to live longer more productive and fulfilling lives; and enables communities to prosper. To achieve good health, all people need access to health care services. Having good health enables people to better cope with, and respond to, an emergency when it occurs.

A strong health system is an essential element of good health. An effective health system provides services that support the prevention, treatment and control of diseases, enable people to access medicines when needed, and provides information and education to people about safeguarding and improving their health. At the centre of the health system are the health workers who deliver the services, working at all levels from the community through to the specialist hospital or Ministry of Health.

In times of disasters the first responsibility of the health sector is to save lives, provide health care where it is most needed and reduce the risk of communicable diseases and other health risks (proVention, 2007). This responsibility can only be carried out if health facilities and health services are functioning, but in many countries this is often not the case. Health systems and services are frequently fragmented and unable to meet daily needs. As a result, lack of access to reliable health care increases vulnerability over time. In times of disaster, this may become overwhelming and levels of disability, injury or death increase.

For Merlin, good disaster risk reduction means strengthening a country's health system; preparing and protecting essential infrastructure and delivering health care when it is most needed. It means having the right numbers of skilled health workers throughout the health system to plan for, and respond to, future health shocks or disasters. Good disaster risk reduction means meeting and responding to people's health needs at all times not just in times of crisis, ensuring that people are in good health and resilient when crises arise.

The cholera crisis in Zimbabwe in December 2008 demonstrated how important a strong health system is in protecting the health of the population, and the consequences when that system fails. Historically one of the best public health care systems in the region, it suffered years of chronic under-investment leading to a lack of access to drugs and the migration of health workers away from the system. As a result, the health services were simply unable to protect the people and respond to the severe cholera outbreak.

While it is not uncommon in many countries for health services and health workers to be temporarily overwhelmed following disaster, in many fragile states, vulnerability of the health system to disaster is rooted in decades of poor governance and an absence of effective policy planning in health and other sectors at national level.

In Nepal, Merlin is working with health and non-health stakeholders to strengthen disaster preparedness

and emergency response capacity at district level. By replicating real-life events, the authorities have been able to test the efficacy of their disaster plans and implement essential training. Good disaster risk reduction means working across sectors to develop risk reduction strategies and plans; enabling communities and countries to better prepare for and respond to the range of risks they face.

The particular challenges of Disaster Risk Reduction in fragile states

The World Conference on Disaster Reduction, held in January 2005 in Kobe, Japan adopted the *Hyogo Framework for Action 2005-2015* (HFA), a global strategy aimed at building the resilience of countries to disasters and ensuring that disaster risk reduction is integrated into policies, planning and programmes. But while the international community and donors, notably DFID, are becoming increasingly active, policy development and implementation at international level is low and it remains difficult to persuade affected governments to make it a national priority (Peppiat, 2006).

While national governments have primary responsibility for risk reduction in terms of policy approaches, allocation of resources and coordinating responses, in many fragile states, governance is weak and national emergency coordination mechanisms are absent or under-resourced. Emergency planning and preparedness is not just an issue for the health sector but requires government-wide cooperation.

Even where national governments have the capacity to integrate risk reduction into policy and planning, the increased decentralisation of many health systems has led to a tendency by central government to 'abdicate' responsibility or devolve risk reduction to local level, where access to resources, expertise and capacity is weaker. Frequently, risk reduction is not seen as a priority area for inclusion in development planning by the government or other stakeholders.

At national level, the World Health Organisation works with other partners to support national health ministries to ensure that health sector vulnerability reduction priorities are in place and relevant capacities built up, in accordance with the HFA. However in those countries where health sector investment is already very low it may fall to donors to meet the deficit – both in terms of financial as well as political capacity.

At international level, where affected governments are unable or unwilling to allocate additional funds, international pressure must be brought to bear to ensure that governments have access to the right funding and expertise where it is needed. NGOs and partner agencies have an important role to play in advocating for change in this area.

Merlin's role in Disaster Risk Reduction

How Merlin implements Disaster Risk Reduction

Merlin's work in disaster risk reduction – which addresses the impact of disasters on health and the pivotal role of an effective health system in risk reduction – focuses on actions at the national, sub-national and community level. Merlin works with affected populations and the health sector to protect lives and strengthen health system capacity to respond rapidly in the event of disaster and support recovery. In practice this means:

- Strengthening the emergency preparedness, planning capacities and response of the health sector to disasters.
- Promoting activities that mitigate the impact of disasters, such as training health workers and community volunteers to identify and act on early warning signs.
- Identifying the extent to which communities and health services are at risk from hazards and assessing community vulnerability.
- Raising public awareness about risk and risk reduction and building capacity to respond and cope when a disaster occurs.
- Strengthening local preparedness such as by developing evacuation plans or improving epidemic preparedness and response mechanisms.
- Promoting a more integrated approach to risk reduction across health and other sectors. Strengthening coordination mechanisms between sectors for disaster preparedness and response.
- Advocating for inclusion of risk reduction and emergency preparedness in national plans and support for Ministries of Health at sub-national implementation level.

Key elements of Merlin's work in Disaster Risk Reduction

We are working with national Ministries of Health to support Health Systems Strengthening

The health impact of disasters can be substantially reduced if national and local authorities in high risk areas are well prepared; Merlin Nepal is an active member of the national level inter-agency Emergency Health and Nutrition Working Group coordinated by WHO and UNICEF, which focuses on contingency planning as a part of disaster planning and coordination of disaster response. Since 2007, in collaboration with the Ministry of Health, WHO and other stakeholders, Merlin has been promoting **health sector disaster preparedness and response planning** in Pyuthan and Rolpa districts. This planning initiative includes conducting training of health professionals and key district stakeholders in organising field and hospital based mass casualty response teams and district management committees.

Our experience on the ground has shown that even where governments have the capacity to develop disaster plans, implementation gaps can emerge between national and sub-national level. In Ampara and Batticaloa districts in north Sri Lanka, working with other local partner, Merlin advocated for **strengthened coordination** in the health sector in the event of a disaster and to put in place with Inter-agency response plans in advance of the monsoons. Merlin called for risk reduction in health to be put on the agenda and advocated for greater allocation of resources by international donors and national governments for effective disaster planning, based on **evidence** of what works.

It is important to recognise that in resource poor settings where even the most basic needs of the population remain unmet, disaster risk reduction interventions may not always be considered a priority by local authorities. However, existing health interventions can make a positive contribution to reducing risk. In Somalia and Ethiopia Merlin is working with the Ministry of Health to strengthen communicable disease surveillance and put in place an effective **epidemic preparedness and response** system to identify and respond to disease outbreaks. A surveillance system with reliable data allows the Ministry of Health to map disease outbreaks more effectively and plan and prepare their response rather than be taken by surprise. Effective data and the development of better **health information systems** are critical to effective risk reduction.

Disaster Preparedness and Emergency Response Training, Nepal, 2008.

We are supporting health workers and their communities to become more resilient and reduce the risks they face.

Community knowledge and experience is critical to understanding risk and vulnerability. Merlin is committed to strengthening its community engagement in disaster risk reduction: Using local knowledge of past disasters, Merlin's Community Action Preparedness Projects in Tajikistan focused on identifying and **mapping high-risk villages** and developing community specific **evacuation plans**. Tajikistan is highly vulnerable to disasters such as flooding, earthquakes and landslides and evacuation maps were posted in tea houses and at mosques and simulation exercises at community and district levels were carried out.

In addition to supporting health professionals across a number of Merlin's country programmes to be able to prepare for and respond to emergencies, Merlin has worked with teachers in Tajikistan to enable schools to run disaster preparedness teams and given teenagers comic-strip style leaflets to educate on **disaster awareness** and basic first aid. Theatre shows are also used as a way of disseminating information and knowledge – particularly when discussing issues such as HIV and AIDS in Kenya. Merlin will use its learning to strengthen knowledge about disaster risk reduction at national level as well as in the international arena by developing and sharing case studies.

In Kenya Merlin is supporting communities to **mitigate the impact of drought related stress**, by improving their health and nutritional status. Climate change is likely to bring increased pressure to natural resources and in Turkana and Wajir districts pastoralist communities are particularly vulnerable, facing acute food deficits, scarce water resources and poor health. As part of a wider programme aimed at reducing people's vulnerability, Merlin has provided training for village volunteers to enable them to identify vulnerable community members. These **local-level "early warning systems"** help to identify increased levels of malnourishment and alert health authorities to potential slow on-set disasters. Although Merlin will continue to promote greater awareness of the impact of climate change on health and call for a strengthening of the critical **information flows** between local and national level – that link the reality on the ground to the policy making and emergency response mechanisms at national level.

Hygiene promotion training, Sri Lanka, 2005.

Looking to the Future

What more needs to be done

Merlin would like disaster risk reduction prioritised by governments in affected countries, particularly within the health sector, with risk reduction significantly strengthened in health sector planning.

We believe that governments can take positive steps to ensure that communities and health systems are better prepared for the risks they face. A longer-term approach is needed by all actors to build up the resilience of communities and health systems to cope with and respond to future hazards. In order to achieve this:

- **Health should play a leading role in disaster risk reduction. A fully functioning health system positively impacts on the ability of a country to protect itself, and recover from, disasters.**
- **National health plans and policy need to integrate disaster risk reduction at national and local level.**
- **Strong links are needed between health sector planning at national and local level and the experience of communities in risk mitigation, emergency preparedness and response.**

What Merlin will do more of

In pursuing our policy and influencing objectives for disaster risk reduction Merlin will:

Continue to Provide Practical Solutions

Merlin will provide practical support to the development of more effective disaster risk reduction initiatives through its current and future programming. We will:

- Support the development and implementation of mechanisms which inform, prepare and forewarn decision makers.
- Improve disease surveillance systems.
- Promote Epidemic Preparedness and Response mechanisms.
- Contribute to the development and strengthening of national Health Management Information Systems.
- Promote vulnerability analysis and risk mapping exercises.
- Support health workers to provide health care services that respond to urgent health needs and longer term health care.

- Provide opportunities for on-the-job training to strengthen understanding of risk awareness and hazard threats.
- Promote health facility-led disaster preparedness incorporating a focus on how existing practices can contribute to reducing risk, such as infection control.
- Promote better preparedness and planning at local and national level.
- Promote risk awareness at all levels of the health system.
- Provide technical support to government authorities at provincial and district levels on disaster risk reduction and emergency response.
- Provide support to existing national disaster management plans, including support to other sectors where relevant.

Strengthen the Evidence Base - Gather and Share Evidence of what works

There is currently insufficient evidence and research demonstrating the efficacy of risk reduction interventions. In terms of health service delivery, outcomes at programme and project level can be difficult to determine because to a certain extent activities are in place to ensure something *does not happen.* Looking to the future Merlin will focus on expanding and strengthening the evidence base. We will:

- Strengthen and share organisational learning about effective risk reduction interventions at project and programme level.
- Use this learning to influence decision making processes – at national and international levels.

Influence Change – Advocate for national-led country planning and investment to support affected national governments

- Use our influence to ensure that disaster risk reduction is adequately represented in national planning and strategy documents. Advocate for risk reduction to be integrated into national health plans.
- Work with national Ministries of Health to promote awareness of risk reduction. Raise awareness of the value of community level experience in national level decision making.
- Use our influence to ensure that adequate funds are allocated by donors to disaster risk reduction and that this funding is delivered in an appropriate way to help support the longer term development of the health systems in all countries.

As has been shown, while national governments may have overall responsibility for risk reduction in terms of political decision making, policy development and allocation of adequate resources – in reality it is not always seen as a priority for many governments in affected countries, owing to resource constraints, lack of institutional capacity or an absence of political will.

Investment in disaster risk reduction by international donors also remains low in comparative terms when set against the economic and social losses incurred as a consequence of disasters. In the UK, DFID has committed to allocating 10 per cent of each disaster response to mitigation and preparedness activities. But while there is international policy consensus about the importance of risk reduction, funding commitments are lagging behind.

Annex: Disaster Risk Reduction Terminology

A **disaster** can be understood in terms of **hazards** and people's **vulnerability** to that hazard.

The UN defines a **disaster** "a serious disruption of the functioning of a community or 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."

Hazards are as diverse in nature as they are in magnitude. They include geophysical, biological, atmospheric or hydrological events that have the potential to cause harm or loss such as earthquake, landslide, and outbreaks of epidemic disease, tsunami, windstorm, flood or drought. Merlin also considers health system collapse, complex political emergencies (protracted instability and high levels of violence) and displacement of populations as hazards. Hazards that arise suddenly, or whose occurrence cannot be predicted far in advance, are called sudden on-set disasters. In contrast, environmental degradation, HIV and drought can be characterised as slow on-set disasters.

Vulnerability can be understood as the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impact of a hazard (Wisner et al, 2004). Both vulnerability and its antithesis, **resilience**, are determined by physical, environmental, social, economic, political, cultural and institutional factors.

Risk. The probability of harmful consequences of expected losses (deaths injuries, property, livelihood, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerabilities (WHO, 2007).

Mitigation refers to any measures undertaken to minimise the adverse impact of potential natural hazard(s). Health education and infection control are examples of mitigation activities.

Emergency refers to a sudden occurrence demanding immediate action that may be due to epidemics, to natural to technological catastrophes, to strife or to other man-made causes (WHO, 2007).

Emergency Preparedness refers to activities and measures taken to forecast and warn against hazards, evacuate people and property when they threaten and ensure effective response. Disease surveillance and control measures, pre-positioning of stocks and the provision of support to Ministry of Health in disaster planning are all examples of emergency preparedness.

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This paper has been prepared by Merlin's Policy team within the Health and Policy department, and is based on a discussion document (2008) looking at disaster risk reduction in Merlin's programmes.

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Merlin specialises in health, saving lives in times of crisis and helping to rebuild shattered health services.

12th Floor 207 Old Street London EC1V 9NR UK TEL: +44 (0)20 7014 1600 FAX: +44 (0)20 7014 1601
EMAIL: hq@merlin.org.uk WEB: www.merlin.org.uk Registered charity number: 1016607

Cover: A flooded village outside Yangon following Cyclone Nargis, Myanmar, 2008.
(Photo: Reuters, courtesy www.alertnet.org)