UNITED NATIONS

ECONOMIC COMMISSION FOR EUROPE

CONVENTION ON THE PROTECTION AND USE OF TRANSBOUNDARY WATERCOURSES AND INTERNATIONAL LAKES

Climate change and the Water Convention

Guiding adaptation

Climate change is a reality, and so are its impacts. In the period 2000–2006, the frequency of disasters worldwide from extreme climatic events increased by 187 per cent compared to the previous decade. Nearly all UNECE countries can expect negative impacts, although these will vary considerably from region to region and even from basin to basin.

In Northern Europe, some impacts can already be seen, including increased flooding, erosion and the retreat of glaciers. Reduced snow cover threatens economies based on winter tourism, and changing water regimes affect the development of hydropower and agriculture. Coastal areas face negative impacts from sea-level rise, including salt intrusion into coastal groundwaters as well as increased river discharges. Wetlands could simply dry out.

In Central Asia, the Caucasus and Southern Europe, higher temperatures and drought are expected to threaten water availability, hydropower potential, summer tourism and agricultural yields. In Central and Eastern Europe, summer precipitation is projected to decrease.

Throughout the region, climate change threatens the health of people, slows development and increases poverty, child mortality and hunger. Floods, heat waves, extreme cold and other severe weather events leave people traumatized, and exposed to contaminated water and disease vectors.

Ecosystems throughout the region are affected by changes in flow regime causing, for example, drying out of wetlands, changes in temperature, algae blooms and disappearance of certain species. Such changes may lead to the collapse of certain ecosystems and the irreversible disruption of the services they provide.

Less developed countries are among the most vulnerable to the adverse effects of climate change. Moreover, widespread poverty limits their adaptive capacity.

While international efforts try to slow and mitigate negative impacts of climate change, these efforts will take a long time to show results. Adaptation to climate change is therefore indispensable and urgent. The challenge is even greater for countries that share a critical resource as intimately linked to climate as water. It is both wise and cost-effective to start adapting *now*.

To be successful, adaptation policies must take into account that climate change is only one of the many increasing pressures on water resources, and should be managed with this in mind. When water bodies are shared, adaptation measures must be developed and applied cooperatively, by all stakeholders, and at the basin level to avoid conflict, waste of resources and confusion.

Most countries in the UNECE region do not have adaptation strategies. Many lack the needed resources, knowledge and/or capacity to develop them. For this reason, Parties to the Water Convention decided to produce a guidance on water and adaptation to climate change in transboundary basins, including flood and drought risk management.

Working in cooperation with the Protocol on Water and Health, the water experts drafted a document on how to adapt water management to climate change in the UNECE region and elsewhere. The Guidance intended for managers and decision makers describes how countries can implement the Water Convention under changing climate, and increasing uncertainty. The document outlines a step-wise approach to assessing the impacts of climate change and developing appropriate policy, strategic and operational responses on adaptation. It is a general road map, however, one meant to be tailored to specific local situations.

Steps to adaptation

The Guidance covers:

General principles and the overall policy, institutional and legal framework necessary to enable effective adaptation planning and implementation.

Information needs for climate impact assessment on water availability and water services, linking climate models and scenarios to hydrological models at the basin level.

Vulnerability assessment, from the national to the local levels, designed to identify places, human groups, and ecosystems at highest risk, as well as the sources of their vulnerability and how the risk can be reduced or eliminated.

Development of adaptation measures, addressing:

- **Prevention**, including action plans and legislation, to avert the worst effects of extreme events such as droughts and floods.
- **Improving resistance or resilience** of water systems, by improving irrigation, desalinization, water balance, dam safety, land-use planning, etc.
- **Preparation for extreme events** through awareness-raising, fair sharing of water resources and associated governance.
- **Response to extreme events**, including evacuation measures, emergency medical care, and safe drinking water distribution as well as arrangements for hazard management, institutional development, emergency training and information dissemination.
- **Preparedness for recovery or aftercare**, including rehabilitation, reconstruction, legislation, and information collection and dissemination.

Financing of adaptation strategies to ensure their economic soundness, efficiency and sustainability.

Evaluation of adaptation strategies to identify barriers and constraints to their implementation and to assess their results and economic efficiency.

Climate and health

The Protocol on Water and Health to the Water Convention aims to control water-related diseases through improved water management. Its implementation will be heavily affected by the impacts of climate change. Adaptation thus needs to be taken into account when implementing its provisions, in particular those related to safe drinking water, sanitation, early warning systems and surveillance of water related diseases.

From theory to practice

Pilot projects are being developed to transform the Convention's aims and policies relating to climate change into concrete action on the ground. To help countries develop their adaptation strategies, the Convention also promotes the exchange of experience in coping with climate change and the development of a knowledge base on expected impacts and adaptive measures as they are implemented in the UNECE region.

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

Printed at United Nations, Geneva–GE.09-20429–February 2009–4,320–**ECE/CEP/NONE/2009/2**