

# **Saving Lives and Safeguarding Development through Reducing the Impact of Natural Disasters**

## **Focus on South Asia, East Africa and Southern Africa**

### **The Context**

Since 1980, natural disasters caused almost 3 million fatalities of which around 95% occurred in developing countries; every year more people are affected and economic losses increase. For the poorest and most vulnerable, natural hazards like floods, droughts and earthquakes hamper economic development and force people into poverty. Droughts and floods are estimated to have reduced Ethiopia's annual growth potential by more than one-third. Without good risk management, the progress made against the Millennium Development Goals will increasingly come under threat in large parts of South Asia and Sub-Saharan Africa. For example, economic losses sustained in lower and middle income countries alone over the last 30 years are equivalent to one third of all development assistance over the same period, oversetting development progress across many sectors.

Without concerted action, the impact of natural disasters is likely to continue to rise as more people and economic activity become concentrated in hazard-prone areas. For weather-related hazards, the 2014 report of the Intergovernmental Panel on Climate Change made clear that climate change is also becoming an increasingly important driver of risk. The UK's Humanitarian Emergency Response Review (HERR) in 2011 concluded that these trends will put considerable pressure on an already overstretched international humanitarian system.

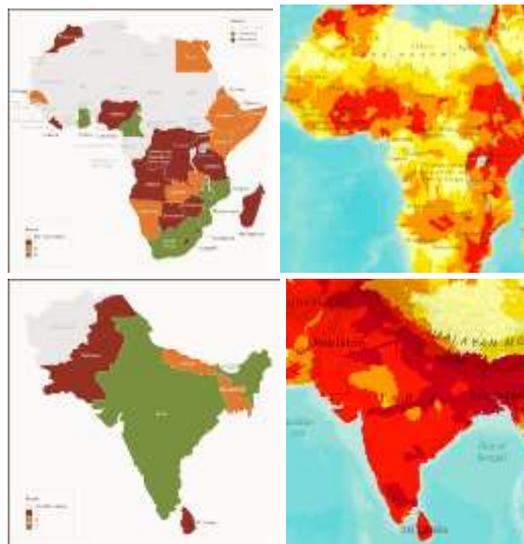
The primary goal of the Sendai Framework on Disaster Risk Reduction, adopted by governments in 2015, is to substantially reduce the impacts of disasters. This was reinforced within the in the first of the Sustainable Development Goals, to end poverty. The social and economic costs of natural hazards can be substantially reduced through building resilience and better anticipating and preparing for hazards. The UK's Humanitarian Policy "*Saving Lives, Preventing Suffering and Building Resilience*" committed to making resilience central to DFID's work. Increasing preparedness and resilience saves lives and safeguards development progress as well as reducing the cost of emergency response.

Data and joint analysis must be the bedrock of action. The recent report by the United Nations Secretary General for the World Humanitarian Summit stressed that collecting, monitoring and analysing risk before, during and after crises, must be strengthened, particularly in the most risk-prone countries and areas. This can be divided into three areas:

### **1. Data for Resilience**

The starting point for improved risk management is to better understand risk. It is only with good risk data and analyses, communicated in a clear and understandable way, that people will begin to invest in disaster preparedness and building resilience. For example, in Sri Lanka, investment in risk analyses and interpretation led to a \$200million investment by the government in enhancing resilience. Risk information is required to identify risks, appraise options and to plan and implement risk management strategies. High-quality, accurate and reliable disaster risk information and monitoring is also a foundation for effective planning and decision making in areas spanning the Sustainable Development Goals, including on food and water security, urban planning and infrastructure resilience, health and climate change adaptation. It is also a catalyst for building risk transfer markets, like insurance. Globally there has been good progress in understanding risk, but many developing countries are being left behind. Scarcity of data is a key challenge. Specific needs include for example:

- Critical gaps in mapping and monitoring of landslides, e.g. Pakistan, Afghanistan, Bangladesh and Nepal.
- Mapping of exposure and vulnerability to hazards, including locations of people, buildings, roads and critical infrastructure, and indicators of vulnerability, including building types, land-use, income levels etc.
- Mapping and monitoring urban development, urban systems and resilience.
- Accessible and inexpensive digital elevation data
- Probabilistic hazard information, particularly flood and drought risk
- Mapping and monitoring of key sensitive resources and sectors, including water resources, agriculture and fisheries, forestry and critical ecosystems.
- Developing estimates of disaster loss.
- Real-time tracking and monitoring of changing hazards, vulnerability and/or exposure, including flooded areas, evolving coast lines in delta regions, coastal erosion and inundation, regions affected by drought etc.
- Easily accessible tools for combining different datasets and visualising risk data
- Integrating risk information into planning and investments, including urban planning, natural resource management and disaster risk management.



Elicited ratings of the effectiveness of flood risk assessments in Africa and South Asia (green “effective”, orange “moderately effective” and red “not effective”) against estimated flood hazard (right). Source: Lombroso et al. and WRI Aqueduct

## 2. Anticipate, don’t wait, for crises

The recent report of the United Nations Secretary-General for the World Humanitarian Summit “One Humanity Shared Responsibility” stressed the need for the humanitarian system to do more to anticipate and act before a disaster strikes, rather than wait until a full crisis develops. For example, in Bangladesh, an improved early warning system contributed to saving hundreds of thousands of lives when cyclone Sidr struck in 2008. Acting early not only saves lives and reduces the impacts of disasters, but is also cost-effective, reducing the costs of disaster response. Early warning systems and real-time tracking of developing crises are important inputs into early action. This includes, for example, multi-hazard early warning systems, impact-based forecasting, tracking of tropical cyclones, flooding and other hazards and monitoring of key environmental variables or social indices that indicate growing risks. Such systems are improving in developing countries, but there remain significant gaps, particularly in the poorest and most vulnerable countries.

- Real-time tracking of developing events, including droughts and flooding in Africa.
- Impact-based forecasting systems, e.g. providing forecasts of potential areas affected and losses ahead of a flood, drought or storm occurring.
- Key gaps in early warning systems in some countries, e.g. lack of tropical cyclone warnings in Haiti; across Africa experts report at best ‘moderately effective’ drought early warning systems and for many countries ‘ineffective’ systems; many countries at risk from flooding, like parts of Ethiopia and Kenya, Nigeria, Bangladesh, Pakistan and Nepal have only moderately effective or ineffective risk assessments.
- Tracking broader indicators of growing vulnerability or risk, including status of key resources such as water, agricultural productivity etc.

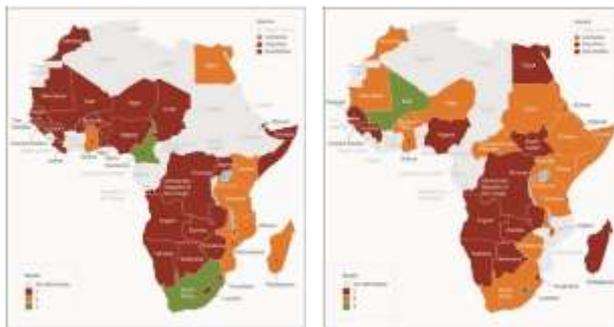


Fig 2: (left) The effectiveness of flood (left) and drought (right) early warning systems across Africa (green indicates “effective”, orange “moderately effective” and red “not effective”). Source: Lumbroso et al. 2013.

### 3. Real-time monitoring to inform humanitarian response

Despite recent advances, it is still difficult for humanitarian responders to quickly identify, access and analyse the real-time observations that are needed increase the effectiveness of humanitarian response. For example, specific challenges include:

- Accessible real-time monitoring information related to specific hazards, particularly for rapid-onset hazards, including flood extents, landslide affected areas, identifying damaged areas and infrastructure, monitoring access to roads etc.
- Rapid assessments of humanitarian needs and priority areas.

Importantly, for each of these challenge areas, lack of data, tools and services is only part of the problem. To reduce the impacts of disasters, one must also address the barriers that prevent such products being used in practice, including capacity constraints, inability to access data, failures to supply the right information, and lack of training.

#### Potential focus countries and hazards:

Ethiopia and Kenya – flooding and droughts, including food security and health

Zambia and Malawi – flooding and droughts, including water resource management

Sahel – flooding, droughts and natural resource management

Tanzania and Mozambique – flooding and cyclones

Bangladesh and Myanmar – cyclones, flooding and heat waves, including health

Pakistan, Afghanistan and Nepal – flooding, earthquakes and landslides