



Vulnerability

Zero draft for EEA 2012 state of water assessment

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To be added later

Abbreviations used

BWE: Beate Werner, EEA

ETC/CCA: European Topic Centre on Climate Change, Impacts, Vulnerability and Adaptation

ETC/ICM: European Topic Centre on Inland, Coastal and Marine Waters

WVA: Wouter Vanneuville, EEA

0. Guidance to the reader

2012 will be the European year of water in which the EU Commission will publish its —Blueprint to safeguard European waters comprising reviews of the WFD, Water scarcity and drought and vulnerability and adaptation policies. To accompany these policy processes EEA plans for 2012 a set of reports on the —State of Europe’s water.

The format of the EEA 2012 State of Europe’s water assessment is planned to consist of four thematic assessments and an overarching synthesis and integrated report. In terms of communication, the several assessments are planned to be published on several occasions throughout 2012. EEA is currently working on the following thematic assessments with indication of when they are to be published:

- 1) Efficient Use of Water Resources (World Water Forum, Marseilles) - March 2012;
- 2) WFD: Hydromorphology – Summer 2012.
- 3) Vulnerability (Water scarcity and drought, floods, water quality) – Autumn 2012;
- 4) WFD: Ecological and chemical status and pressures – Autumn 2012;

This report is going to be the third one in the series. It is based on the input “Thematic Assessment on Vulnerability to Water Scarcity and Drought” by ETC/ICM and “Floods – vulnerability, risks and management” by ETC/CCA and ETC/ICM. Both background documents are distributed together with this zero draft.

The background document on Water Scarcity and Droughts contains an Annex providing more detail about the maps for the Water Exploitation Index (WEI), the needed and available data.

The final version of this report will be around 70 pages.

We hope that Member States and relevant stakeholders will read and comment on the current draft reports. We hope that Member States can check the information included from their country/RBDs and in case of missing information update the information reported.

1. Executive Summary/Key Messages

To be written later,

2. Introduction

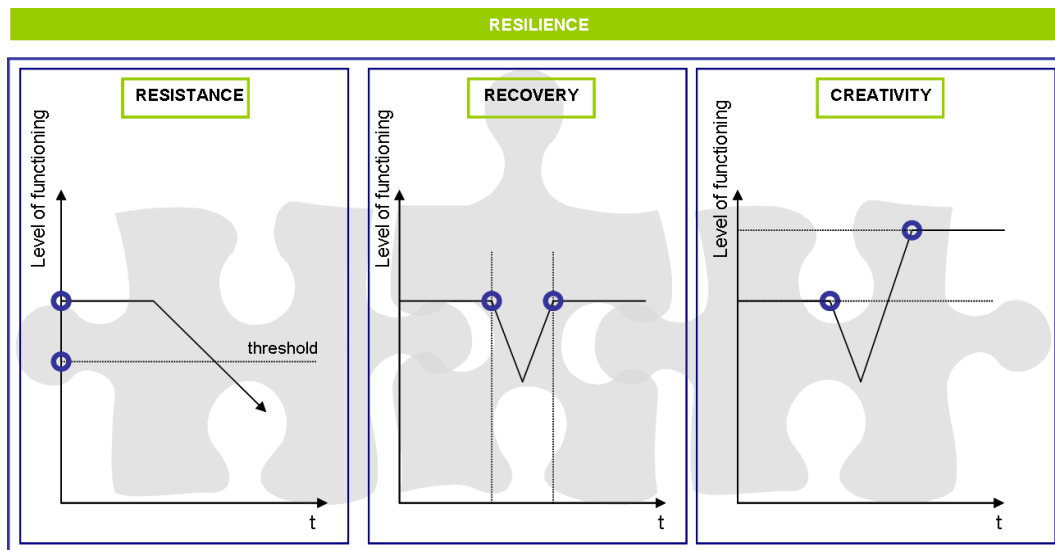
The introduction of the report will explain why a thematic assessment on Vulnerability is needed for Water, what it is about and how this report contributes to the process leading to the Blueprint.

Vulnerability in the context of this assessment is understood in the wider context of ecosystem assessment and ecosystem goods and services.

The more narrow vision where vulnerability is seen in relation to hazard and risk is only one part of this framework, which is a more holistic view on vulnerability.

The concept of vulnerability should depict the possible resilience of ecosystems and their ability to react to the driving forces affecting them. Vulnerability is seen as a function of the susceptibility of the receptors (the ecosystem as a whole or even broader the environment) and its value. Here value must not be seen in a strict monetary or economic sense, but as the value of a landscape or an ecosys-

tem. The receptors are the environment, ecosystems, people affected, economic sectors and activities, etc.



(Figure copied from FREEMAN project, CRUE ERA-Net)

We're talking about resistance when a system can withstand a pressure until a threshold is exceeded and a tipping point is reached after which recovery isn't possible any longer. When a system can recover it can recuperate from the impact in a reasonable time. With creativity the current level of functioning can be disturbed (and temporarily be lower) but in the end being higher than before/without the pressure.

The concept of vulnerability subsumes in the best way how water management, in particular in the areas of floods and droughts, is influenced on the one hand by climate change, on the other hand by human and economic activities like regional and land use planning, demographic developments and economic constraints. Sustainable water management has to relate to both, the economic drives of water use and management in the different sectors (agriculture, industries, energy, utilities) as well as the functioning of aquatic ecosystems that needs to be preserved to further provide the goods and services needed.

Water resource management and the integration of land use planning into the planning processes related to water management are most vital to achieve the objectives under the WFD and to further implement sustainable water management in a wider perspective. The most important tools here are River Basin-, Flood Risk- and Drought Risk Management Plans.

The report will deal therefore provide information on the current status in the area of water management related to Floods, Droughts and Water scarcity as well as the water quality aspects related to it. It will provide information on Projections, and Scenarios and compile good cases of management.

Because much of the terminology used in the assessment can have different meaning and is subject to on-going discussions, a glossary will be added as an annex.

3. Status, trends and projections

This chapter will be based on the background documents of ETC/ICM and ETC/CCA and their on-going developments.

It will contain facts and numbers from existing studies to set the scene with what happened/happens. It deals with drivers, pressures, state and impact. It will be the knowledge base used in the following chapters of this report where necessary actions are proposed. The projects developed by the Commission as e.g. ClimWaterAdapt, ENSEMBLES or LISFLOOD and on “water retention potential” will feed into this assessment.

It summarizes the climate change scenarios but also other drivers as e.g. demographic or economic projections. Examples of questions raised in this chapter are:

- Has frequency and/or intensity of rainfall changed over the years and what are the expectations based on climate change scenarios?
- Have droughts increased and prolonged and/or are they expecting to do so due to climate change expectations?
- Is there an increase in the frequency and/or impact of floods and if so can this be attributed to climate change?
- ...

Urban aspects and the effect of land use and land cover changes will be investigated in this chapter besides a sector approach.

Specific information will be provided in different subchapters for:

1. Floods;
2. Water Scarcity and Droughts; and
3. Water Quality.

There will be certain synergies with other thematic assessments. As an example for flood protection, a reference can be made to the Hydromorphology report where the information on the hydromorphological aspects of sustainable flood risk management can be found.

A core part of the assessment regarding water Scarcity and Droughts will be the information on water availability, supply and abstraction. It will be based on recent updates of calculations of the Water Exploitation Index (WEI) and the data provided by member States for that (Priority data flow on water quantity and development of WS&D indicators. It will in addition be based on the Water Account calculations for Europe.

In this chapter examples and case studies from member states or river basin districts will be included. Information in addition to what's available in the 2 background documents by the ETCs from the member states or relevant stakeholders are welcome.

4. Response

This chapter will be based on the background documents of ETC/ICM and ETC/CCA and their on-going developments and will contain possible scenarios for future sustainable water management in connection with land management and spatial planning.

Based on the information in the previous chapters it will further develop possible options for governance and management.

As in chapter 3 an overarching general part will be completed by specific subchapters for:

1. Floods;
2. Water Scarcity and Droughts; and
3. Water Quality.

Provisional and not limitative, this chapter can include:

- sustainability of combinations of future measures;
- the effectiveness or/and efficiency of possible scenarios together with their robustness and flexibility;
- the need to intensify cooperation outside the ‘water-sector’, e.g. in the domain of spatial planning;
- the need for more specific scenarios e.g. for urban areas, or the opportunities in agriculture / agricultural areas;
- ...

In this chapter examples of good practice and case studies from member states or river basin districts will be included. Information in addition to what’s available in the 2 background documents by the ETCs from the member states or relevant stakeholders are welcome.

5. Conclusions

To be developed in a later stage.

6. References

Will be added together with the growing of the document

7. Annex: Definitions used for the framework of Vulnerability

As explained in the introduction a specific language is used. A glossary will be added as an annex as the list of terms that we want to explain is too long to put it in the introduction.

Where existing, definitions will be copied from EU legislation or documents developed during the implementation of the EU Water legislation.