



# UNECE Guidance on Water and Adaptation to Climate Change

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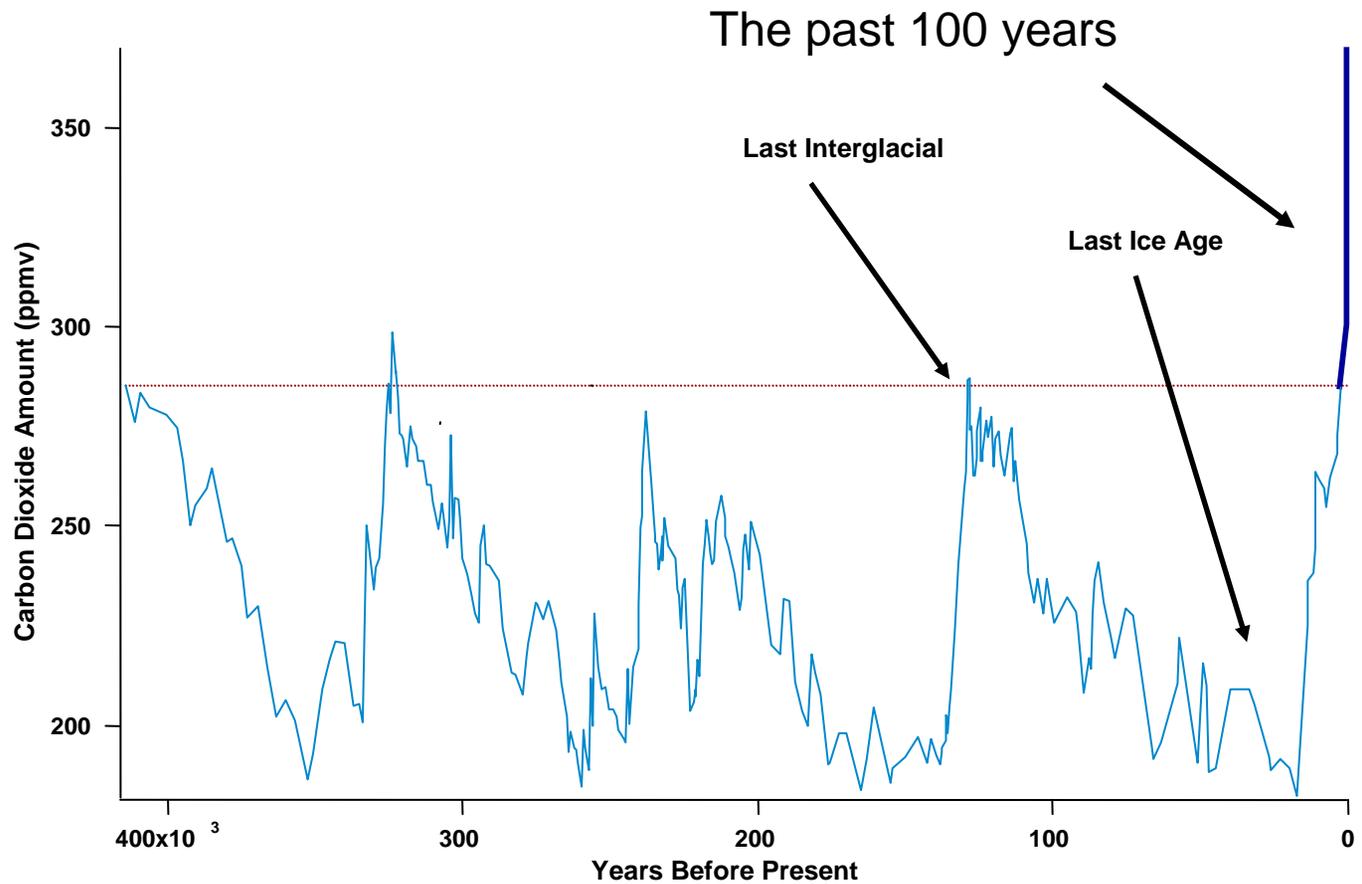
Ministry of Transport, Public Works and  
Water Management of the Netherlands

# Outline

- Climate change and its impacts
- Elements of transboundary cooperation
- Guidance on Water and Adaptation to Climate Change

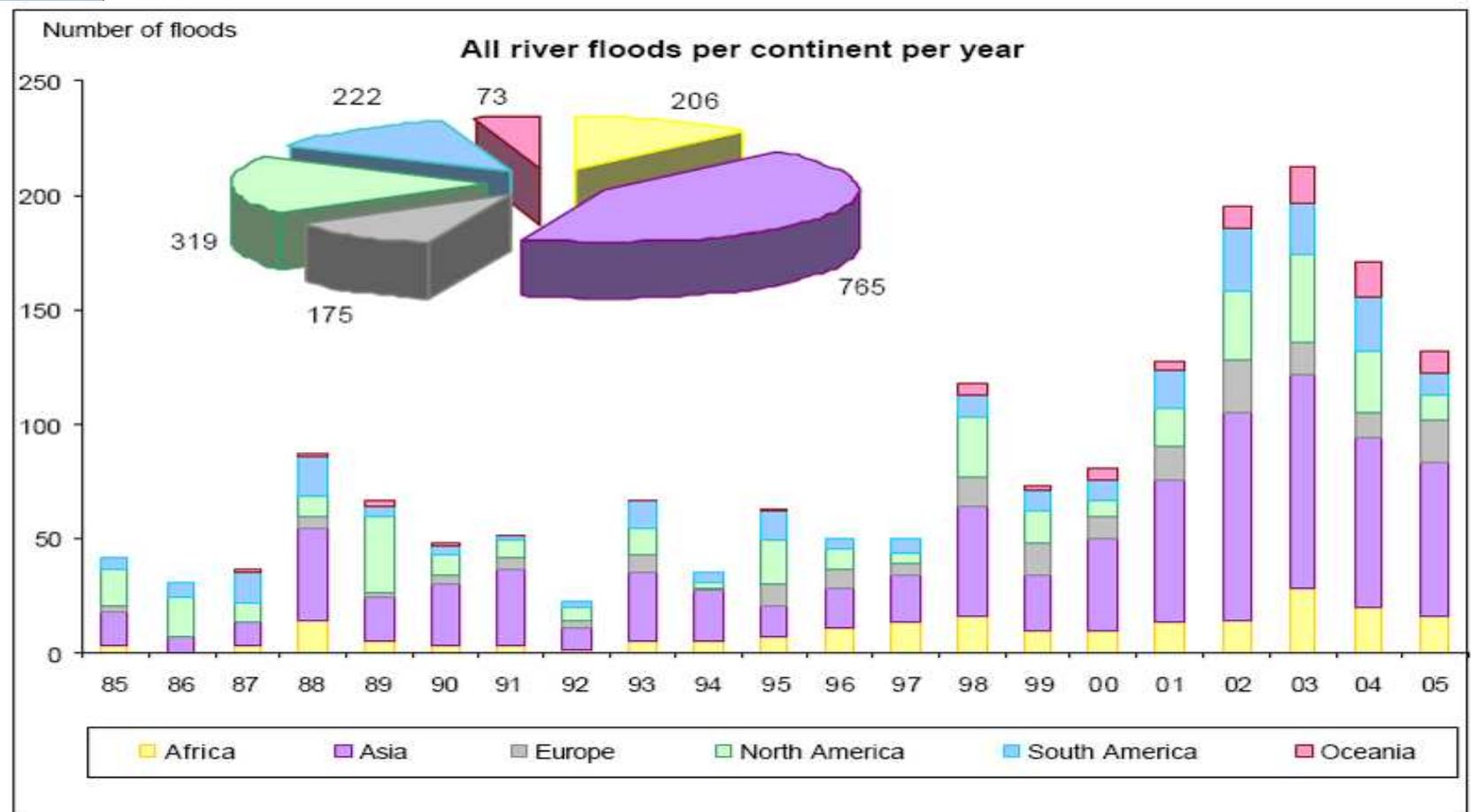


# Climate is changing

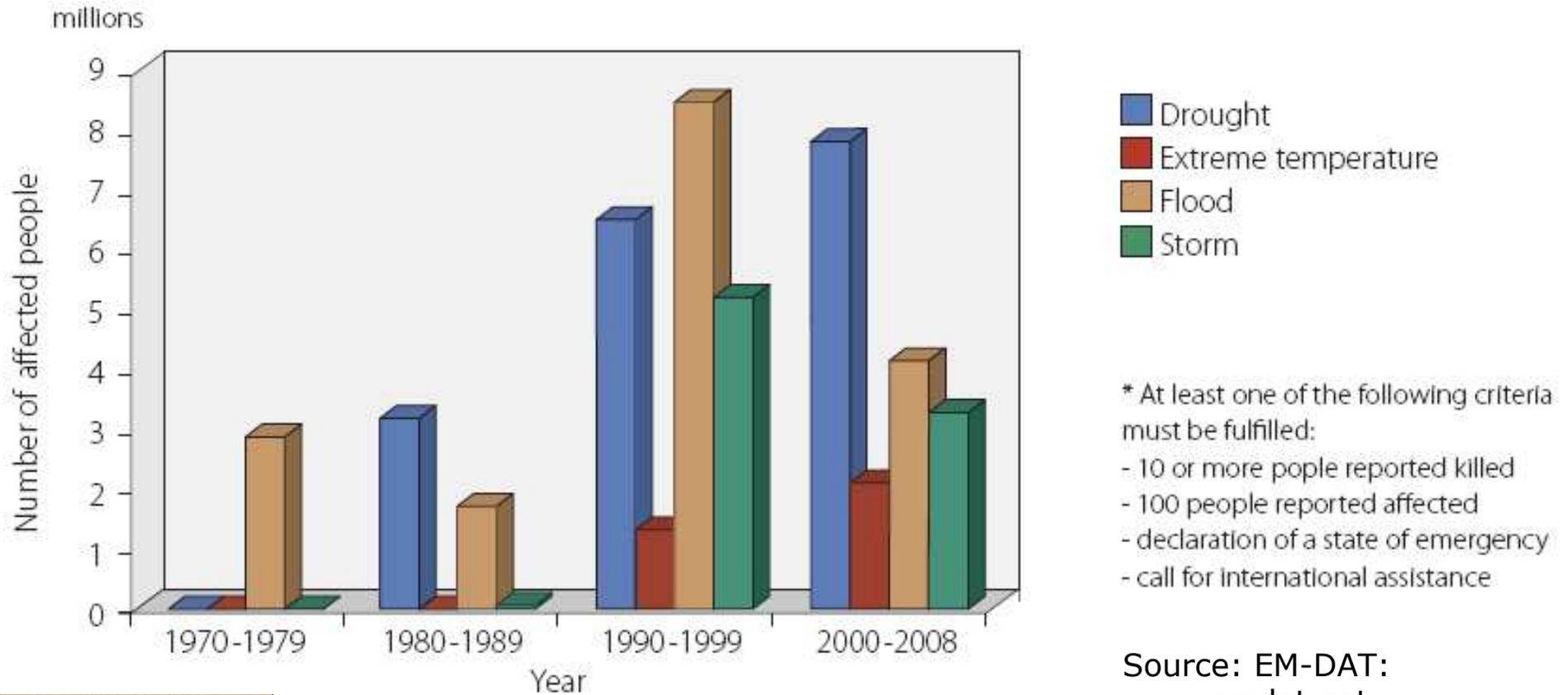


Source: IPCC, 2001

# Floods



# Total number of people affected



Source: EM-DAT:  
[www.emdat.net](http://www.emdat.net)



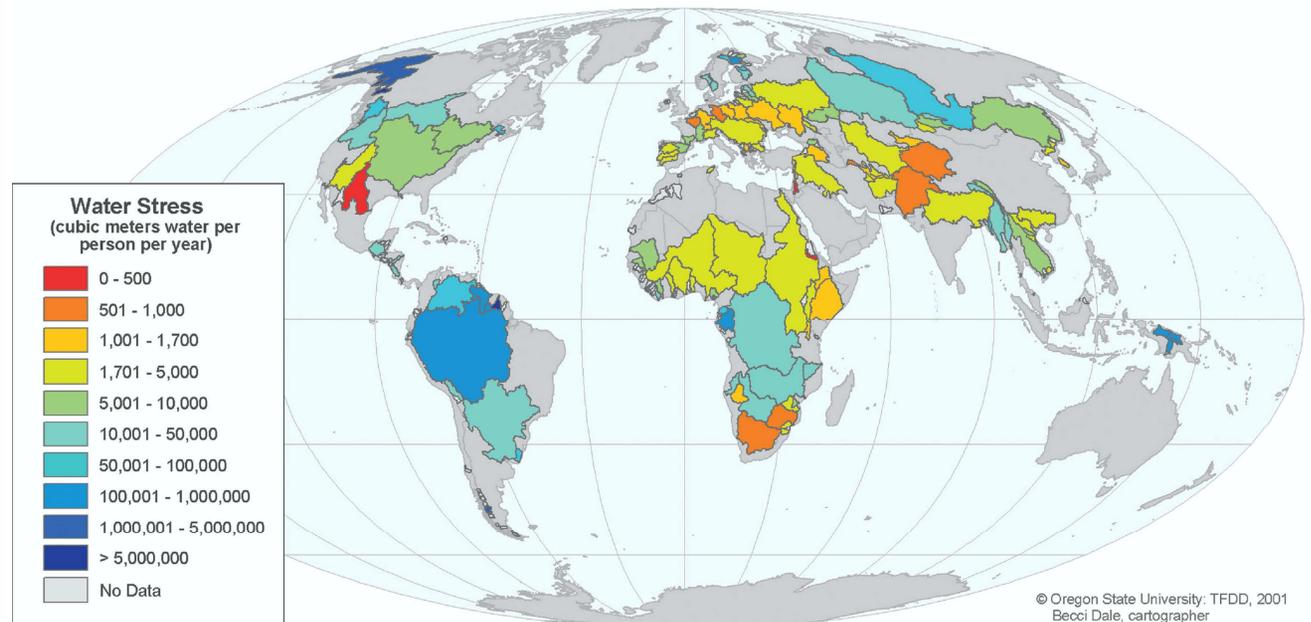
# Impacts on human wellbeing

- Reduced availability of freshwater (drinking water, hygiene water, irrigation water)
- Increase in food and water borne diseases (water temperature rise, use of waste water for irrigation purposes)
- Disrupted water supply and sanitation systems
- Erosion of fertile soils
- Reduced crop production / food availability
- Salinisation of agricultural lands



# Transboundary waters

- 279 international river basins
- Almost 50% of world's total land surface
- 273 shared aquifers worldwide

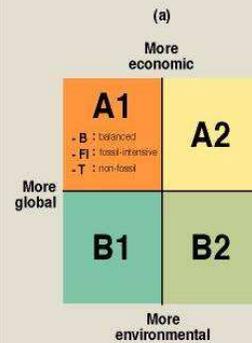


# Uncertainty

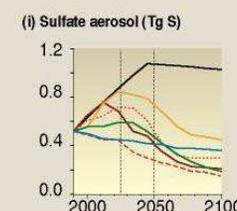
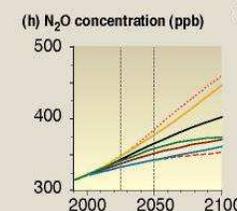
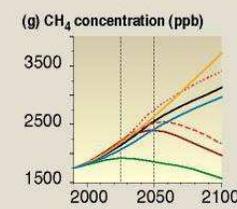
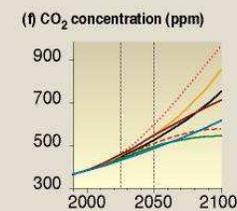
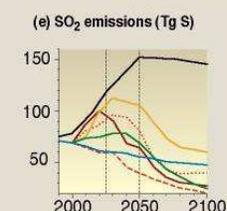
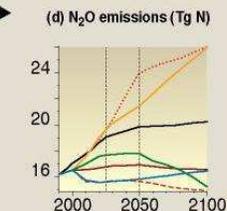
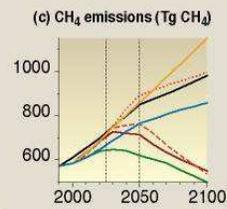
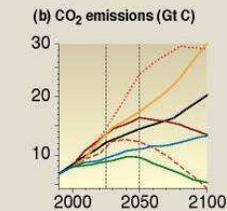
Narratives  
and  
scenarios

Emissions

Concentrations



- Scenarios
- A1B
  - - - A1T
  - ..... A1FI
  - A2
  - B1
  - B2
  - IS92a



Climate  
change  
and  
impacts

# Elements for transboundary cooperation

- Policy strategies – testing the future
- Legal setting - national and international laws and agreements
- Institutional setting – formal and informal networks
- Information management – exchange and communication
- Financial systems – water pricing



# Main principles (I)

- The climate is changing and adaptation is needed now
- Uncertainty should never be a reason not to act
- Water management is a key-factor in adaptation to climate change
- Transboundary cooperation - prevent transboundary impacts, share benefits and risks



# Main principles (II)

- Climate change is not the only pressure on water resources - population growth, migration, globalization, changing consumption patterns, agricultural and industrial developments
- National and international legislation and commitments support climate change adaptation
- Education, capacity-building and communication
- Involve stakeholders
- Exchange knowledge and experiences



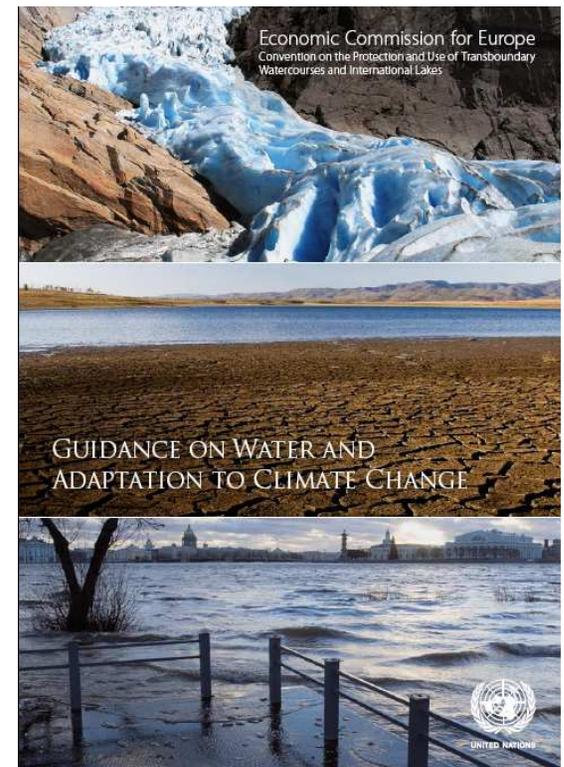
# Main principles (III)

- Effective adaptation strategies are a mix of
  - structural and non-structural
  - regulatory and economic instruments
  - education and awareness-raising measures
- Start adaptation now - costs will be much higher once climate change effects are irreversible
- Developing and implementing adaptation measures on learning-by-doing basis

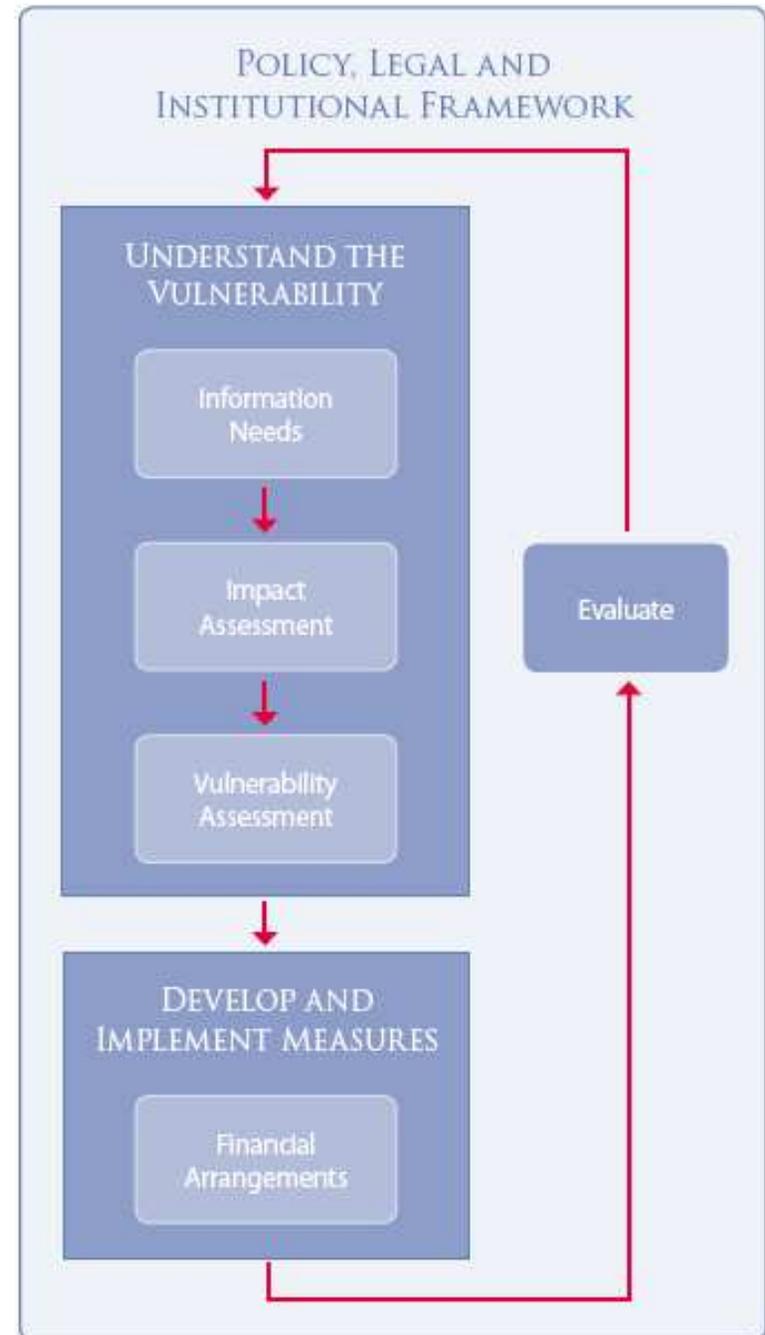


# Aim of the Guidance

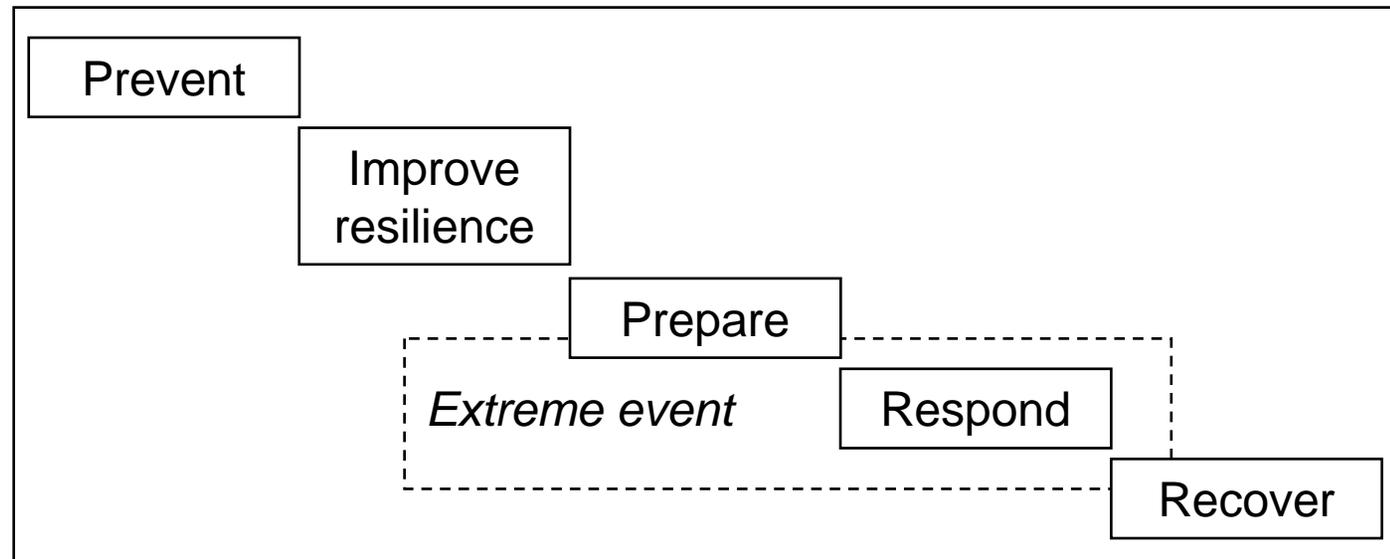
- General roadmap for climate proofing of water management
- Step-wise approach on:
  - assessing impacts of climate change
  - developing policy, strategic and operational responses
- Transboundary context
- Floods, droughts and quality aspects, including health



# Structure of the Guidance



# Develop measures: safety chain





“It is not the strongest of the species, nor the most intelligent that survives. It is the one that is the most adaptable to change”  
(Charles Darwin)

Thank you for your attention