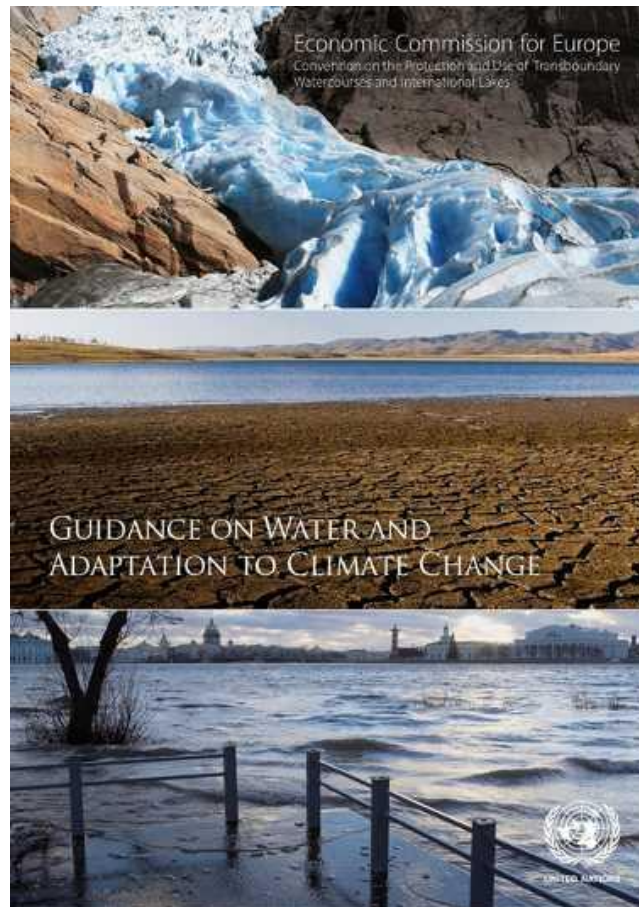


CLIMATE CHANGE, ADAPTATION AND WATER



Impacts of Climate Change

Observational evidence from all continents and most oceans shows that many natural systems are being affected by anthropogenic climate changes. The socio-economic impacts of climate change are significant: between 2000 and 2006, the frequency of disaster from extreme climate events worldwide increased by 187 per cent as compared with the previous decade, accounting for 33,000 deaths and 1.6 billion people affected.

In the same period, global economic damage from flooding events and heavy storms was estimated at about US\$ 25 billion (source: the Centre for Research on the Epidemiology of Disasters).

Adaptation is all About Water and Cooperation

The hydrological cycle which encompasses water availability and water quality as well as water services is severely impacted by climatic changes [IPCC, 2007] and will affect all economic sectors. The impacts will certainly vary considerably from region to region and even from basin to basin, posing serious challenges for water resources management [Ludwig et al., 2009]. Adaptation in water management to climate change is, consequently, of central and urgent importance. Like climate change, water knows no borders. A particular challenge for water resources management is connected to the fact that many river basins and groundwater systems are transboundary; i.e. the basin is shared by two or more countries.

Recent studies identify a total of 279 international river basins [Bakker, 2006], draining almost half of the world's total land surface [Wolf et al., 1999]. Countries must therefore adapt - and work together when doing so. Adaptation measures, especially structural measures such as dams, reservoirs or dykes can have significant effects on other riparian countries. What to do, for instance, if an upstream country unilaterally builds a dam to retain water for its population during droughts, but the water downstream is drastically reduced?

What can be done if an upstream country is bound by an agreement stipulating the delivery of a specific amount of water downstream, but the overall amount of water is reduced?

UNECE Guidance on Water and Adaptation to Climate Change

Under the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) the Guidance on Water and Adaptation to Climate Change is developed. The Guidance describes how to develop adaptation measures, prevent conflicting situations and how to deal with them should they arise: for instance, by empowering existing institutions for cooperation on transboundary waters with the required authority to address climate change impacts, by opening consultations, pooling knowledge and initiating joint action. In these terms, the Guidance is more than “just another paper”, it is a unique tool to deal with these issues. It explains step by step how to develop and implement an adaptation strategy in the transboundary context. Based on the concept of integrated water resources management (IWRM), the Guidance provides advice to decision makers and water managers on how to assess impacts of climate change on water quantity and quality, how to perform risk assessment, including health risks, how to gauge vulnerability, and how to design and implement appropriate adaptation strategies.

More than 80 different authors from many countries and disciplines contributed to the Guidance. It features nearly 40 case studies – illustrating, for example, how river basins like the Rhine or the Danube are preparing for climate change.

In 2009, Parties added to foster implementation of the Guidance through a programme of pilot projects and a platform for exchanging experience with adaptation to climate change in the transboundary context.

Good practices and lessons learned on water and adaptation to climate change in transboundary basins

In 2013-2015, a collection of lessons learned and good practices on climate change adaptation in transboundary basins will be developed as a complement to the Guidance on Water and Adaptation to Climate Change in cooperation with the International Network of Basins Organizations (INBO) as well as other partners. It will include a compilation, analysis and synthesis of existing knowledge, experience, lessons learned and good practices on climate change adaptation in transboundary basins. The collection of good practice also responds to one of the outcomes of the sixth World Water Forum in 2012 and will be presented at the Seventh World Water Forum in 2015 in the Republic of Korea.

Source:

<http://www.iwawaterwiki.org/xwiki/bin/view/Articles/AdaptationtoClimateChange>