Improving resilience of water supply and sanitation in extreme weather events

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Water and health in the pan-European region

- In the European Region, poor-quality drinking-water causes over 13,000 deaths from diarrhoea among children aged 0–14 years (5.3% of all deaths in this age group) each year.

- 140 million (16%) do not have a household connection to a drinking-water supply.

- In central and eastern Europe water is safe only in 30–40% of households.

- Emerging threats: protozoan infestations of drinking-water supply systems, proliferation of *Legionella*, and potential health problems related to the increasingly complex chemical environment.
Home connection to improved sanitation facilities in urban and rural areas Year 2006 or latest

Sources: ENHIS, WHO Euro
Protect human health and well being by better management of water resources

Access to drinking water for everyone and provision of sanitation for everyone
Integrated approach

Environmental Management

- Effective protection of water related ecosystems and sustainable use of water resources
- Provision of safe drinking water and adequate sanitation

Health Outcomes

- Prevention, control and reduction of water-related diseases
- Detection, contingency planning and response to outbreaks

Drinking water quality

Environmental quality

Health outcome

Legal framework

The Protocol on Water and Health
The Protocol on Water and Health

Status of ratification

Adopted in 1999 by 36 countries

Entered into force in 2005

Currently ratified by 24 countries
Water supply and sanitation in extremes: THE FACTS

Number of extreme weather disasters 1980-2008
Comparative trends between UNECE and Global Regions

- UNECE
- GLOBAL

Number of total affected people by drought, extreme temperatures, flood and storm disasters* in UNECE Region (1970-2009)

*At least one of the following criteria must be fulfilled:
- 10 or more people reported killed
- 100 people reported affected
- declaration of a state of emergency
- call for international assistance

Source: EM-DAT database by CRED* adapted by ISFRA**
**ISFRA= National Institute for Environmental Protection and Research - Italy
*CRED= Centre for Research on the Epidemiology of Disasters - Université Catholique de Louvain
Water supply and sanitation in extremes: THE ISSUE

- Extremes such as floods, droughts and thermal anomalies are more & more recurrent worldwide and are a significant pressures on healthy environments.

- Water and waste water utilities are very vulnerable to extremes and in the region WSS performance is still an issue.

- Under critical conditions water supply and sanitation services aren’t anymore an healthy delivery services, but a significant source of contamination, sometimes irreversible that may also affect areas beyond local and national borders.

- Health risk are not only related to direct damages and supply disruption but also to contamination of water and biota.
<table>
<thead>
<tr>
<th>Health Risks WSS Utilities Performance</th>
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<tbody>
<tr>
<td>Contaminated discharge in environment and water bodies</td>
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<tr>
<td>Lack of available safe water</td>
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<tr>
<td>Higher pollutants concentrations and/or overload</td>
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<tr>
<td>Impairment of waste water treatment performance</td>
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<tr>
<td>Unsafe use of new water sources</td>
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</tbody>
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- Chemical and biological safety of
  - Drinking water
  - Bathing waters
  - Irrigated crops
  - Food and sea food

- Increase of vectors and rodents

- (Costly) impairment of effectiveness of environmental protection of healthy water resources

High vulnerability of WSS infrastructures in the Region
Guidance on water supply and sanitation in extreme weather events

- Science, engineering
- Institutional stakeholders
- Management tools

⇒ Cope not only with climate change impacts but also with other drivers
Integrated environment and health approach

- Risk management
- Adaptation challenges
- Health risks
- Environment & climate determinants
- WSS vulnerability & adaptation measures
- Communicate & inform
Disaster preparedness and early warning

- Apply integrated risk management in development planning
- Well defined institutional responsibilities
- Broad process of consultation
- Tools for disaster management and information (forecasting, early warning, etc)
- Awareness campaign

=> From disaster response and reaction to risk anticipation and mitigation
Communication and information

- The communication strategy, based on a multidisciplinary approach, should be part of the risk disaster management and adaptation plans for extreme weather events in order to share knowledge among different actors.

- Specific communication activities should be planned (before, during and after the event) and targeted at different groups at risk (e.g. the elderly, children, rural communities).

- Public authorities must be mainly responsible for elaborating and delivering the messages.

- The media are a key partner in communication.

- Communication should be a long-lasting and institutional process and not only a contingency tool.
THANK YOU FOR YOUR ATTENTION

http://www.unece.org/env/water/welcome.html