



*An exercise to assess research needs
and policy choices in areas of drought*

*How to deal
with drought*

science policy brief 5

Water Framework Directive 2000/60/EC: River basin management plans (Art.13)



Xerochore - An exercise to assess research needs and policy choices in areas of drought

Assessment of research needs and policy choices in the area of drought. Review of the state-of-the-art and identification of research gaps in the natural system, impact assessment, policy-making and integrated water resources management, and assessment of the possible impacts of droughts and guidance on appropriate responses.

Policy focus

Contribution to the understanding of drought and the natural system (climate and hydrology) and how it impacts on the characterisation of water bodies and pressures, socio-economic impacts and related drought management, environmental impacts on water availability for ecosystems.

Purpose of this science-policy brief

River Basin Management Plans (RBMPs) describe the processes and means to achieve the environmental objectives established by the Water Framework Directive (WFD). Drought, as a hazard, cannot be avoided and poses additional pressures on water bodies which should be examined while developing the RBMPs, following the six-year river basin management cycle:

Drought management plans should be an essential part of river plans and reviewed on a regular basis, in order to account for advances in drought planning.

Regions facing drought and water scarcity problems should be mapped (parallel to the delineation of river basins), in order to adjust/rationalise water management, as well as development projects, in these areas.

The Xerochore project contributed to improved drought preparedness through a state-of-art review and better knowledge on the processes of developing a drought plan, complementary to river basin management plans.

Policy milestones and relevant Xerochore key outputs

The main provisions of the Water Framework Directive regarding River Basin Management Plans (RBMPs) are:

Development of RBMPs for each river basin district (national and international). The first RBMPs should be published nine years after the date of entry into force of this Directive, at the latest.

RBMPs shall be reviewed and updated 15 years at the latest, after the date of entry into force of this Directive and every six years thereafter.

RBMPs may be supplemented by the production of more detailed programmes and management plans for sub-basin, sector, issue, or water type, to deal with particular aspects of water management. Implementation of these measures shall not exempt Member States from any of their obligations under the rest of this Directive.

Indicative contents of RBMPs are given in the WFD Annex VII.

The Xerochore D5.2 Extended Guidance document after Conference on Drought management and policy options addresses the issue of interlinkages between water and drought management and contributes to an improved knowledge on drought planning through:

The development of drought (growth and decay) and associated characterisation (scale, durations, severity) (more information on this topic is provided in the Science-Policy brief No 1 on drought characterisation) (contribution to WFD Annex II).

Monitoring and short-term forecasting of drought (more information on this topic is provided in the Science-Policy brief No 2 on drought monitoring) (contribution to WFD Annex V).

The processes for developing drought management plans within river basin management plans, since drought intensifies pressures set on water bodies (contribution to WFD Article 13).

The minimum required contents of drought plans, particularly under the framework of adaptation to climate change (contribution to WFD Annex VII).

The need to identify potential “drought regions”, supplementary to the identification of river basins (contribution to WFD Articles 3 & 5).

Key issues and objectives for improving drought management.

Limitations identified by Xerochore:

Processes for developing and reviewing drought plans have not been established, within the framework of drafting the river basin management plans.

Water management is performed independently of other national policies. For example, there is no linkage among water management and rural

development plans, particularly regarding the agricultural sector. Furthermore, the impacts of these plans on aquatic ecosystems have not been examined during their development (e.g. impacts of drainage systems and constructions on natural vegetation and soil saturation with water).

There is still limited political commitment on drought planning which is depicted in the absence of drought policies.

Participatory processes are not included in the decision-making process targeted to mitigating drought impacts. Important topics for the successful implementation of such processes are the use of a common language among stakeholders and conflict resolution techniques among water users.

Not all countries have established comprehensive drought declaration processes, which are based on the use of combined indicators and multi-monthly, seasonal monitoring and forecasting (including uncertainty assessment).

Existing water planning practices (mainly supply-oriented) have proven inefficient to cope with the adverse impacts of drought, leading to overexploitation of water bodies (e.g. rivers and reservoirs). As a result the survival of aquatic ecosystems is jeopardised, due to the increased stress set on them.

Global change (non-stationarity) pressures and impacts on European's water cycle have not been thoroughly studied.

Main recommendations

There should be a requirement for the development of a specific Drought Management Plan (DMP) linked to the RBMPs described in the WFD, for each river basin (not only for water stressed regions), which is affected or is expected to be affected by drought and water scarcity issues, within the Member States, and on international grounds.

Climate change aspects, particularly aspects of uncertainty (emissions, propagation in modelling chain), should be integrated in planning for the second and third RBMP (2015-2027).

Analysis of holistic response and recovery frameworks, especially targeting highly-impacted areas by drought, including vulnerable aquatic ecosystems, should be promoted.

Short-term drought forecasts can already be integrated in the planning and decision-making process and in the long run multi-model and seasonal forecast should be included.

The use of participatory tools and methods (e.g. role-playing and conflict resolution tools) can improve drought management efforts. Furthermore, participatory ecosystem-based management can ensure the sustainable use of water resources while protecting the aquatic ecosystems.

Aspects of ecosystem preservation should be integrated in drought

Further information on the XEROCHORE project:

Starting/Ending date of project:
1st May 2008 30th April 2010

Participating countries/institutes:

Fondazione Eni Enri Mattei, Italy [Coordinator]

Wageningen Universiteit, The Netherlands

Water Management Center GbR, Germany

Universitetet i Oslo, Norway

Ministero dell'Ambiente, della Tutela del Territorio e del Mare, Italy

Ministerio de Medio Ambiente, Spain

Natural Environment Research Council, United Kingdom

National Technical University of Athens, Greece

EC DG Joint Research Centre, European Commission, Italy

Centre National du Machinisme Agricole, du Genie Rural, des Eaux et des Forets, France

The International Union for Conservation of Nature and Natural Resources, Switzerland

Type of R&D:

Specific support action

Programme:

7th Framework Programme
Theme 6: Environment
(Including Climate Change)

Web-Links:

Xerochore:

<http://www.feem-project.net/xerochore/>

European Drought Center:

<http://www.geo.uio.no/edc/>

European Drought Observatory:

<http://edo.jrc.ec.europa.eu>

planning. The establishment of “minimum flows” highly influences the water use rates during drought and can contribute to the maintenance of the “good status” of groundwater bodies, as well as surface bodies.

Additional technical / scientific information

Xerochore Working Document on “Provisions and Gaps of the Water Framework Directive 2000/60/EC regarding drought management”.

Xerochore Working Document on “Pan-European Drought policy framework”.

Selected related projects / activities

MEDROPLAN: Mediterranean Drought Preparedness and Mitigation Planning (EU MEDAWATER, 2003-2007).

PRODIM: Proactive Management of water systems to face drought and water scarcity in islands and coastal areas of the Mediterranean (Interreg IIIB ARCHIMED, 2006-2007).

WAM-ME: Water Resources Management Under Drought Conditions: Criteria and Tools for Conjunctive Use of Conventional and Marginal Waters in Mediterranean Regions (INCO MED (2), 2000-2003).

MEDDMAN: Integrated water resources management, development and comparison of common transnational methodologies to combat drought in the MEDOCC regions (Interreg III, 2006-2008).

European Drought Centre (EDC) and the European Drought Observatory (EDO).