

Managing risks, preventing disasters

Reducing the risk of climate-related and other disasters and better equipping communities to deal with them are key elements of the post-2015 development agenda

By **Margareta Wahlström**, Special Representative of the UN Secretary-General for Disaster Risk Reduction

Human actions can lead to the creation of new disaster risks. Combined with natural hazards, these risk factors ruin lives and livelihoods. But human actions can also lead to disaster risk reduction, prevention or mitigation when there is clear understanding of what needs to be done, for example, when



building a new school, hospital, factory, electricity plant or road.

There is growing confidence that humankind, with the aid of science and technology, can take charge of its own destiny and go beyond simply managing disasters to managing the risk factors that create them. This is nowhere better expressed than in the outcome of the Third UN World Conference for Disaster Risk Reduction, which resulted in the first major milestone on the post-2015 development



agenda, the Sendai Framework for Disaster Risk Reduction 2015-2030.

The new framework builds on ten years of work with the Hyogo Framework for Action, as well as the knowledge and experience of major stakeholders from the scientific and academic communities, civil society, and the public and private sector. It will guide global action on disaster risk reduction for the next 15 years.

There is no great mystery as to what is driving human and financial losses from disasters. Over the last ten years, some 700,000 people have lost their lives, and the economic impact is now calculated to be around \$250 billion per year. Evidence indicates that exposure of people and assets in all countries has increased faster than vulnerability has decreased, thus generating a steady rise in disaster losses with significant economic, social, health, cultural and environmental impacts in the short, medium and long term, especially at the local and community level.

The Sendai Framework calls for action on the underlying drivers, including poor risk governance, poverty and inequality, climate change, unplanned urbanisation, poor land management, ecosystem decline and unsustainable use of natural resources, as

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well as compounding factors such as a lack of incentives for private disaster risk-reduction investment and the threat of pandemics. It opens a major new chapter in sustainable development as, for the first time, it sets out clear targets and priorities for action aimed at a: “substantial reduction of disaster risk and losses in lives, livelihoods and health and in

◀ Survivors sit with their belongings outside a damaged temple in Kathmandu after the first of two devastating earthquakes hit Nepal in April and May 2015. More than 8,000 were killed, twice that number injured and almost 300,000 homes destroyed

the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.”

To achieve this outcome, it identifies four priorities for action: focusing on a better understanding of risk, strengthened disaster risk governance, more investment, and more effective disaster preparedness that embeds the ‘build back better’ principle into recovery, rehabilitation and reconstruction.

The seven global targets it outlines are: a substantial reduction in global disaster mortality; a substantial reduction in numbers of affected people; a reduction in economic losses in relation to global GDP; substantial reduction in damage to critical infrastructure and disruption of basic services, including health and education facilities; an increase in the number of countries with national and local disaster risk-reduction strategies by 2020; enhanced international cooperation; and increased access to multi-hazard early warning systems and disaster risk information and assessments.

Scientific approach

The Sendai Framework also calls for more science-based methodologies and tools to be developed and distributed. Recording and disseminating disaster losses and relevant statistics, including disaggregated data, provides important support to governments as they set their own quantitative targets for reductions in mortality, economic losses, damage to vital infrastructure and access to early warnings.

From a scientific point of view, the Sendai Framework includes some key areas that are worth highlighting, particularly a new focus on health. This issue received scant attention in the previous framework but is now clearly at the heart of global efforts to build resilience, based on the last decades’ experience of the reality, and threat of, pandemics such as HIV/AIDS, malaria, TB, Ebola, SARS and H1N1.

Advances in science and technology have played a significant role in saving lives over the last ten years, especially in the area of weather-related disasters, which account for over 80 per cent of all disaster events. Innovations in satellite monitoring, real-time



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weather forecasting, and ICT access and availability for disaster managers have played an important role in improved performance of disaster management systems.

Using smartphones and complementary technologies, there are hopeful signs of progress in creating less costly systems for providing early warning in earthquake zones for developing countries that lack the capacity to deploy the more sophisticated systems used in countries like the United States and Japan.

Given the number of lives lost through building collapses, there is also an obvious role for engineering science and technology to play in reducing the risk either through retrofitting or ensuring building standards are adequate in the first place. Technological improvements in earthquake-proofing buildings are behind the current drive in Turkey to ensure that every school and hospital in the country is earthquake-proof by 2018. Turkey is becoming a showcase for other countries facing this type of risk

– which is responsible for more deaths than any other disaster type – in the Worldwide Initiative for Safe Schools run by the UN Office for Disaster Risk Reduction.

Solutions may be less obvious with regard to long-term weather patterns. As rainfall intensifies and sea levels rise, the scientific community clearly is an important link between government and the public when it comes to making the evidence for far-reaching decisions easily understood, especially by affected communities. This is especially important in worst-case scenarios that might require moving large groups of people out of harm's way.

Scientific enterprise is vitally important not just for supporting mitigation, preparedness and response measures but for the development of policy at the highest levels of government and in providing evidence of the benefits that ensue from investing in disaster risk reduction. Community participation and understanding is crucial in all these efforts. If we are to reap the benefits from technology

▲ A boy outside his home in Santa Cruz department, Bolivia, amid extensive floods caused by heavy rains linked to La Niña climate effects

in terms of improved disaster risk modelling, assessment, mapping, monitoring and multi-hazard early warning systems, then an 'all-of-society' approach is required.

As the UN Secretary-General has noted: "sustainability starts in Sendai". It is clear from the Framework and the ongoing discussions that development cannot achieve sustainability without addressing the corrosive impact of disaster risk.

The Third UN World Conference on Disaster Risk Reduction has brought this truth into the mainstream of thinking around development and climate change. The Sendai Framework has laid the foundation for the post-2015 development agenda. The way is now clear for complementary agreements on sustainable development and climate later this year. ●