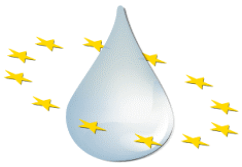

MED Joint Process WFD /EUWI

WATER SCARCITY DRAFTING GROUP

POLICY SUMMARY

WATER SCARCITY MANAGEMENT DOCUMENT : WHAT FOR?

The pressure on Europe's water resources has been increasing during the last decades, deteriorating freshwater quality and quantity. Unsustainable water management practices such as over-consumption and water pollution, combined with climate change and pre-existing water scarcity situations could result in severe impacts on both nature and society. Ineffective drought and water resources management mechanisms put aquatic ecosystems under higher stress. Indeed, the lack of adequate water use planning leads to heavy overexploitation of rivers and reservoirs in case of drought, which jeopardizes the survival of the associated fauna and flora and reduces the availability of resources for agricultural municipal and industrial uses. The inappropriate management of water scarcity and drought has the potential to negatively impact the status of water bodies, thereby compromising our ability to supply our communities with good quality water of sufficient quantity to support lives and livelihoods.

The purpose of the Water Framework Directive (WFD) is to enhance the protection of water bodies and the status of aquatic ecosystems by promoting sustainable water use. The WFD places the integrity of freshwater ecosystems at the core of water management. Measures to prevent and alleviate drought consequences and water scarcity are thereby entirely appropriate within its context.

This policy summary is addressed to competent authorities within EU countries who face water scarcity issues in the process of WFD implementation. Its purpose is to describe measures and practices including possible actions which may be used to react to water scarcity issues.

This document is informed by a much larger technical document which has been drafted by a working group representing EU and non EU countries (Mediterranean countries from the 'WFD and Water Initiative' joint process), the European Commission, and researchers from projects funded by the EC dealing with water resources management in arid or semi-arid regions (the ARID cluster). The technical document was developed in the context of the Common Implementation Strategy (CIS) agreed by members states and the Commission supporting the implementation of the WFD.

RECOMMENDATIONS ON DROUGHT MANAGEMENT AND WATER SCARCITY

- **What kind of problem are we facing?**

Firstly it is necessary to clarify what sort of situation we are facing. Although many concepts related to the issue are interrelated and confused in the common usage, it is important to distinguish between imbalances and aridity. Imbalances arise when water demands exceed the supply capacity of the natural system. Aridity, which is a natural phenomenon, generally describes low water availability in an ecosystem due to low precipitation and/or high evaporation rates. It is equally important to differentiate between aridity as a long-term average feature and a drought situation that indicates a deviation from the average situation, but is still within the ecosystem natural variability.

It is also necessary to differentiate among transitory periods of water deficiency, caused by exceptional droughts and long-term imbalances of available water resources and demands. Both phenomena require different sort of measures and actions but including both, as minimum common denominator, water demand management measures.

- **Droughts : moving from crisis to risk management**

Analysis of the drought management policies in some countries today indicates that decision-makers usually react to drought episodes through a crisis-management approach by declaring a national or regional drought emergency programme to alleviate drought impacts, rather than developing comprehensive, long-term drought preparedness policies and plans of actions that may significantly reduce the vulnerabilities to extreme weather events. Drought planning has to evolve to risk management. It requires the development of comprehensive, long-term drought preparedness policies and plans of action, based on the following principles:

- Reducing vulnerability and increasing resilience to drought.
- Prevention in order to reduce the risk and effects of uncertainty.
- Mitigation of the adverse impacts of the hazard.
- Proactive management. Developing actions planned in advance, involving modification of infrastructures, national laws and institutional agreements together with an improvement in public awareness.
- A drought management strategy should include sufficient capacity for contingency planning before the onset of drought. It entails effective information and early warning systems as well as effective networking and coordination between central, regional, and local authorities.

Drought is a complex phenomenon that involves social, economic, and environmental aspects. From the water resources perspective, a proactive approach to drought is equivalent to strategic planning of water resources management for drought preparation and mitigation. Such planning consists of the following categories of measures that are best planned in advance:

a) *Long-term actions* oriented to reduce the vulnerability of water supply systems to drought. They have to improve the reliability of each system to meet future demands under drought conditions by a set of appropriate structural and institutional measures. Alternative actions could be : water conservation and demand management, involving efficient use and resource protection, educational programs, public information and awareness, research.

b) *Short-term actions* which respond to a specific and impending drought event within an existing framework of infrastructures and management policies. This type of action comprises a contingency plan. The objective is to limit the adverse impacts on the economy, social life and environment when a drought situation is arising. The basic components of short-term actions are :

- Data and continuous monitoring systems (Drought Management Plan, Drought Monitoring and Forecasting Systems)
- Impact assessment systems
- Response systems, requiring appropriate:
    - National legal framework
    - Organisational structure
    - Measures and infrastructures

- **Long-term imbalances : the value of water**

EU institutions, member states and stakeholders should play a leading role in the implementation of a new vision for water resources management. This vision could be summarized as considering that fresh water is a scarce and valuable resource that should be carefully managed in the long-term perspective by respecting the following conditions :

- Functioning freshwater ecosystem fulfil basic socio-economic and environmental needs. Prioritizing the uses, including the "environmental "use" is therefore a necessity..
- Participation, partnership and active cooperation must be promoted for a sustainable water management at local, national and international scales.
- Knowledge is a key aspect for a sustainable management of water resources. Water management must be realistic and produce sound estimations of water needs by aquatic ecosystems and human activities that depend on water.
- Where necessary (in case of overexploitation of the resources), authorities should implement a combination of both demand and supply side measures for all users in a coherent river basin management programme. The role of water managers should be focused on the improvement of the equilibrium between supply and demand. Thus they should be given the necessary means (human resources, fundings) to effectively cope with this challenge.

In the core of possible measures, some are emerging due to their important impact on the biggest water consumers and to their short-term effects :

- For demand-side measures :
  - Changes in water consumption promoting subsidies, especially via CAP and the national choices for its implementation (partial de-coupling of payments and Rural Development Programmes) will have to be considered
  - Reduction of leakages in the distribution networks.
  - Improvement of irrigation technologies by improving agricultural management, optimizing soil water utilisation and irrigation, and setting up new programmes of practical research in order to reduce water consumption (e.g. crop rotation, genetic variety).
  - Promotion of improved waste water reuse where appropriate.
  - Wise use of water resources (use of new technologies and changing processes in industry and agriculture), natural storage improvement and water saving.
  - Evaluation of the advantage of setting up water banks and quota systems.
  - Setting up an adapted tax and price policy system to encourage investments or demand approach management development, and to develop financial mechanisms to internalize external costs and anticipate profits on water savings.
  - Development of education and awareness campaigns
- For supply-side measures :
  - Preservation of the functioning of natural catchments, aquifers and restoration.
  - Improvement of an efficient use of existing water infrastructures
  - Water recharge aquifers.

-Setting up an obligation for using a costs / needs / advantages / alternative solutions analysis with economic, environmental and social impact for every project of new water resource creation.

- Evaluation of effectiveness and efficiency of the proposed measures.

INTEGRATING SCARCITY & DROUGHT ISSUES IN THE IMPLEMENTATION OF WFD

The recommendations described in this document must be clearly and explicitly linked to implementation of the WFD. Although the WFD is not directly designed to tackle quantitative issues, its purposes include contributing to the mitigation of drought effects (art. 1.e) and the promotion of sustainable water use (art 1.b) and its environmental objectives include ensuring a balance between abstraction and recharge of groundwater (art 4.1(b)(ii). Furthermore, water quantity can have a strong impact on water quality and therefore on good ecological and chemical status. In this respect, the directive can be an instrument for addressing drought and water scarcity management.

River Basin Management Plans (RBMP) have to include a summary of the programmes of measures in order to achieve environmental objectives (art. 4) and may be supplemented by the production of more detailed programmes and management plans for issues dealing with particular aspects of water management. In this context, RBMPs could be used to describe and operationalize some of the measures proposed above. The following recommendations are made:

- Actions which will help to achieve WFD objectives through to managing water quantity (e.g. water scarcity) should be considered as "measures" (basic/supplementary) when developing WFD POM and associated RBMPs (art. 11, art. 13).
- When and where needed, a specific "drought management subplan" could be used to supplement the WFD RBMP (art. 13.5). Many EU countries already generate drought plans as part of their 'security of supply' procedures[1].
- Public participation, as required by WFD (art. 14), should also be organized around water scarcity management issues and should be coordinated with other initiatives taken to implement art. 14.
- When developing the WFD POM and associated RBMPs (art. 11 and 13), the interaction between quantitative and qualitative water management aspects should considered through an integrated approach when developing plans and programmes in order to make coherency and create synergies where possible. The interaction between quantitative and qualitative water management aspects may lead to specific and supplementary constraints (technical and financial) for concerned countries. When setting the environmental objectives in the RBMPs, these additional constraints should be taken into account when justifying the potential exemptions.

Regarding exemptions, "prolonged droughts" are introduced in the Directive (Art, 4.6) as natural cause or force majeure events resulting in temporary deterioration in the status of water bodies. Therefore, in the context of the obligations of the WFD, clear definitions of what is understood by "prolonged droughts" will have to be established.

[1] These plans are often not based on catchments or specific rivers however. Indeed, this raises the question of whether the WFD, with its emphasis on planning for individual river basins, is a suitable vehicle for drought planning.

The conditions under which exceptional circumstances are or could be considered have to be stated through the adoption of the appropriate indicators which take account of specific climatic and hydrogeological circumstances. When a specific Drought Management Subplan is supplementing the RBMP, contingency drought plans should be defined in order to establish objective thresholds supporting the selection of specific measures related to an indicators system. The process could be structured as follows :

- Determine the indicators and thresholds that will establish the starting point, the ending point, and severity levels of the exceptional circumstances. In addition, thresholds of pre-alert and alert levels should also be defined.
- Set up the measures to take during the pre-alert and alert phases in order to prevent deterioration of water status.
- All the reasonable measures have to be taken in case of prolonged drought in order to avoid further deterioration of water status.
- All practicable measures have to be taken to restore the body of water to its prior status, once the event has finished and the sooner as reasonably possible.
- Make a summary of the effects and measures taken and subsequently revise and update the existing drought management plan.

FURTHER DEVELOPMENT NEEDED

There is a need for a deeper analysis of some of the measures mentioned above before they can be implemented in a RBMP / Drought Management Plan. There is also a need for further development of coordination at EU level and development of knowledge on specific issues, among which :

- Research and development to obtain operational, region specific thresholds and indicators; coordination of activities among researchers, experts and agencies.
- Evaluation - on a scientific basis - of the climate change effects on drought events, especially in the context of the planning exercise.
- Methodologies to evaluate the efficiency of the proposed measures.
- Alternative solution and water saving technologies should be promoted and further explored. A common way forward should be agreed upon in order to enable implementation, improve, and promote coordination and information exchanges.
- Exploration of opportunities and obstacles with CAP and the national choices for its implementation
- Communication about the socio-economic benefits of achieving the WFD “good status”, also for regions and/or countries already affected by drought and water scarcity.
- Build a Common long-term strategy to prepare for extreme events within water policies, including public awareness, educational programs and research. It could be reached by reinforcing coordination at EU level to seek a transnational and interdisciplinary approach to drought research, monitoring, forecasting and joint mitigation strategies.