United Nations Educational, Scientific and Cultural Organization

UN WATER

World Water Assessment Programme

Risk management in WWDR3

Living with Change and Uncertainty

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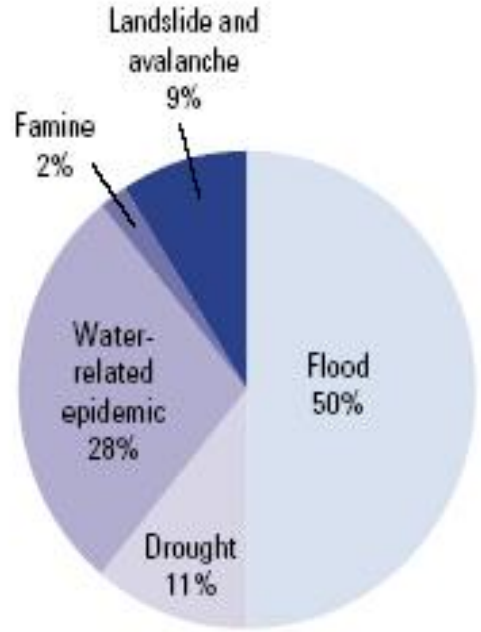
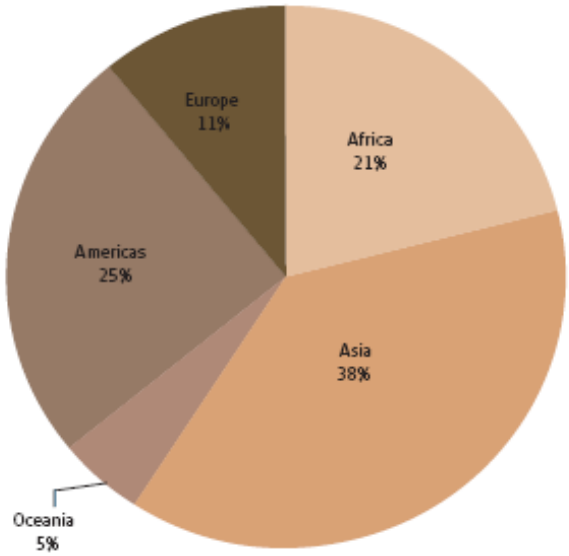
Water Related Disasters



Types of water-related natural disasters



Distribution of water-related natural disasters

1990s-2000s:

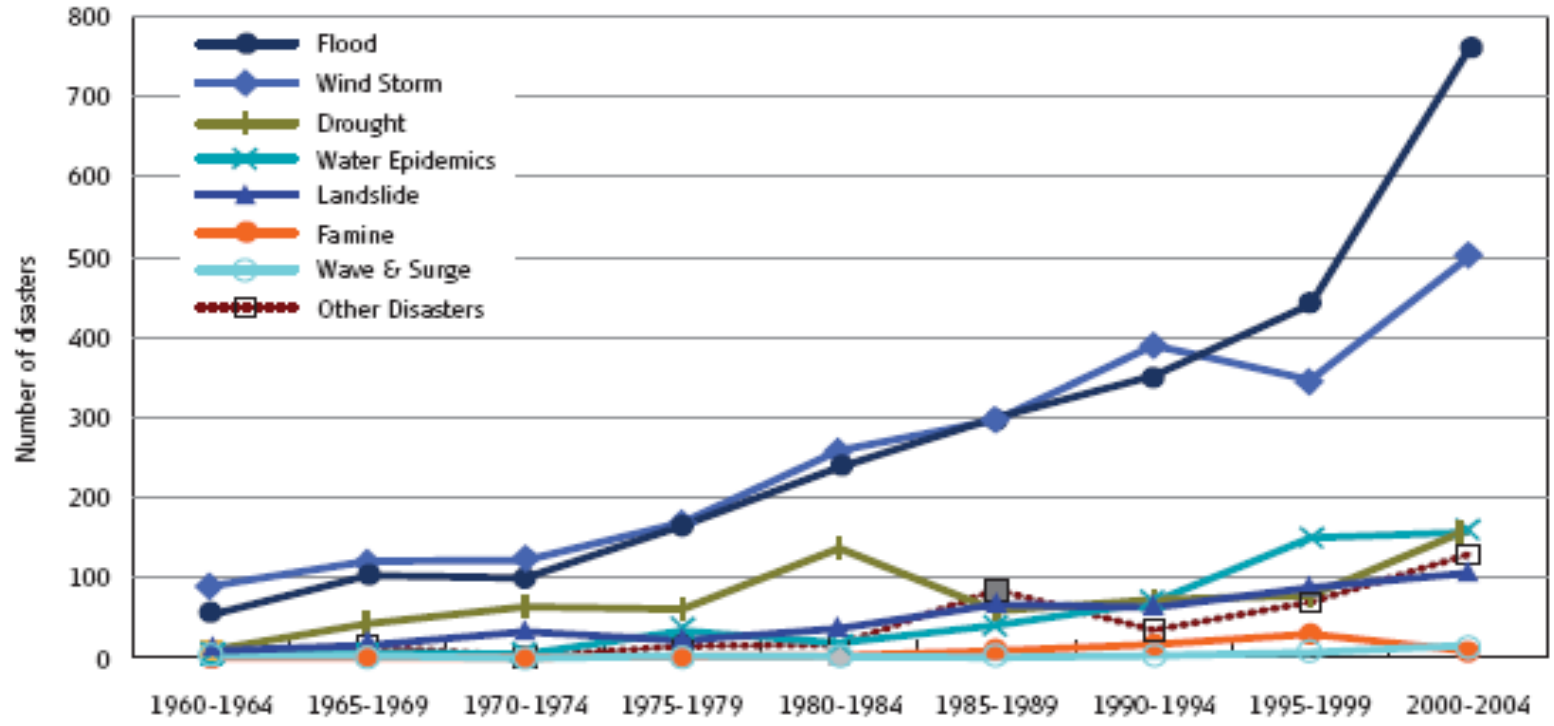
- Floods: 50 %
- Droughts: 11 %

Geographical breakdown:

- Africa: 21 %
- Asia: 38 %
- Americas: 25 %
- Europe: 11 %
- Oceania: 5 %

From 1996 to 2005, appx. 80% of all disasters were of meteorological or hydrological origin !

Global Trends



Source: Data from the Center for Epidemiology of Disasters (OFDA-CRED) in Louvain (Belgium). Analysis by the Public Works Research Institute (PWRI) in Tsukuba (Japan), 2005.[4]

Floods and Droughts

- Floods account for over 65 % of all people affected by natural disasters,
- More than 350,000 people died due to droughts and floods,
- Of this number, drought has been responsible for over 280,000 deaths.
- Combined economic losses were estimated at USD 446 billion.

Responding to disasters (WWDR1 and WWDR2)

- Knowing the risk: Probability of occurrence and establishing the vulnerability index,
- Defining and implementing the measures (structural and non-structural),
- Risk-sharing (public/private insurance mechanisms).

Risk Management:
Key findings of WWDR1 and WWDR2

- Adopting and balancing the use of structural and non-structural methods is a necessity,
- For both floods and droughts, a comprehensive watershed management approach provides the best solution,
- The concept of risk management should be integrated into long term policies, plans and programmes for sustainable development.

Risk Management:
Key findings of WWDR1 and WWDR2

- Preventing data loss is critical:
  - for correct analysis of events,
  - for development of indicators taking into account natural and social changes,
  - better preparedness to future hazards.
- In order to reduce the economic impact of water related natural disasters, it is important to impose the risk on a broader economic basis through insurance programmes.

What is in WWDR3? [1]

Climate change and its affect on water resources will be the main theme of the report.

Climate change may exacerbate vulnerability to water related hazards!

What is in WWDR3? [2]

Living with Uncertainty / Acknowledging Uncertainties:

"It is impossible to design a system that never fails (fail-safe). What is needed is to design a system that fails in a safe way (safe-fail)."

Coverage in WWDR3

Uncertainty and adaptation will be addressed as explicit topics:

- Adaptation Capacity of societies towards climate variability and change,
- Adaptation, resilience and insurance,
- Decision-making in the Context of Risk and Uncertainty,
- Economic evaluation of different responses (How will increased risk and uncertainty affect investment in the water sector?).....

Improving the science basis

Establishment of expert groups on:

- Climate Change
- Indicators, databases, monitoring
- Scenarios
- Law
- Policy Relevance

will allow WWDR to satisfactorily address controversial and emerging topics.

Scenarios
WWDR3 will look at the future

- To what extent can scenarios developed by the IPCC be used in WWDR3 to look at the future of water resources?
- Should additional scenarios be developed that are based on drivers directly linked to water resources and their use?

Real-time Delphi Process

These questions were posed to a group of over 40 experts in the water sector and the specialists in scenario development using an on-line real-time Delphi process

Responses

The responses enabled WWAP to conclude there was a consensus among participants that:

1. Modelling results based on the IPCC scenarios could be used, especially for downscaled physical impacts (precipitation and evapotranspiration), but with less certainty when it comes to impacts of socio-economic and cultural drivers.

Responses

2. It would be useful to develop scenarios based on the direct impact of drivers on water resources and their uses. For economy of effort these could be based on previous similar exercises such as the World Water Vision Scenarios

WWAP Approach to Scenarios

- WWDR3 will use results of the use of impact studies based on the IPCC scenarios in assessing the future of water resource availability
- A parallel scenario exercise will be conducted with the guidance of the Scenario Expert Group using drivers having a more direct link to the use of water.

Added Value of WWDR series

- Reporting mechanism of UN-Water as well as the decade 'Water for Life' (2005-2015),
- Awareness Raising,
- Bringing UN and non-UN partners together for a more sophisticated and comprehensive approach (eg. ISDR and Tsukuba Centre on Risk Management)
- Providing key messages directed towards decision makers and politicians,
- Case Studies,
- Side series, policy papers.

Disaster Risk Reduction at the International Level

- Yokohama Strategy and Plan of Action (1994)
- International Decade for Natural Disaster Reduction (1990-2000)

provided valuable policy guidance and tools for the mitigation of disasters.

Water for Life Decade

The International Decade 'Water for Life' builds upon the previous attempts by focusing on:

- *Governance,*
- *Risk identification,assessment,monitoring,*
- *Education/knowledge management,*
- *Reduction of underlying risk factors,*
- *Preparedness for effective response*

WWDR series during the period of the decade will report on the progress

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Thank you

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