

# Implementing Risk Management in Water and Sanitation



## Information brief

### Why do we need to manage water risks?

Over the centuries, societies around the world have and learned to coexist alongside the risk of natural disasters. Today's climatic changes mean that we live in a world where these risks are aggravated. Additionally, a globalised economy brings with it the risk of socioeconomic disasters created by fluctuations in the global financial market.

By developing solutions to manage increasing risk we can help protect the poor and vulnerable communities who bear the brunt of the effects of natural disasters. We need new strategies and a better capacity to absorb change.

#### Quick facts

- Floods, droughts and windstorms are the most frequent natural disasters and account for almost 90% of the 1,000 most disastrous events since 1990.
- Disaster events pose huge economic risks with costs estimated at US\$ 1 trillion from 2000 to 2010.

*Source: WWAP (2012), UN-Water (2014)*

### Commitment to progress

Rio+20 demanded coordination between disaster risk reduction and development planning and suggested mainstreaming climate change and resilience in sustainable development strategies.

#### Targets related to risks and water adopted by the Intergovernmental Open Working Group (OWG) on Sustainable Development Goals (SDGs)

**11.5** by 2030 significantly reduce the number of deaths and the number of affected people and decrease by y% the economic losses relative to GDP caused by disasters, including water-related disasters, with the focus on protecting the poor and people in vulnerable situations.

**6.a** by 2030, expand international cooperation and capacity-building support to developing countries in water and sanitation related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.

**6.b** support and strengthen the participation of local communities for improving water and sanitation management.

*Source: OWG (2014)*

The proposed targets follow proven disaster risk reduction strategies endorsed by the internationally agreed Hyogo Framework for Action.

## What is needed?

Key aspects for dealing with water-related disasters include:

- 1) **Increase knowledge** about communities at risk from water-related disasters, especially disasters likely to arise from climate change;
- 2) Adopt **integrated disaster risk management**, including structural and non-structural approaches;
- 3) Adopt and implement **monitoring systems**; and
- 4) Apply an **end-to-end preparedness approach**, which has the user communities prepared for potential disasters (UN-Water, 2014).

About 40% of the world's people live in international river basins. Around 60% of international watercourses are not governed by cooperative management agreements and 80% of the existing agreements are bilateral even though other partners may exist.

*Source: SIWI (2009)*

## Challenges

- According to the last report by the United Nations International Strategy for Disaster Reduction (UNISDR) (2014), disaster risk reduction has hardly been integrated and embedded within poverty eradication and **sustainable development policies and programmes**.
- **Decentralisation** has put a heavy burden on local government, which is often overwhelmed by responsibilities. The success of local adaptation measures relies on supportive institutions.
- Most governments have not fully developed **coordinated and coherent action** on disaster risk reduction across different sectors and between central and local governments. Institutional arrangements, legislation and policy for disaster risk reduction tend to be anchored, when in place, in disaster response which may not have the authority or capacity to influence decisions related to national development planning and investment.
- Few doubt that human-induced climate change is real, but it can be difficult for decision-makers to understand what the rise of average annual temperatures means for their region. **Hydrological information** is often incomplete, unreliable, inaccessible or lacking.

## Tools for implementation

### 1. Increased and improved financing

There is a need for improved financing. Many lack access to financial resources, and current financial systems do not always reflect needs.

- **Accounting for disaster losses** would allow for more analysis and identifying strategic trade-offs when making decisions that may have an impact on risk.
- **Innovative, predictable** and **sustainable funding targeting** the most vulnerable groups and ecosystems is needed to improve adaptive capacity.
- **Decentralisation** requires that local institutions are strengthened, supported and empowered.
- These resources should be **additional to official development assistance (ODA) commitments**.



- Donors need more **flexible mechanisms** to get funds to the level where strategies are being put into action. **Microcredits** should be more widely available and targeted.
- **Channelling funds** through government is advantageous because of broad scale coverage. But corruption can eat away at these initiatives. NGOs can only exist in a political context that allows them to cooperate with government. Strong NGOs can lobby local governments on behalf of the poor and hold governments accountable for service delivery.
- **Corporate social responsibility** is a means to engage local neighbourhoods in water resources, mobility and communication.
- Funding to enhance communities' **capacity** to anticipate and respond to water-related disasters is a sound investment, as is investing in **cost-effective and adaptive water management** and **technology transfer**.
- Invest in **infrastructure and in well-functioning ecosystems**.
- Invest in **data collection**.
- **Cost-benefit analysis** of adaptation should consider all benefits, especially those related to health.

## 2. Infrastructure and technologies

- Infrastructure can help cope with climate uncertainty. This includes natural infrastructure, such as watershed and wetlands, in addition to dams and canals.

## 3. Capacity development

Where it is insufficient, capacity should be increased and traditional knowledge should be acknowledged and used.

- Public awareness and professional education on the inter-dependence of disasters with development, climate change, disaster risk and adaptation are the foundations of a culture of risk reduction.

## 4. Water governance

Governance should be improved beginning with an increased focus on water. In the United Nations Framework Convention on Climate Change (UNFCCC) there was little focus on water, and little mention of it in the reports from the UN Climate Change Conferences in Bali, 2007 (COP 13) and Poznan, 2008 (COP 14).

### *At national level*

- **Disaster risk management (and in particular risk assessments) needs to be an integral component of development plans and poverty eradication programmes.** The approach needs to incorporate development mechanisms (such as national public investment planning systems, social protection, and national and local infrastructure investments) to reduce risks and strengthen resilience.
- The **river basin perspective** must become more prominent in National Adaptation Programmes for Action (NAPAs), and mechanisms must be put in place to stimulate cooperation between transboundary countries on adaptation measures.

- **Accountability measures** can guide government and public awareness of, and support for, disaster risk reduction policies. A culture of accountability improves the effectiveness of governance and service delivery.
- **Hydrological data** must be shared among regions in accordance with the World Meteorological Organization (WMO) Resolution 25 on free and open exchange.

## *At local level*

- **The local level is crucial in climate adaptation, and institutional reforms must be crafted accordingly.** Mechanisms should be put in place to ensure adaptation efforts respect, protect and promote fundamental human rights.
- **Risk assessments** of standards can be useful tools for identifying and minimising negative impacts at local level.
- Ministries and public authorities must be encouraged towards greater **attendance** at local level.
- Adaptation strategies will only work if they fit local conditions (**physical landscape, cultural traditions and traditional knowledge**). Promoting and supporting the collection, assessment and dissemination of successful local **adaptation strategies** is essential to guard the wealth of local experience around the globe.
- **Stakeholder participation must be the back-bone of all processes.** Women must be involved in decision-making at all levels in society and **adaptation strategies and programmes must be gender sensitive**.
- **All utilities**, including rural water and sanitation programmes, must be systematically **assessed for resilience to climate change**.

Additionally, most governments have not fully developed **coordinated and coherent action** on disaster risk reduction across different sectors and between central and local governments. There is a growing recognition about government's responsibility for effective disaster risk reduction policy planning and implementation conducted through a **transparent and multistakeholder approach**.

### **Dutch Delta Programme**

The Dutch Delta Programme is a joint endeavour between central and sub-national authorities in charge of managing water, in close co-operation with social organisations and business to protect the country against flooding and ensure freshwater supply over the next 100 years.

Source: <http://www.government.nl/issues/water-management/delta-programme>

### **Recommendations from UN-Water to improve disaster risk management**

- At-risk communities implement hazard-specific early warning systems.
- Countries understand trends in disaster impacts and are able to make informed decisions about investments in risk mitigation and preparedness.
- Economic losses reduced and livelihoods improved for vulnerable communities.

Source: *UN-Water (2014)*



## Suggestions for the post-2015 framework for disaster risk reduction

### The plan of action

The effective management of disaster risk requires a Plan of Action by countries with three mutually-supportive goals:

- (a)** Prevent the creation of new risk by adopting risk-informed growth and development pathways that minimise increase in exposure and vulnerability.
- (b)** Reduce existing risk through action that addresses and reduces exposure and vulnerability, including preparedness for disaster response.
- (c)** Strengthen resilience by social and economic measures that enable countries and people to absorb loss, minimise impact and recover.

### Guiding principles

The principles of the Yokohama Strategy and the Hyogo Framework for Action are complemented by guiding principles:

- (a)** The prevention of new risk creation and reduction of existing risk are essential components of governance.
- (b)** Sustainable development depends on the ability to prevent new risk creation and the reduction of existing risk.
- (c)** Sound prevention and reduction of disaster risk are based on risk-informed decision-making.
- (d)** Preventing new risk creation and reducing existing risk require social engagement and empowerment, equality, inclusion and non-discriminatory participation and assumption of responsibility by all stakeholders.
- (e)** While the causes and consequences of risk may be national, transboundary or global, disaster risks have local characteristics and their management requires the empowerment of local communities.
- (f)** Preventing new risks of disaster, and reducing those existing, constitute an international legal duty.
- (g)** Aligned and clear responsibilities and action across private stakeholders and public institutions.
- (h)** In the planning and implementation of disaster risk management, the differential capacities of countries and communities need to be duly considered.

### Implementation

The following measures are suggested for implementation:

- (a)** Record and account for all disaster loss and impact, periodically estimate the probability of disaster risks in the context of a changing climate.
- (b)** Ensure national and local plans prevent the creation of new risk, reduce existing risk and strengthen resilience with clear targets and timeframes.

- (c)** Ensure the coherence of national frameworks of public policies through defining roles and responsibilities.
  - (i)** Guide the public sector in addressing disaster risk in publically owned, managed or regulated services and infrastructure, and in the environment.
  - (ii)** Regulate and provide incentives for action by households, communities, businesses and individuals, particularly at local level.
- (d)** Create specific public policies to address post-disaster recovery, reconstruction and displacement.
- (e)** Review existing financial and fiscal instruments to support risk-sensitive public and private investments.
- (f)** Stimulate the development of disaster risk management quality standards.
- (g)** Encourage the integration of voluntary commitments from all stakeholders into national and local plans for disaster risk management.

*Source: UNISDR (2014)*



## References

- OWG, 2014. Introduction and Proposed Goals and Targets on Sustainable Development for the Post-2015 Development Agenda. Open Working Group on Sustainable Development Goals, June 2014.  
<http://sustainabledevelopment.un.org/focussdgs.html>
- SIWI, 2009. Adapting Water Management to Climate Change. Wilk, J. and Wittgren, H.B. (eds). Swedish Water House Policy Brief Nr. 7. Stockholm International Water Institute.  
[http://www.siwi.org/documents/Resources/Policy\\_Briefs/SWHWaterClimate.pdf](http://www.siwi.org/documents/Resources/Policy_Briefs/SWHWaterClimate.pdf)
- UN, 2012. A/RES/66/288. The Future We Want – Outcome Document of the Rio+20 Conference. United Nations.  
<http://www.un.org/en/sustainablefuture/>
- UNECE, 2013. Guide to Implementing The Water Convention. United Nations Economic Commission for Europe. Convention on the Protection and Use of Transboundary Watercourses and International Lakes.  
[http://www.zaragoza.es/ciudad/medioambiente/onu/en/detallePer\\_Onu?id=768](http://www.zaragoza.es/ciudad/medioambiente/onu/en/detallePer_Onu?id=768)
- UNISDR, 2014. Suggested elements for the post-2015 framework for disaster risk reduction. 3rd United Nations World Conference on Disaster Risk Reduction. United Nations International Office for Disaster Reduction.  
<http://www.unisdr.org/we/inform/publications/37865>
- UNISDR, 2014. Towards a Post-2015 Framework for Disaster Risk Reduction. United Nations International Office for Disaster Reduction.  
<http://www.unisdr.org/we/inform/publications/25129>
- UN-Water, 2013. Climate Change Adaptation: The Pivotal Role of Water. Policy Brief. UN-Water.  
[http://www.unwater.org/downloads/unw\\_ccpol\\_web.pdf](http://www.unwater.org/downloads/unw_ccpol_web.pdf)
- UN-Water, 2014. A Post-2015 Global Goal for Water: Synthesis of key findings and recommendations from UN-Water. UN-Water, January 2014.  
[http://www.zaragoza.es/ciudad/medioambiente/onu/en/detallePer\\_Onu?id=811](http://www.zaragoza.es/ciudad/medioambiente/onu/en/detallePer_Onu?id=811)
- WWAP, 2012. Managing Water under Uncertainty and Risk. 4th World Water Development Report. World Water Assessment Programme. UNESCO, Paris.  
<http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/wwdr/wwdr4-2012/>