



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 18.7.2007  
SEC(2007) 996

**COMMISSION STAFF WORKING DOCUMENT**

*Accompanying document to the*

**COMMUNICATION FROM THE COMMISSION  
TO THE EUROPEAN PARLIAMENT AND THE COUNCIL**

**Addressing the challenge of water scarcity and droughts in the European Union**

**Summary of the Impact Assessment**

{COM(2007) 414 final}  
{SEC(2007) 993}

## EXECUTIVE SUMMARY

This Impact Assessment (IA) has been prepared by the Commission services to support the Communication on Water Scarcity and Droughts.

### 1. PROCEDURAL ISSUES

- At the Environment Council of 9 March 2006, a number of Member States called for European action on water scarcity and droughts. The Commission presented a preliminary analysis at the Environment Council of 27 June 2006 and announced its intention to adopt a Communication on water scarcity and droughts by July 2007.
- The development of the Communication fully respected the minimum standards for consultation. Three meetings with all interested stakeholders and Member States were organised by the Commission, which enabled them to actively contribute to the process.
- The steps to further develop policies and measures to address water scarcity and drought issues will in any case require additional thorough impact assessments of some selected measures.
- This assessment for the Communication on water scarcity and droughts will therefore be proportionate based on the preliminary information and experience acquired so far.
- In early 2007, the Commission launched a study in order to quantify the water saving potential across Europe. Another study will consider regional disparities in water saving potential. The inclusion of scenarios testing the cost-effectiveness of several measures will provide useful information for further consideration by the end of 2007.
- On 5 June 2007 the Impact Assessment Board adopted an opinion on the draft version of the Impact Assessment of the Communication. All the recommendations for improvement have been fully integrated into the impact assessment.

### 2. WHAT PROBLEM IS THE COMMUNICATION EXPECTED TO ADDRESS?

- 33 river basins affected by water scarcity have been identified so far. They represent a total area of 460 000 km<sup>2</sup> (about 10% of the total EU area) and host a total population of 82 million (about 16.5% of the total EU population).
- Most Member States have reported drought events which have taken place since 1976. From 2000 to 2006, an average of 15% of the EU total area and an average of 17% of the EU total population were affected by droughts.
- The spatial and temporal distribution of water resources across Europe are one of the main drivers of water scarcity and droughts.
- Water pricing policies also generally do not reflect the level of sensitivity of water resources at local level. The 'user pays' principle is hardly implemented. These gaps lead to mismanagement of water resources, even though the Water Framework Directive (WFD) provides the principles to set up effective economic instruments.

- Inappropriate land-use planning and water allocation between economic sectors result in imbalances between water needs and existing water resources.
- Agriculture is the major user (with 64%), followed by energy (20%), public water supply (12%) and industry (4%). Tourism is likely to put strong pressure on water abstraction, particularly in Southern Europe and in coastal areas where freshwater resources are limited.
- Across Europe there is huge potential for water saving. Europe continues to waste at least 20% of its water due to inefficiency.
- In general terms, there is a lack of consistency and sometimes even counter-productive effects on water resource protection, due to insufficient integration of water concerns into water-related sectoral policies.
- As regards drought events, they have often been resolved by a crisis management approach dictated by a lack of timely preparedness for extreme events.
- Water scarcity situations encountered at river basin level have already had noticeable impacts on economy, society and environment, with consequent effects on costs.
- Droughts have immediate and significant economic, social and environmental impacts which can last beyond the end of the drought event.
- The direct economic impact of drought events in the past thirty years is estimated at a minimum of €100 billion.

### *No policy change scenario*

- In total, the proportion of European river basin areas in the severe water stress category is likely to increase from 19% today to 34-36% by the 2070s.
- The impacts of economic and social development on water resources may be of the same order of magnitude as changes in water availability due to climate change.
- South-Eastern countries might be the area with the greatest increase in pressure on its water resources in the coming decades.
- The WFD provides all the tools needed to achieve truly sustainable water management. However, implementing these tools (in particular water pricing and cost recovery) in the most effective way remains a challenge.

All things being equal, the problem is likely to evolve as follows:

- Maintenance of widespread inappropriate land planning throughout some of the most water scarce river basins.
- Continuing waste of water and significant water inefficiency in households and many economic sectors.

### **3. OBJECTIVES**

The proposal pursues the following general policy objectives:

- Address the increasing impacts of water scarcity and droughts in the European Union
- Ensure the long-term protection of available water resources
- Ensure sustainable water availability across Europe and promote sustainable water uses

The specific objectives are:

- Enhance preparedness for increasing droughts
- Mitigate all impacts of water scarcity and droughts on the environment, economy and society
- Create the conditions for sustainable economic and social development across Europe in a context of climate change and growing situations of water scarcity and droughts

The operational objectives include:

- Identify the most appropriate and cost-effective measures in order to efficiently address water scarcity and drought issues
- Consider possible priorities or hierarchy to guide policy-making in the light of water availability at river basin level.

### **4. WHAT ARE THE MAIN POLICY OPTIONS AVAILABLE TO ACHIEVE THE OBJECTIVES?**

In addition to the 'no policy change' scenario, three options have been identified.

- Option A: 'Water supply only' option

The measures under consideration within this option consist in

- Enhancing the development of new water supply on the basis of existing EU legislation.
- Supporting the widespread development of new water supplies, with priority being given to the allocation of EU and national funds.
- Option B: 'Water pricing policies only'

The measures under consideration within this option cover:

- Effective water pricing.
- Cost recovery.

- Option C: Integrated approach

The measures under consideration include measures:

- to prevent droughts,
- to support efficient water allocation and sustainable land use planning,
- to foster water performance technologies and practices,
- to foster the emergence of a water-saving culture in Europe,
- for new water supply.

## **5. ANALYSIS OF IMPACTS**

### **5.1. Option A: The 'water supply only' option**

#### **Environmental impacts**

- Reservoirs play an important role in public water supply, irrigation and industrial uses. However, the construction of dams and water transfers can have serious implications for the functioning of freshwater ecosystems in a river basin and negative impact on the ecological status of water bodies.
- Given the current uncertainty about the environmental impact of all alternative solutions such as desalination - including the amount of energy used – and, by extension, its compatibility with the Energy Policy for Europe- , it is necessary to carry out further risk assessment work before the Commission takes any definitive position.

#### **Economic impacts**

- The short-term impacts on the economy are, at first sight, expected to be positive. Any new water supply can support the development of activities in the area surrounding the new infrastructure.
- However, dams and water transfers present a number of shortcomings highlighted notably by the World Commission on Dams. Several existing projects show other shortcomings as regards alternative solutions.
- Few opportunities for new and significant water supply are foreseeable within Europe other than by increasing the pressure on already sensitive water resources and consuming remaining resources until total depletion. New opportunities will need to be identified beyond Europe, in neighbouring countries which will still have sufficient water availability, such as Russia.
- One expected outcome is that some economic sectors might decide, in the light of the lower profits generated by their activity, to partly or totally delocalise in order to find cheaper water prices outside Europe.

## **Social impacts**

- The direct short-term impacts on society are expected to be positive if one aim of the new infrastructure is to provide public water supply. New economic activities can develop and support the creation of new jobs.

However, benefits may be limited if the development of new water supply involves transfers of costs from some economic sectors to households or in the case of water transfers, whenever they give rise to social and political conflicts between donor and receiving basins.

### **5.2. Option B: 'Water pricing policies only'**

- The impacts of water pricing policies differ according to the socio-economic context and natural conditions.
- Water pricing policies are usually not sufficient in themselves to fully address water scarcity and droughts, but they can prove effective if they are combined with complementary options.

## **Environmental impacts**

- Regarding agriculture, the implementation of water pricing leads to changes in land use towards higher-value uses. However, current prices are often well below the range where water saving is a significant financial consideration for the farmer.
- The available data also show that domestic water consumption decreases when metering is introduced. However, it is possible to determine a certain threshold below which price increases do not affect consumption levels.
- There is evidence of elasticity of demand for industrial water. The range of possible alternatives appears to play a major role.

## **Economic impacts**

- The implementation of a water pricing policy covering both environmental and scarcity costs can prompt an efficient allocation of resources, leading to an increase in social welfare. Case studies on the macro-economic impact of sustainable agriculture in a number of Member states show that large-scale conversion of arable land to sustainable agriculture through internalisation of policies brings economic benefits.

## **Social impacts**

- Article 9 of the WFD sets the conditions for the recovery of costs for water services. It specifies *inter alia* that Member States need to have regard to the social, environmental and economic effects of the recovery. Member States are therefore allowed to adjust their water pricing policies on the basis of social considerations.

### **5.3. Option C: Integrated approach**

#### **Water saving and water efficiency potential**

- The assessment of the water saving potential in Europe resulting from the implementation of appropriate measures shows that 20% of water can be saved.
- Water demand reduction is possible without affecting current economic activities and can lead to economic, social and environmental benefits.
- Wasting water can be considered as an additional cost (along with exploitation, supply and processing) and the potential financial savings are huge.
- Very often, water demand management appears much more economically advantageous than increasing water supply. The few studies available that make this kind of comparison show differences of 1-3, or even 1-10 between cost per cubic metre 'saved' and 'supplied'.

### **Economic impacts**

It is essential to mention that the implementation of some specific measures will require the definition of appropriate accompanying measures taking into account specific regional, sectoral and social factors. Such measures will require further assessment.

- The sectoral policies offer opportunities to address water scarcity and drought issues. However, there is scope for further adjustments to improve the efficiency of these policies in tackling water quantity issues.
- Successive reforms of the CAP and in particular rural development support have contributed to improving the situation. However, over-abstraction remains an issue and also due to incomplete uptake of full decoupling by some Member States. Future adjustments of the CAP and the 'Health check' of 2008 could provide opportunities to examine how to further integrate water quantity issues in the relevant CAP instruments. In this context, it should be for instance considered to what extent the CAP and the "Health check" of 2008 could promote more complete use of full decoupling and increased support for water management within rural development programmes.
- Ensuring that future reviews of the structural funds lead to a better coverage of the areas concerned by water quantity issues is also important. **An extension of these budgets and the identification of possible synergies between policies would not entail any opportunity costs for other European environmental policies.**
- As regards the impacts of incentives at national level, the evaluation of the tools used for the energy sector provides interesting information about the likely effectiveness of their implementation in the water sector.
- It is clear that encouraging the development of water-efficient technologies and products stimulates the market and increases the competitiveness of European industries, as is already the case in the energy sector.

## Social impacts

- Water saving policies have positive social impacts, in particular on sustainable job creation in the public sphere

## Environmental impacts

- The water which is saved will not be wasted and will not contribute to direct emissions on water bodies. More generally, the reduction of abstraction from the natural environment will lead to better status of water bodies and preservation of the ecosystems.

There is a need to focus on options which help significantly to improve all water demand management practices. Considering the overall water saving and water efficiency potential across Europe, this point comes down to the need to introduce a clear water hierarchy to guide policy-making. New water supply should be considered as an option, when other water demand management options, including effective water pricing policy and cost-effective alternatives, have been exhausted.

## 6. COMPARING THE OPTIONS

	Option A Water supply only		Option B Water pricing policies only	Option C Integrated approach	
	Short-term	Long-term		Short-term	Long-term
Economic impacts	++	-	+	++	+++
Social impacts	+	-	+/-	+/-	+
Environmental impacts	-	-	+	++	+++

- The above table summarises the economic, social and environmental impacts of the different options assessed in the previous section.
- Option A can deliver interesting benefits for the economy and society in the short-term, while impacts on the environment are expected to be negative. An assessment of the impacts in a longer term reveals a negative cost-benefit ratio for the economy, the society and the environment.
- Option B is expected to have positive impacts on the economy and the environment whenever effective water pricing policies and cost recovery of the water services by the water users are introduced. Social impacts may depend on the level of water pricing considered and could prove negative for some economic sectors or some social classes of the population.



- Option C will deliver results gradually. Impacts on the economy are expected to be positive from the outset and grow in the longer term. Social impacts will also be positive with time. This option is expected to deliver significant and increasing positive impacts on the environment. Compared to the other options, it generates the greatest benefits for the environment.

Based on this assessment, option C appears to be the most promising. It ensures the best cost-effectiveness ratio in the long-term.

- The steps to develop policies further and the measures to address water scarcity and drought issues will in any event require additional, thorough impact assessments. The next steps will involve looking deeper into the collection of data and the quantitative assessment of the selected measures extracted from the wide range of options proposed in the Communication.
- It is also clear that the implementation of some specific measures will require the definition of appropriate accompanying measures taking into account regional, sectoral and social specificities. Such measures will also require further assessment.

## **7. MONITORING AND EVALUATION**

The challenge of water scarcity and droughts will need to be addressed both as an essential environmental issue and as a precondition for sustainable economic growth in Europe.

The Commission will review progress towards the set orientations and report on them to the Council and the European Parliament. The report will be presented in the framework of a Stakeholder Forum to be organised in 2008.

The Commission will consider follow-up initiatives and action in the light of discussions on this Communication in the Council of Ministers and the European Parliament.