Increasing resilience to water extremes and climate change: a societal challenge for urban areas

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PROTOCOL ON WATER AND HEALTH

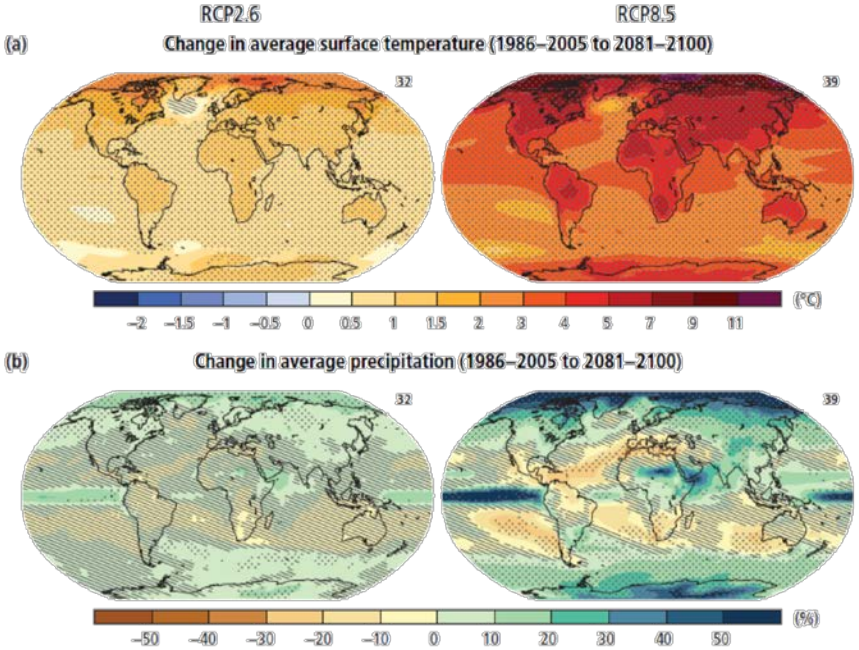
UNECE

World Health Organization
REGIONAL OFFICE FOR Europe

Rationale

What is the problem and emerging trends in the pan-European region?

* Climate change modified water quantitative/qualitative dynamics of hydrologic processes and features
  * Increased Evaporation
  * More extreme events (floods, droughts, hurricanes, …)
  * Earlier and more sever snow melt
  * More intense precipitation with lower yearly cumulated rainfall
  * Sea level rise



IPCC, 2014

Rationale

What is the problem and emerging trends in the pan-European region?

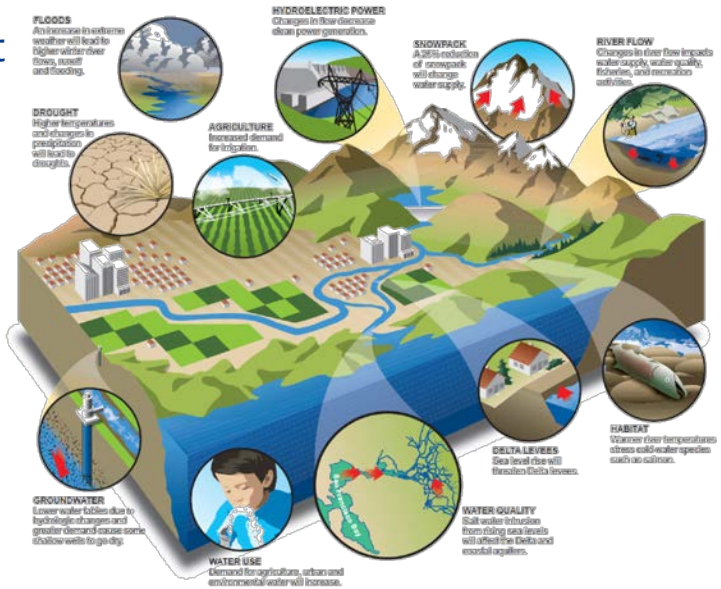
* Wastewater: increasing quantity of **untreated water overflows** and more pollutants in receiving water bodies (subject to higher evaporation rates)

* Sea level rise and more sever storm surge will impact **waste and storm water/sewer system efficiency** especially in low lying and coastal flat areas

* Increasing **energy usage** for adapting (pumping needs) and/or need of updating water infrastructure

* Decreased global/yearly water availability will force increasing **reuse of urban/industrial water**

* Increased temperatures will lead to **increased biological activity** with consequent water quality issues



California Department of Water Resources (2008)

Rationale

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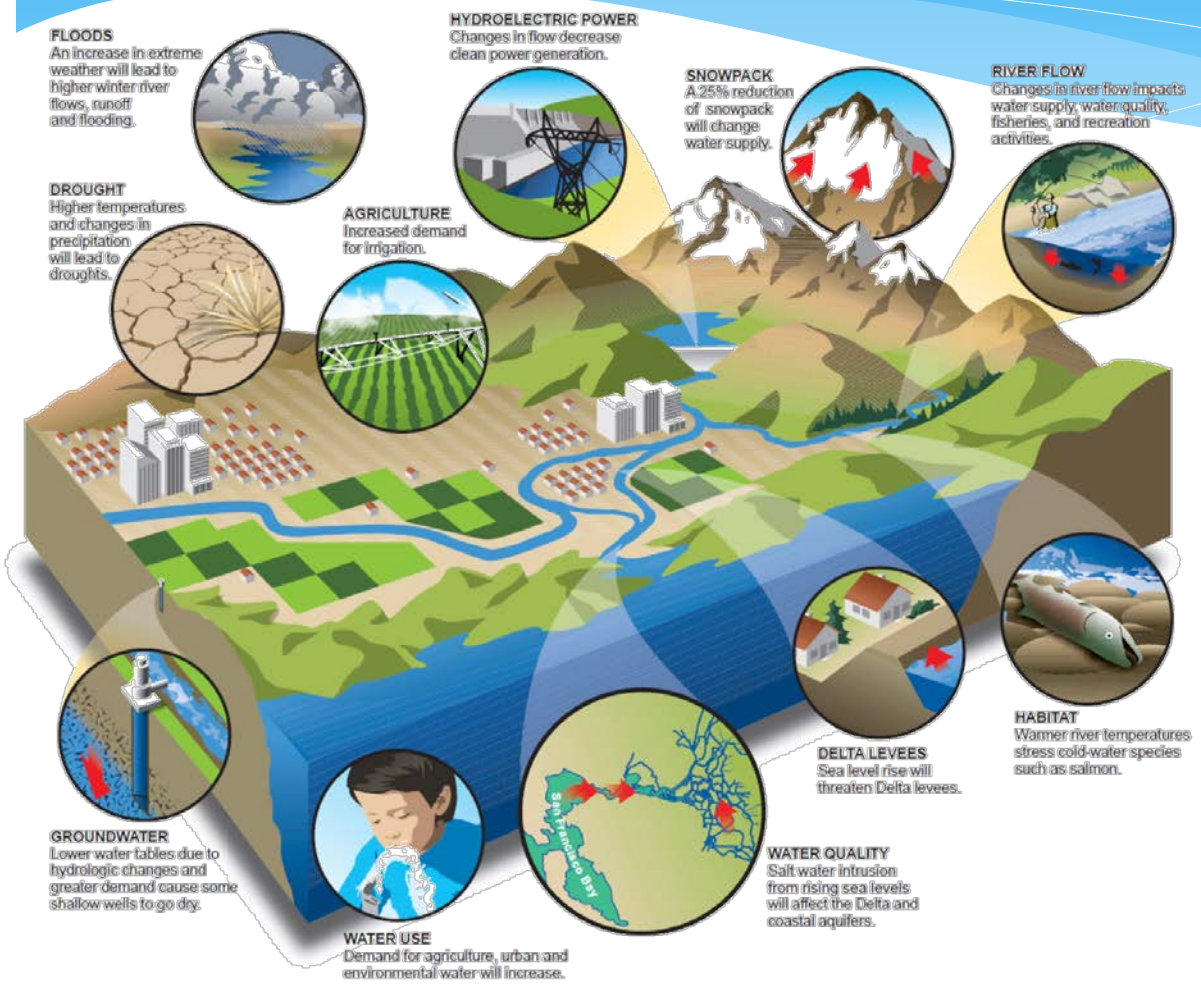

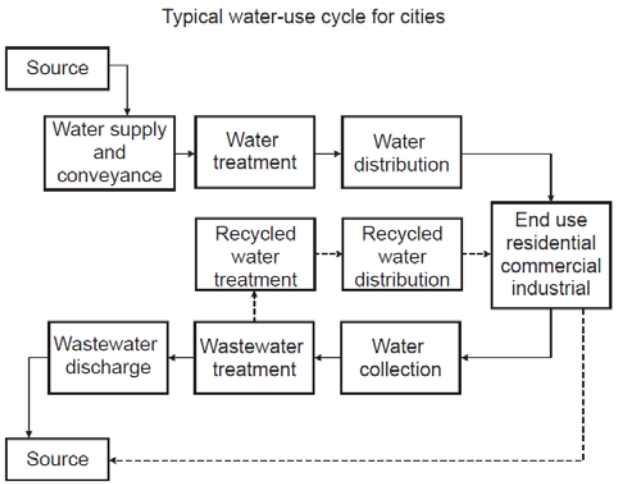

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What is already happening?

* Actual strategies and priorities in the UNECE region
  * From urban planning to disaster risk reduction and emergency management (UNECE CHLM, UNISDR, …)
* Alignment with international and regional agenda
  * Rio+20, the 2030 Agenda and the SDGs
  * 2015–2030 Sendai Framework for Disaster Risk Reduction
  * The 2010 Parma Declaration
  * Water Convention, Arhus Convention and European Environment and Health Process
  * Horizon 2020 and Directives and policies of the European Union (European Flood Directive 2007/60/EC and the Water Framework Directive 2000/60/EC)

Interlinkages

* The Protocol on Water and Health for 2017–2019 as a regional tool for complementing and linking existing strategies:
  * Adapting water policies to climate change
  * Interlinking water resource / wastewater management plans with disaster risk reduction strategies
  * Multidisciplinary and holistic approach

Solutions

* Infrastructure engineering and update:
  * build green and grey infrastructure
  * increased effluent treatment and cooling
  * more recycling and reuse
  * new treatment plants at higher elevations
  * smart and green energy management/solutions (smart cities)

* Large to local scale spatial planning for water management
  * Informal settlements
  * Managing agricultural areas and small/single settlements

Possible Protocol's contribution

* Strengthening the environment using holistic approach with focus on prevention
  * **inter-links and synergies** with actual projects/strategies in the pan-european region
  * **Regionalizing** the decision making process **(coastal, fluvial, hillslope)** by identifying region-based issues and solutions (**formal vs informal water and wastewater systems**)
  * Enforcing **Integrated Water Resources Management (IWRM)** into water and wastewater management
  * Support the efficient **transboundary water management** by **policy** and **guidelines homogenization**
  * Building a strong **holistic policy-oriented process** while providing scientific and professional guidelines

References (selection)

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